JAX
Jacksonville International Airport

Master Plan Update

FAA AIP Project No. 3-12-0035-2018

March 2020

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1. INTRODUCTION

During the fall of 2018 the Jacksonville Aviation Authority (JAA) embarked on an Airport Master Plan Update as well as an Airport Layout Plan (ALP) Update for Jacksonville International Airport (the Airport or JAX). The Airport had experienced unprecedented growth in the years leading up to the Master Plan Update with the introduction of ultra-low-cost carriers (ULCCs) into the market as well as increased activity from the mainline carriers. The JAA realized a Master Plan Update was needed to quantify the recent and forecasted growth at JAX and to determine the facility and infrastructure requirements to serve the anticipated demand.

1.1 MASTER PLAN UPDATE OBJECTIVES

To accomplish the overarching purpose of the Master Plan Update, to identify and address the current and future activity at the Airport, the JAA established several specific objectives. These objectives helped guide the development of the Master Plan Update, and include the following:

- Identify a baseline of existing conditions.
- Develop an updated base map in compliance with the Federal Aviation Administration's (FAA) prescribed guidelines.
- Prepare a preliminary siting study and evaluate potential sites for an Air Traffic Control Tower.
- Determine the development/activity trigger for Concourse B construction.
- Establish the space program for a Customs and Border Patrol (CBP) General Aviation Facility (GAF) and conduct a siting study.
- Identify facility requirements primarily based on:
  - aircraft gate utilization and requirements
  - aircraft hardstands/remote parking requirements
  - airfield capacity and the need/timing for the north and south parallel runways
  - critical aircraft
- Prepare airfield development alternatives that focus on necessary modifications to comply with the FAA's runway incursion mitigation (RIM) program and enhancement of situational awareness techniques.
- Update the Airport Layout Plan set and Airport Property Map.

1.2 MASTER PLAN DELIVERABLES

The Master Plan Update's documentation provides the sources of data collected, assumptions made in the analysis, technical analyses, findings, conclusions, and recommendations that form the basis for the master plan projects. The Master Plan Update document is presented in the following sections and supporting appendices:

- Section 1: Introduction
- Section 2: Inventory and Data Collection
- Section 3: Aviation Activity Forecasts

- Section 4: Demand/Capacity Assessment and Facility Requirements Update
- Section 5: Alternatives Update
- Section 6: Environmental Overview Update
- Section 7: Implementation Plan
- Section 8: Financial Analysis
- Appendix A: Ramp Charts
- Appendix B: JAX parking Study Phase II
- Appendix C: Bus Gate Alternatives
- Appendix D: CIP Sheets
- Appendix E: Cost Estimate Detail

The ALP Update and the Exhibit A were each prepared as standalone documents in conjunction with the Master Plan Update. These deliverables reflect the changes that have occurred at the Airport since the last ALP update as well as the development as identified in this Master Plan Update.

2. AIRPORT INVENTORY

This chapter provides background data on the existing facilities, infrastructure, and operating systems at the Airport. The inventory of existing facilities is key to master planning as it provides the basis for evaluating facilities and, subsequently, for determining future facility needs. The Inventory includes the review of data and as-built drawings for facilities that were constructed since the previous Master Plan Update completed in 2010.

The JAA provided the Airport data as part of this Master Plan Update; the data include the following:

- previous Airport planning analyses and studies (e.g., 2010 Master Plan Update, the Jacksonville International Airport Parking Study)
- aerial photography, mapping, terminal plans, and lease drawings
- Airport facility directories
- Airport noise monitoring and management data
- ground operating procedures
- current floorplan for the JAX terminal areas
- remote hardstand parking locations with striping plans
- curbside allocation data
- lease boundaries and expiration dates
- cargo operators and their lease area
- general aviation tenants and their lease area
- new air service projections and target markets
- Timber Study

The data collection effort also relied on a review of the following documents:

- approach plates, sectional charts, etc.
- as-built drawings for facilities constructed since 2009
- design drawings for facilities in design or construction
- AutoCAD files of the latest ALP drawing set

This chapter summarizes the Airport's existing facilities and the on-Airport development that has occurred since the 2010 Master Plan Update, including the following:

- demolition of the old sign shop
- demolition of the flight kitchen
- construction of a new maintenance facility
- Parking Plaza expansion
- additional facilities within the Florida Air National Guard (FANG) facility
- demolition of Terminal B concourse

The construction of Concourses A and C was completed in 2009. The existing Concourse B was demolished in 2010, providing eight aircraft hardstand parking positions and additional ground support equipment (GSE) storage area.

2.1 AIRPORT SETTING

JAX serves as the primary commercial service airport and as the gateway to Northeast Florida. The Airport is situated approximately 15 miles north of downtown Jacksonville, in Duval County, Florida. It covers approximately 7,911 acres. **Exhibit 2-1** shows the location of the Airport surrounded by Interstate 95 (I-95) to the east, Interstate 295 to the south, and Lem Turner Road (State Road 115) to the west.

JAX also supports the general aviation community, with two fixed-base operators (FBO), Sheltair Aviation Services and Signature Flight Support, located at the Airport. Additionally, the Airport is home to several cargo operators and freight forwarders, including the United Parcel Service (UPS), Federal Express (FedEx), Suburban Air Freight, and Mountain Air Cargo.

The FANG 125th Fighter Wing is also based at JAX. The 125th Fighter Wing operates an armed fleet of F-15 military aircraft. Its mission is "to provide air defense for the southeastern United States, as directed by the North American Aerospace Defense Command (NORAD) and United States Northern Command (USNORTHCOM), from Charleston, South Carolina, to the southern tip of Florida and across the Florida panhandle."[1]

JAX is one of four public-use airports owned and operated by the JAA. The other three airports are Jacksonville Executive at Craig Airport (CRG), Herlong Recreational Airport (HEG), and Cecil Airport (VQQ). JAX is currently the only airport within the JAA's system of Airports providing commercial air service. **Exhibit 2-2** depicts the location of these airports.

All JAA airports are included within the National Plan of Integrated Airport Systems (NPIAS). The NPIAS identifies the airports that are included in the national airport system, the roles they serve, and the Airport Improvement Program–eligible airport development needed over the next 5 years[2]. **Table 2-1** summarizes the NPIAS service levels.

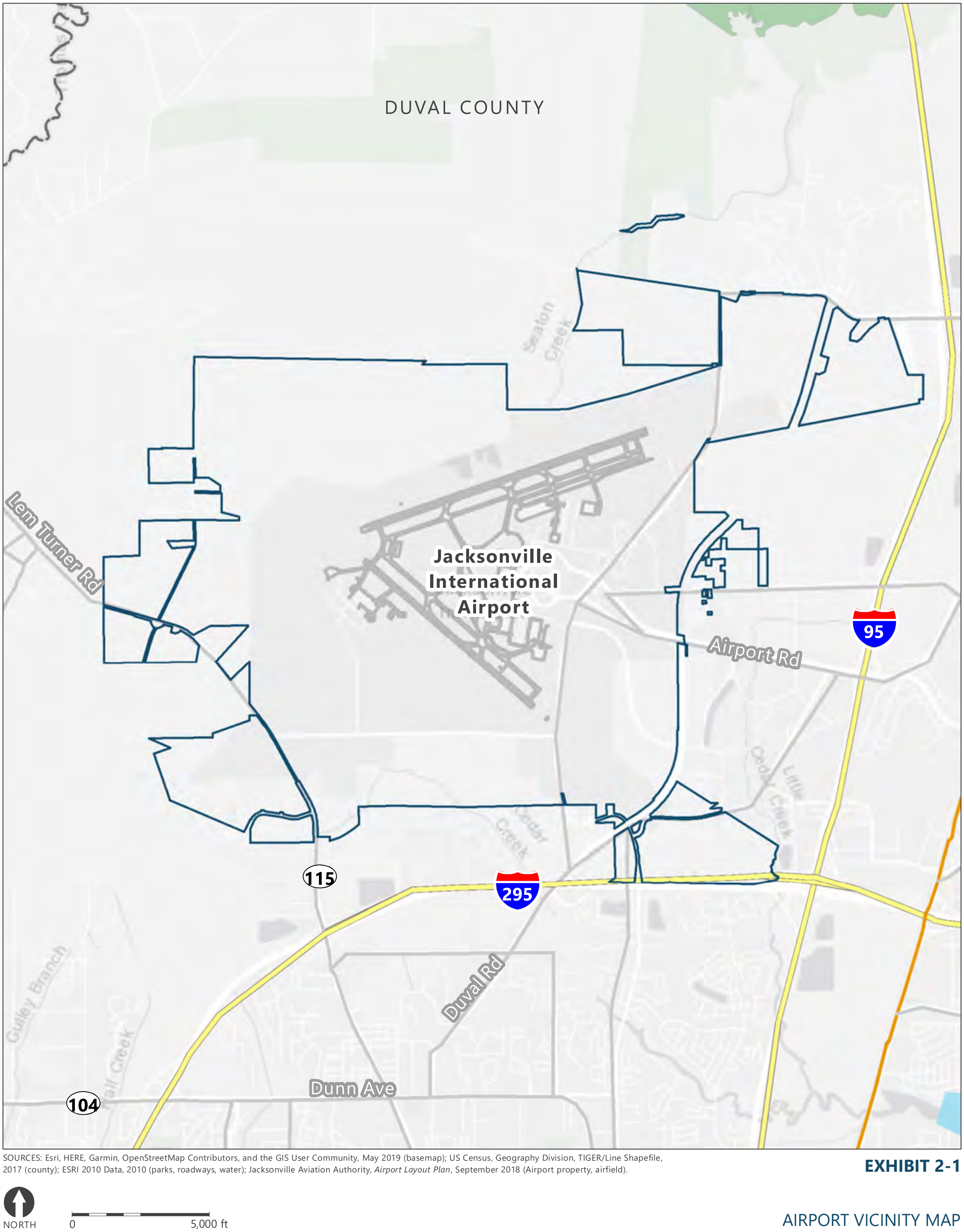
TABLE 2-1 FEDERAL AVIATION ADMINISTRATION – NATIONAL PLAN OF INTEGRATED AIRPORT SYSTEMS AIRPORT SERVICE LEVEL CLASSIFICATION

CLASSIFICATION	DEFINITION	JAA AIRPORTS
Commercial Service – Primary	Public-use commercial airport enplaning at least 10,000 annual passengers	Jacksonville International Airport
Commercial Service – Non-Primary	Public-use commercial airport enplaning at least 2,500 and no more than 10,000 annual passengers	N/A
General Aviation – Reliever	A general aviation airport that serves to relieve operational congestion at a nearby commercial service airport. Must have at least 100 based aircraft or 25,000 itinerant operations.	Jacksonville Executive at Craig Airport, Herlong Airport, and Cecil Airport
General Aviation	Other airports with fewer than 2,500 annual enplaned passengers or that do not receive scheduled service	N/A

SOURCE: U.S. Department of Transportation, Federal Aviation Administration, *Report to Congress – NPIAS*, October 2018.

1 Florida Air National Guard, 125th Fighter Wing, https://www.125fw.ang.af.mil/units/ (accessed November 7, 2018).

2 U.S. Department of Transportation, Federal Aviation Administration, *National Plan of Integrated Airport Systems (2019-2023)*, September 26, 2018, pp. 2–3.



SOURCES: Esri, HERE, Garmin, OpenStreetMap Contributors, and the GIS User Community, May 2019 (basemap); US Census, Geography Division, TIGER/Line Shapefile, 2017 (county); ESRI 2010 Data, 2010 (parks, roadways, water); Jacksonville Aviation Authority, *Airport Layout Plan*, September 2018 (Airport property, airfield).

EXHIBIT 2-1

AIRPORT VICINITY MAP

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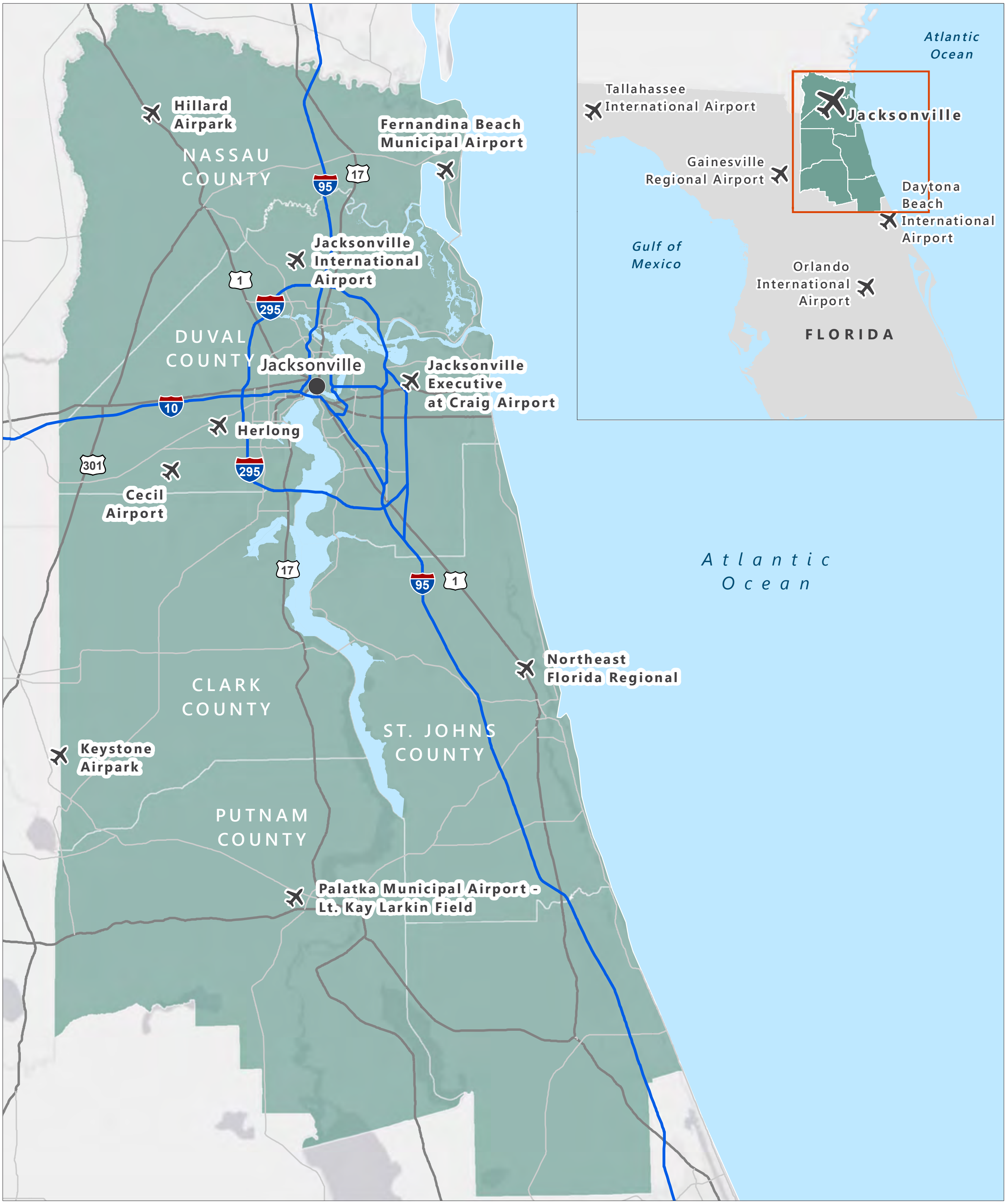


SOURCES: Esri, HERE, Garmin, OpenStreetMap Contributors, and the GIS User Community, September 2018 (basemap); U.S. Census, TIGER/Line Shapefiles, 2018 (roads, counties, states).

EXHIBIT 2-2

NORTH 0 15 mi

AIRPORT LOCATION MAP

P:\GIS\Projects\JAX\MXD\JAX_Exhibit2-2_NortheastRegionalAirportLocations_20190614.mxd

The following is the NPIAS classification for each of JAA's airports:

- JAX is a public-use airport with scheduled commercial airline service, as well as cargo, military, and general aviation activity. It is categorized as a medium hub or Primary Commercial Service airport.
- CRG accommodates general aviation activity and is located approximately 8 miles east of downtown Jacksonville. The airport's general aviation role is regional; it is designated as a General Aviation Reliever to JAX.
- HEG is a general aviation airport located approximately 8 miles southwest of downtown Jacksonville. HEG is designated as a General Aviation Reliever airport.
- VQQ is a general aviation airport located approximately 20 miles southwest of downtown Jacksonville. VQQ is designated as a General Aviation Reliever airport.

These facilities comprise a diversified system of airports that accommodate commercial, business, general aviation, and recreational aviation needs for the City of Jacksonville and Duval County, as well as for Northeast Florida and Southeast Georgia. **Table 2-2** identifies the surrounding airports located within the Northeast Metropolitan Area. This includes Baker, Clay, Duval, Putnam, Nassau, and St. Johns Counties. As identified in the table, JAX is the only airport in this region to provide commercial air service.

TABLE 2-2 NORTHEAST METROPOLITAN AREA AIRPORTS

AIRPORT	AIRPORT IDENTIFIER	SERVICE LEVEL
Cecil Airport	VQQ	General Aviation
Jacksonville Executive at Craig Airport	CRG	General Aviation
Fernandina Beach Municipal Airport	55J	General Aviation
Herlong Airport	HEG	General Aviation
Hillard Airpark	01J	General Aviation
Jacksonville International Airport	JAX	Commercial/International
Northeast Florida Regional Airport	SGJ	General Aviation
Palatka Municipal Airport – Lt. Kay Larkin Field	28J	General Aviation
Keystone Airpark	42J	General Aviation

SOURCE: Florida Department of Transportation, *Florida Aviation System Plan (FASP) 2025*, 2012.

2.2 METEOROLOGICAL CONDITIONS

Weather has a direct effect on aircraft performance, and it plays an important role in the operation of aircraft and airports. Wind and weather conditions impact runway use, runway length requirements, and runway capacity. In addition, the evaluation of meteorological conditions affecting an airport's operations generally dictates the type of airfield instrumentation required during poor weather for aircraft to safety land and takeoff. Observations of weather conditions at JAX, including wind direction and speed, visibility, and cloud ceiling, were used to evaluate general weather conditions and runway wind coverage.

2.2.1 GENERAL WEATHER CONDITIONS

Weather conditions fall under two categories: visual meteorological conditions (VMC) and instrument meteorological conditions (IMC). VMC occur when the prevailing visibility is greater than or equal to 3 statute miles and the cloud ceiling is 1,000 feet above ground level (AGL) or higher. During VMC, pilots operate under visual flight rules (VFR), essentially using visual means to see and maintain separation from other aircraft, objects, and terrain.

IMC occur when the prevailing visibility is less than 3 statute miles, or the cloud ceiling is lower than 1,000 feet AGL. During IMC, pilots operate under instrument flight rules (IFR), relying on Federal Aviation Administration (FAA) Air Traffic Control (ATC) to provide separation guidance from other aircraft and terrain. Operating under IFR requires additional pilot training and aircraft certifications beyond those required for operating under VFR. Pilots can operate under IFR in VMC.

To evaluate the weather conditions at JAX, information was obtained from the automated weather station located at the Airport. Data for this station were recorded by the National Climatic Data Center (NCDC) for the 10-year period between January 1, 2008, and December 31, 2017; the data consists of 81,446 hourly observations.

At JAX, VFR and IFR were observed during approximately 92.9 percent and 7.1 percent of the hourly observations, respectively.

2.2.2 RUNWAY WIND COVERAGE

Wind patterns play an important role with runway use at an airport, as aircraft typically take off and land into the wind to minimize required runway length. When wind direction is not directly aligned with the runway(s), pilots calculate a crosswind component to determine if a runway is usable. FAA Advisory Circular (AC) 150/5300-13A, Change 1, *Airport Design*, recommends that runway(s) at an airport achieve at least 95 percent wind coverage, evaluated based on a period of at least 10 consecutive years. To evaluate the runway wind coverage at JAX, the NCDC information was utilized. Runways 8-26 and 14-32 were evaluated independently and collectively. Crosswind components of 10.5 knots, 13.0 knots, 16.0 knots, and 20.0 knots were evaluated to determine the runway wind coverage percentages for all Runway Design Codes (RDCs).

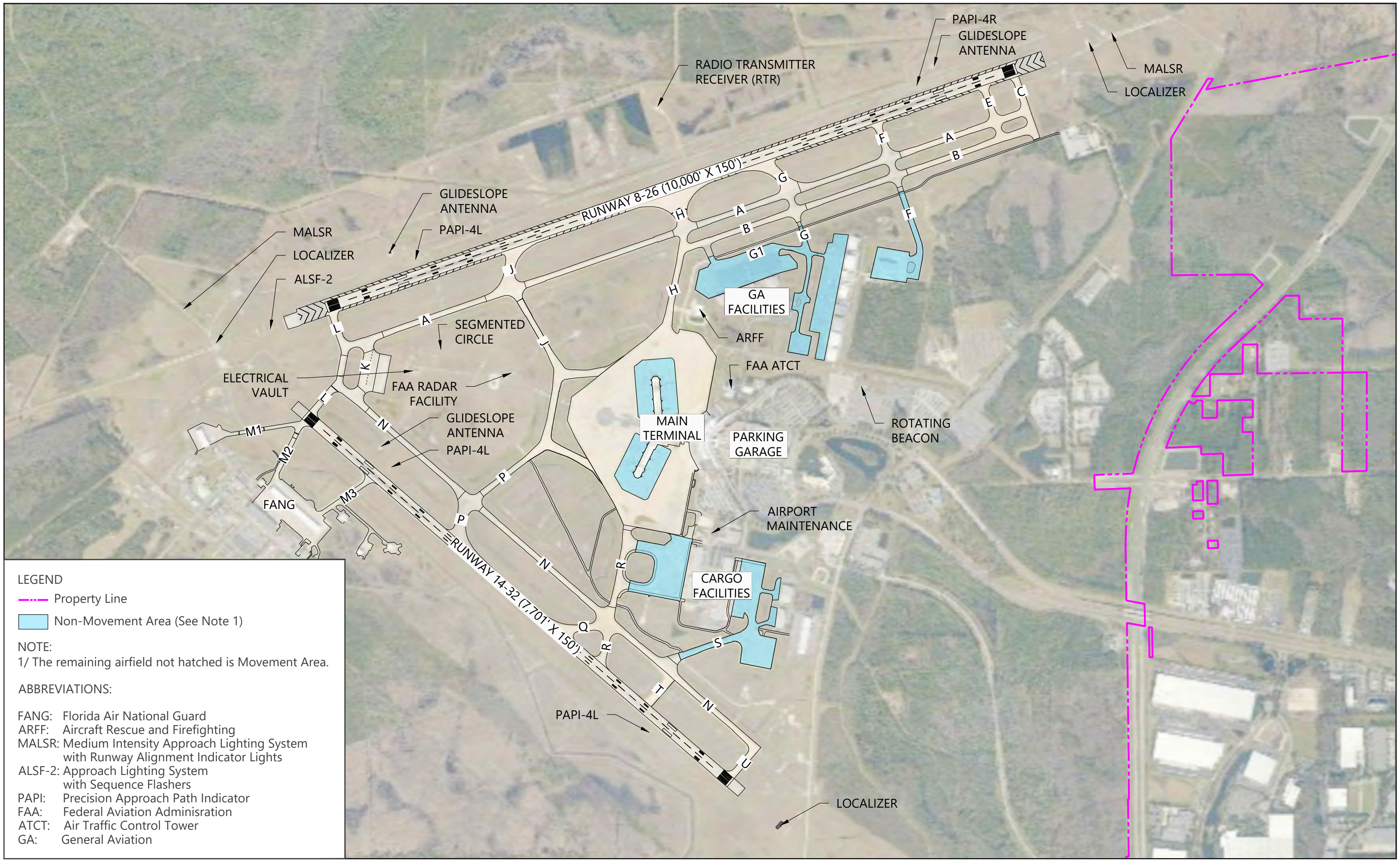
Based on the NCDC wind data information, the combined wind coverage provided by all runways at JAX is equal to approximately 100 percent for all weather conditions, VMC, and IMC at all four calculated crosswind components (10.5, 13.0, 16.0, and 20.0 knots). This runway coverage exceeds the FAA's recommendation of 95.0 percent for all runways at an airport.

2.3 AIRFIELD AND AIRSIDE FACILITIES

The following subsections describe the existing airfield system at JAX as depicted on **Exhibit 2-3**. The airfield consists of components needed to facilitate or accommodate aircraft movements. The airfield system generally incorporates those facilities that are necessary to support the movement and operation of aircraft, including runways, taxiways, instrumentation/navigational aids, airfield lighting, pavement markings, visual aids, and airfield signage. The midpoint of the airfield is known as the Airport Reference Point (ARP). The ARP is located at N 30° 29' 38.6000" W 081° 41' 16.2000." The Airport elevation (highest point on either runway) is 29.2 feet mean sea level (MSL).

2.3.1 RUNWAY LAYOUT

JAX consists of two runways, Runway 8-26 and Runway 14-32, which form the "V"-shape airfield configuration. **Table 2-3** summarizes the physical characteristics of each runway. The two runways, and the taxiways and taxilanes that serve them, are discussed in the subsequent sections.



SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, November 2018 (airfield basemap).

EXHIBIT 2-3

EXISTING AIRFIELD LAYOUT

NORTH

0 2,000 ft

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-3_JAX Existing Airfield Layout.dwgLayout: Airfield Layout Plotted: Jan 30, 2020, 10:39AM

TABLE 2-3 RUNWAY CHARACTERISTICS

DESCRIPTION	RUNWAY 8-26		RUNWAY 14-32	
Length (feet)	10,000		7,701	
Width (feet)	150		150	
Runway End Elevations (feet)	Runway 8 = 29.1		Runway 14 = 26.7	
	Runway 26 = 26.1		Runway 32 = 23.8	
Touch Down Zone Elevation (feet)	Runway 8 = 29.2		Runway 14 = 26.8	
	Runway 26 = 26.2		Runway 32 = 23.9	
Shoulder Width (feet)	35		N/A	
Runway Safety Area				
Width (feet)	500		500	
Length beyond runway end	1,000		1,000	
Runway Protection Zone				
Length (feet)	2,500	2,500	2,500	1,700
Inner Width (feet)	1,000	1,000	1,000	500
Outer Width (feet)	1,750	1,750	1,750	1,010
Approach Surface	50:1	50:1	50:1	34:1
Load Bearing Capacity (pounds)				
Single Wheel	120,000		120,000	
Dual Wheel	250,000		250,000	
Dual Tandem	485,000		480,000	
Double-Dual Tandem	1,005,000		1,000,000	
Gradient (%)	0.05%		0.04%	
Runway Composition	Grooved-Concrete		Grooved-Concrete	
Runway Markings	Precision		Precision (Rwy 14)/Non-precision (Rwy 32)	
Blast Pad Length (feet)	400		200	
Blast Pad Width (feet)	220		150	

SOURCE: U.S. Department of Transportation, Federal Aviation Administration, National Flight Data Center (NFDC), Effective November 8, 2018, through December 6, 2018.

2.3.1.1 RUNWAY 8-26

Runway 8-26 is the longest runway at JAX. It operates in an east-west orientation and can accommodate Runway Design Category V. The runway is 10,000 feet long, with a width of 150 feet, and a true bearing of 70.54 degrees. The runway shoulder width is 35 feet.

Runway 8-26 consists of grooved concrete and has a published strength of 120,000 pounds for single-wheel gear configuration, 250,000 pounds for dual-wheel configuration, 485,000 pounds for two dual wheels in tandem configuration, and 1,005,000 pounds for two dual wheels in tandem / two dual wheels in double tandem configuration.

The pavement classification number (PCN) is a number that expresses the load-carrying capacity of a pavement for unrestricted operations. The PCN code is identified by a five-part code, separated by forward-slashes, describing the piece of pavement concerned. The first part is a numeric value that expresses the strength of pavement. The second part is a letter, either R or F, whether the pavement is rigid (concrete) or flexible (asphalt). The third part is a letter value expressed by either A through D identifying the strength of the subgrade below the pavement. Subgrade of A would be the strongest to D would be very weak. The fourth part is a letter value that identifies the maximum tire pressure the pavement can support. This part is expressed by W through Z. Code W is no pressure limit to Z representing pressure limited to 73 pounds per square inch (psi). The fifth and final part is how the first value of the code was identified. This part is expressed with a T or U, where T indicates a technical evaluation and U indicates usage (a physical testing regime). The PCN code for Runway 8-26 is 76/R/B/W/T.

Both ends of the runway have blast pads that are 400 feet in length and 220 feet in width. These paved surfaces serve to decrease the likelihood of loose material being blown at high velocities by engine blast. Although this area does not have the full strength of the runway pavement, it does serve as an overrun area should an aircraft fail to stop. The runway is classified as a precision instrument runway and is marked accordingly with precision markings at both ends.

2.3.1.2 RUNWAY 14-32

Runway 14-32 is the secondary or crosswind runway at JAX; it is oriented in a northwest–southeast direction. The runway is 7,701 feet long, with a width of 150 feet, and a true bearing of 130.53 degrees. There are no shoulders on this runway.

Runway 14-32 consists of grooved concrete and has a published strength of 120,000 pounds for single-wheel gear configuration, 250,000 pounds for dual-wheel configuration, 480,000 pounds for two dual wheels in tandem configuration, and 1,000,000 pounds for two dual wheels in tandem / two dual wheels in double tandem configuration. The PCN code for Runway 14-32 is 88/R/C/W/T.

Both ends of the runway have blast pads that are 200 feet in length and 150 feet in width. The Runway 14 end is classified as a precision instrument runway, and the Runway 32 end is classified as a nonprecision instrument runway. The runway is marked accordingly with precision markings at both ends.

2.3.2 TAXIWAY NETWORK

The taxiway network at JAX provides access between the two existing runways and the Main Terminal, which is centrally located on the airfield. Taxiways A and B are the two main taxiways that serve Runway 8-26. Taxiway A is 75 feet wide, and it runs parallel 600 feet south of Runway 8-26. Taxiway B is 75 feet wide and is located 867 feet south of Runway 8-26, and it runs approximately half the length of the runway from Taxiway C southwest to Taxiway H. Taxiways A and B turn into Taxiway L and Taxiway C at the Runway 8 and Runway 26 ends, respectively. A project is currently shown on the ALP to extend Taxiway B to Taxiway L at the Runway 8 end to provide a dual parallel taxiway system for Runway 8-26.

Runway 8-26 connects to Taxiways A and B via seven taxiways. Four of these are perpendicular turns (L, F, E, and C) and three of these are angled turns (J, H, and G) connecting via Taxiway A.

Taxiways H and J provide access to the Main Terminal and the airfield rescue and firefighting (ARFF) station located in the center of the airfield. Taxiways G and F provide access to the two FBOs located at the Airport, Sheltair Aviation Services and Signature Flight Support, and their associated aprons and hangars.

Taxiway N is the main taxiway that serves Runway 14-32. It is 75 feet wide, and it runs parallel 600 feet north of Runway 14-32. Taxiway N turns into Taxiway L and Taxiway U at the Runway 14 and Runway 32 ends, respectively.

Runway 14-32 connects to Taxiway N via six taxiways. Three of these are perpendicular turns (L, T, and U) and three of these are angled turns (P, Q, and R) connecting via Taxiway A.

Taxiways M1, M2, and M3, located near the Runway 14 end, provide access to the FANG apron and facilities. Taxiways R, P, and S connect the larger taxiways to different apron and hangars around the airfield.

Table 2-4 identifies each taxiway designator, including taxiway width dimensions, pavement condition, and Pavement Condition Index (PCI), as well as the associated runway and airfield area each one serves.

2.3.3 INSTRUMENT APPROACH PROCEDURES

During times of inclement weather, instrument approach procedures allow pilots to safely navigate and land at airports. Different types of instrument approaches are available, each offering different sets of performance. The most advanced systems allow pilots to land with extremely low visibility conditions. As the cloud ceiling decreases and visibility deteriorates, the necessity for instrument approach capability increases. There are two basic categories for instrument approaches: precision and nonprecision.

Both precision and nonprecision approaches provide course guidance to runway ends. The precision component, or horizontal guidance, increases with the sophistication of the instrument approach aid. The primary difference between a precision and a nonprecision approach is that in addition to horizontal guidance, the precision approach provides vertical guidance to a specific runway end, which allows an aircraft to descend safely on a fixed glide slope signal, even though no visual reference to the runway environment can be confirmed.

JAX offers an instrument landing system (ILS) or localizer (LOC) approach on Runways 8, 14, and 26, while Runway 32 utilizes a very high frequency omni-directional range (VOR)/distance measuring equipment (DME) approach. Additionally, area navigation (RNAV) Global Positioning System (GPS) non-precision approaches are on all four runway ends. **Exhibit 2-4** through **Exhibit 2-12** show the approach procedures associated with these instrument approaches.

2.3.3.1 PRECISION INSTRUMENT APPROACH

There are three general categories for precision instrument approaches. The characteristics of each category are based upon decision height and visibility minimums, noted in statute miles, under which a pilot can operate an aircraft. **Table 2-5** describes these three categories.

TABLE 2-4 TAXIWAY DATA SUMMARY

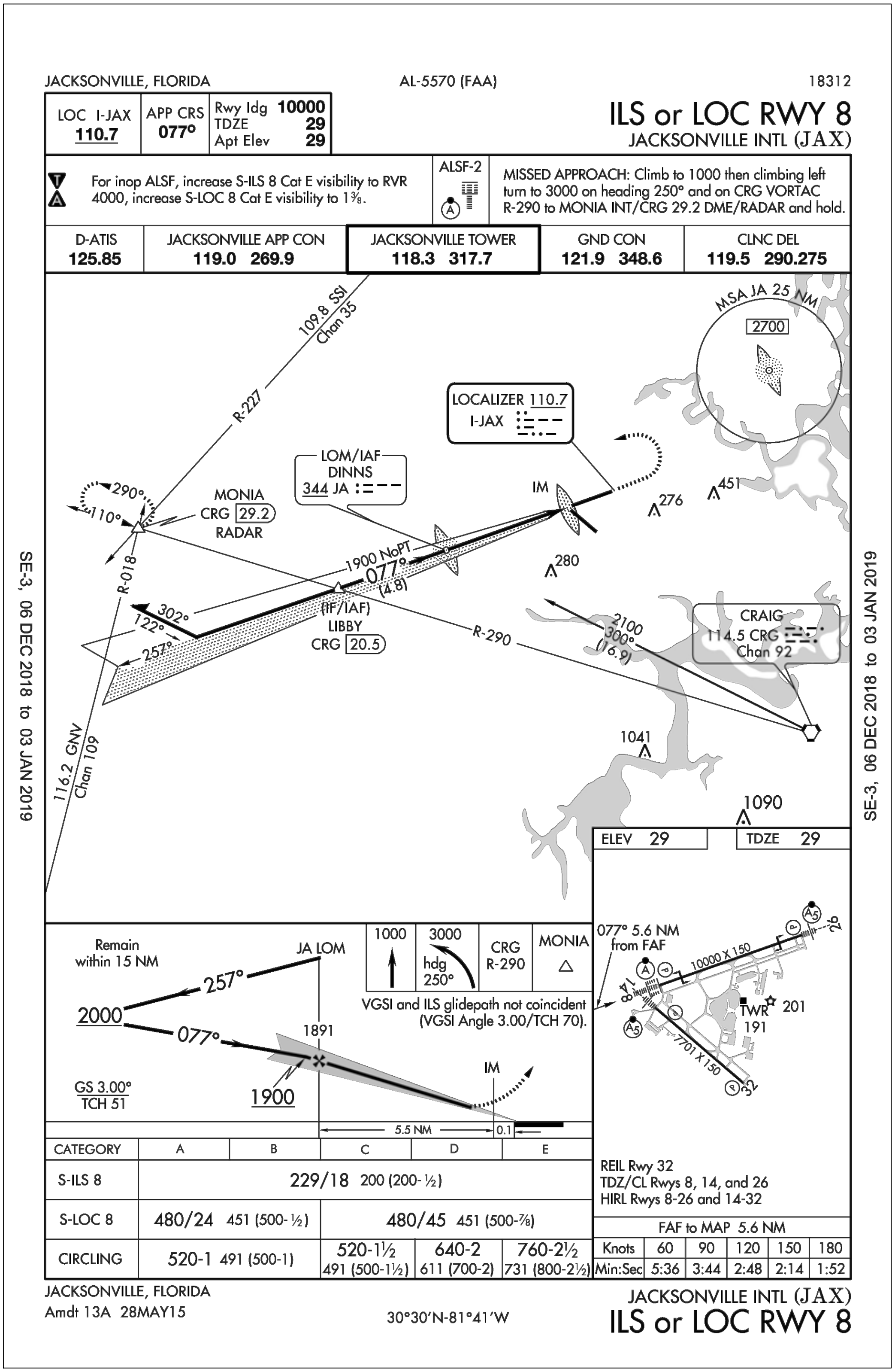
TAXIWAY	TAXIWAY WIDTH (FEET)	ASSOCIATED RUNWAY	PAVEMENT CONDITION	PCI INDEX[1]	TAXIWAY TYPE
A	75	8-26	Satisfactory	75	Parallel Taxiway (to Runway 8-26)
B	75	8-26	Satisfactory	74	Parallel Taxiway (to Taxiway A)
C	90	8-26	Satisfactory	74	Entrance Taxiway (to Runway 26)
E	90	8-26	Satisfactory	79	Bypass Taxiway
F	75 / 90	8-26	Satisfactory	77	Exit Taxiway
G	50 / 90	8-26	Satisfactory	100[2]	Angled Exit Taxiway / Taxiway Leading to the GA Ramp
H	75	8-26	Satisfactory	71	Angled Exit Taxiway / Taxiway Leading to the Terminal Ramp
J	75	8-26	Fair	70	Angled Exit Taxiway / Taxiway Leading to the Terminal Ramp
K	90	Not Applicable	Good	87	Bypass Taxiway (to Taxiway L)
L	90	8-26 and 14-32	Satisfactory	78	Entrance Taxiway (Runways 8 and 14)
M1	50	14-32	N/A	N/A	Exit Taxiway Leading to the FANG Facilities
M2	50	14-32	N/A	N/A	Exit Taxiway Leading to the FANG Facilities
M3	50	14-32	N/A	N/A	Exit Taxiway Leading to the FANG Facilities
N	75	14-32	Good	88	Parallel Taxiway (to Runway 14-32)
P	75	14-32	Satisfactory	71	Angled Exit Taxiway / Taxiway Leading to the Terminal Ramp
Q	90	14-32	Good	86	Angled Exit Taxiway
R	90	14-32	Good	87	Angled Exit Taxiway / Taxiway Leading to the Terminal Ramp
S	75	Not Applicable	Satisfactory	80	Taxiway Leading to the Cargo Area

NOTES: PCI – Pavement Condition Index; GA- General Aviation; FANG – Florida Air National Guard

1 Multiple core samples were taken on the taxiway during the Florida Department of Transportation's 2015 Statewide Airfield Pavement Management Program, and pavement conditions vary; however, the lowest PCI is shown.

2 Taxiway G had mill/overlay project completed after FDOT assessment. The PCI value of 100 is only for the asphalt section.

SOURCE: Florida Department of Transportation, *Statewide Airfield Pavement Management Program Update Summary Report*, Volume I, June 2015.



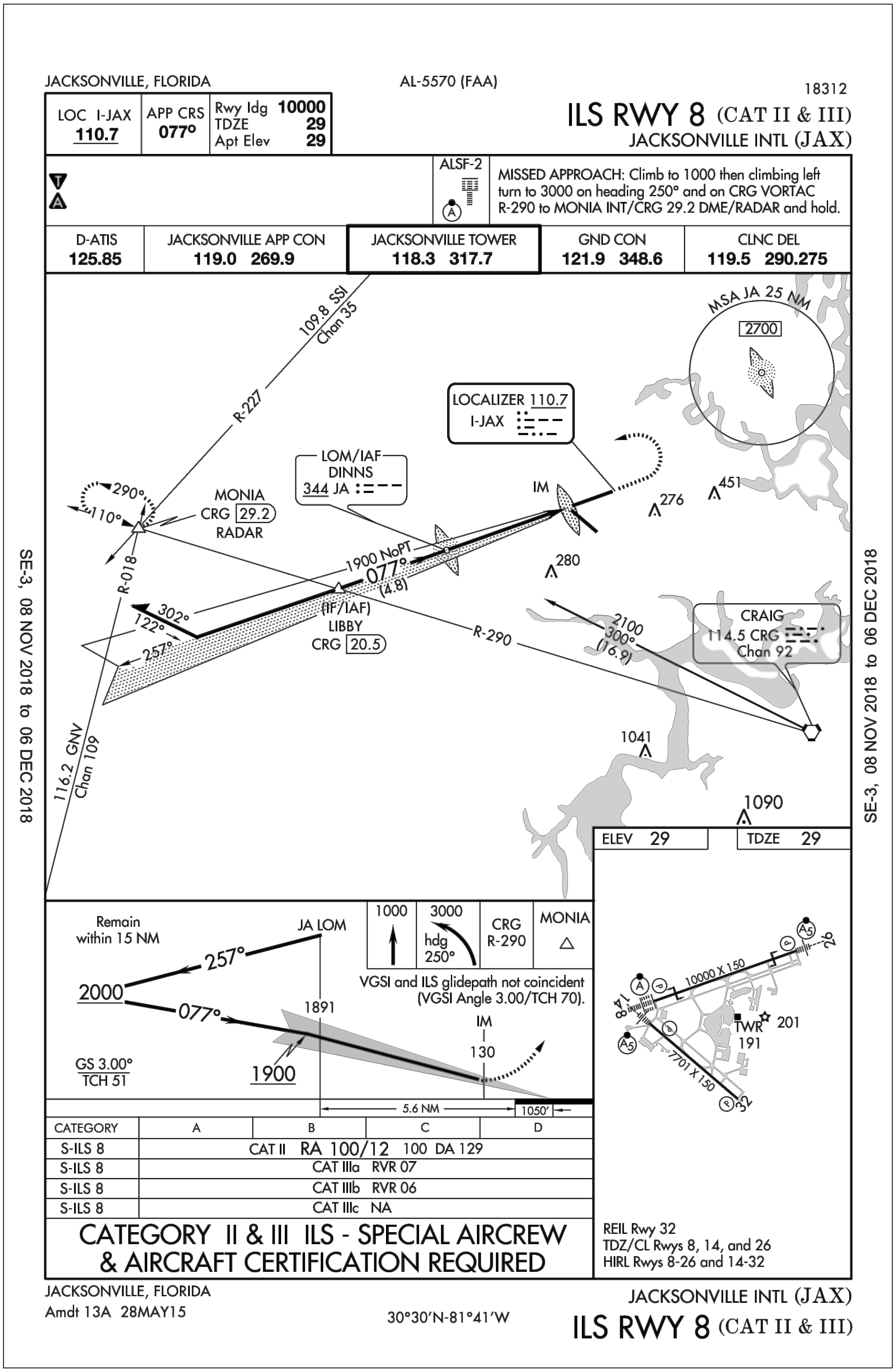
SOURCE: Federal Aviation Administration, November 2018.

NORTH 0 Not To Scale

EXHIBIT 2-4

INSTRUMENT APPROACH PLATE
RUNWAY 8 INSTRUMENT LANDING SYSTEM OR LOCALIZER

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-4 Plotted: Mar 13, 2020, 01:29PM



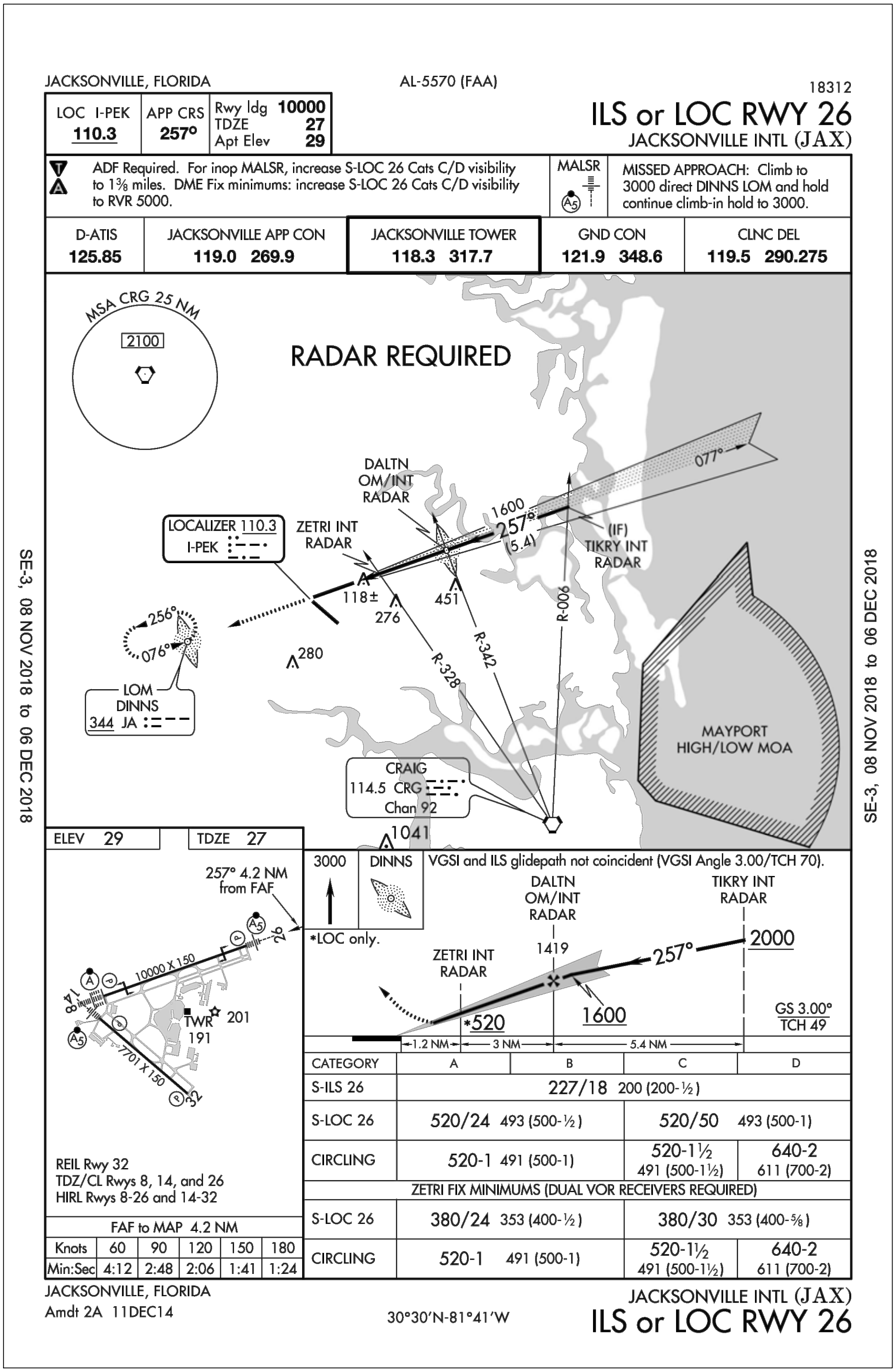
SOURCE: Federal Aviation Administration, November 2018.

EXHIBIT 2-5

INSTRUMENT APPROACH PLATE
RUNWAY 8 INSTRUMENT LANDING SYSTEM - CAT II AND CAT III

NORTH 0 Not To Scale

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-5 Plotted: Mar 13, 2020, 01:29PM



SOURCE: Federal Aviation Administration, November 2018.

EXHIBIT 2-6

INSTRUMENT APPROACH PLATE
RUNWAY 26 INSTRUMENT LANDING SYSTEM OR LOCALIZER

NORTH 0 Not To Scale

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-6 Plotted: Mar 13, 2020, 01:29PM

JACKSONVILLE, FLORIDA AL-5570 (FAA) 18312

LOC I-CZH 110.5	APP CRS 137°	Rwy ldg 7701 TDZE 27 Apt Elev 29

ILS or LOC RWY 14

JACKSONVILLE INTL (JAX)

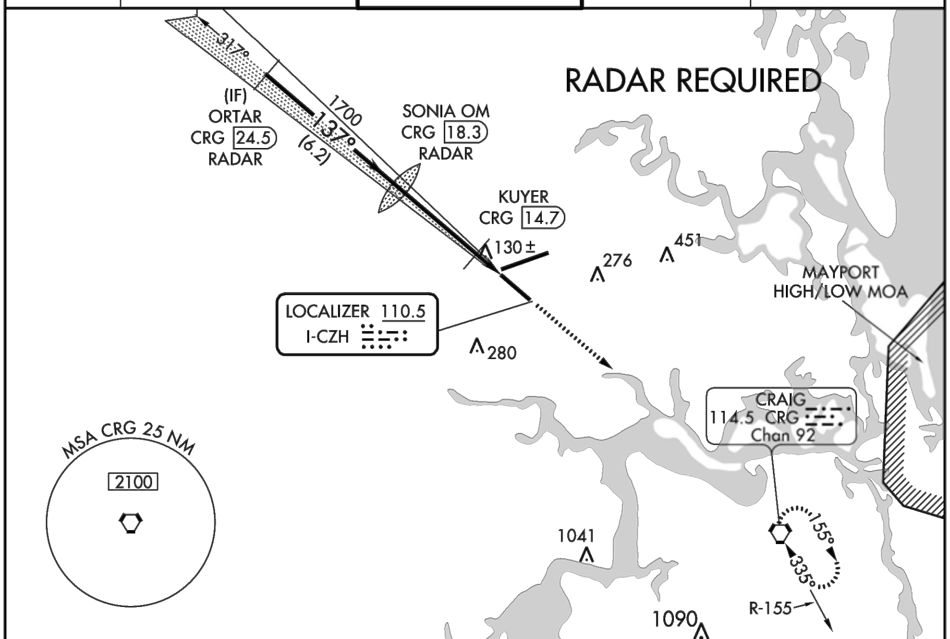
DME from CRG VORTAC. For inop MALSR, increase S-LOC Cats A/B visibility to 1 mile. KUYER Fix minimums: For inop MALSR, increase S-LOC 14 all Cats visibility to 1 mile. Helicopter visibility reduction below ¾ SM NA.

MALSR

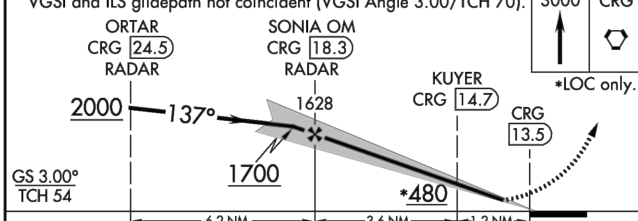
MISSED APPROACH: Climb to 3000 direct CRG VORTAC and hold.

D-ATIS	JACKSONVILLE APP CON	JACKSONVILLE TOWER	GND CON	CLNC DEL
125.85	119.0 269.9	118.3 317.7	121.9 348.6	119.5 290.275

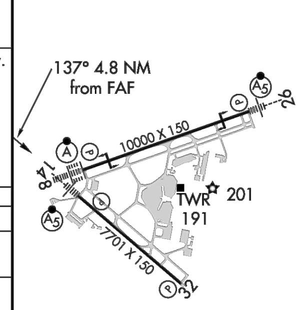
SE-3, 08 NOV 2018 to 06 DEC 2018



VGSI and ILS glidepath not coincident (VGSI Angle 3.00/TCH 70).



ELEV 29 TDZE 27



CATEGORY	A	B	C	D
S-ILS 14	227-½ 200 (200-½)			
S-LOC 14	480-¾ 453 (500-¾)		480-⅞ 453 (500-⅞)	
CIRCLING	520-1 491 (500-1)		520-1½ 491 (500-1½)	640-2 611 (700-2)
KUYER FIX MINIMUMS (DME REQUIRED)				
S-LOC 14	380-¾ 353 (400-¾)			
CIRCLING	520-1 491 (500-1)		520-1½ 491 (500-1½)	640-2 611 (700-2)

REIL Rwy 32
TDZ/CL Rwys 8, 14, and 26
HIRL Rwys 8-26 and 14-32

FAF to MAP 4.8 NM

Knots	60	90	120	150	180
Min:Sec	4:48	3:12	2:24	1:55	1:36

JACKSONVILLE, FLORIDA
Amdt 7B 28MAY15

30°30′N-81°41′W

JACKSONVILLE INTL (JAX)

ILS or LOC RWY 14

SE-3, 08 NOV 2018 to 06 DEC 2018

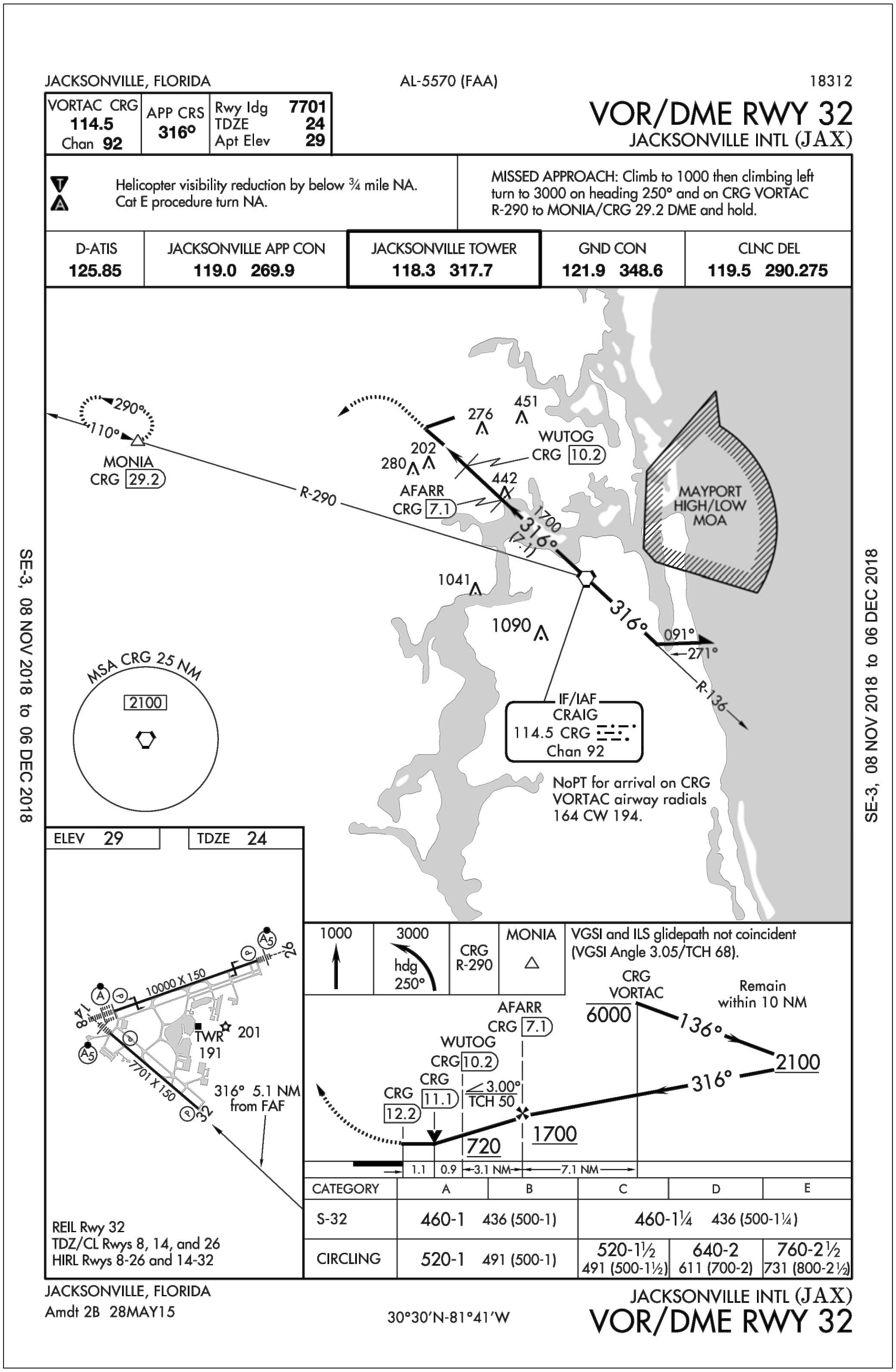
SOURCE: Federal Aviation Administration, November 2018.

EXHIBIT 2-7

INSTRUMENT APPROACH PLATE
RUNWAY 14 INSTRUMENT LANDING SYSTEM OR LOCALIZER

NORTH 0 Not To Scale

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-7 Plotted: Mar 13, 2020, 01:29PM



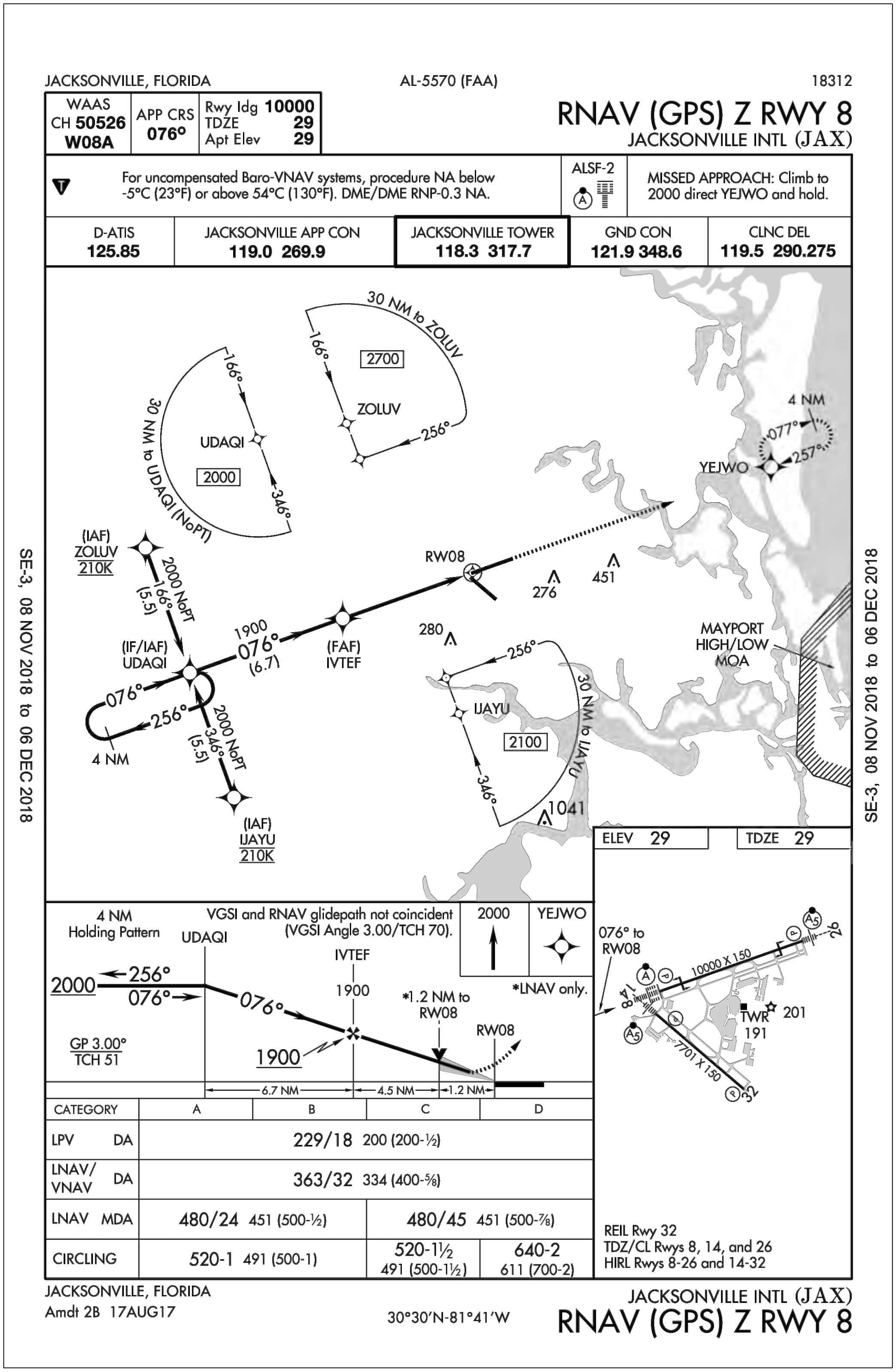
SOURCE: Federal Aviation Administration, November 2018.

NORTH 0 Not To Scale

EXHIBIT 2-8

INSTRUMENT APPROACH PLATE - RUNWAY 32 VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE/DISTANCE MEASURING EQUIPMENT

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-8 Plotted: Mar 13, 2020, 01:29PM



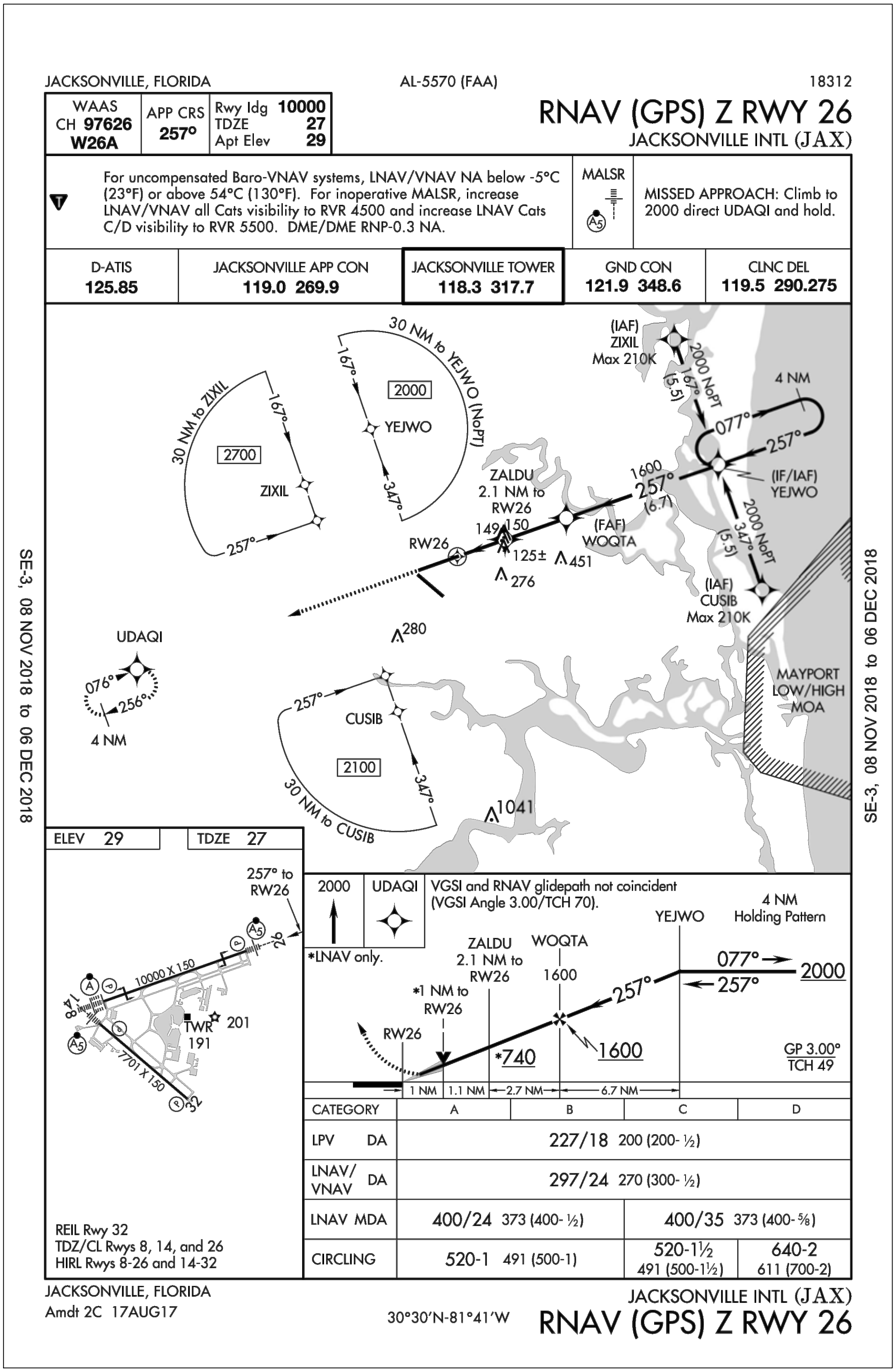
SOURCE: Federal Aviation Administration, November 2018.

NORTH 0 Not To Scale

EXHIBIT 2-9

INSTRUMENT APPROACH PLATE
RUNWAY 8 AREA NAVIGATION GLOBAL POSITIONING SYSTEM

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-9 Plotted: Mar 13, 2020, 01:29PM



CATEGORY	A	B	C	D
LPV DA	227/18 200 (200-½)			
LNAV/VNAV DA	297/24 270 (300-½)			
LNAV MDA	400/24 373 (400-½)		400/35 373 (400-⅝)	
CIRCLING	520-1 491 (500-1)		520-1½ 491 (500-1½)	640-2 611 (700-2)

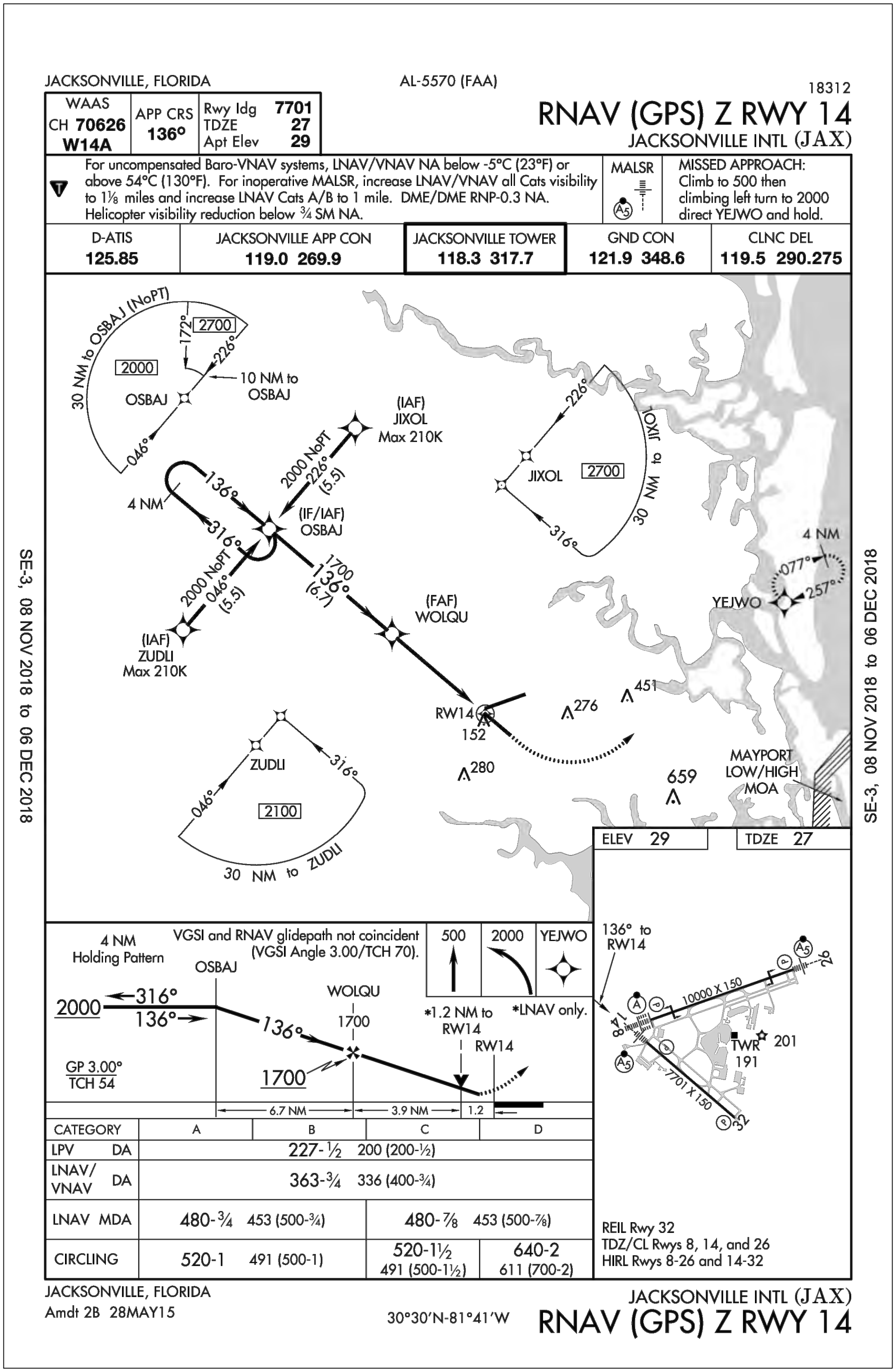
SOURCE: Federal Aviation Administration, November 2018.

EXHIBIT 2-10

INSTRUMENT APPROACH PLATE
RUNWAY 26 AREA NAVIGATION GLOBAL POSITIONING SYSTEM

NORTH 0 Not To Scale

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-10 Plotted: Mar 13, 2020, 01:29PM



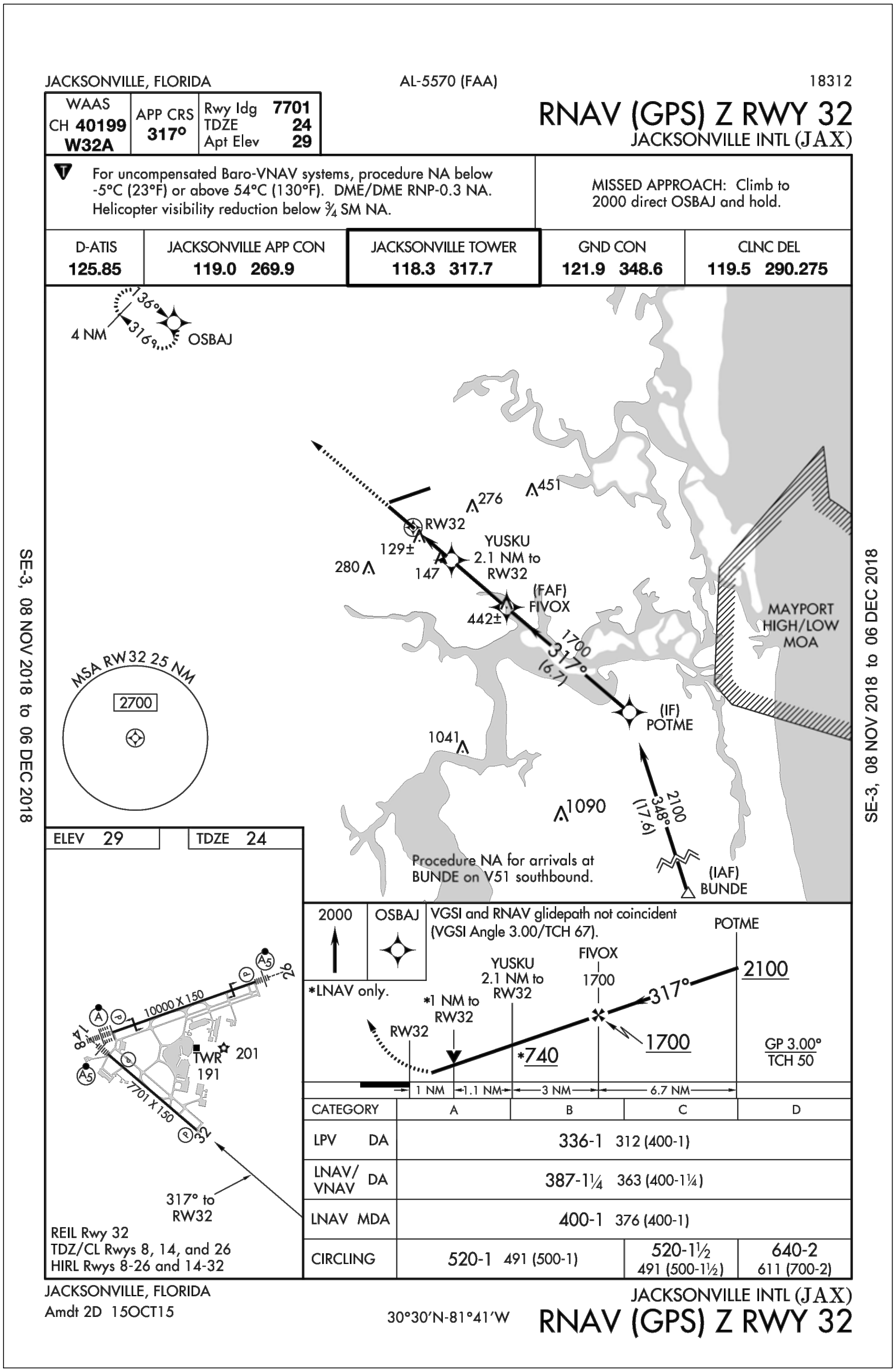
SOURCE: Federal Aviation Administration, November 2018.

EXHIBIT 2-11

INSTRUMENT APPROACH PLATE
RUNWAY 14 AREA NAVIGATION GLOBAL POSITIONING SYSTEM

NORTH 0 Not To Scale

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-11 Plotted: Mar 13, 2020, 01:30PM



SOURCE: Federal Aviation Administration, November 2018.

NORTH 0 Not To Scale

EXHIBIT 2-12

INSTRUMENT APPROACH PLATE
RUNWAY 32 AREA NAVIGATION GLOBAL POSITIONING SYSTEM

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-4 thru 2-12_JAX_Instrument Approach Plates.dwgLayout: EXHIBIT 2-12 Plotted: Mar 13, 2020, 01:30PM

TABLE 2-5 PRECISION APPROACH CATEGORIES

CATEGORY	DECISION HEIGHT	VISIBILITY MINIMUM	APPLICABLE JAX RUNWAY
CAT I	Not lower than 200 feet	RVR not less than 1,800 feet	Runway 8, 14, and 26
CAT II	Lower than 200 feet but not lower than 100 feet	RVR not less than 1,200 feet	Runway 8
CAT III	Lower than 100 feet	RVR less than 1,200 feet	Runway 8

NOTES:
RVR – Runway Visual Range
RVR is an instrumentally derived value that represents the horizontal distance a pilot may see down the runway.
SOURCE: U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5300-13A, Change 1, *Airport Design*, February 2014.

An ILS system provides both horizontal and vertical guidance to pilots on approach to the runway; it consists of a localizer antenna (located on the opposite runway end of which the aircraft is on approach), a glideslope antenna, marker beacons, and the runway approach lighting system. These four components guide an aircraft to a touchdown point beyond the approach end of the runway. JAX currently has six published ILS approaches, as listed in **Table 2-6**.

TABLE 2-6 JACKSONVILLE INTERNATIONAL AIRPORT – INSTRUMENT LANDING SYSTEM PRECISION APPROACH SUMMARY

INSTRUMENT PROCEDURE	DECISION ALTITUDE FOR STRAIGHT IN APPROACH (IN FEET ABOVE GROUND LEVEL)	VISIBILITY MINIMUM (IN STATUTE MILES)
Runway 8 ILS CAT I	229	1/2 (A, B, C, D, E)
Runway 8 ILS CAT II	100	RVR of at least 1,200 feet (A, B, C, D, E)
Runway 8 ILS CAT III a*	N/A	RVR of at least 700 feet (A, B, C, D, E)
Runway 8 ILS CAT III b**	N/A	RVR of at least 600 feet (A, B, C, D, E)
Runway 14 ILS CAT I	227	1/2 (A, B, C, D)
Runway 26 ILS CAT I	227	1/2 (A, B, C, D)

NOTES: ILS – Instrument Landing System; RVR – Runway Visual Range
* "a" - A CAT III a approach is a precision instrument approach with no decision height or a decision height lower than 100ft and a runway visual range not less than 700ft.
** "b" - A CAT III b approach is a precision approach with no decision height or a decision height lower than 50ft and a runway visual range less than 700ft, but not less than 150ft.
SOURCE: U.S. Department of Transportation, Federal Aviation Administration, December 2018.

2.3.3.2 NONPRECISION INSTRUMENT APPROACHES

A nonprecision instrument approach uses only horizontal navigational guidance for the pilot approaching a runway. The pilot follows a specified course and descends to the minimum descent altitude. If the pilot can see the runway, or the corresponding runway lights, then the pilot may land. All four runway ends are equipped with an RNAV (GPS) approach. **Table 2-7** summarizes these approaches for each runway end.

JAX can provide a nonprecision instrument approach by utilizing other navigation aids found at the Airport. The localizer can be utilized independently from the ILS system to provide horizontal guidance or nonprecision approach capability. The Airport also offers two other navigational aids to provide nonprecision approaches: VOR and GPS.

TABLE 2-7 NONPRECISION INSTRUMENT APPROACHES

INSTRUMENT PROCEDURE	MINIMUM DESCENT ALTITUDE	VISIBILITY MINIMUM (IN STATUTE MILES)
Runway 8 LOC	480	1/2 (A, B) 7/8 (C, D, E)
Runway 8 GPS/RNAV	480	1/2 (A, B) 7/8 (C, D)
Runway 14 LOC	480	3/4 (A, B) 7/8 (C, D)
Runway 14 GPS/RNAV	480	3/4 (A, B) 7/8 (C, D)
Runway 26 LOC	520	1/2 (A, B) 1 (C, D)
Runway 26 GPS/RNAV	400	1/2 (A, B) 5/8 (C, D)
Runway 32 GPS/RNAV	400	1 (A, B, C, D)

NOTES: LOC – Localizer; GPS – Global Positioning System; RNAV – Area Navigation

SOURCE: U.S. Department of Transportation, Federal Aviation Administration, Instrument Approach Procedures (PLATES), Effective November 8, 2018, through December 6, 2018.

A VOR is a ground-based electronic navigation aid that transmits 360-degree signals called radials. The VOR is also equipped with Distance Measuring Equipment (DME). The DME provides pilots the distance to or from the VOR as various radials are flown. The VOR utilized at the Airport is located approximately 8 miles east of JAX at CRG.

2.3.4 AIRFIELD LIGHTING

All airports that allow operations during nighttime hours or during times of inclement weather are required to have airfield lighting to help pilots identify the airport, the runways, and the associated taxiways. These enable the pilots to navigate safely through reduced visibility conditions. All airfield lighting electrical systems at the Airport receive power from the electrical vault located on the west side of the airfield near the ends of Runways 8 and 14 and east of Taxiway K. The following subsections detail the various lighting components that currently exist at JAX.

2.3.4.1 IDENTIFICATION LIGHTING

Pilots are assisted in locating airports that operate at night or during very adverse weather conditions by rotating lighted beacons. At JAX, the rotating beacon is situated on top of a water tower (elevation 178.6 feet MSL) that is located on the east side of the airfield and adjacent to the overflow parking lot located on the south side of Barnstormer Road. The beacon is continuously operated during nighttime hours and when the airfield is under instrument conditions.

2.3.4.2 RUNWAY LIGHTING

Runways 8-26 and 14-32 are both equipped with high-intensity runway lights (HIRL) and bidirectional centerline lighting. In addition, Runways 8, 14, and 26 are equipped with touchdown zone lights (TDZL), and Runway 32 is equipped with runway-end identifier lights (REIL).

The TDZL systems are variable-intensity white lighting in the touchdown zone of the associated runway. The systems consist of bars of three inset lights per bar situated on either side of the runway centerline at 100-foot intervals, commencing 100 feet from the threshold and extending 3,000 feet down the runway. The REILs on the end of Runway 32 consist of two synchronized flashing lights, located on each side of the runway threshold, that provide rapid and positive identification of the runway end. **Table 2-8** summarizes the runway lighting systems available at JAX.

TABLE 2-8 RUNWAY LIGHTING SYSTEMS

SYSTEM	RUNWAY 8	RUNWAY 26	RUNWAY 14	RUNWAY 32
High Intensity Runway Lights	•	•	•	•
Centerline Lights	•	•	•	•
Touchdown Zone Lights	•	•	•	
Runway End Identifier Lights				•

SOURCE: U.S. Department of Transportation, Federal Aviation Administration, Web datasheet, June 26, 2014.

2.3.4.3 APPROACH LIGHTING

Approach lighting systems are located along the extended runway centerline; they serve to enhance the runway visibility upon approach. A variety of systems can be used based upon the types of IFR approaches to that runway. As a requirement to conducting Category (CAT) II or CAT III instrument approaches, runways must be equipped with approach lighting systems that have sequenced flashers. Currently, only Runway 8 is equipped with a 2,400-foot high-intensity approach lighting system with sequential flashing lights (ALSF-2).

Runways 14 and 26 are both equipped with a 2,400-foot medium-intensity approach lighting system with runway alignment indicator lights (MALSR). The ALSF-2 is an advanced system that allows CAT II and CAT III precision approaches, while the MALSR is an economy approach lighting system approved for CAT I precision approaches.

Runway 32 is equipped with REILs that consist of two synchronized flashing lights, located on each side of the runway threshold, that provide rapid and positive identification of the runway end.

2.3.4.4 TAXIWAY AND APRON LIGHTING

All taxiways at JAX are equipped with medium-intensity taxiway edge lights, and the angled taxiways located off Runway 8-26 are equipped with centerline lighting. Apron edge lighting is also provided on the terminal and cargo ramps. All airfield lighting has been converted to light-emitting diode (LED) lights, except for the runway edge lights. The runway edge lights are not approved for LED by the FAA and are currently quartz fixtures.

2.3.5 NAVIGATIONAL AND APPROACH AIDS

In addition to the ILS available at JAX, all four runway ends are equipped with a four-box precision approach path indicator (PAPI) lighting system. The PAPI provides the aircraft with a visual descent reference during approach and uses red and white lights to indicate to pilots when their approach is too high or too low. The Runway 8-26 four-box PAPIs are located on the left side of Runway 8 and the right side of Runway 26. The Runway 14-32 four-box PAPIs are located on the left side of Runways 14 and 32.

2.3.6 AIRFIELD SIGNAGE

JAX has several illuminated airfield signs to display instruction and guidance information to aircraft, as stipulated in FAA AC 150/5340-18F, *Standards for Airport Sign Systems*. Standard airfield signage is used to indicate an intersection of an entrance to a runway, taxiway, or critical movement area. In addition to standard signage, Runways 8-26 and 14-32 are also equipped with runway distance-remaining signs, which are characterized by single, double-sided white numerical inscriptions that are used by pilots as a reference to indicate the remaining distance of runway available in thousands of feet. Runway 8-26 is equipped with nine runway distance-remaining signs, while Runway 14-32 is equipped with six signs.

2.3.7 RAMP AND APRON AREAS

For the purposes of this MPU, four categories of ramps and aprons are identified:

- Passenger Terminal Ramp
- Air Cargo Ramps (Air Cargo Ramps 1, 2, and 3)
- FANG Apron
- General Aviation Ramps (Sheltair Aviation Services and Signature Flight Support)

Exhibit 2-13 depicts the ramp areas. The terminal ramp surrounds the terminal building, providing access for air carrier aircraft to and from the taxiways. This ramp provides an area of approximately 2,000,000 square yards, designed with a series of taxilanes to allow safe maneuvering of air carrier aircraft to and around the concourse gates. In addition, the terminal ramp also provides a total of 20 remote aircraft parking positions, which can accommodate a mix of aircraft ranging from small twin-engine turbo props (e.g., SAAB 340) to widebody aircraft (e.g., Boeing 767-300). Access to the terminal ramp is provided by Taxiways H, J, P, and R.

Located south of the terminal area are the cargo ramps, identified as Air Cargo Ramps 1, 2, and 3. Ramp 1 is located directly south of the terminal area and can be accessed via Taxiway R. This ramp primarily serves UPS and provides an apron area of approximately 38,000 square yards.

Air Cargo Ramps 2 and 3 are located to the east of Air Cargo Ramp 1. Access to these ramps is provided solely by Taxiway S. Ramp 2 serves FedEx and provides an apron area of approximately 36,700 square yards. Ramp 3 provides an area of approximately 22,000 square yards and is used to accommodate charter aircraft and large air cargo aircraft, such as the Antonov 124.

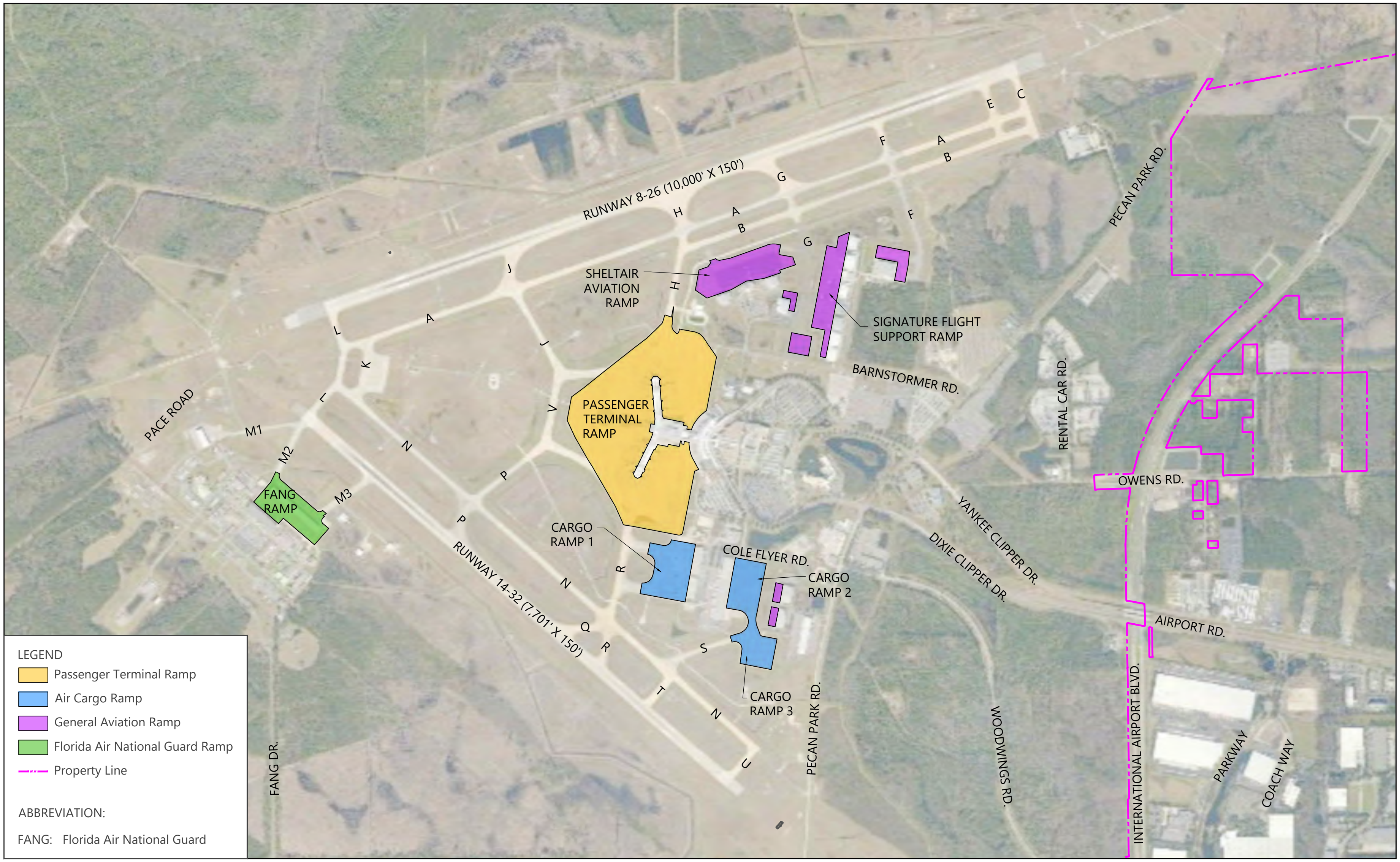
The FANG apron is located on the west side of the airfield near the end of Runway 14. The apron is approximately 45,000 square yards and accommodates the F-15 fleet of the FANG 125th Fighter Wing. Access to the FANG apron is currently provided by Taxiways M2 and M3. A separate apron to the west of the FANG apron also provides military support and can accessed via Taxiway M1. All three of these taxiways provide direct access to Runway 14-32.

The aprons located on the north side of the terminal and south of Runway 8-26 are dedicated to general aviation aircraft and occasional military aircraft that need to be refueled and serviced by one of the FBOs. In total, the general aviation area includes five different aprons that provide approximately 122,000 square yards for aircraft parking and ground support activities.

2.3.8 SERVICE ROAD

The service roads at JAX consist of both gravel and paved surfaces. This network of secured roads allows Airport personnel to access several different facilities located within or near the Airport Operations Area (AOA) for the purposes of maintenance and security as depicted on **Exhibit 2-14**. In addition, these roads allow the general circulation of vehicles around the Airport without affecting the flow of aircraft.

With the completion of the 2009 Terminal Expansion Program, the terminal ramp provides a two-lane vehicle service road (VSR) for the circulation of GSE around each concourse. The terminal ramp VSRs are located just outside the taxilane object-free areas, allowing for the safe circulation of GSE vehicles without affecting aircraft traffic flows within the terminal area.



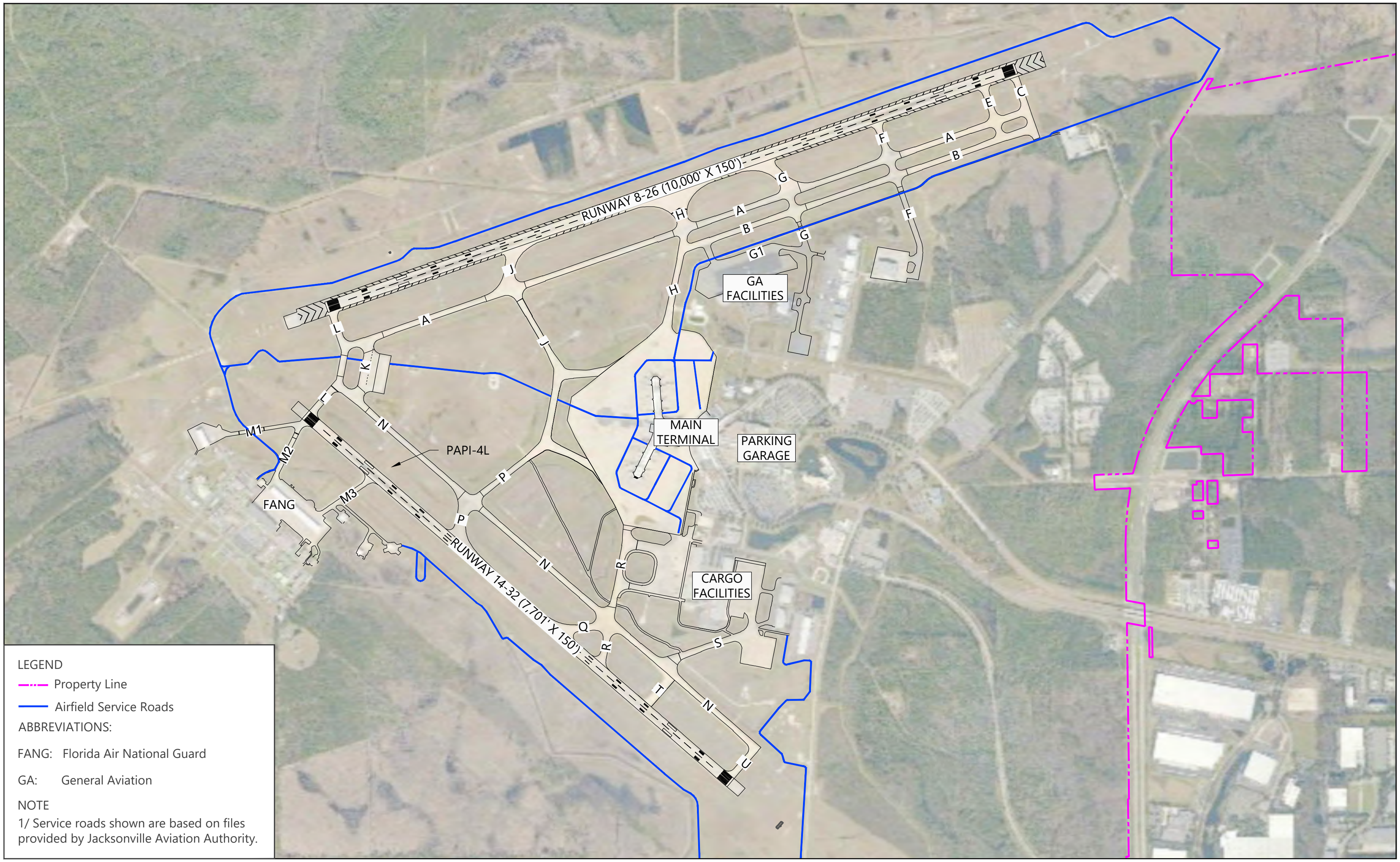
SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, October 2018 (airfield data).

NORTH 0 2,000 ft

EXHIBIT 2-13

RAMP AND APRON AREAS

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-13_JAX_Ramp and Apron Areas.dwgLayout: Ramp and Apron Plotted: Jan 30, 2020, 11:08AM



SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, November 2018 (airfield basemap).

EXHIBIT 2-14

NORTH 0 2,000 ft

EXISTING AIRFIELD SERVICE ROADS

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-14_JAX Existing Airfield Service Roads.dwgLayout: Airfield Layout Plotted: Jan 30, 2020, 11:09AM

2.3.9 FENCING

The Airport is currently secured by a perimeter fencing system consisting of a 10-foot-high chain link fence with a concrete strip at the bottom and is illustrated on **Exhibit 2-15**. The perimeter security fence secures the AOA and it helps to prohibit wildlife from accessing the Airport. The AOA at JAX includes all runways, taxiways, and apron areas. The AOA access control includes vehicle gates with keypad access for highly utilized areas of vehicular ingress and egress. Private-use gates to FBO areas and associated hangars are also controlled by keypads.

2.4 AIRSPACE ENVIRONMENT

The airspace for JAX includes two elements: the Airport approach surfaces and the regional airspace. The following subsections further describe these surfaces.

2.4.1 AIRPORT APPROACH SURFACES

14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, defines imaginary surfaces surrounding an airport. These surfaces, depicted on **Exhibit 2-16**, must be kept clear of natural and manmade obstructions that may compromise the safety of approaching or departing aircraft. **Table 2-9** summarizes the existing surfaces and the related dimensional requirements at JAX, as stipulated by the FAA.

TABLE 2-9 14 CODE OF FEDERAL REGULATIONS PART 77 IMAGINARY SURFACES

	RUNWAY APPROACH END			
	8	26	14	32
Approach Type	Precision	Precision	Precision	Nonprecision
Primary Surface Width (feet)	1,000	1,000	1,000	1,000
Horizontal Surface Radius (feet)	10,000	10,000	10,000	10,000
Approach Surface Inner Width (feet)	1,000	1,000	1,000	500
Approach Surface Outer Width (feet)	16,000	16,000	16,000	3,500
Approach Surface Length (feet)	50,000	50,000	50,000	10,000
Approach Slope	50:1 / 40:1	50:1 / 40:1	50:1 / 40:1	34:1

NOTE: The precision instrument approach slope is 50:1 for the first 10,000 feet and 40:1 for an additional 40,000 feet.
SOURCE: U.S. Department of Transportation, Federal Aviation Administration, *U.S. Terminal Procedures Publication Southeast (SE)*, Volume 3 of 4, Effective November 8, 2018, through January 3, 2019.

2.4.2 REGIONAL AIRSPACE

The immediate airspace surrounding JAX is categorized as Class C airspace; this airspace is depicted on **Exhibit 2-17**. Class C airspace is controlled and includes the surface up to 4,000 feet above the airport elevation of 29.2 MSL. The Class C airspace surrounding JAX is controlled by the Air Traffic Control Tower (ATCT), which supervises, directs, and monitors the arrival and departure traffic from the Airport and in the airspace within 5 miles of the Airport. **Table 2-10** lists the different classifications of airspace.

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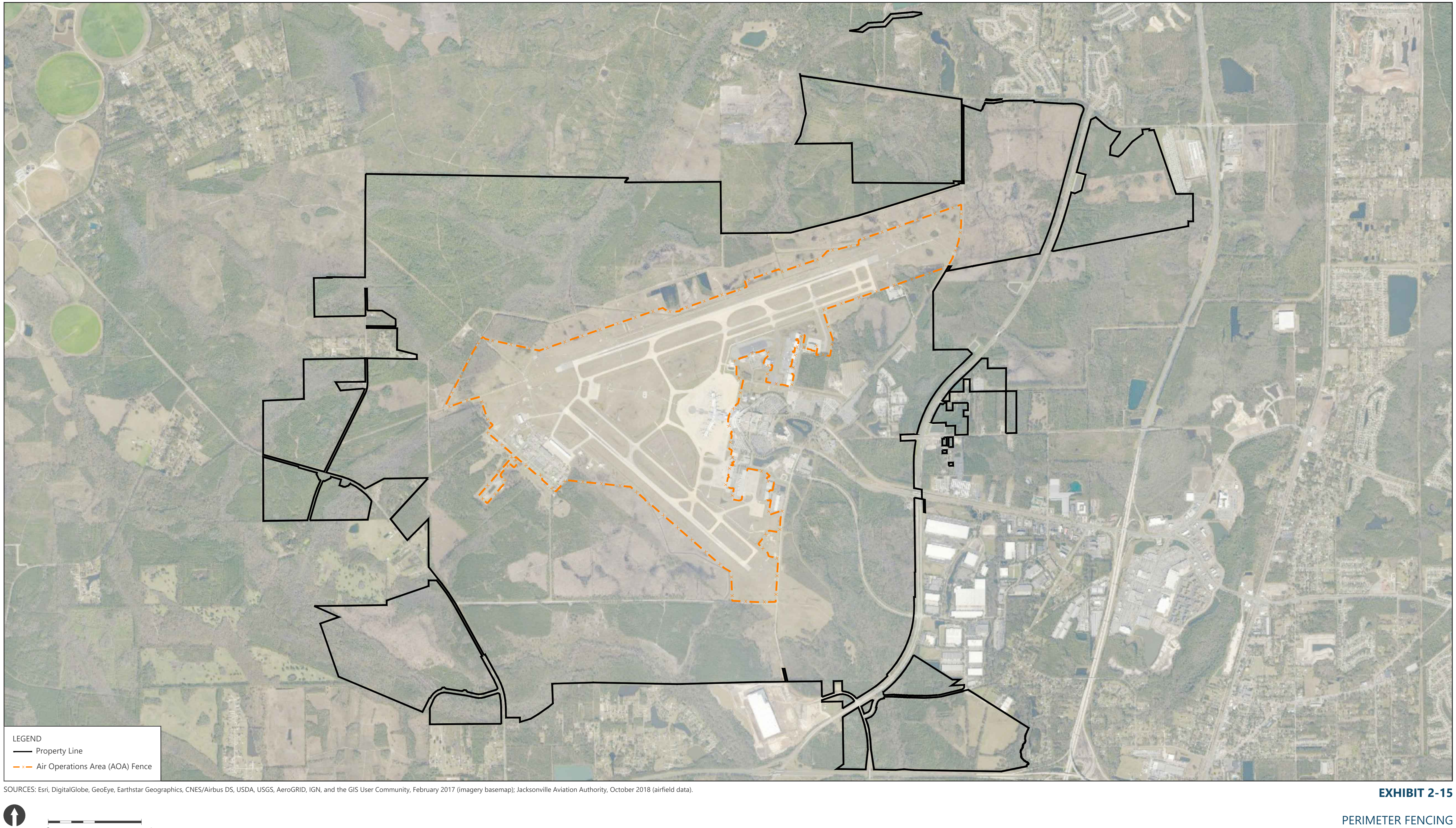

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, October 2018 (airfield data).

EXHIBIT 2-15

PERIMETER FENCING

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-15_JAX_Perimeter Fencing.dwgLayout: EXHIBIT 2-14 Plotted: Jan 30, 2020, 11:12AM

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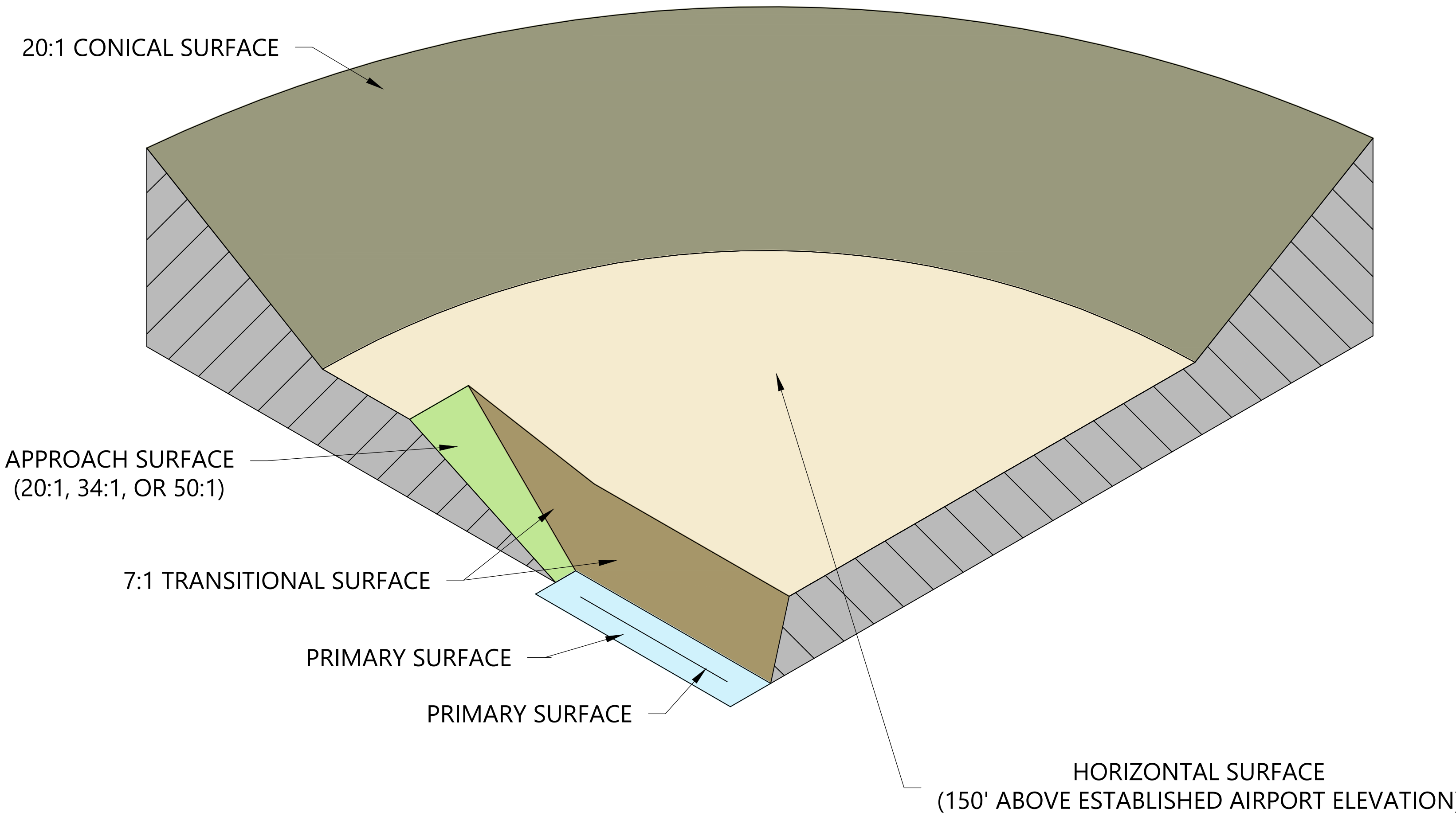

SOURCE: Title 14 Code of Federal Regulations Part 77 Subpart C (imaginary surfaces).

EXHIBIT 2-16

14 CODE OF FEDERAL REGULATIONS PART 77 IMAGINARY SURFACES

NORTH 0 Not To Scale

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-16_JAX_14 CFR Part 77 Imaginary Surfaces.dwgLayout: EXHIBIT 2-15 Plotted: Jan 30, 2020, 11:13AM

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SOURCE: U.S. Department of Transportation, Federal Aviation Administration, November 2018.

EXHIBIT 2-17

VISUAL FLIGHT RULES SECTIONAL CHART

NORTH 0 Not To Scale

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-17_JAX_VFR Sectional Chart.dwgLayout: EXHIBIT 2-16 Plotted: Jan 30, 2020, 11:14AM

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TABLE 2-10 AIRSPACE CLASSIFICATIONS

Class A	Extends from 18,000 feet MSL to FL600 (+/- 60,000 feet MSL). Restricted to instrument flying only.
Class B	Airspace that surrounds major air carrier airports. Shape is similar to an "upside down wedding cake." The typical upper limit of Class B airspace is 10,000 feet.
Class C	Structured similar to Class B airspace, typically surrounds air carrier airports with scheduled service of 100 passengers or more. The upper limit is typically 4,000 feet and has a radius of 5 nautical miles.
Class D	Airspace surrounds airports with an operating control tower, but not classified as B or C. Extends from the surface to 2,500 feet MSL and has a radius of 4 nautical miles.
Class E	Controlled airspace that is not classified as A, B, C, or D. Typically extends up from 1,200 feet AGL to 18,000 feet MSL. However, it may begin at the surface or at 700 feet AGL at airports without a control tower where a transition is needed for aircraft operating under instrument flight rules to additional controlled airspace.
Class G	Airspace below 14,500 feet MSL that is not controlled.
Alert Areas	Areas where pilots must exercise caution while entering. Usually involves a high volume of pilot training or other activity.
Controlled Firing Areas	Areas that contain activities hazardous to aircraft. Activities are suspended immediately when an aircraft approaches. They are not depicted on aeronautical charts.
Military Operation Areas	Areas where military operations are frequently conducted. Clearance is not required to enter, but pilots should verify there is no hazardous activity before entering.
National Security Areas	Airspace that is identified as being in the national interest and requires increased security. Pilots are requested to avoid flying through National Security Areas.
Prohibited Airspace	Entry is prohibited under all circumstances, unless in an emergency.
Restricted Airspace	Entry is restricted without a special clearance from the controlling agency.
Warning Areas	Airspace that extends from 3 nautical miles out from the U.S. coast that contains activity that may be hazardous to aircraft.

NOTES: MSL – Mean Sea Level; AGL – Above Ground Level
SOURCE: U.S. Department of Transportation, Federal Aviation Administration, December 2018.

The Jacksonville TRACON facility is located at JAX and has jurisdiction over aircraft operating in low altitude airspace from the surface up to as high as 15,000 feet MSL. The TRACON monitors air traffic in the airspace surrounding airports with moderate to high density traffic and uses inputs from airport surveillance radars installed at JAX and Gainesville Regional Airport.

2.5 PASSENGER TERMINAL FACILITIES

2.5.1 MAIN TERMINAL

The Main Terminal at JAX is a two-level, curvilinear building that was constructed in 1990 as an expansion to the original terminal. **Exhibit 2-18** depicts the layout of the existing passenger terminal complex. This facility supports the various passenger processing functions and provides a building area of approximately 238,400 square feet. The Main Terminal is linked to the central courtyard and airside concourses via a sloping corridor located on the second level. **Table 2-11** summarizes the building areas within the Main Terminal by level and functional category.

SOURCE: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap).

EXHIBIT 2-18

EXISTING PASSENGER TERMINAL COMPLEX

NORTH 0 800 ft

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-18_JAX_Existing Passenger Terminal Complex.dwgLayout: EXHIBIT 2-17 Plotted: Jan 30, 2020, 11:16AM

TABLE 2-11 MAIN TERMINAL AREAS

	LEVEL 1 (SQUARE FEET)	LEVEL 2 (SQUARE FEET)	TOTAL (SQUARE FEET)
Airline Ticket Offices and Counter Work Area	N/A	19,600	19,600
Rental Car Counters	6,000	N/A	6,000
Concessions – Others (Storage and Support Areas)	6,400	9,700	16,100
Passenger Baggage Claim Area	49,400	N/A	49,400
Passenger Baggage Makeup and Tug Lane Areas	62,300	N/A	62,300
Non-Public Areas (Airline Offices and Storage)	3,400	16,100	19,500
Circulation	13,800	37,800	51,600
Restrooms	2,200	1,300	3,500
United Service Organizations Welcome Center	700	N/A	700
Building Support (Mechanical/Electrical Building Systems)	8,600	1,100	9,700
Total	**152,800**	**85,600**	**238,400**

NOTE: Area calculations are approximations based on AutoCAD files provided by Jacksonville Aviation Authority.
SOURCE: Jacksonville Aviation Authority, October 2018.

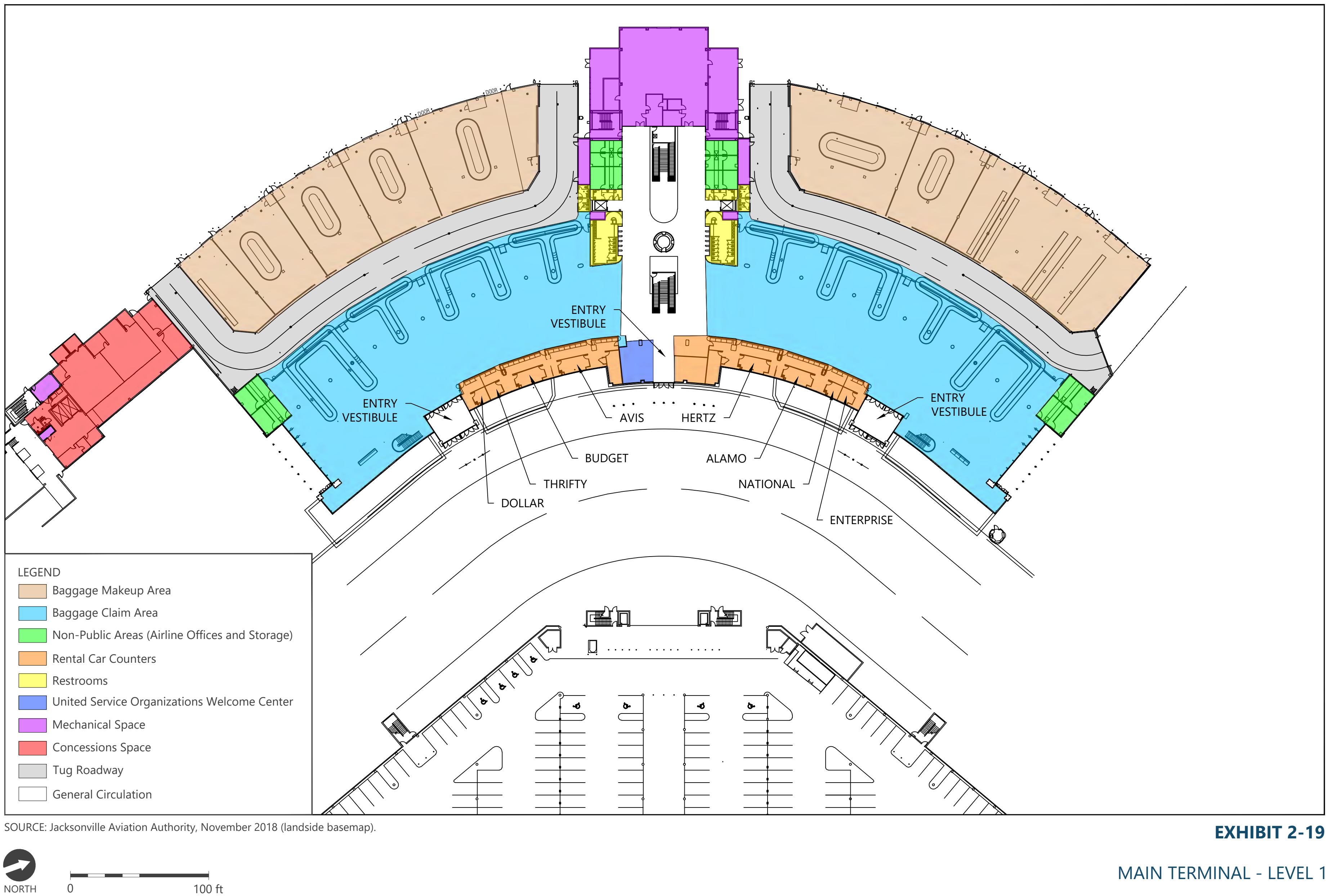
Level 1 of the main terminal building, which is illustrated on **Exhibit 2-19**, provides an area of approximately 152,800 square feet. Level 1 primarily houses the baggage claim area (claim lobby and conveyor belts), which can be accessed from the curbside and the first floor of the Hourly and Daily Garages through one of three entry vestibules. In addition, Level 1 houses the inline baggage screening system (not depicted), rental car counters, airline baggage claim offices, and the baggage makeup area.

As shown on **Exhibit 2-20**, Level 2 of the Main Terminal provides an area of approximately 85,600 square feet. Level 2 consists of the ticketing lobby, ticket counter area, and airline ticket offices. Similar to Level 1, Level 2 can be accessed from the associated curbside and the second floor of the Hourly and Daily Garages through one of three entry vestibules. One of the vestibules accesses the central vertical circulation core within the Main Terminal, while the two other vestibules access the north and south wings of the ticket lobby. Details pertaining to the specific areas within the Main Terminal are provided in the following subsections.

2.5.1.1 BAGGAGE CLAIM

The inbound baggage operations are in the lower level of the terminal, on the west side (airside) of the building. Inbound bags are delivered by baggage tugs from the aircraft and placed on one of eight recirculating flat-plate conveyor devices, which loop from the airside incoming bag operations area into the baggage claim area.

The baggage conveyor devices are grouped into north and south wing groupings. The north grouping of four conveyor devices accommodate United Airlines, Delta Air Lines, JetBlue Airways, and Frontier Airlines. The south grouping of four conveyor devices accommodate American Airlines, Air Canada, Southwest Airlines, Spirit Airlines, and Allegiant Air. Baggage claim offices for each of the airlines are located at the north and south ends of the baggage claim area, as well as the central corridor near the down escalators leading from the departure level. The baggage claim lobby contains an area of approximately 49,400 square feet, and the claim devices provide 1,306 linear feet of frontage for passenger pickup. The rental car desks encompass approximately 6,000 square feet and are located across from the baggage claim adjacent to the curbside.

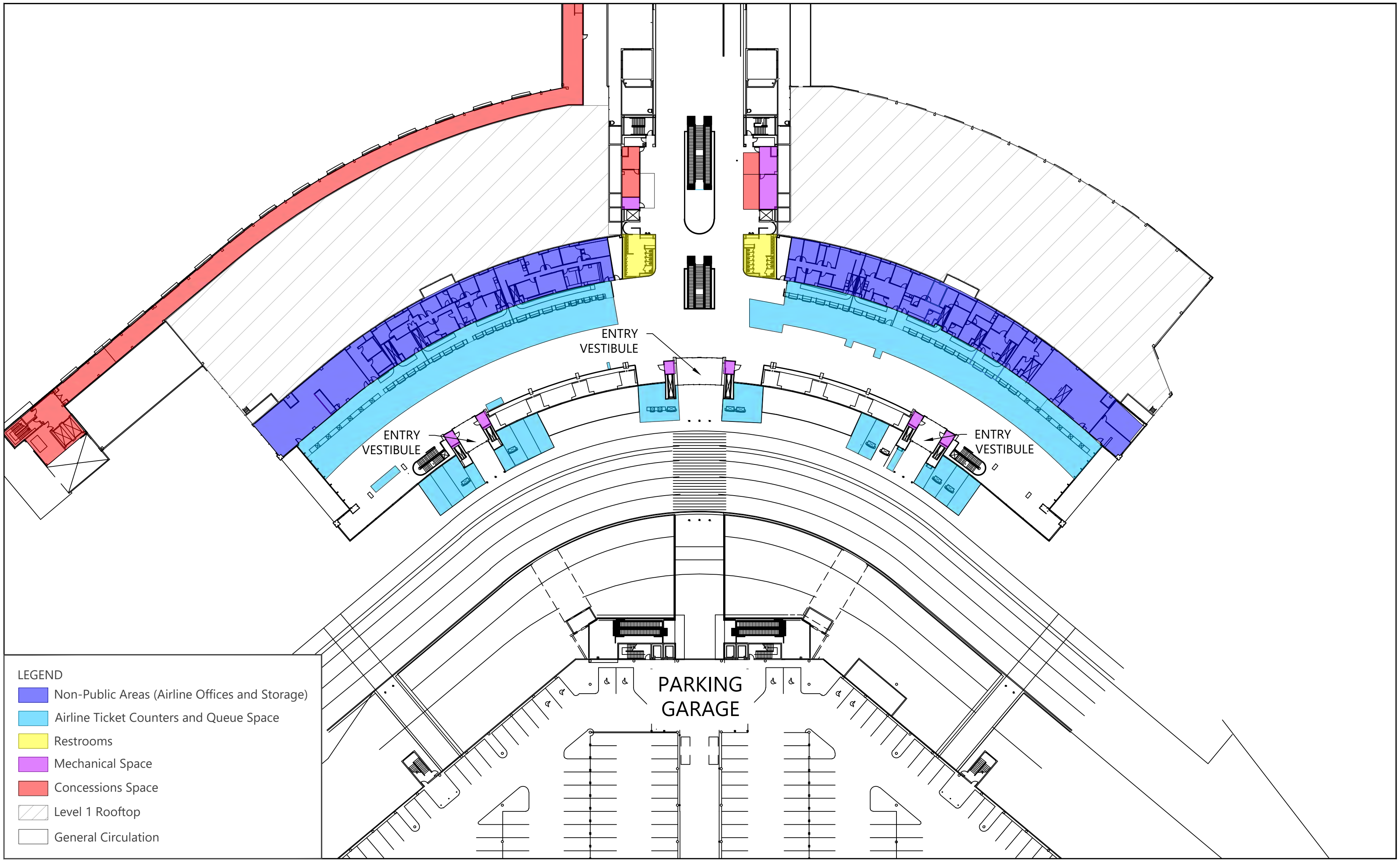


SOURCE: Jacksonville Aviation Authority, November 2018 (landside basemap).

EXHIBIT 2-19

MAIN TERMINAL - LEVEL 1

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-19_JAX_Main Terminal - Level 1.dwgLayout: EXHIBIT 2-19 Plotted: Jan 30, 2020, 11:18AM



SOURCE: Jacksonville Aviation Authority, November 2018 (landside basemap).

EXHIBIT 2-20

MAIN TERMINAL - LEVEL 2

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-20_JAX_Main Terminal - Level 2.dwgLayout: EXHIBIT 2-20 Plotted: Jan 30, 2020, 11:18AM

2.5.1.2 BAGGAGE SCREENING

In 2002, JAX introduced the first all-airport, fully automated, integrated inline baggage screening system in the United States. The Airport was one of five airports selected to participate in a Transportation Security Administration (TSA) baggage screening pilot program, which placed Explosive Detection Systems (EDS), model CTX9000, in line with the baggage conveyor system.

In 2017 the TSA recapitalization program replaced the original EDS machines with CTX9800 EDS machines. The CTX9800 EDS machines provide a higher throughput of baggage screening per hour than the legacy equipment. Each of the six original EDS machines were capable of screening approximately 400 bags per hour. The recapitalization program replaced the original six CTX9000 EDS with four CTX9800, which can screen up to 700 bags per hour.

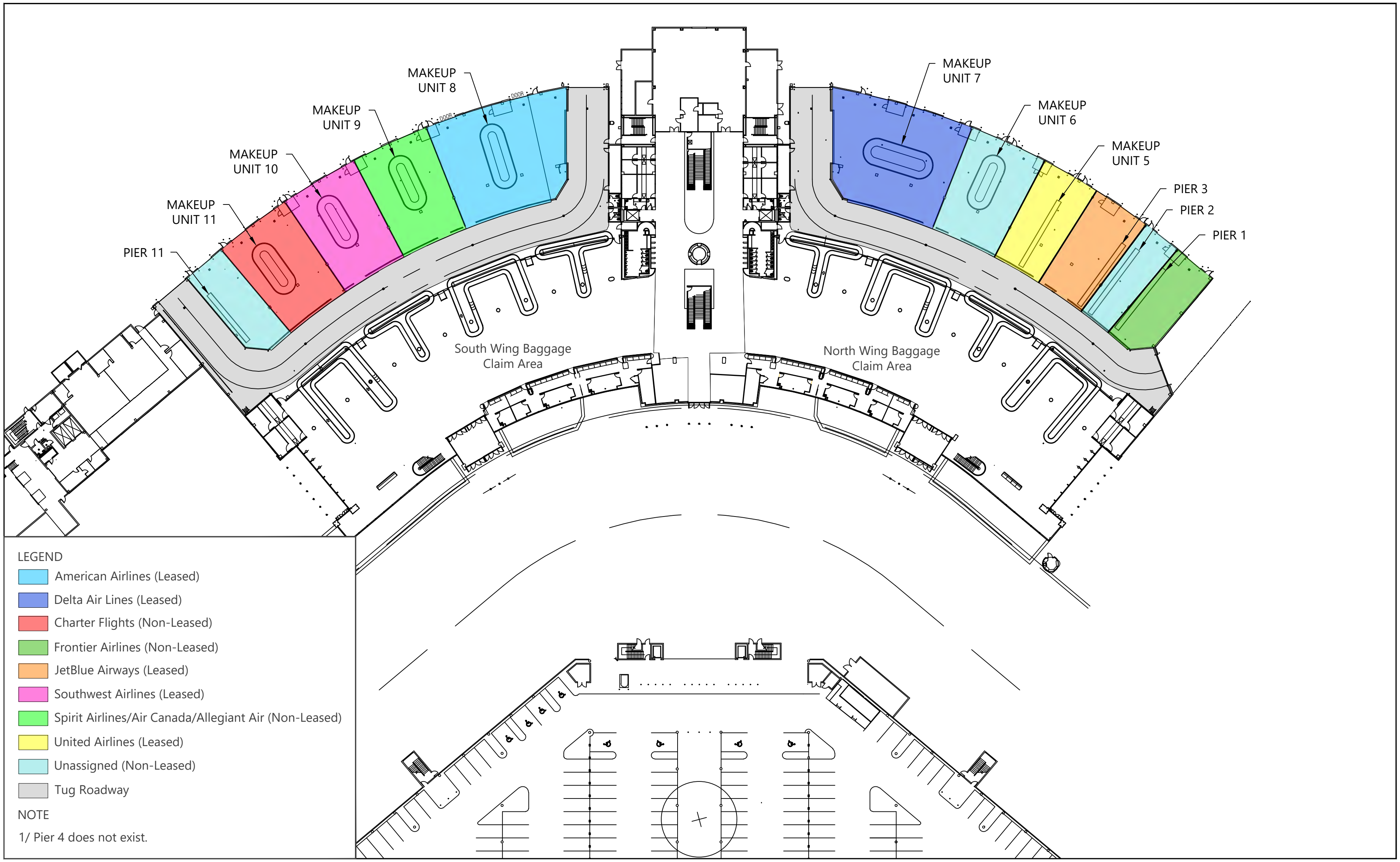
As part of the check-in process at JAX, all checked bags are tagged with a standard International Air Transport Association barcode tag. The bags then enter a holding loop via a conveyor belt system and are directed to an EDS machine. The EDS machines are in both the north and south wings (two in each wing) in the mezzanines of the Main Terminal, above the outgoing baggage makeup areas located on Level 1. If the bags pass the automated screening process, then they are directed to a conveyor belt that takes them to the outgoing baggage makeup piers, where they are delivered to waiting aircraft by tugs and carts. If the bags do not pass the automated screening process, then they are directed to a secondary inspection area where a manual inspection is performed by TSA representatives.

The inline baggage screening system is currently configured for four EDS machines that can screen up to 700 bags per hour each. Thus, the existing system is designed for a maximum processing capacity of 2,800 bags per hour. The existing configuration will allow a new EDS machine to be added to both the north and south wings when additional capacity is needed.

Because oversize bags cannot pass through the sortation conveyor or the EDS machine, these bags are routed directly to the secondary inspection area for manual inspection/screening. The bags must then be picked up for delivery to their respective baggage makeup areas. The secondary inspection area is located on the south side of the Terminal Courtyard on the lower level.

2.5.1.3 BAGGAGE MAKEUP

The baggage makeup area is located behind the baggage claim area on the lower level of the Main Terminal, as depicted on **Exhibit 2-21**. Upon completion of screening, the bags are directed to one of 11 makeup devices, including six sloped carrousel belts (Makeup Units 6, 7, 8, 9, 10, and 11), one flat-plate carrousel (Pier 5), and four single pier belts (Piers 1, 2, 3, and 11). The north wing includes two sloped carousels, one flat-plate carousel, and three single pier belts, which are allocated to Delta Air Lines, United Airlines, and JetBlue Airways. The south wing includes four carousels and one single pier belt, which are allocated to Allegiant Air, Air Canada, American Airlines, Southwest Airlines, Spirit Airlines, Frontier Airlines, and all charter operations. In total, the baggage makeup area, not including the tug lanes that serve the baggage makeup devices, provides approximately 39,800 square feet of space.



SOURCE: Jacksonville Aviation Authority, November 2018 (landside basemap).

EXHIBIT 2-21

BAGGAGE MAKEUP AREA

NORTH 0 100 ft

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-21_JAX_Baggage Makeup Area.dwgLayout: EXHIBIT 2-20 Plotted: Jan 30, 2020, 11:20AM

2.5.1.4 RENTAL CAR COUNTERS

For the convenience of arriving passengers, rental car counters are located adjacent to the baggage claim area located on Level 1 of the Main Terminal. The on-Airport rental car agencies are: Alamo, Avis, Budget, Dollar, Enterprise, Hertz, National, and Thrifty. These rental car companies have ready/return parking located on the first floor of the Hourly and Daily Garages, located directly across from the Level 1 curbside. **Table 2-12** summarizes the cumulative counter and office space, along with the number of ready/return parking spaces occupied by each provider. Enterprise is the only rental car company with office space as indicated in the table below.

TABLE 2-12 RENTAL CAR COUNTER AND OFFICE SPACE

OPERATOR	TICKET COUNTER (SQUARE FEET)	OFFICE SPACE (SQUARE FEET)	READY/RETURN SPACES
Avis	1,193	-	109
Budget	695	-	119
Dollar / Thrifty	712	-	79
Enterprise[1]	1,407	323	292
Hertz	1,626	-	145
Total	5,633	-	744

NOTES:
1 Due to an agreement among Enterprise, Alamo, and National, ready/return spaces are included under Enterprise. Enterprise has the discretion to allocate those 292 spaces as desired.
2 Area calculations are based on AutoCAD files provided by Jacksonville Aviation Authority.
SOURCE: Jacksonville Aviation Authority, November 2018.

2.5.1.5 UNITED SERVICE ORGANIZATIONS

The lower level of the passenger terminal also houses a United Service Organizations (USO) Welcome Center. This 700-square-foot facility is meant to comfort military personnel shipping out and/or returning home. The center is operated by volunteers who assist military personnel with information, comfort items, and transportation. The USO center is located adjacent to the Avis counter, near the stairwell located in the center of the floor and leading to the departure level.

2.5.1.6 TICKET LOBBY AND TICKET COUNTERS

The ticketing area is located on Level 2 and is configured similar to the baggage claim area, providing a north wing and a south wing, as shown in **Table 2-13**. This portion of the terminal consists of a ticketing lobby, ticket counter area, and airline ticket offices. There are 17 ticketing counters in use, which provide 34 agent positions. In addition, there are 29 freestanding kiosks and 16 ticket counter kiosk check-in positions. The curbside offers 9 curbside counters with 18 check-in positions adjacent to the departure level roadway for passenger use.

TABLE 2-13 TICKET COUNTERS AND SELF-SERVICE KIOSKS

TICKETING COUNTERS	SELF-SERVICE KIOSK	CURBSIDE COUNTERS
17	29	9

SOURCE: Jacksonville Aviation Authority, January 2018.

2.5.1.7 TERMINAL CURBSIDE

The terminal curbside is arranged with two levels (upper and lower or departing and arriving) that are located on the east side of the Main Terminal. Both the upper and lower-level curbsides are shown on **Exhibit 2-22** and **Exhibit 2-23**, respectfully.

The innermost lane of the upper level curb is used primarily by vehicular traffic dropping off departing passengers. The outer four lanes are used as circulation lanes for through traffic. Although the curbside in front of the ticketing lobby contains 650 linear feet of space, some of this area is marked for pedestrian crossings and not usable for passenger loading/unloading. Transportation Network Companies (TNCs), such as Lyft and Uber, are only allowed to drop-off passengers on the upper level curb. The curbside is also equipped with canopies over the north and south entrances to the ticketing lobby, which provide covered access to and from the parking garage.

The lower (arrivals) level curbside is located in front of the baggage claim area and is signed for arriving passenger pickup. The first-level curbside consists of seven lanes, four inner lanes and three outer lanes, which are separated by a large concrete curb. The inner four lanes are used primarily by noncommercial vehicles that are picking up arriving passengers. The outer three lanes are used by commercial vehicles (hotel shuttles, taxis, etc.) that are picking up arriving passengers. Transportation Network Company (TNCs) can only pickup arriving passengers on the lower level curb outside and to the right of baggage claim door 3. The curb closest to the baggage claim area contains approximately 600 linear feet of curb front.

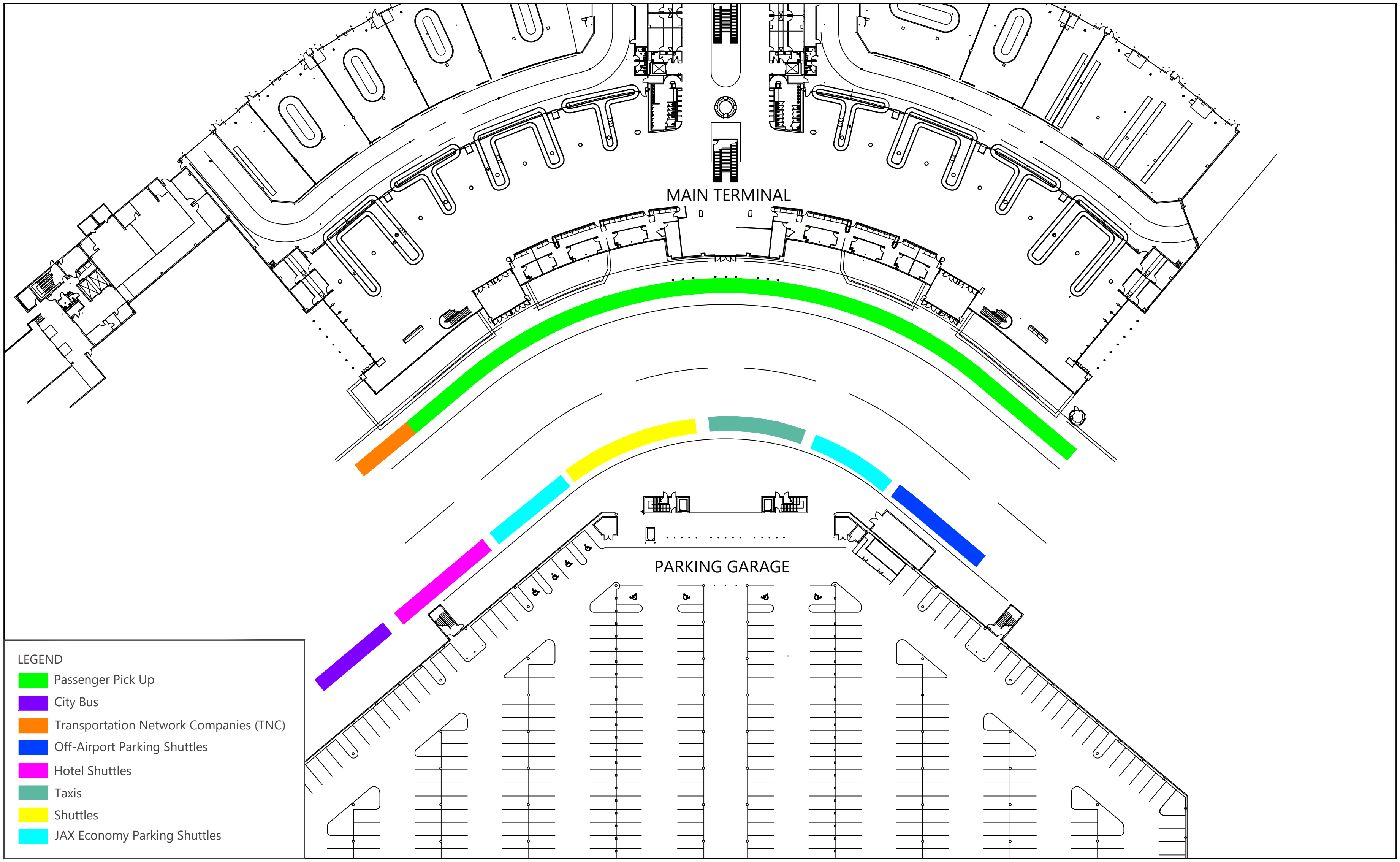
2.5.2 TERMINAL COURTYARD

The Terminal Courtyard was the original terminal facility prior to the construction of the Main Terminal. This facility has two levels and now connects the Main Terminal to Concourses A and C. The Terminal Courtyard, which consists of approximately 239,300 square feet, accommodates a centralized security checkpoint and additional concessions space. **Table 2-14** summarizes the areas within the Terminal Courtyard by level and functional category.

TABLE 2-14 TERMINAL COURTYARD AREAS

	LEVEL 1 (SQUARE FEET)	LEVEL 2 (SQUARE FEET)	TOTAL (SQUARE FEET)
Concessions (Food/Beverage and Retail)	N/A	43,200	43,200
Airline Functions (Operations, Lounge, Support, and Storage Area)	N/A	6,700	6,700
Circulation	N/A	46,100	46,100
Restrooms	2,600	4,200	6,800
Security Check Points / Processing Area	N/A	12,800	12,800
Transportation Security Administration Offices and Support Areas	22,600	N/A	22,600
Non-Public Areas (Unenclosed)	44,000	N/A	44,000
Non-Public Areas (JAA Space)	35,500	3,800	39,300
Building Support (Mechanical/Electrical Building Systems)	15,300	1,600	16,900
Pet Relief Area	N/A	900	900
The Club JAX		4,700	4,700
Total	120,000	124,000	244,000

NOTE: Area calculations are approximations based on AutoCAD files provided by Jacksonville Aviation Authority.
SOURCE: Jacksonville Aviation Authority, November 2018.

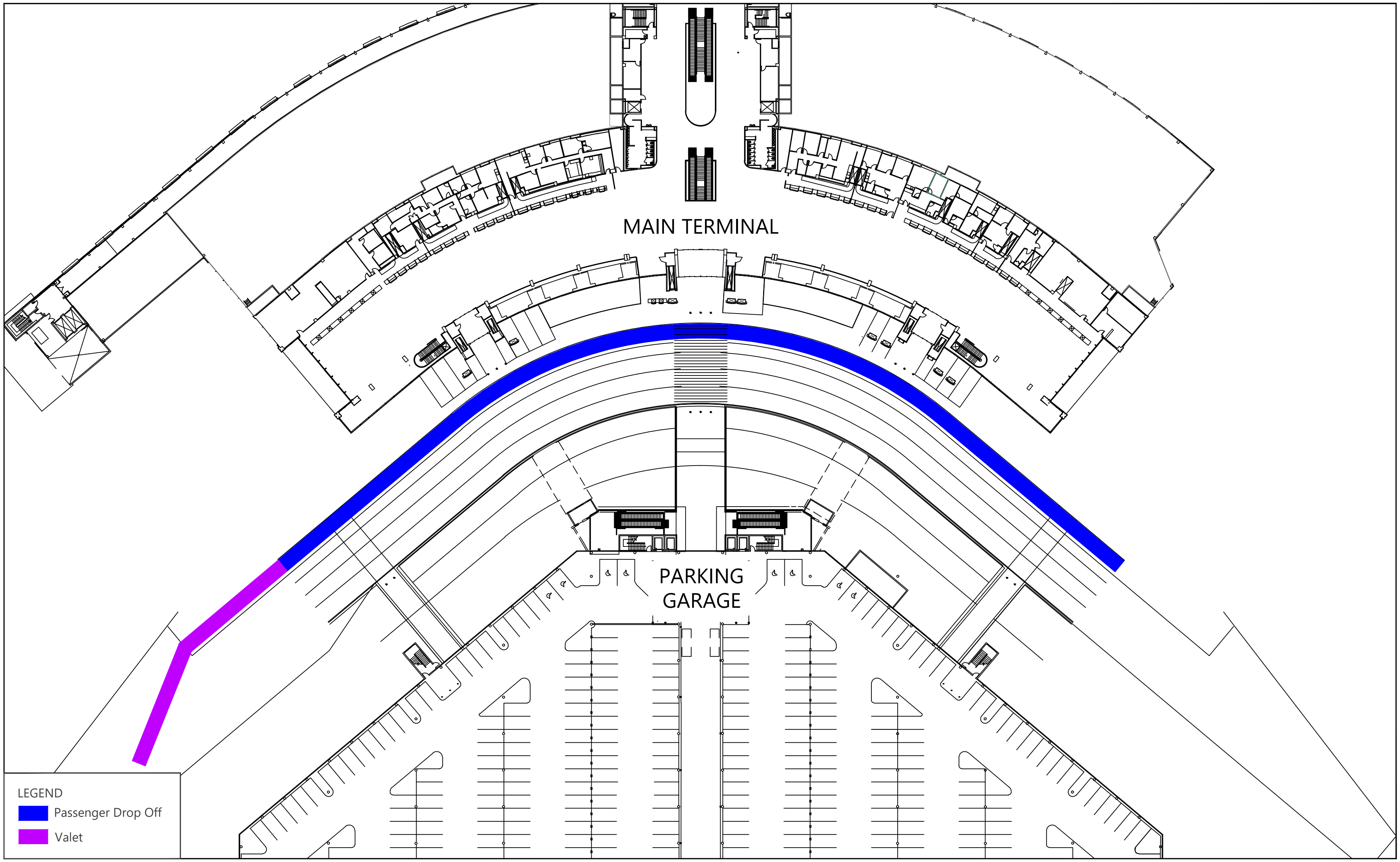


SOURCE: Jacksonville Aviation Authority, November 2018 (landside basemap); Walker Consultants, June 2018 (existing commercial lane - Ph II).

EXHIBIT 2-22

CURBSIDE UTILIZATION - LEVEL 1

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-22_JAX_Curbside Utilization - Level 1.dwgLayout: EXHIBIT 2-28 Plotted: Jan 30, 2020, 11:20AM



SOURCE: Jacksonville Aviation Authority, November 2018 (landside basemap).

EXHIBIT 2-23

CURBSIDE UTILIZATION - LEVEL 2

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-23_JAX_Curbside Utilization - Level 2.dwgLayout: EXHIBIT 2-29 Plotted: Jan 30, 2020, 11:21AM

Level 1 of the Terminal Courtyard, which is illustrated on **Exhibit 2-24**, provides an area of approximately 120,000 square feet; it is only accessible to badged JAA employees and Department of Homeland Security personnel. Level 1 of the Terminal Courtyard mainly accommodates offices, workshops, conference rooms, restrooms, and a TSA secondary screening area for checked baggage.

The second level of the Terminal Courtyard, which is illustrated on **Exhibit 2-25**, provides an area of approximately 119,300 square feet; it consists of both public and limited access areas. Public areas on Level 2 include the centralized security checkpoint area, which includes eight X-ray machines, four magnetometers, and three AIT Full Body Scanners, retail concessions, a food court, restrooms, and public circulation areas. The limited access area of the courtyard is beyond the security screening checkpoint; it contains additional retail and food concessions. Located to the west of these concession areas is the recently completed The Club JAX that provides passengers the opportunity to enjoy fresh meals and hot showers during long layovers. The limited access area also provides an interconnected corridor allowing passengers to access either Concourse A or Concourse C. In addition, Level 2 of the courtyard provides access to various nonpublic areas, including TSA and JAA offices and the Airport’s operations control center.

2.5.3 CONCOURSE A

Concourse A is a linear pier consisting of two levels; it provides a total building area of approximately 111,000 square feet, as summarized in **Table 2-15**. The concourse extends to the north for approximately 600 linear feet from the Terminal Courtyard. Concourse A provides 10 gates (A1 through A10) with passenger boarding bridges (PBBs), consisting of both narrowbody and widebody positions. **Table 2-16** lists the gates available on Concourse A by the lessee and the aircraft type that can be accommodated at each gate.

Level 1 of Concourse A, illustrated on **Exhibit 2-26**, provides an area of approximately 55,300 square feet; it consists of areas that support airline operations and various building/JAA and concessions support functions.

Level 2 of Concourse A, illustrated on **Exhibit 2-27**, serves as the primary area for processing enplaning (departing) and deplaning (arriving) passengers with public circulation corridors, departure gates and their respective holdrooms, boarding pass/gate counters, and storage areas. The circulation corridor is located along the middle of the concourse and provides one bidirectional automated walkway. Four concession areas are located within Concourse A; two on the east side and two on the west side. These areas include retail and food/beverage concessions. Restroom facilities are also available on the north and south portions of the concourse. Concourse A is occupied by United Airlines, Delta Air Lines, and JetBlue Airways on a preferential-use basis and Frontier Airlines, Allegiant Air, Air Canada, and Spirit Airlines on Common Use gates. Level 2 of Concourse A is approximately 55,700 square feet in area.

2.5.4 CONCOURSE C

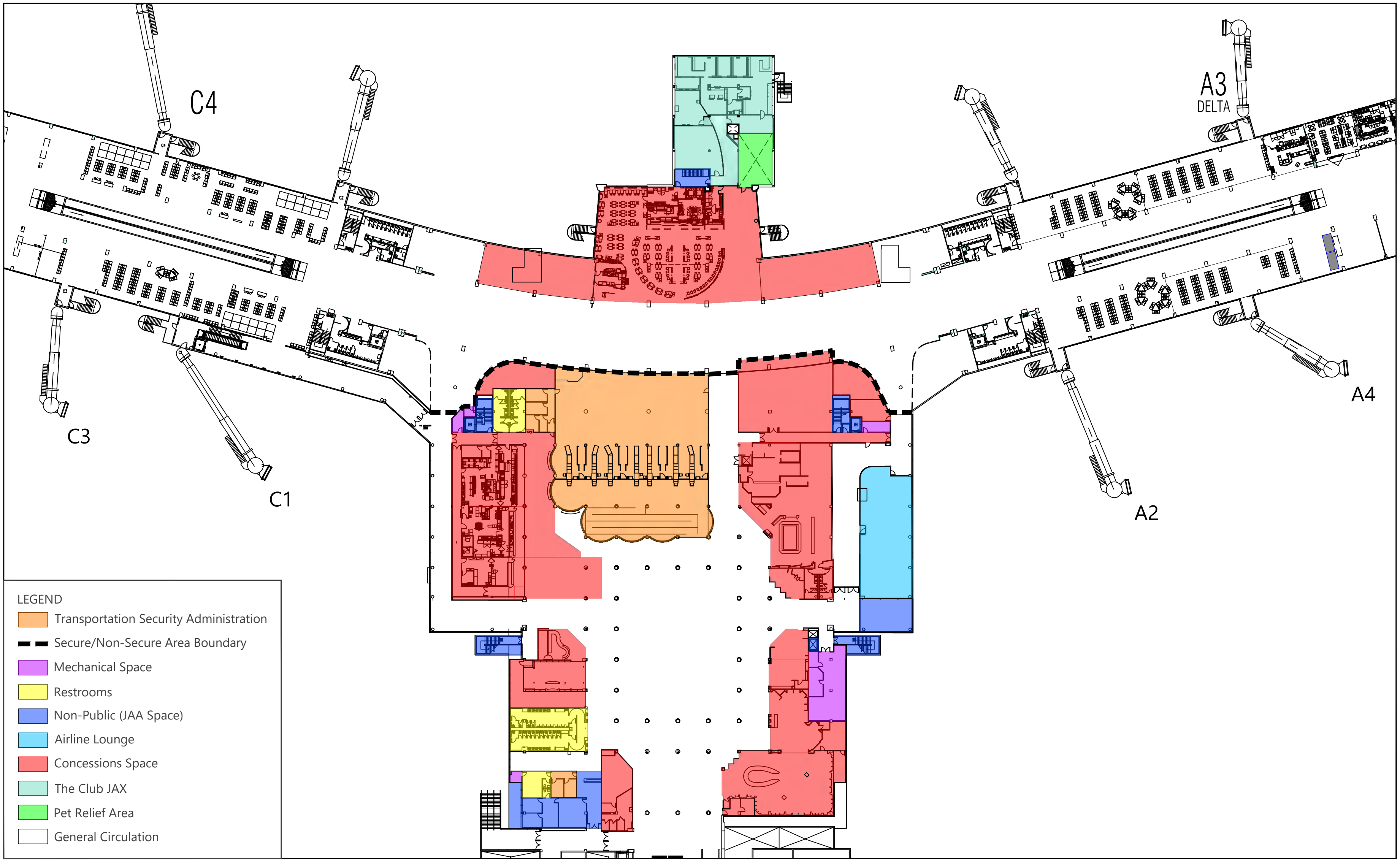
Similar to Concourse A, Concourse C is a linear pier that provides two levels and a total building area of approximately 112,000 square feet, as summarized in **Table 2-17**. Concourse C extends to the south at approximately 600 linear feet from the Terminal Courtyard. Concourse C also provides 10 gates (C1 through C10) with PBBs, consisting of both narrowbody and widebody positions. **Table 2-18** lists the gates on Concourse C and the aircraft type that can be accommodated.

SOURCE: Jacksonville Aviation Authority, November 2018 (landside basemap).

EXHIBIT 2-24

TERMINAL COURTYARD - LEVEL 1

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-24_JAX_Terminal Courtyard - Level 1.dwgLayout: EXHIBIT 2-21 Plotted: Jan 30, 2020, 11:23AM



SOURCE: Jacksonville Aviation Authority, November 2018 (landside basemap).

NORTH 0 100 ft

EXHIBIT 2-25

TERMINAL COURTYARD - LEVEL 2

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-25_JAX_Terminal Courtyard - Level 2.dwgLayout: EXHIBIT 2-22 Plotted: Jan 30, 2020, 11:24AM

TABLE 2-15 CONCOURSE A AREAS

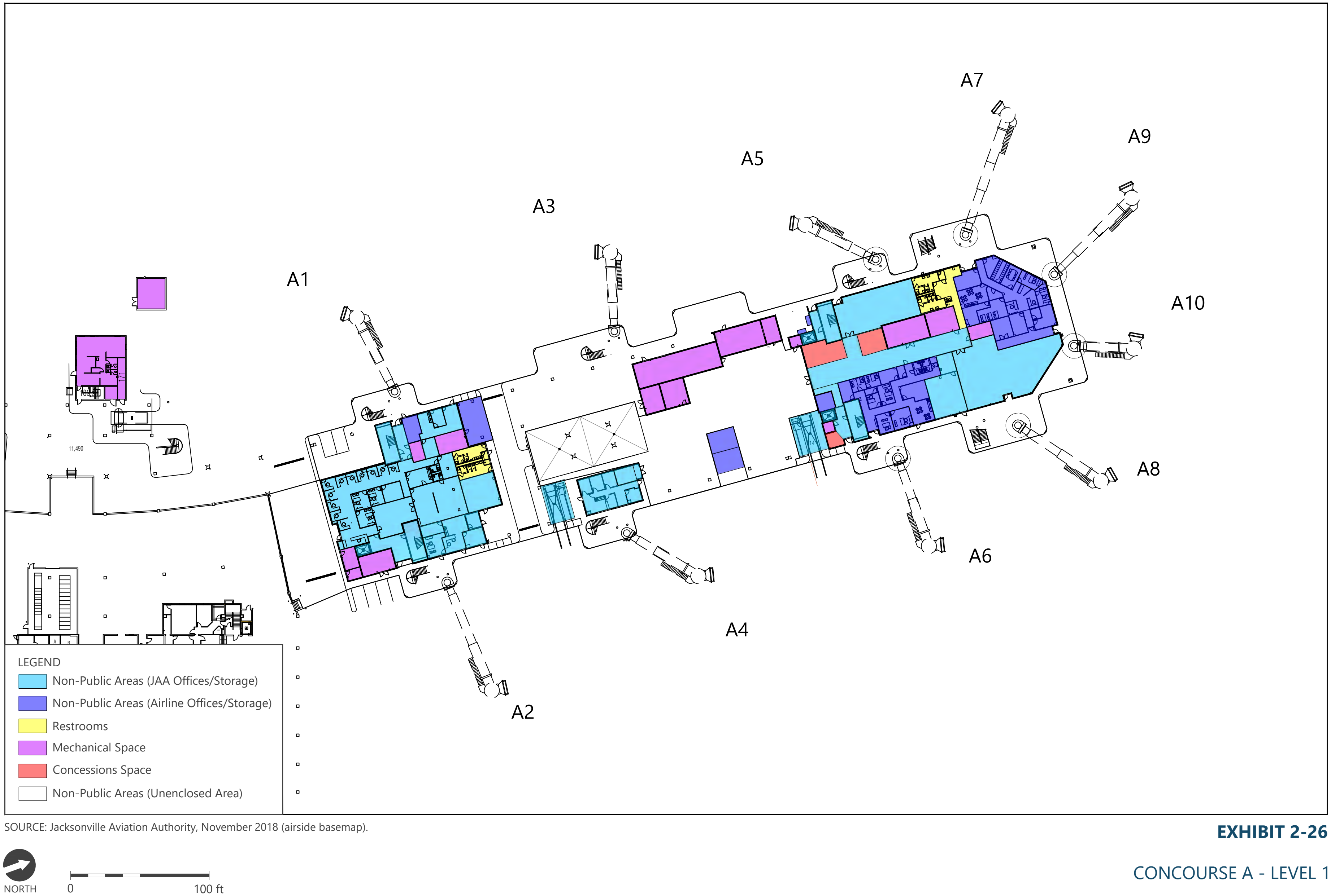
	LEVEL 1 (SQUARE FT)	LEVEL 2 (SQUARE FEET)	TOTAL (SQUARE FEET)
Holdroom Areas	N/A	25,800	25,800
Concessions (Food/Beverage and Retail)	900	8,800	9,700
Circulation	N/A	16,000	16,000
Restrooms	1,400	3,600	5,000
Non-Public Areas (JAA Space)	19,000	1,500	20,500
Non-Public Areas (Airline Offices and Storage)	7,400	N/A	7,400
Non-Public Areas (Unenclosed Area)	21,700	N/A	21,700
Building Support (Mechanical/Electrical Building Systems)	4,900	N/A	4,900
Total	55,300	55,700	111,000

NOTE: Area calculations are approximations based on AutoCAD files provided by Jacksonville Aviation Authority.
SOURCE: Jacksonville Aviation Authority, November 2018.

TABLE 2-16 CONCOURSE A GATE ALLOCATIONS

GATE	LESSEE	LARGEST AIRCRAFT ACCOMMODATED	DOMESTIC (D) INTERNATIONAL (I)
A1	JAA / Common Use	Narrowbody / Regional Jet	D
A2	JetBlue Airways / Common Use	Narrowbody	D
A3	Delta Air Lines	Narrowbody / Regional Jet	D
A4	JetBlue Airways	Narrowbody	D
A5	Delta Air Lines	Narrowbody / Regional Jet	D
A6	United Airlines	Narrowbody / Regional Jet	D
A7	Delta Air Lines	Narrowbody / Regional Jet	D
A8	United Airlines	Narrowbody	D
A9	Delta Air Lines	Widebody (B767-400)	D
A10	United Airlines	Widebody (B767-300)	D

SOURCE: Jacksonville Aviation Authority, November 2018.

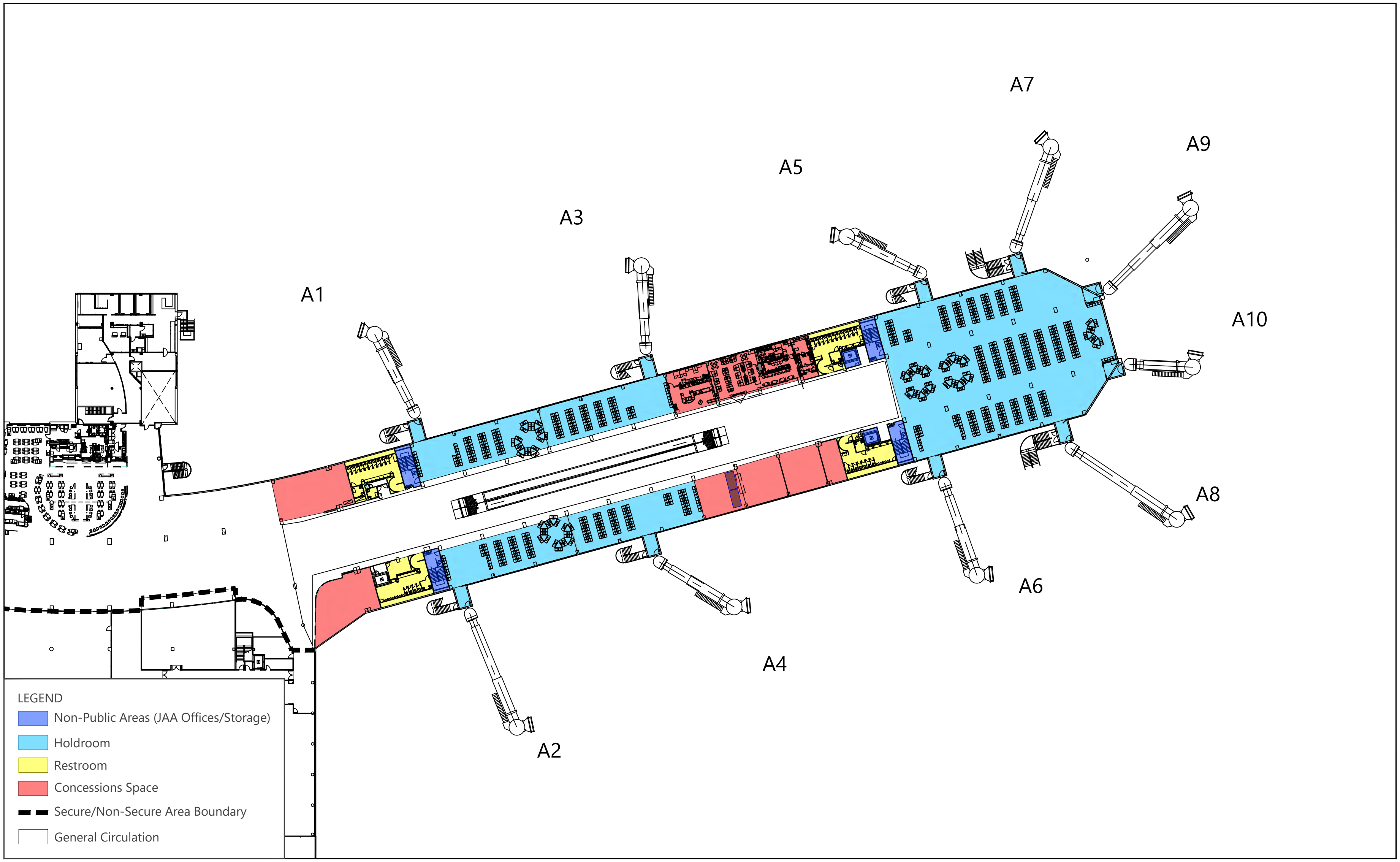


SOURCE: Jacksonville Aviation Authority, November 2018 (airside basemap).

EXHIBIT 2-26

CONCOURSE A - LEVEL 1

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-26_JAX_Concourse A - Level 1.dwgLayout: EXHIBIT 2-23 Plotted: Jan 30, 2020, 11:25AM



SOURCE: Jacksonville Aviation Authority, November 2018 (airside basemap).

NORTH 0 100 ft

EXHIBIT 2-27

CONCOURSE A - LEVEL 2

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-27_JAX_Concourse A - Level 2.dwgLayout: EXHIBIT 2-24 Plotted: Jan 30, 2020, 11:26AM

TABLE 2-17 CONCOURSE C AREAS

	LEVEL 1 (SQUARE FEET)	LEVEL 2 (SQUARE FEET)	TOTAL (SQUARE FEET)
Holdroom Areas	N/A	26,000	26,000
Concessions (Food/Beverage and Retail)	200	8,400	8,600
Circulation	N/A	13,800	13,800
Restrooms	2,300	3,500	5,800
Federal Inspection Services Facility / Security Check Points / Processing Area	23,000	3,000	26,000
Non-Public Areas (JAA Space)	3,200	1,500	4,700
Non-Public Areas (Airline Offices and Storage)	5,200	N/A	5,200
Non-Public Areas (Unenclosed Area)	16,400	N/A	16,400
Building Support (Mechanical/Electrical Building Systems)	5,500	N/A	5,500
Total	55,800	56,200	112,000

NOTE: Area calculations are approximations based on AutoCAD files provided by Jacksonville Aviation Authority.
SOURCE: Jacksonville Aviation Authority, November 2018.

TABLE 2-18 CONCOURSE C GATE ALLOCATIONS

GATE	LESSEE	LARGEST AIRCRAFT ACCOMMODATED	DOMESTIC (D) INTERNATIONAL (I)
C1	Southwest Airlines	Narrowbody	D
C2	Southwest Airlines	Narrowbody	D
C3	JAA / Common Use	Narrowbody	D
C4	Southwest Airlines	Narrowbody	D
C5	JAA / Common Use	Widebody (B767-400)	I
C6	JAA / Common Use	Narrowbody	D
C7	American Airlines	Narrowbody	D
C8	American Airlines	Narrowbody / Regional Jet	D
C9	American Airlines	Widebody (B767-300)	D
C10	American Airlines	Widebody (B767-200)	D

SOURCE: Jacksonville Aviation Authority, November 2018.

As illustrated on **Exhibit 2-28**, Level 1 of Concourse C provides approximately 55,800 square feet of space. It consists of areas that support airline operations and support functions. In addition, Level 1 includes a Federal Inspection Services (FIS) facility for the clearance of international arriving passengers entering the United States. This facility was designed to primarily accommodate international charter operations; it encompasses approximately 23,000 square feet.

SOURCE: Jacksonville Aviation Authority, November 2018 (airside basemap).

EXHIBIT 2-28

CONCOURSE C - LEVEL 1

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-28_JAX_Concourse C - Level 1.dwgLayout: EXHIBIT 2-25 Plotted: Jan 30, 2020, 11:27AM

Arriving passengers are directed to one of six immigration and passport control counters and then cleared to the baggage claim area, which includes one claim device to retrieve their baggage. Arriving passengers and their baggage are then directed to a customs control checkpoint, where they are either allowed to exit or directed to Secondary Screening Inspection. If allowed to exit, passengers continue through a secure corridor that takes them to the Terminal Courtyard on the landside. The passengers directed to Secondary Screening will follow the same exit path once they have cleared Secondary. The FIS facility is also used for the processing of international general aviation arrivals. In 2017, an average of three international general aviation arrivals were accommodated at Concourse C per day.

As illustrated on **Exhibit 2-29**, Level 2 of Concourse C serves as the primary area for processing enplaning (departing) and deplaning (arriving) passengers with a public circulation corridor, departure gates and their respective holdrooms, and boarding pass counters. The circulation corridor is located along the center of the concourse and provides bidirectional automated walkways. Four concession areas are included within Concourse C; two on the east side and two on the west side. These areas include retail and food/beverage concessions. Restroom facilities are also available adjacent to the concessions areas. Concourse C is occupied by Southwest Airlines, American Airlines, and charter operations on a preferential-use basis and Frontier Airlines, Allegiant Air, Air Canada, and Spirit Airlines on Common Use gates. Level 2 of Concourse C is approximately 56,200 square feet in area.

2.6 GROUND ACCESS, COMMERCIAL TRANSPORTATION, PARKING, AND RENTAL CAR SERVICES

This section describes the surface transportation network, ground transportation service providers, automobile parking facilities, and rental car operators that serve the commercial passenger terminal area. These services are discussed in the following subsections.

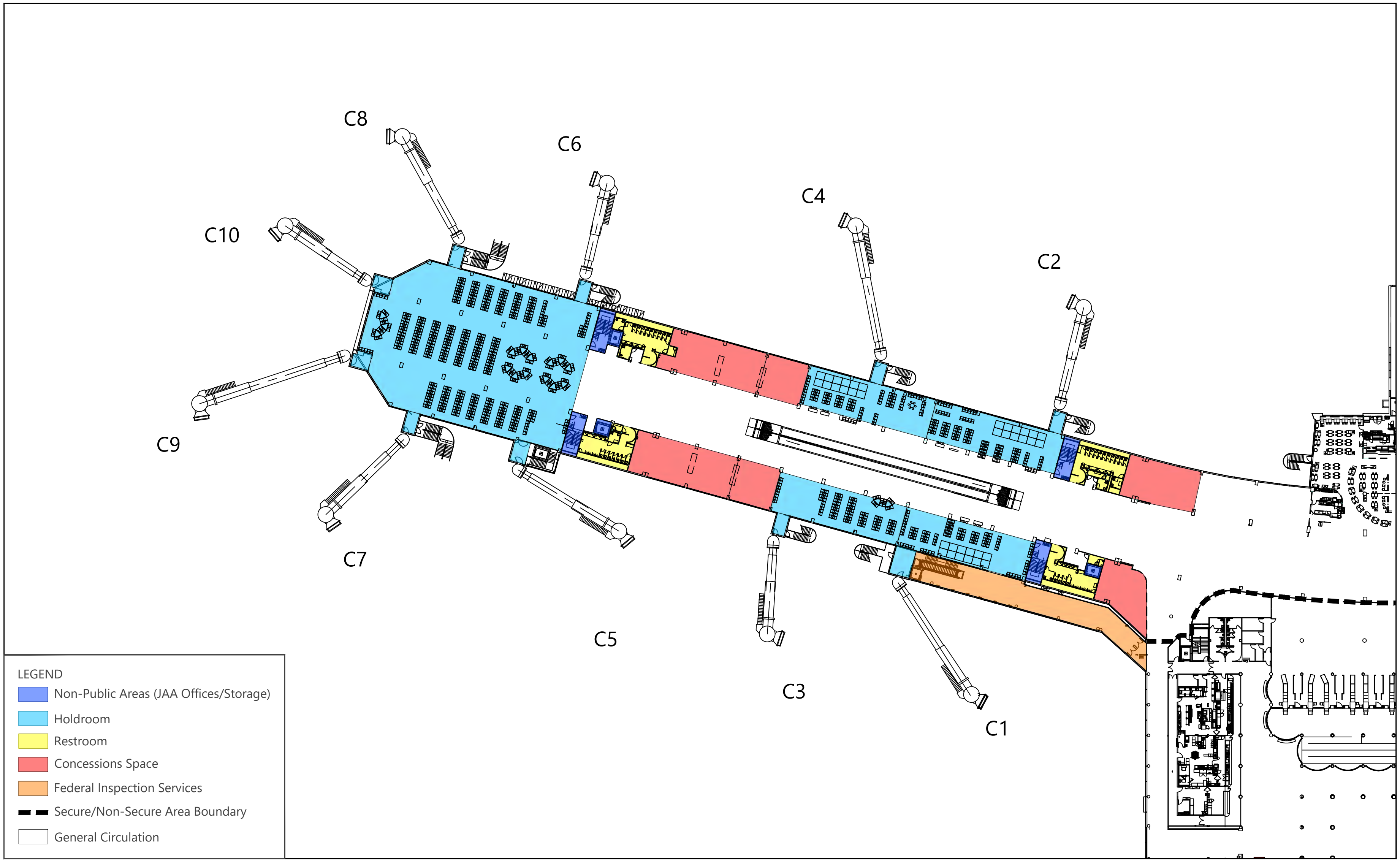
2.6.1 EXISTING GROUND ACCESS ROADWAY NETWORK

Exhibit 2-30 shows the local roadway network surrounding the Airport. I-95, which is situated approximately 2.5 miles east of the Airport, is a major north–south artery for the eastern United States, and it is one of the main Airport access roads. Going south, I-95 leads to downtown Jacksonville, Daytona Beach, and the Fort Lauderdale/Miami area. Going north, I-95 leads to northern states and major cities of the eastern United States, including New York, Boston, and Washington, DC. The I-95 exit leading to the Airport is identified as Exit 363B, also known as Duval Road West (SR 102) or Airport Road.

Airport Road is currently a four-lane divided highway that serves as the primary entrance road between JAX and I-95. Between I-95 and Yankee Clipper Drive, Airport Road is paralleled on its north and south sides by two bidirectional frontage roads that serve hotels and off-Airport parking lots.

West of International Airport Boulevard (SR110), the eastbound and westbound lanes of Airport Road split into a loop road. From this point, the westbound lanes leading to the passenger terminal are identified as Yankee Clipper Drive. Past the passenger terminal, the eastbound lanes become Dixie Clipper Drive, forming the exit from the terminal area complex.

The inbound roadway, Yankee Clipper Drive, provides access to the passenger terminal, hourly and daily parking garages, daily surface lots, and rental car return facility located in the lower level of the Hourly and Daily Garages. The outbound road, Dixie Clipper Drive, exits the arrival and departure levels of the passenger terminal on the south side of the terminal complex and provides access to the Airport DoubleTree Hotel and Pecan Park Road.



SOURCE: Jacksonville Aviation Authority, November 2018 (airside basemap).

EXHIBIT 2-29

CONCOURSE C - LEVEL 2

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-29_JAX_Concourse C - Level 2.dwgLayout: EXHIBIT 2-26 Plotted: Jan 30, 2020, 11:28AM

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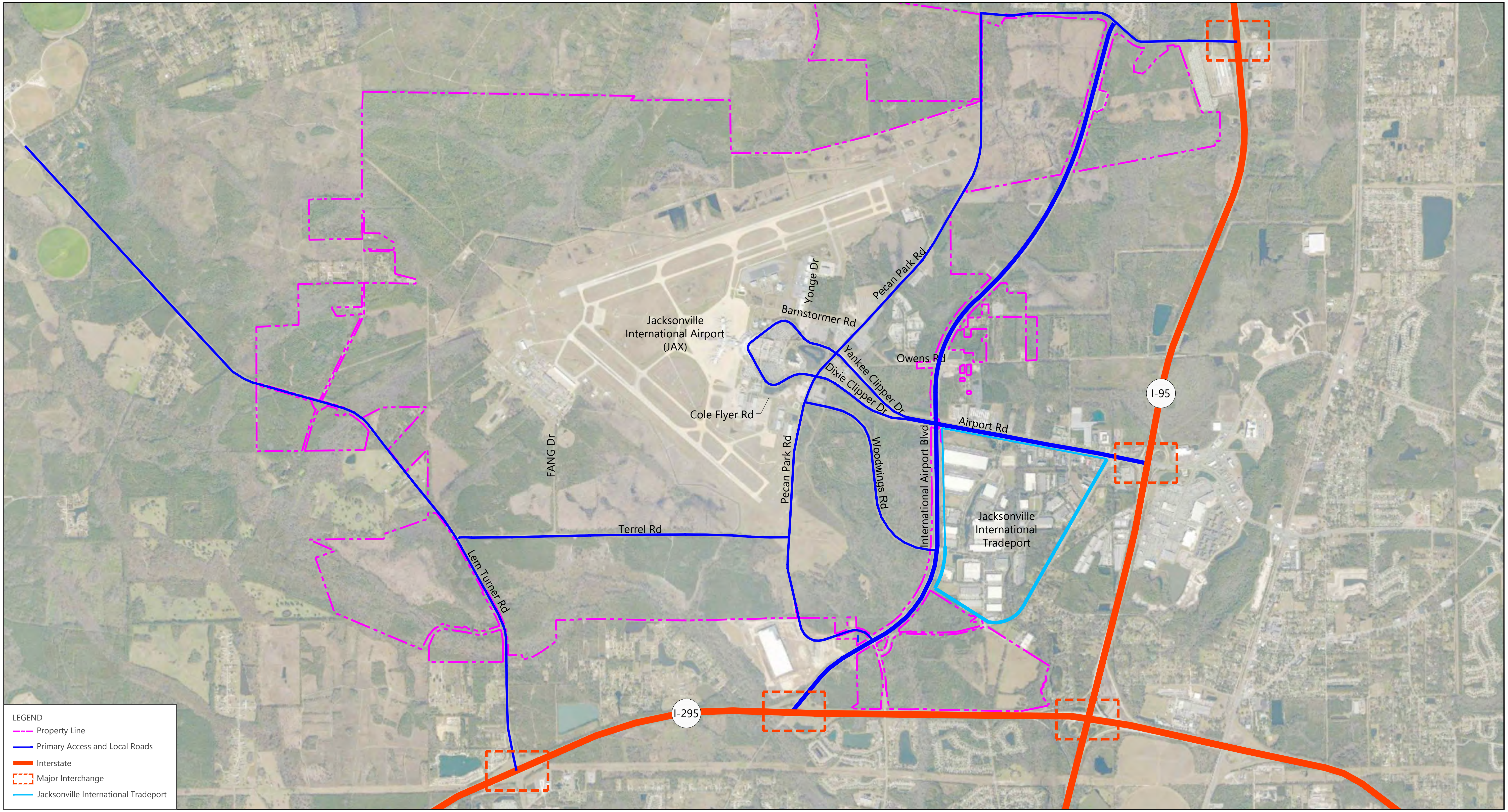

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, November 2018 (airfield basemap).

EXHIBIT 2-30

GROUND ACCESS ROADWAY NETWORK

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International Airport Boulevard is also a major access road leading to the Airport. This boulevard runs in a north–south direction, stretching from the I-295–Duval Road interchange to Pecan Park Road. International Airport Boulevard is a four-lane divided highway that allows travelers to bypass I-95.

Beyond providing access to the Airport, International Airport Boulevard also provides access to nonaviation development, and it facilitates access to the Jacksonville International Tradeport, home to several businesses. Tracts of undeveloped lands that the JAA plans to develop along International Airport Boulevard are generally referred to as Woodwings. These areas are further described in a subsequent section.

The local roadway system also includes several bidirectional roads. Pecan Park Road stretches from the I-95–Pecan Park Road North interchange, about 2.6 miles north of the Airport Road exit, to International Airport Boulevard, just north of I-295.

Pecan Park Road North provides access to the general aviation area, the FAA ATCT, the ARFF station, and the Commercial Parking Lot, via Barnstormer Road. Pecan Park Road North also provides direct access to the economy parking lots, the U.S. Postal Service (USPS), and Rental Car Road, which provides direct access to the car rental service facilities.

South of Airport Road, Pecan Park Road South provides direct access to the Flex-Office/Warehouse Building, JAA office maintenance facilities, Air Cargo Building #4, Cole Flyer Road, and Woodwings Road. Cole Flyer Road provides direct access to the air cargo area, the Airport fuel farm, and the JAA employee parking lot. Woodwings Road cuts through the Woodwings West development area, stretching from Pecan Park Road South to International Airport Boulevard.

Lem Turner Road (SR 115), which is situated on the west side of the Airport's property, also provides access to the Airport from the northwest. The road stretches from the town of Callahan, which is located 10 miles northwest of the Airport, to I-95, just south of the Trout River.

Terrell Road, which runs in an east–west direction and south of the airfield, links Lem Turner Road and Pecan Park Road. This bidirectional road provides access to FANG Drive, which is the main access road to the FANG facilities.

2.6.2 COMMERCIAL TRANSPORTATION SERVICES

Limousines and Airport shuttle services, taxi operators, hotel shuttles, and the AirJTA bus service provided by the Jacksonville Transportation Authority (JTA) comprise the various ground transportation services available at the Airport.

The AirJTA bus provides service for approximately 17 hours a day, Monday through Friday, between the Airport and downtown Jacksonville. JTA also offers a special Ride-Request Service. This "as-needed" service, also called the "Highlands-Airport Service," transports workers from Dunn Avenue and the neighborhoods of Harts and Biscayne Boulevard to the hotels and businesses around the Airport, including JAX and the Jacksonville International Tradeport.

Taxi services are provided by Gator City Taxi under an exclusive concession agreement with the JAA. Off-Airport taxicab service providers are also available for Airport pickup; however, prior arrangements must be made directly with the provider. Courtesy shuttle services are also provided by several local area hotels:

- Aloft Jacksonville Airport
- Courtyard Marriott

- Crown Plaza Jacksonville Airport
- Double Tree by Hilton Jacksonville Airport
- Fairfield Inn & Suites
- Hilton Garden Inn
- Hyatt Place Jacksonville Airport
- SpringHill Suites by Marriott

The designated pickup area for prearranged ground transportation providers is a dedicated parking lot located adjacent to the north end of the terminal baggage claim area. The pickup areas for ground transportation service that has not been prearranged (e.g., hotel shuttles, taxis) are located along the commercial transportation curbside outside the baggage claim as depicted on Exhibit 2-22 and Exhibit 2-23. Also depicted on Exhibit 2-22 and Exhibit 2-23 are the areas where TNC's are allowed to operate. TNC's are only allowed to drop-off departing passengers on the upper-level curb and are only allowed to pickup arriving passengers on the lower-level curb outside and to the right of baggage claim door 3.

2.7 PARKING

Currently, seven public parking facilities are available at JAX, including an hourly garage, a daily garage, a daily surface lot, three economy lots, and one courtesy lot. Parking for most employees working at JAX is provided in three designated employee parking facilities: a parking lot located adjacent to and south of the terminal, a parking lot adjacent to the Administration Building, and at the top level of the hourly parking garage. There is also a shuttle bus parking area and a commercial parking lot for prearranged transportation. All public parking facilities accept cash, check, Visa, MasterCard, Diners Club, and American Express. The locations of the public and nonpublic parking facilities at JAX are depicted on **Exhibit 2-31**, and they are summarized in **Table 2-19**. Table 2-19 also provides the rates and the number of spaces available for the parking facilities, as applicable.

TABLE 2-19 PARKING FACILITIES

FACILITY	TOTAL CAPACITY	RATE
Hourly Garage	1,133	$20.00 (daily max)
Daily Garage	1,949	$17.00 (daily max)
Daily Lot	1,722	$11.00 (daily max)
Economy Lot 1	1,935	$6.00 (daily max)
Economy Lot 2	1,276	$6.00 (daily max)
Economy Lot 3 (special events)	1,200	$20.00 (flat rate)
Courtesy Lot	160	Nonrevenue
Employee Lot – South of the Passenger Terminal	471	Nonrevenue
Employee Lot – Adjacent to the Administration Building	176	Nonrevenue
Commercial Parking Lot for Prearranged Transportation	51	Nonrevenue
Total	10,073	

SOURCE: Jacksonville International Airport, flyjacksonville.com (accessed December 2018).

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, November 2018 (basemap).

EXHIBIT 2-31

PUBLIC AND NONPUBLIC PARKING FACILITIES

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-31_JAX_Parking Facility Locations.dwgLayout: EXHIBIT 2-30 Plotted: Jan 30, 2020, 11:31AM

2.7.1 HOURLY GARAGE

The Hourly Garage is a four-level facility that is located just east of the Main Terminal. JAA staff indicated of the four levels, only Levels 2, 3, and 4 (850 spaces) are available for public parking at a rate of $2 for every 30 minutes of parking, until the daily maximum of $20 is reached. Level 1 of the facility is used solely for the parking of rental cars.

2.7.2 DAILY GARAGE

Located to the east and adjacent to the Hourly Garage is the Daily Garage, which is currently the largest parking facility at JAX. This garage was constructed as part of the 2009 Terminal Expansion Program. JAA staff indicated the Daily Garage has six levels and provides a total of 1,949 parking spaces. Similar to the Hourly Garage, the Daily Garage's Level 1 is used solely for the parking of rental cars. Levels 2 through 6 are available for public parking at a daily maximum rate of $17.

2.7.3 DAILY SURFACE LOT

The Daily Surface Lot is a combination of four surface lots that are located on the east, north, and south sides of the Daily Garage. Together, these lots provide a total of 1,722 parking spaces at a maximum daily rate of $11. The Daily Surface Lot can be accessed off Yankee Clipper Drive and exited through an eight-booth toll plaza that allows passenger traffic to exit the Airport onto Dixie Clipper Drive. The valet parking is available to passengers at a daily rate of $20. The valet parking booth, located on the south end of the Daily Surface Lot, is the drop-off location for passengers who choose to use the valet service.

2.7.4 ECONOMY LOTS

Currently, three surface economy lots are available at JAX. Economy Lots 1 and 2 remain open all year, while Economy Lot 3 is only available during the holidays and special events (e.g., Tournament Players Club, Super Bowl). As indicated on Exhibit 2-27, Economy Lot 1 is bound on the south by Yankee Clipper Drive, on the north by Barnstormer Road, and to the east by Pecan Park Road. This lot provides 1,935 parking spaces and can be accessed/exited from either Pecan Park Road or Barnstormer Road. Economy Lot 2 is located on the east side of Pecan Park Road and provides 1,276 parking spaces. Economy Lot 2 has two access/exit points located along Pecan Park Road. As previously mentioned, Economy Lot 3 is only used as an overflow lot during special events. Economy Lot 3 is located north of the intersection between Barnstormer Road and Pecan Park Road; it provides 1,200 parking spaces and has one entrance/exit that is located along Pecan Park Road. Economy Lots 1 and 2 are available to passengers at a daily maximum rate of $6 and Economy Lot 3 charges a flat rate of $20 per event.

2.7.5 COURTESY LOT

The Courtesy Lot or "cell phone" parking lot is located adjacent to and northeast of the JAA Administration Building, between Yankee Clipper Drive and Dixie Clipper Drive. It currently provides approximately 160 parking spaces, and it serves as a waiting area for persons and vehicles traveling to the Airport to pick up arriving passengers. A large screen display provides continuous updated flight arrival information, allowing drivers to see when their passenger's flight has arrived and informing them as to when the passenger is ready for pickup. No cost is associated with the use of this parking facility.

2.7.6 EMPLOYEE LOTS

The Airport has three main employee lots. The larger lot is located on the south side of the passenger terminal; it currently provides 471 parking spaces. Access to this facility is provided by Delivery Road and indirectly by Cole Flyer Road, which also serves the air cargo area. The second employee lot is located adjacent to the JAA Administration Building; it provides approximately 176 parking spaces. The third area is designated for employee and public parking and is located on the top level of the Hourly Garage. This area provides 100 parking spaces, which are generally used by the tenants and JAA employees who operate within the terminal and concourses.

2.7.7 SHUTTLE BUS PARKING AREA

The shuttle bus parking area is a staging and parking area for the shuttles that serve the economy lots. This parking facility provides an area of approximately 19,000 square feet and 47 parking spaces. This lot is located just east of the Daily Surface Lot, along the exit road that leads to the toll plaza.

2.7.8 COMMERCIAL PARKING LOT

The Commercial Parking Lot for prearranged transportation is located on the north side of the Main Terminal; it serves as a staging area for commercial vehicles, such as limos and taxis. The Commercial Parking Lot currently provides 51 parking spaces that can be accessed from Barnstormer Road. The layout of the facility is such that commercial transportation vehicles can exit the lot directly onto Yankee Clipper Drive when called upon for service.

2.8 RENTAL CAR AND GROUND TRANSPORTATION FACILITIES

2.8.1 RENTAL CAR FACILITIES

The rental car companies maintain ready/return spaces on the first floor of the Hourly and Daily Garages. However, their maintenance and vehicle fleet storage facilities are located east of the passenger terminal and general aviation facilities areas, directly off Rental Car Lane, which connects to Pecan Park Road North. **Exhibit 2-32** depicts the location of the rental car facilities, and **Table 2-20** presents the space breakdown for each rental car company.

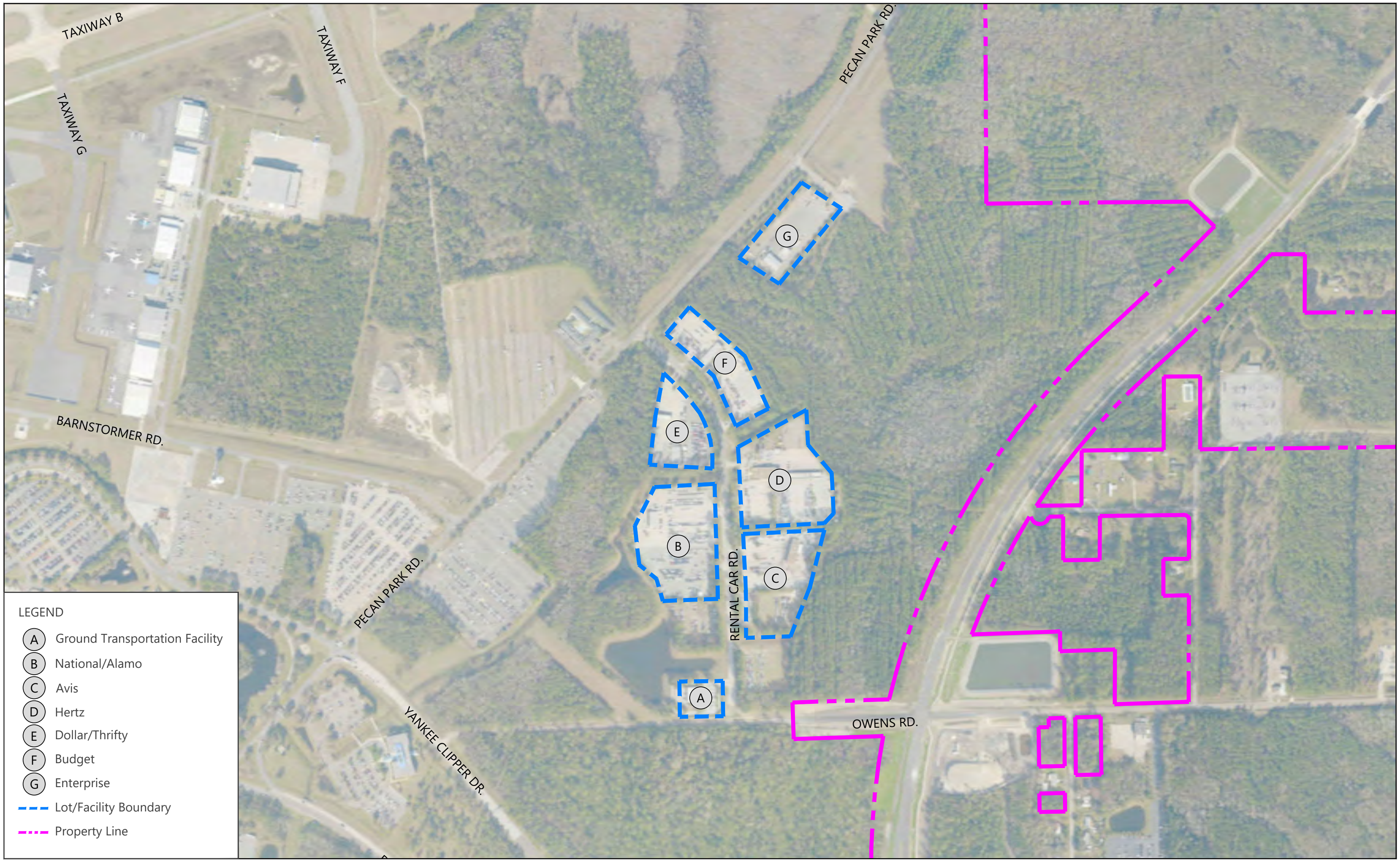
TABLE 2-20 RENTAL CAR FACILITIES

RENTAL CAR COMPANY	MAIN BUILDING SIZE (SQUARE FEET)	SECONDARY BUILDING SIZE (SQUARE FEET)	VEHICULAR PARKING / AVAILABLE SPACE (SQUARE YARDS)	TOTAL LEASED SPACE (SQUARE FEET)
Avis	8,600	N/A	13,000	125,00
Budget	6,200	1,500	16,600	157,000
Dollar	4,200	N/A	4,000	40,000
Hertz	9,000	2,200	22,000	208,900
National/Alamo	4,000	1,200	14,600	136,700
Enterprise	5,700	2,200	Unknown	128,500

SOURCE: Jacksonville Aviation Authority, November 2018.

2.8.2 GROUND TRANSPORTATION FACILITY

The 6,640-square-foot ground transportation facility opened in 2001 and is located at the end of Rental Car Lane, just south of the rental car facilities. Half of the building is currently being rented to a local taxi company; the other half is vacant.



SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, November 2018 (basemap).

EXHIBIT 2-32

RENTAL CAR AND GROUND TRANSPORTATION FACILITIES

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-32_JAX_Rental Car and Ground Transportation Facilities.dwgLayout: EXHIBIT 2-31 Plotted: Jan 30, 2020, 11:33AM

2.9 AIR CARGO FACILITIES

The air cargo area is located southeast of the passenger terminal area and north of the Runway 32 end. This area encompasses approximately 24 acres and consists of four main buildings, three ramps, and associated landside facilities. As shown on **Exhibit 2-33**, the area is accessible via Cole Flyer Road, which connects to Pecan Park Road. The cargo buildings are used by airlines and freight forwarders for the processing of belly cargo express and freight.

2.9.1 AIR CARGO BUILDING #1

Building #1 consist of approximately 34,436 square feet of floor space and is located southeast of existing Concourse C at the end of Cole Flyer Road. This building is occupied by five tenants: Delta Air Lines, Freedom Interstate Shippers, Air Ground Logistics, and Majestic Terminal Services. In addition, the Flight Kitchen has been relocated within this facility to make room for the new Airport maintenance facility. **Table 2-21** and **Exhibit 2-34** present the space and tenant allocations within Building #1.

TABLE 2-21 AIR CARGO BUILDING #1 – SPACE UTILIZATION BY TENANT

LESSEE	ALLOCATED SPACE (SQUARE FEET)
Delta Air Lines Offices/Warehouse	8,758
Freedom Interstate Shippers Offices/Warehouse	3,596
Federal Aviation Administration (FAA) Offices/Warehouse	3,006
Gate Gourmet Flight Kitchen	9,024
Jacksonville Aviation Authority (JAA) Offices/Warehouse	2,205
Majestic Terminal Services	3,617
Vacant Offices/Warehouse	2,681
Common-Use Space	1,549
Total	**34,436**

SOURCE: Jacksonville Aviation Authority, October 2018.

2.9.2 AIR CARGO BUILDING #2

Building #2 has approximately 28,377 square feet of space and is located adjacent to and south of Building #1. Building #2 is occupied by two tenants, United Parcel Service (UPS) and John Bean Technologies (JBT). **Exhibit 2-35** and **Table 2-22** present the space and tenant allocations within Building #2.

TABLE 2-22 AIR CARGO BUILDING #2 – SPACE UTILIZATION BY TENANT

LESSEE	ALLOCATED SPACE (SQUARE FEET)
United Parcel Service (UPS) Offices/Warehouse	14,119
John Bean Technologies (JBT) Offices/Warehouse	4,685
Vacant Offices/Warehouse	9,573
Total	**28,377**

SOURCE: Jacksonville Aviation Authority, October 2018.

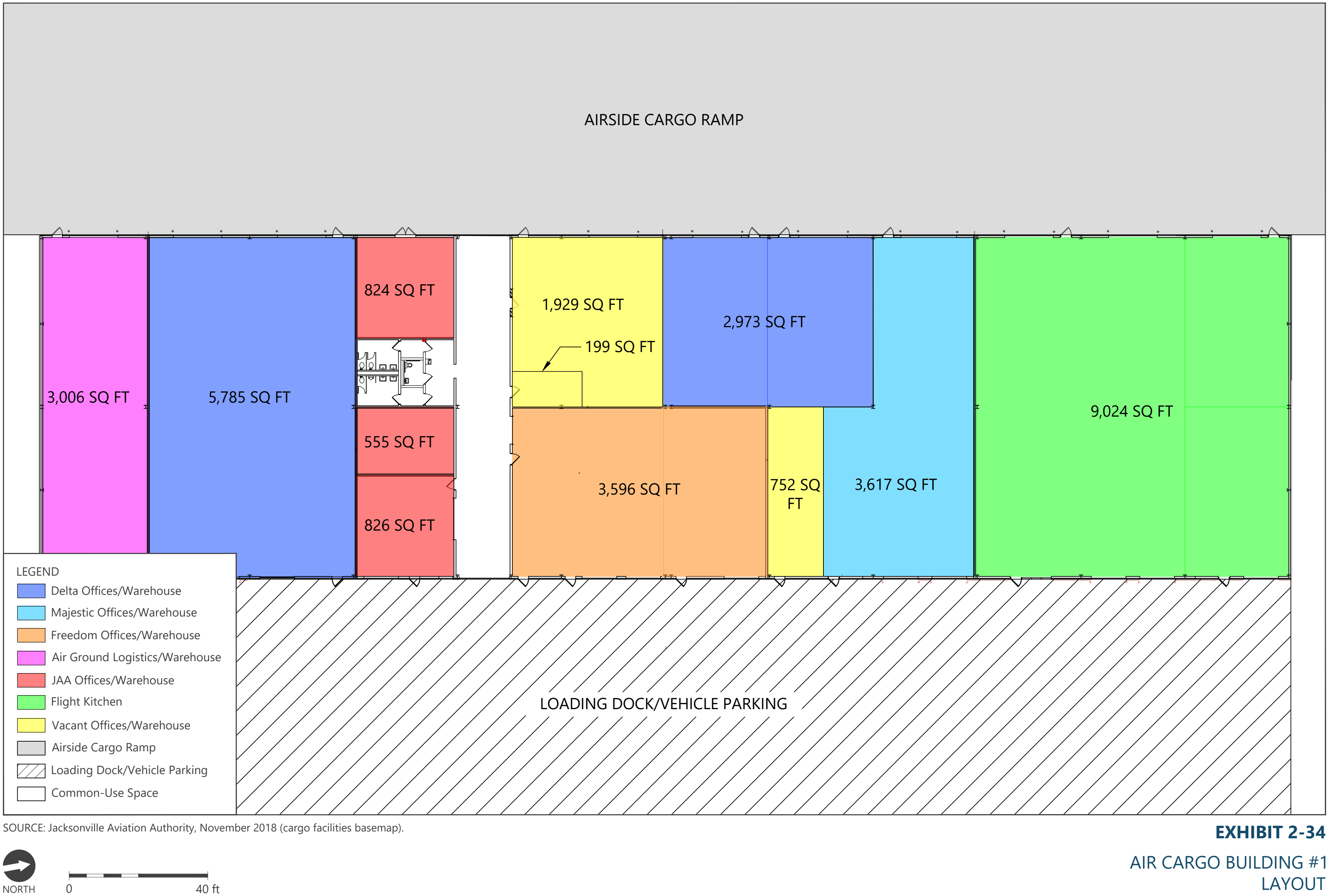
SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, November 2018 (basemap).

NORTH 0 800 ft

EXHIBIT 2-33

AIR CARGO FACILITIES

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-33_JAX_Air Cargo Facilities.dwgLayout: EXHIBIT 2-32 Plotted: Jan 30, 2020, 11:35AM

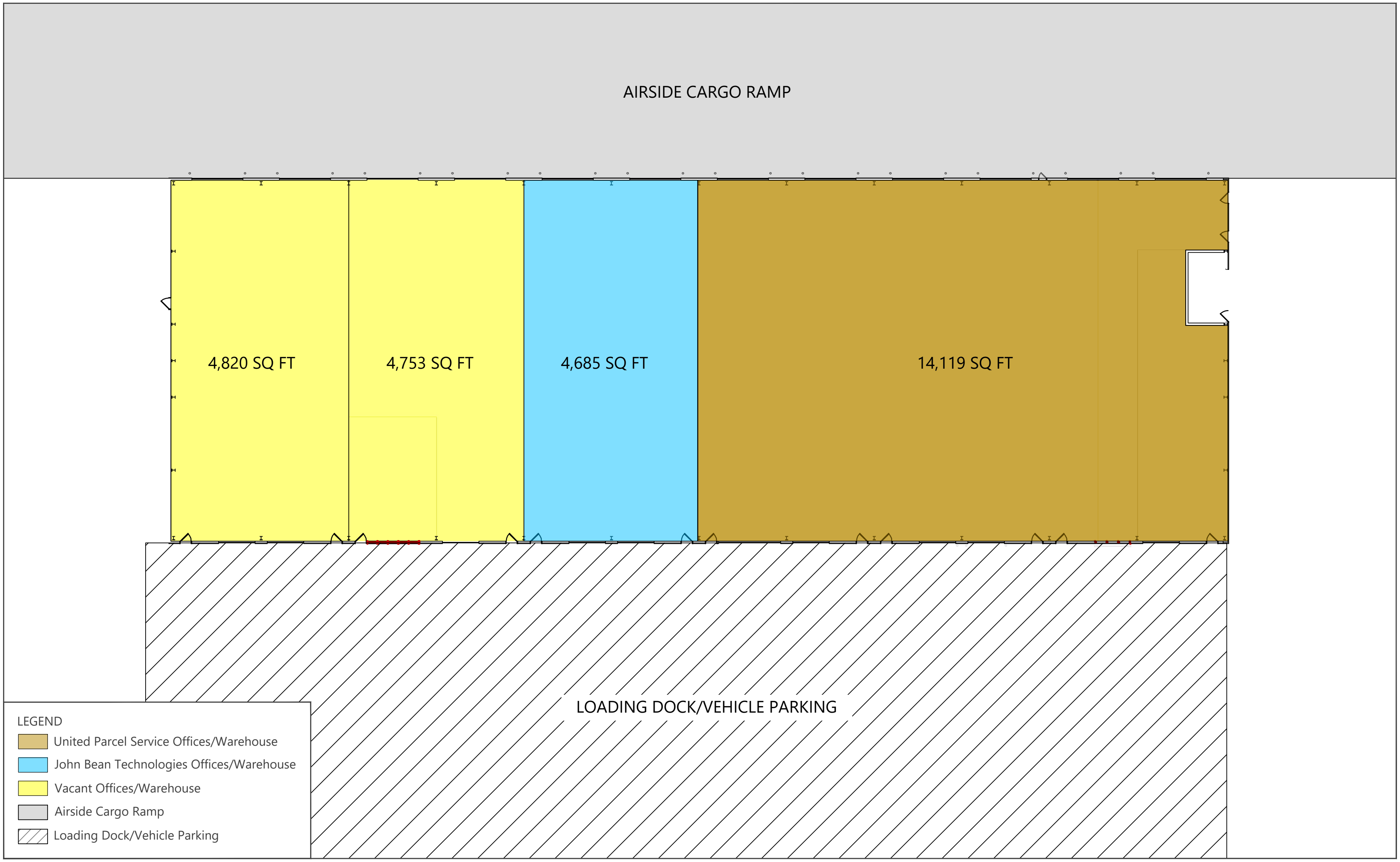


SOURCE: Jacksonville Aviation Authority, November 2018 (cargo facilities basemap).

EXHIBIT 2-34

AIR CARGO BUILDING #1 LAYOUT

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-34_JAX_Air Cargo Building #1 Layout.dwgLayout: EXHIBIT 2-33 Plotted: Jan 30, 2020, 11:36AM



SOURCE: Jacksonville Aviation Authority, *Air Cargo Buildings One & Two Exhibit A Parcel*, June 2017.

EXHIBIT 2-35

AIR CARGO BUILDING #2
LAYOUT

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-35_JAX_Air Cargo Building #2 Layout.dwgLayout: EXHIBIT 2-34 Plotted: Jan 30, 2020, 12:41PM

A parking lot is situated east of Buildings #1 and #2 and encompasses approximately 45,000 square feet. This parking lot is used for employee and visitor parking and the storage of trailers, and it accommodates trucks backing up to the docks for loading and/or unloading of cargo.

As indicated in Table 2-21, UPS is the largest tenant in Building #2. The number and type of aircraft utilized by UPS fluctuates with the amount of cargo that is hauled into and out of JAX. However, on a regular basis, UPS operates three types of cargo planes (Airbus 300 B4, Boeing 757-200PF, and Boeing 767-300). UPS conducts limited sorting operations at the Airport. Instead, most UPS cargo is processed at an off-Airport sorting facility. To meet its delivery commitments, UPS stages trailers on the ramp so cargo containers can be transferred directly from the aircraft to the trailer, and vice versa, without having to pass through the cargo building.

The cargo ramp adjacent to Buildings #1 and #2 provides approximately 37,500 square yards, which is used for the staging of trailers and other GSE, the parking of aircraft, and the loading/unloading of cargo.

2.9.3 AIR CARGO BUILDING #3

Building #3, which is located east of Buildings #1 and #2, has an area of approximately 103,000 square feet and is entirely leased by FedEx (see **Exhibit 2-36**). The building was constructed in 1997 and provides space for additional growth. **Table 2-23** lists the space within Building #3.

TABLE 2-23 AIR CARGO BUILDING #3 – SPACE UTILIZATION BY TENANT

LESSEE	ALLOCATED SPACE (SQUARE FEET)
Federal Express (FedEx)	103,000

SOURCE: Jacksonville Aviation Authority, October 2018.

On the landside, Building #3 has 26 truck docks and approximately 500 linear feet of loading dock frontage available for cargo operations on both sides of the building. FedEx's parking lot can accommodate up to 60 vehicles.

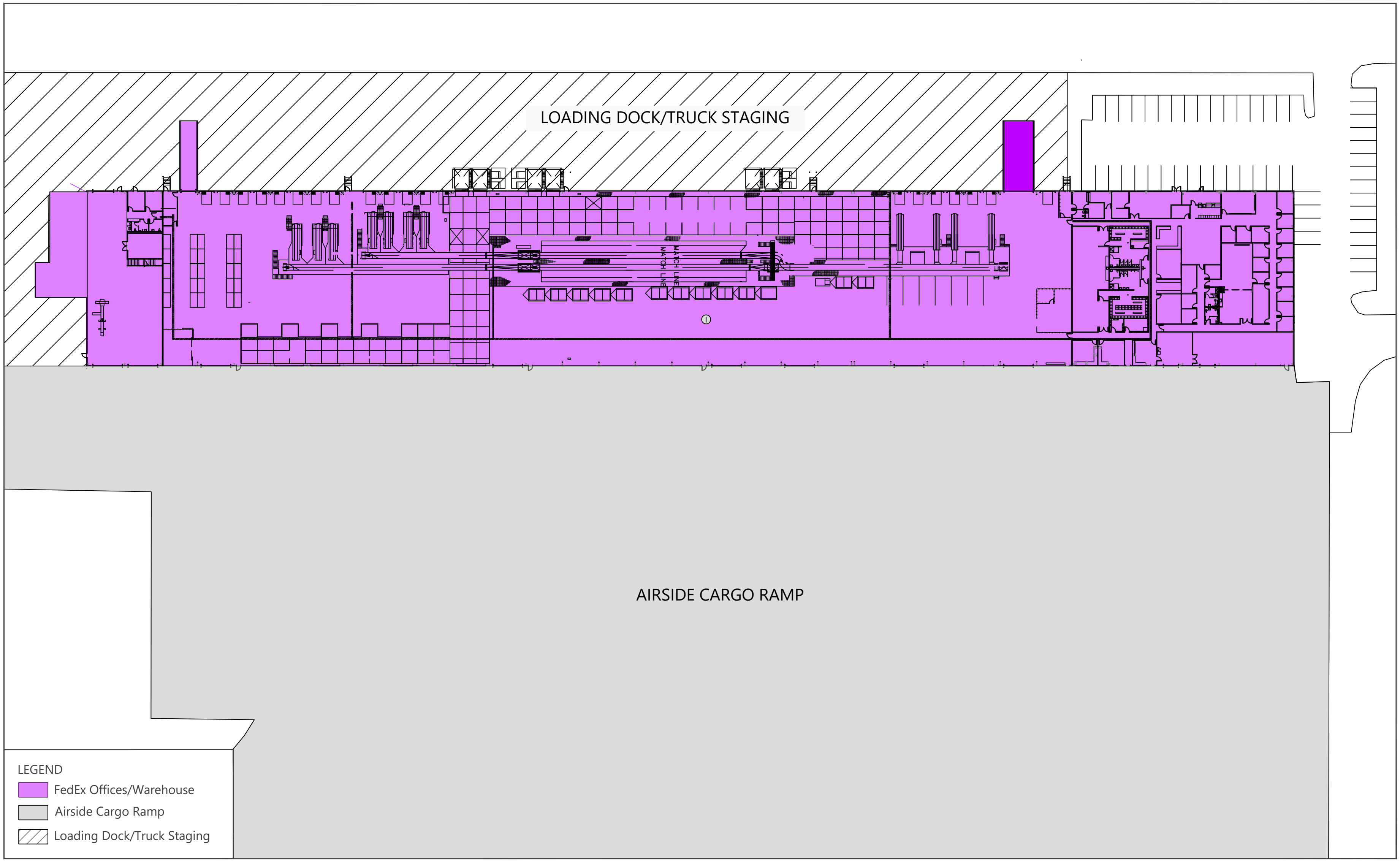
FedEx operates A300-600, B757-200, B767-300F, MD10-10, MD10-30C, MD10-30F, and MD-11ER.

2.9.4 AIR CARGO BUILDING #4

AMB Property Corporation constructed and owns Building #4; the property is leased from the JAA. The building is located on 5.9 acres and has a total floor area of 50,000 square feet, with truck loading docks on the east and west sides. As illustrated on Exhibit 2-32, Building #4 is located along Pecan Park Road, east of the FedEx facilities. The landside area provides 18,900 square yards for the parking and staging of automobiles and trucks. A parking lot situated south of Building #4 provides 80 automobile parking spaces.

2.10 GENERAL AVIATION FACILITIES

General aviation typically refers to those facilities and the operations of aviation users other than the scheduled commercial airlines, the cargo operators, and the military. General aviation activities comprise of recreational flight training, as well as for-hire charter flights, including those used for aerial observation, news reporting, traffic observation, environmental surveys, wildlife counts, police patrol, emergency medical evacuation, pipeline patrol, crop dusting, and business air travel.



SOURCE: Jacksonville Aviation Authority, *Air Cargo Buildings One & Two Exhibit A Parcel*, June 2017.

EXHIBIT 2-36

AIR CARGO BUILDING #3
LAYOUT

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-36_JAX_Air Cargo Building #3 Layout.dwgLayout: EXHIBIT 2-35 Plotted: Jan 30, 2020, 12:42PM

As depicted on **Exhibit 2-37**, most of the general aviation facilities are located north of the terminal area and south of Runway 8-26. This general aviation area, including apron, hangar facilities, executive terminal, automobile parking, and access road, encompasses approximately 100 acres. The FBOs own the general aviation hangars and executive terminals, manage the ramp, and lease the tiedown positions. The FBOs are Signature Flight Support and Sheltair Aviation Services.

2.11 SIGNATURE FLIGHT SUPPORT

Signature Flight Support is a full-service FBO that operates 24 hours a day accommodating jet aircraft. Most of the Signature Flight Support facilities, including its executive terminal, are located on the north side of the airfield, north of Barnstormer Road. In addition, the FBO operates two hangars in the air cargo area.

On the north side, Signature Flight Support facilities include the following:

- one executive terminal located between its hangars (approximately 9,795 square feet)
- eight aircraft/maintenance hangars (approximately 161,200 square feet)
- an apron (approximately 42,000 square yards)
- an automobile parking lot located east of the hangars (approximately 8,600 square yards) with approximately 47 parking spaces

On the south side, Signature Flight Support facilities include the following:

- One hangar encompasses approximately 32,000 square feet. According to the 2010 Master Plan Update, approximately 22,000 square feet are configured for aircraft storage and maintenance, and the remaining 10,000 square feet provide space for offices, restrooms, a kitchen, a conference room, and other common areas.

2.12 SHELTAIR AVIATION SERVICES

Sheltair Aviation Services started its operations at JAX in 2005. The two-story executive terminal/office building is approximately 32,000 square feet in size. On each side of the executive terminal is a clearspan hangar. Each hangar provides 20,000 square feet of aircraft parking and storage space. These hangars were constructed by Sheltair's parent company, Holland Builders, in 2006. Like Signature Flight Support, Sheltair mainly accommodates general aviation activity, specifically business jet traffic. On occasion, Sheltair also serves military aircraft, such as the KC 135 Stratotanker.

As indicated on Exhibit 2-37, Sheltair's facilities are accessible via Barnstomer Road. Sheltair's parking lot includes approximately 200 automobile parking spaces, most of which are in proximity to the executive terminal. Overall, the parking area provides 72,500 square feet of space.

2.13 FIDELITY NATIONAL FINANCIAL AIRPORT HANGAR

In 2005, Fidelity National Financial, Inc. built a 27,000-square-foot corporate hangar at the Airport to accommodate business jet aircraft. This hangar is located between Sheltair Aviation Services facilities to the west and Signature Flight Support facilities to the east. This hangar provides approximately 19,000 square feet of space for aircraft storage and maintenance and 8,000 square feet of office space, pilot lounges, a conference room, restrooms, and other common areas. As depicted on Exhibit 2-33, this hangar and the Signature Flight Support facilities are linked to the airfield via Taxiway G, a 50-foot-wide taxiway leading to parallel Taxiways A and B.

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, October 2018 (airfield data).

EXHIBIT 2-37

GENERAL AVIATION FACILITIES

NORTH 0 800 ft

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-37_JAX_General Aviation Facilities.dwgLayout: EXHIBIT 2-36 Plotted: Jan 30, 2020, 12:44PM

2.14 AIRPORT/AIRLINE SUPPORT FACILITIES

Airport and airline support facilities include the JAA Administration Building, fuel storage, Airport maintenance and equipment storage, the flex-office/warehouse building, and ARFF. These facilities are depicted on Exhibit 2-36 and **Exhibit 2-38**.

2.14.1 FUEL STORAGE FACILITIES

The Airport FBOs (Signature Flight Support and Sheltair Aviation Services) provide fuel for all commercial and general aviation aircraft at JAX. Sheltair Aviation Services serves UPS, Allegiant Air, and Spirit Airlines while Signature Flight Support provides fuel to all other airlines. The main fuel farm is located southeast of the passenger terminal building, adjacent to and west of the JAA maintenance facilities. The location of the fuel farm is depicted on Exhibit 2-37.

Sheltair Aviation Services operates two 50,000-gallon Jet A fuel tanks and one 10,000-gallon AVGAS tank. In the future, this FBO plans to add one 50,000-gallon tank of Jet A fuel.

The second Airport fuel farm is in the general aviation area between Yonge Drive and Signature Flight Support Hangar. The location of this fuel farm is depicted on Exhibit 2-37. According to the 2010 Master Plan Update, the aboveground tanks located in this area provide a total capacity of 90,000 gallons for the storage of Jet-A fuel and 20,000 gallons for the storage of Avgas.

2.14.2 ADMINISTRATION BUILDING

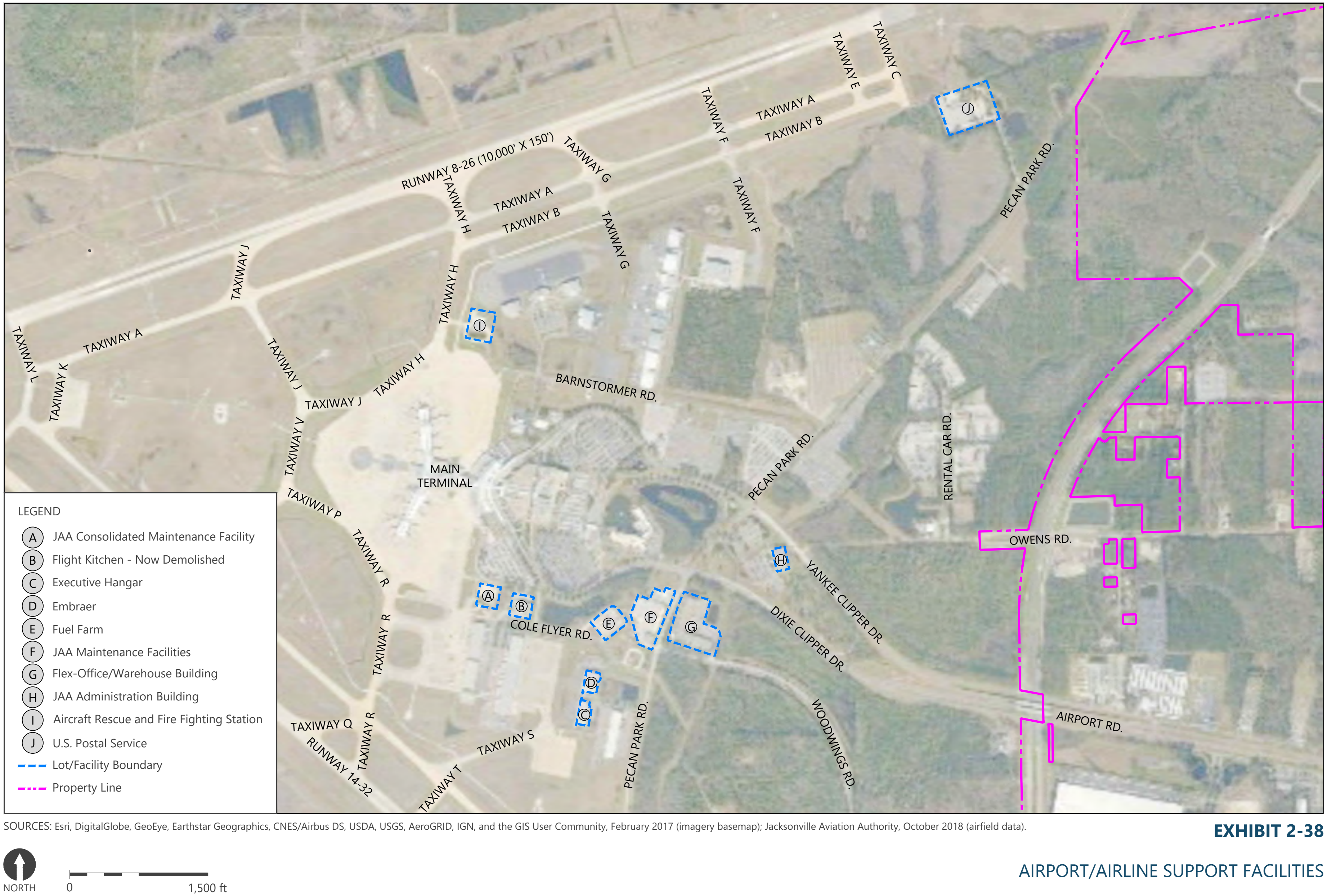
The JAA Administration Building is a three-story facility that was constructed in 2002. The facility is located between the Airport entrance and exit roadways east of the passenger terminal. The office building offers approximately 75,000 square feet of office space and two parking lots. The lot located in front of the JAA office building serves as the parking facility for the Administration Building and provides 192 parking spaces. The smaller lot provides 160 parking spaces; this lot also serves as a cell phone/courtesy lot for people waiting to pick up passengers.

2.14.3 AIRCRAFT RESCUE AND FIREFIGHTING FACILITY

As shown on Exhibit 2-37, the 14,000-square-foot ARFF facility was built in the late 1990s and is located east of Taxiway H between Runway 8-26 and the passenger terminal. The ARFF facility is staffed by firefighters from the City of Jacksonville, and the JAA provides the facilities and equipment required by the FAA. The ARFF facility, including employee and visitor parking, is located within the Security Identification Display Area (SIDA). Therefore, individuals who do not have the required authorization to enter the SIDA must be escorted. Access to the ARFF facility is provided through a security gate located off Barnstormer Road, near the FAA ATCT facilities.

Federal Aviation Regulations (FAR) Part 139 publishes minimum safety standards for emergency response personnel and equipment needed at commercial service airports. Requirements related to the minimum amount of personnel on duty, equipment, and aqueous film forming foam (AFFF) agent are based upon the longest commercial passenger aircraft having an average of five or more daily operations. The following are the categories with the aircraft length requirements:

- Index A includes aircraft less than 90 feet in length
- Index B includes aircraft at least 90 feet, but less than 126 feet in length
- Index C includes aircraft at least 126 feet, but less than 159 feet in length
- Index D includes aircraft at least 159 feet, but less than 200 feet in length
- Index E includes aircraft at least 200 feet in length



SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Jacksonville Aviation Authority, October 2018 (airfield data).

EXHIBIT 2-38

AIRPORT/AIRLINE SUPPORT FACILITIES

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-38_JAX_Airport-Airline Support Facilities.dwgLayout: EXHIBIT 2-38 Plotted: Jan 30, 2020, 12:45PM

JAX is rated as an ARFF Index D airport based upon the current level of scheduled air service. The Airport does not currently have this index level scheduled for commercial passenger service; however, FedEx and UPS operate this index classification for scheduled cargo service. This index level requires the department to have a minimum of three vehicles that carry at least 500 pounds of sodium-based dry chemical and can produce 4,000 gallons of AFFF. Presently, the Airport's ARFF department has the following vehicles: E One Titan 6X6, Oshkosh Striker, and Ford F-550 Super Duty – Twin Agent.

2.14.4 AIRFIELD ELECTRICAL VAULT

This facility was constructed in 2000; it is located east of Taxiway K, approximately 1,200 feet southeast of the Runway 8 end.

2.14.5 FEDERAL AVIATION ADMINISTRATION AIR TRAFFIC CONTROL TOWER AND AIRWAYS FACILITIES

These FAA facilities are located north of the Main Terminal and are accessible via Barnstormer Road, which connects to Pecan Park Road. The main facilities consist of an ATCT which opened in 1968; a "base" building that also houses the TRACON facility, which encompasses 12,600 square feet of space; an airways facilities system service center; and a 10,900-square-foot building that houses air traffic non-operational offices, also referred to as the FAA Airways facility. The vehicle parking located between the base building and the FAA Airways facility offers 66 parking spaces, with additional parking east of the FAA Airways facility.

2.14.6 FLEX-OFFICE/WAREHOUSE BUILDING

This building was constructed in 1999 and is located at the northeast corner of the Woodwings Road and Pecan Park Road intersection. The JAA currently leases the flex building to two air trucking freight companies: Forward Air Solutions and American Cargo Logistics. The remaining area consists of warehouse space. The flex building is approximately 60,000 square feet and has approximately 9,000 square yards for truck loading/unloading, including 21 loading docks. The 5,700-square-yard vehicular parking lot, located in front of the building, provides approximately 150 vehicle parking spaces. **Exhibit 2-39** illustrates the lease layout for this flex building.

2.14.7 JACKSONVILLE AVIATION AUTHORITY AIRPORT MAINTENANCE FACILITIES

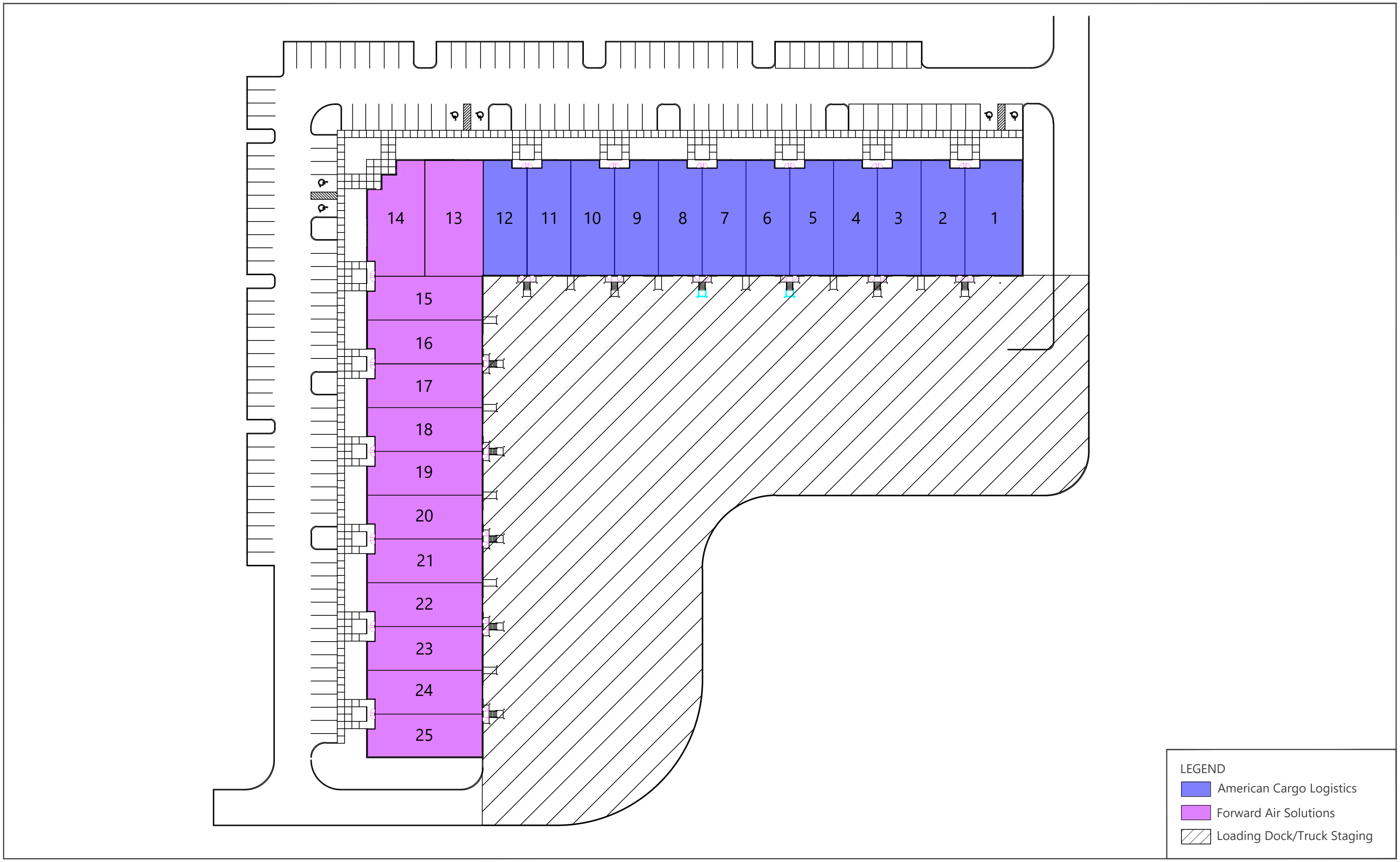
The Airport maintenance facilities are currently under construction and are located north of Air Cargo Building #1 and adjacent to Cole Flyer Road. The site encompasses approximately 3.3 acres and includes three main buildings. These buildings house maintenance and storage areas, as well as electrical, mechanical, and welding, and are approximately 67,100 square feet in total size. This newly constructed facility required the relocation of the Flight Kitchen, which is now located within Air Cargo Building #1.

2.14.8 EMBRAER HANGAR

This 35,000-square-foot hangar was formerly used by USAir as an aircraft maintenance hangar. It is currently used to accommodate charter flight passengers, such as the Jaguars football team. The hangar is used for the storage of vehicles, as well as for the processing of passengers through security screening checkpoints.

2.14.9 WATER TOWER / AIRPORT ROTATING BEACON

The water tower is located just north of Economy Lot 1 on Barnstormer Road. The Airport rotating beacon and several cell phone antennas are mounted on top of this water tower. JAA may demolish the tower in the future, which would require a new location for the rotating beacon and cell phone antennas.



SOURCE: Jacksonville Aviation Authority Records, *Flex Office and Warehouse Building*, July 2013.

EXHIBIT 2-39

FLEX-OFFICE/WAREHOUSE BUILDING

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-39_JAX_Flex-Office-Warehouse Building.dwgLayout: EXHIBIT 2-39 Plotted: Jan 30, 2020, 12:46PM

2.15 OTHER FACILITIES

2.15.1 FLORIDA AIR NATIONAL GUARD FACILITIES

As previously noted, JAX is home to the FANG 125th Fighter Wing. The FANG complex based at JAX is currently located near the approach end of Runway 14. The complex encompasses approximately 332 acres with 43 buildings. Airfield access is provided by three taxiways, two of which (Taxiways M1 and M2) are at the Runway 14 departure end. The FANG facilities include but are not limited to a maintenance hangar, engine testing facilities, munitions dump, bulk fuel supplies, an armory, and an aircraft apron. Automobile access to the FANG facilities is via FANG Drive, which is accessed from Terrell Road.

2.15.2 U.S. POSTAL SERVICE

The USPS operates an on-Airport mail facility. The building, which is located south of Runway 26, is approximately 47,300 square feet and positioned on approximately 5 acres. A 20-foot-wide service road, which runs parallel to and south of Taxiways B and H, allows for the transfer of mail between the USPS facility and the commercial service apron.

2.15.3 DOUBLETREE AIRPORT HOTEL

The DoubleTree Airport Hotel and Conference Center is located east of the hourly and daily parking garages, within the terminal complex loop roadway system. The hotel was built in 1972 and has 201 rooms. The entire hotel site encompasses approximately 3.2 acres.

2.15.4 PET PARADISE

Pet Paradise is a 14,000-square-foot facility that opened in 2005 and later expanded in 2007. The facility provides luxury boarding accommodations and services for pets. The facility is located along Pecan Park Road North, adjacent to Economy Lot 3. Pet Paradise is operated by Crane Group, which holds a ground lease with the Airport.

2.16 ENVIRONMENTAL SETTING

This section summarizes the existing environmental conditions relevant to master planning at and around the Airport. The purpose of this summary is to provide an understanding of the existing environmental conditions relevant to the identification and evaluation of projects being considered in the Master Plan Update. Potential environmental impacts associated with proposed projects under the Master Plan Update will be further discussed as part of the Environmental Overview chapter to be completed after the evaluation of the development alternatives.

2.16.1 WATER RESOURCES

2.16.1.1 WETLANDS LAND USE/COVER

The Clean Water Act (CWA) is the primary federal law governing water pollution.[3,4] The U.S. Army Corps of Engineers (USACE) is responsible for investigating, developing, and maintaining the Waters of the United States and for related environmental resources.[5] Waters under the jurisdiction of the USACE fall into two categories: wetlands and other

3 33 United States Code (U.S.C.) 1251, Clean Water Act.

4 40 Code of Federal Regulations (CFR) Parts 110, 112, 116, 117, 122, 125, 129, 130, 131, 136, 142, 149, 401, and 403.

5 U.S. Army Corps of Engineers, www.usace.army.mil/ (accessed February 26, 2016).

Waters of the United States. Section 404 of the CWA provides the USACE the authority to permit the discharge of dredged or fill material into Waters of the United States.[6] Pursuant to Sections 9 and 10 of the Rivers and Harbors Act of 1899, the USACE oversees work and the placement of structures in navigable waters.[7]

The Airport is highly developed (e.g., paved surfaces, buildings, ornamental landscaping); however, the National Wetlands Inventory Map identifies several types of wetlands on or near the Airport. These include different variations of Freshwater Forested/Shrub Wetlands and Freshwater Emergent Wetlands. **Exhibit 2-40** depicts the wetland areas on and near the Airport which total up to approximately 2,600 acres.

Wetland habitat located on-Airport property supports a number of vegetative species, including: lily (*Nymphaea ordorata)*, pickerel weed (*Pontederia cordata)*, arrowhead (*Sagittaria latifolia*), golden canna (*Canna flaccida)*, lizard tail (*Scleranthus annuus),* swamp tupelo (*Nyssa sylvatica* var. *biflora)*, cypress (*Taxodium* spp.), laurel oak (*Quercus laurifolia)*, red maple (*Acer rubrum)*, swamp bay (*Persea palustris)*, pop ash (*Fraxinus caroliniana),* loblolly bay (*Gordonia lasianthus*), sweet bay (*Magnolia virginiana*), ironwood (*Carpinus caroliniana*), sugarberry (*Celtis laevigata*), wax myrtle (*Myrica cerifera*), cinnamon fern (*Osmunda cinnamomea*), Virginia chain fern (*Woodwardia virginica*), fetterbush (*Lyonia lucida*), myrtle-leaf holly (*Ilex myrtifolia),* pond pine (*Pinus serotina*), sweetgum (*Liquidambar styraciflua*), elm (*Ulmus* spp.), maidencane (*Panicum hemitomon*), St. John's wort (*Hypericum* spp.), chain fern (*Woodwardia* spp.), bitter gallberry (*Ilex glabra*), umbrella sedges (*Cyperus* spp.), maidencane, rushes (*Juncus* spp.), and beakrushes (*Rhynchospora* spp.).

Any activity that would involve dredging and/or filling within jurisdictional wetlands would require coordination and/or potential local, state, and federal permits from Duval County, the St. Johns River Water Management District, and the USACE, respectively.

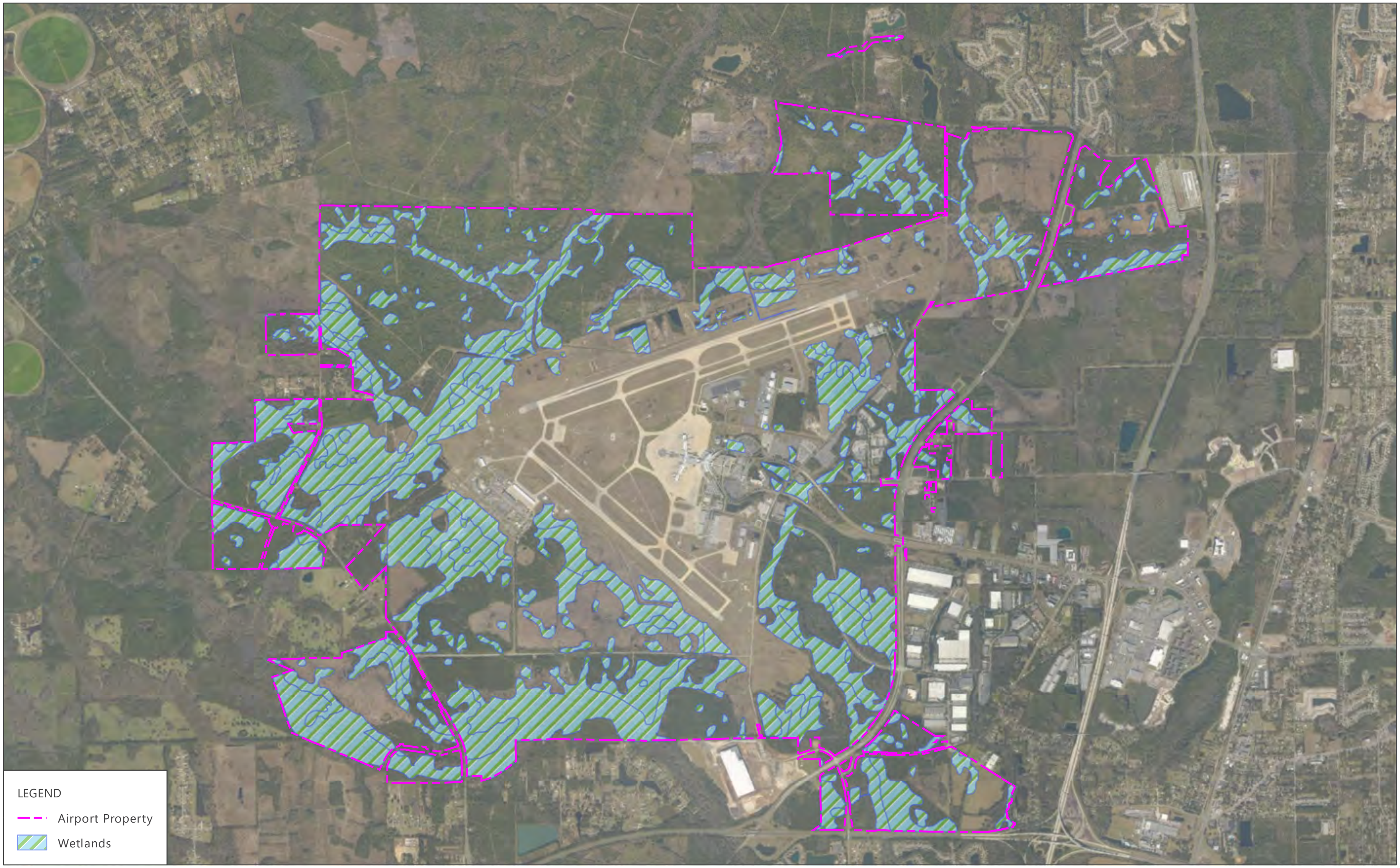
2.16.1.2 FLOODPLAINS

Executive Order No. 11988 was enacted to require avoidance, to the extent possible, of the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, as well as to avoid direct and indirect support of floodplain development wherever there is a practical alternative. The order was issued in furtherance of the National Environmental Policy Act, the National Flood Insurance Act of 1968, and the Flood Disaster Act of 1973.

Floodplains are defined as lowland and flat areas adjoining waters that are subject to a 1 percent or greater chance of flooding in any given year (i.e., a 100-year flood event). Based on digital flood mapping obtained from the Federal Emergency Management Agency, as shown on **Exhibit 2-41**, the majority of JAX lies outside the 100-year floodplain. Parts of the perimeter of the Airport property, along the eastern edge of the terminal area and airfield, lie within either Zone AE or Zone AO. Zone AE is designated for areas subject to inundation by the 1 percent annual chance flood. Zone AO is designated for areas subject to inundation by the 1 percent annual chance flood with flood depths of 1 to 3 feet. These areas could present a constraint to future Airport development. If floodplain impacts are to occur because of proposed projects at the Airport, then floodplain compensation may be required.

[6] 33 U.S.C. 1251–1387.

[7] 33 U.S.C. 401 and 403.



SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); US Fish and Wildlife Service, National Wetlands Inventory, May 2018 (wetlands); Jacksonville Aviation Authority, *Airport Layout Plan*, September 2018 (Airport property).

EXHIBIT 2-40

WETLANDS AT AND IN THE VICINITY OF THE AIRPORT

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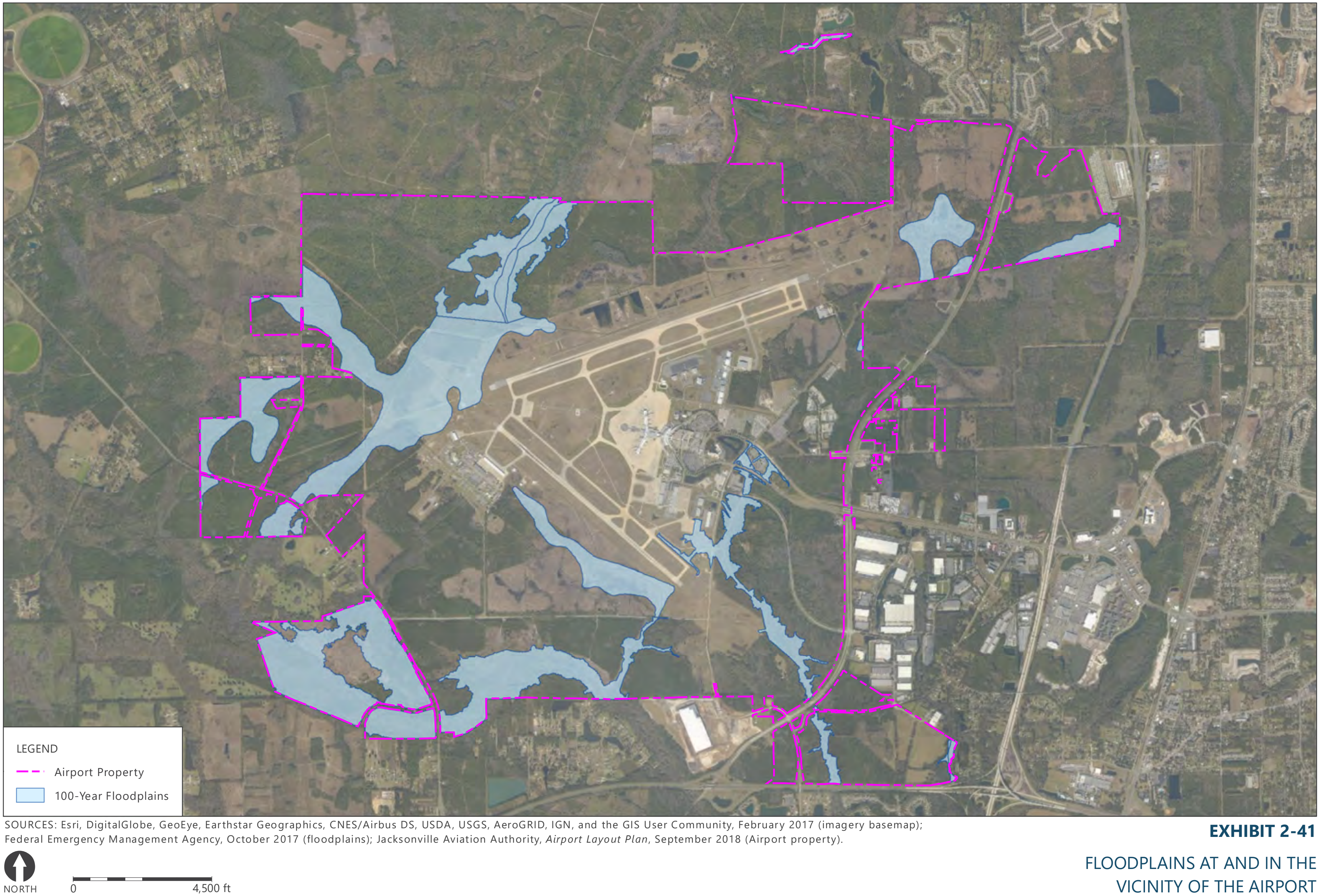

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap); Federal Emergency Management Agency, October 2017 (floodplains); Jacksonville Aviation Authority, *Airport Layout Plan*, September 2018 (Airport property).

EXHIBIT 2-41

FLOODPLAINS AT AND IN THE VICINITY OF THE AIRPORT

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2.16.2 THREATENED AND ENDANGERED SPECIES

The Florida Fish and Wildlife Commission (FWC) and the U.S. Fish and Wildlife Service (USFWS) regulate endangered and threatened species. A review of the USFWS Information for Planning and Consultation and the Florida Natural Areas Inventory databases identified threatened and endangered species that have the potential to have a presence in and around the Airport, as noted in **Table 2-24**.

TABLE 2-24 THREATENED AND ENDANGERED WILDLIFE SPECIES WITHIN AND IN THE VICINITY OF THE AIRPORT

COMMON NAME	SCIENTIFIC NAME	STATUS
West Indian Manatee	*Trichechus manatus*	Threatened
Eastern Black Rail	*Laterallus jamaicensis* ssp.	Proposed Threatened
Piping Plover	*Charadrius melodus*	Threatened
Red Knot	*Calidris canutus rufa*	Threatened
Red-Coackaded Woodpecker	*Picoides borealis*	Endangered
Wood Stork	*Mycteria Americana*	Threatened
Eastern Indigo Snake	*Drymarchon corais couperi*	Threatened
Gopher Tortoise	*Gopherus polyphemus*	Threatened
Green Sea Turtle	*Chelonia mydas*	Threatened
Hawksbill Sea Turtle	*Eretmochelys imbricate*	Endangered
Leatherback Sea Turtle	*Dermochelys coriacea*	Endangered
Loggerhead Sea Turtle	*Caretta caretta*	Threatened
Striped Newt	*Notophthalmus perstriatus*	Candidate
Frosted Flatwoods Salamander	*Ambystoma cingulatum*	Threatened

SOURCE: U.S. Fish & Wildlife Service, *Information for Planning and Consultation*, December 2018.

Historically, threatened and endangered species documented within or near the Airport have also included the American alligator (*Alligator mississippiensis*). Additionally, the most prevalent listed species documented on the Airport is the gopher tortoise, which appears to be concentrated on the northwest and southwest corners of Airport property and near the northeast AOA. Recent surveys at the Airport to determine the presence of threatened and endangered species have not been conducted by Ricondo & Associates, Inc.

At the time when previous studies were completed, gopher tortoises were listed by the State of Florida as a Species of Special Concern. Recently, this species has received increased protection from the state and is now listed as Threatened at the state level and as a candidate species under the Federal Endangered Species Act, with increasingly stringent permitting requirements including mandatory relocation. Beginning April 21, 2009, an Authorized Agent permit was mandated, allowing only Authorized Gopher Tortoise Agents to perform permitting activities related to the gopher tortoise. Pursuant to 68A-27.004 Florida Administrative Code, it is illegal to take, possess, transport, molest, harass, or sell gopher tortoises or their nests or eggs, except as authorized by a specific permit from the Executive Director of the FWC. A relocation permit is required to impact tortoise burrows, and an Authorized Gopher Tortoise Agent is required to mechanically excavate, transport, and release tortoises to a recipient site.

Although potential habitat is present to support all these commensal species, due to extensive urban development in this area, their presence is unlikely. However, care should be taken to observe for commensal species during construction activities.

2.17 LAND USE

Exhibit 2-42 presents a generalized land-use map for the area that surrounds the Airport. As shown, most of the land surrounding JAX is used for agricultural purposes. The area located along the western edge of the Airport property is mainly made of parcels devoted to agriculture, but it also includes two pockets of rural residential areas located northwest and southwest of the Airport. The rural residential area located northwest of the Airport encompasses approximately 915 acres located along Lannie Road, between Lem Turner Road to the west and Ethel Road to the east. The rural residential located southwest of the existing Airport property encompasses approximately 145 acres. This area is located northwest of the I-295 and Lem Turner Road intersection, on the west side of Lem Turner Road.

Land-use categories included along the southern edge of the Airport property and north of I-295 include low density residential (between Lem Turner Road to the west and Sampson Road to the east) and light industrial use, just north of the intersection between I-295 and Duval Road. Commercial and industrial developments comprise the majority of the area located on the east side of the Airport property, but small conservation areas also exist.

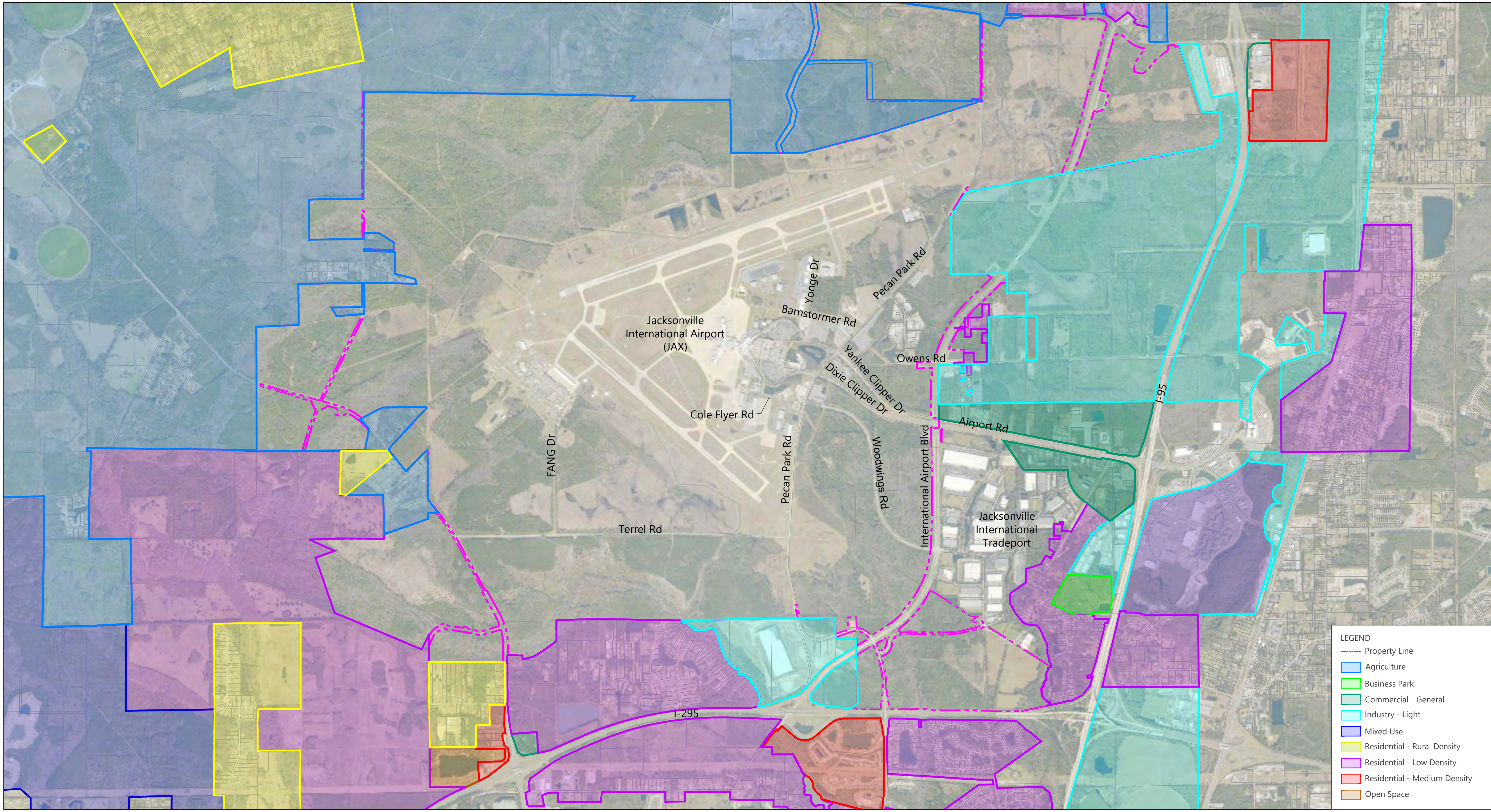
The area located along the northern edge of the Airport property is devoted to agricultural purposes, except for the area located northwest of the Pecan Park Road North and I-95 intersection. This area includes a mix of residential, commercial, and business park uses.

2.18 CITY OF JACKSONVILLE LAND USE AND ZONING CODE

In 2007, the City of Jacksonville (COJ) adopted a new Part 10 of the COJ Land Use and Zoning Code (regulations related to airports and lands adjacent thereto). The Code recognizes Airport Environs Zones, which include all property within a Height and Hazard Zone, Noise Zone, Notice Zone, School Regulation Zone, Miscellaneous Use Zone, Runway Safety Area, and Runway Protection Zone.

The Height and Hazard Zone is based on the limits defined in FAR Part 77, *Objects Affecting Navigable Airspace*. The Airport Notice Zone includes all parcels of land within the 60.0 to 64.99 day-night average sound level (DNL) contour. Airport Noise Zone B includes all parcels of land within the 65.0 to 69.99 DNL contour, and Noise Zone A includes all parcels of land within the 70 or greater DNL contour. The Airport Notice Zone and the Airport Noise Zone require all property owners within the zones to execute an Airport Notice Zone Acknowledgment. All development except for entertainment facilities, amphitheater, music shell, and similar uses are allowed in the Notice Zone. Residential development is allowed in Noise Zone B conditioned on an average minimum noise level reduction of an average minimum 30 A-weighted decibels (dBA) throughout the dwelling, and no residential development is allowed in Noise Zone A, unless it was an approved Planned Unit Development or site plan prior to March 23, 2007. All zones are published on the COJ website at www.coj.net under Land Use Maps with the Notice Zone, Noise Zone, and Height and Hazard Zone features selected. This allows every landowner or potential owner to see the potential impacts to an individual parcel of land.[8]

[8] Ricondo and Associates, Inc., *Jacksonville International Airport Master Plan*, December 2009.



SOURCE: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (imagery basemap).

NORTH 0 3,000 ft

EXHIBIT 2-42

LAND USE MAP

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\3.1 - Inventory & Data Collection - Ricondo\CAD\Exhibit 2-42_JAX_Surrounding Airport Land Use.dwgLayout: EXHIBIT 2-41 Plotted: Jan 30, 2020, 12:54PM

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3. AVIATION ACTIVITY FORECASTS

This document presents historical trends in aviation activity at Jacksonville International Airport (the Airport or JAX) and summarizes forecasts of aviation activity through 2038, the end of the planning period for JAX's Master Plan Update. Forecasts were developed for enplaned passengers, as well as for passenger and cargo aircraft operations. Other air taxi, general aviation, and military aircraft operations were not separately analyzed, and forecasts for these categories have been sourced from the Federal Aviation Administration's (FAA) *2018 Terminal Area Forecast (*TAF). Projections were developed for the aircraft fleet mix serving the Airport. The forecasts and projections provide the basis for determining facility requirements for the Master Plan Update. These forecasts are not constrained by any assumptions regarding the availability of Airport facilities, such as aircraft gates, that may be needed to accommodate demand.

Activity forecasts were prepared in January 2019, using calendar year 2018 as the base year. Published airline schedules for March 2019 provide the basis for presenting the airlines currently serving the Airport and the destinations served from the Airport, as well as other attributes of air service.

The assumptions and historical data underlying the activity forecasts summarized in this document are organized as follows:

- Historical aviation activity
- Factors affecting aviation activity at the airport
- Enplaned passenger and passenger airline operations forecasts
- Comparison of activity forecasts

3.1 CURRENT AND HISTORICAL AVIATION ACTIVITY

3.1.1 CURRENT AIR SERVICE

As of March 2019, nine scheduled passenger airlines operate at the Airport. As listed in **Table 3-1**, in addition to the nine mainline airlines, nine regional airlines provide service as affiliates at the Airport. **Table 3-2** presents the Airport's scheduled passenger air carrier base[1] since 2009. Specific points concerning the scheduled passenger air carrier base at the Airport include the following:

- The Airport has had the benefit of a relatively stable scheduled passenger air carrier base; American, Delta, JetBlue, United, and Southwest Airlines have operated at the Airport throughout this period.
- Since 2015, three new carriers (Allegiant, Frontier, and Spirit) have started service at the Airport.
- Silver Airways began service at the Airport in 2013, but discontinued service in October 2018.

In March 2019, there were approximately 101 daily departures and 12,600 departing seats scheduled from the Airport. The airlines operating from the Airport offer scheduled nonstop service to 30 domestic destinations and one international destination[2]. These destinations are presented on **Exhibit 3-1**.

[1] Includes airlines previously acquired or merged, where applicable.

[2] Air Canada will discontinue service in April 2019.

TABLE 3-1 CURRENT AIRLINES SERVING THE AIRPORT

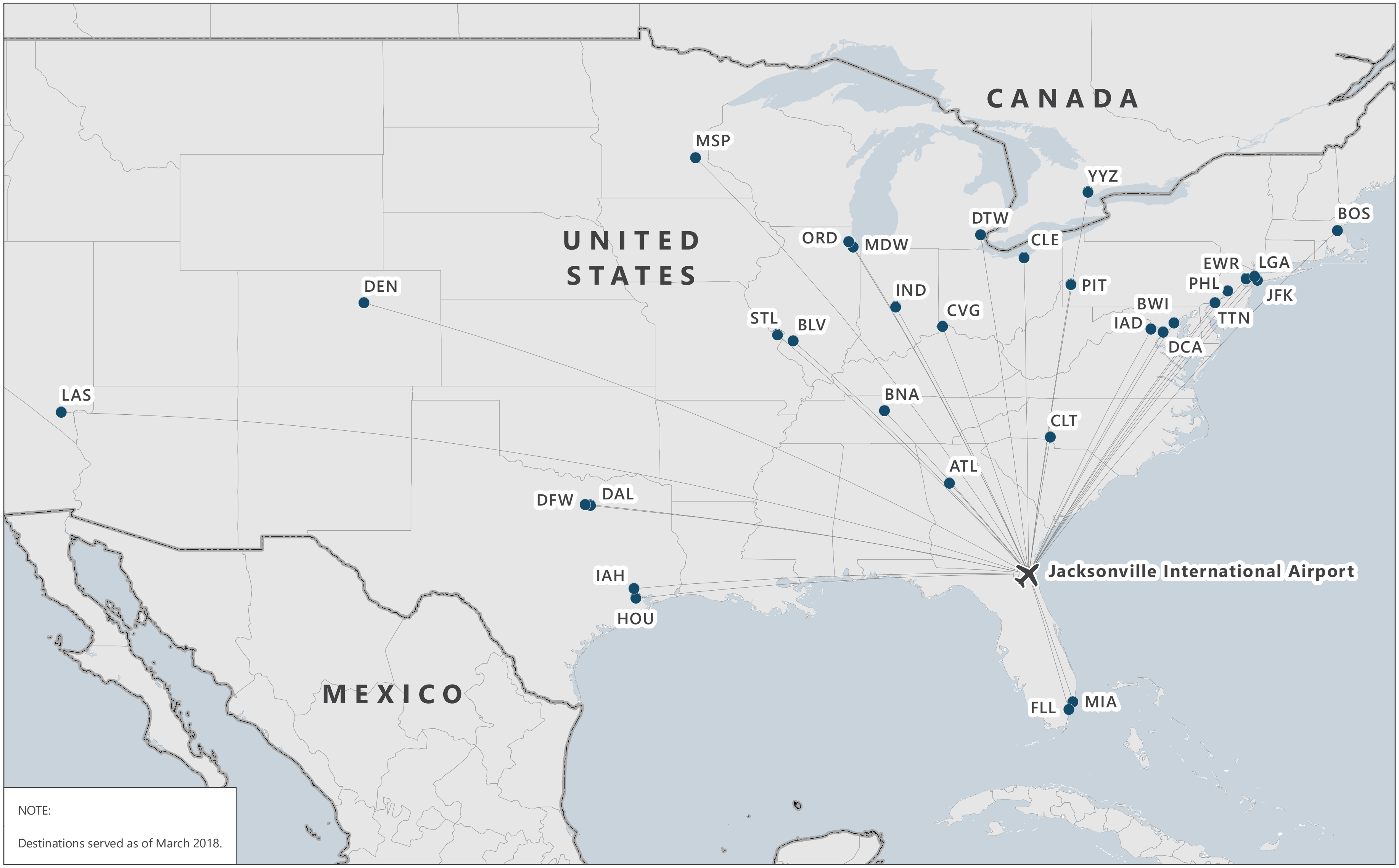
MAINLINE AIRLINES (9)	REGIONAL AIRLINES (9)
Air Canada[1]	CommutAir (United)
Allegiant Air	Endeavor (Delta)
American	Envoy (American)
Delta	ExpressJet (United)
Frontier	GoJet (United)
JetBlue	Mesa (American, United)
Southwest	PSA (American, Delta)
Spirit	Republic (American, Delta, United)
United	SkyWest (Alaska, American, Delta, United)

NOTE:
1 Air Canada is scheduled to discontinue service in April 2019.
SOURCE: Innovata, March 2019

TABLE 3-2 HISTORICAL AIR CARRIER BASE

AIRLINE[1]	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
American (and merged carriers)	●	●	●	●	●	●	●	●	●	●
Delta (and affiliates)	●	●	●	●	●	●	●	●	●	●
JetBlue	●	●	●	●	●	●	●	●	●	●
Southwest (and merged carriers)	●	●	●	●	●	●	●	●	●	●
United (and merged carriers)	●	●	●	●	●	●	●	●	●	●
Allegiant							●	●	●	●
Air Canada[2]								●	●	●
Frontier										●
Spirit										●
Airlines No Longer Serving the Airport										
Silver[3]					●	●	●	●	●	●

NOTES:
1 Where applicable, includes affiliated, regional, and merged carriers.
2 Air Canada is scheduled to discontinue service in April 2019.
3 Silver discontinued service at the Airport in Q4 2018.
SOURCE: Innovata, March 2019.



SOURCES: Innovata, Diio Mi Schedule Dynamic Table Report, February 2019 (destination data); OpenFlights.org, February 2019 (routes); Esri 2010 Data, 2010 (regions).

EXHIBIT 3-1

NORTH 0 350 mi

NONSTOP DESTINATIONS

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3.1.2 PASSENGER ACTIVITY

The FAA classifies JAX as a medium hub airport, accounting for between 0.25 and 1.00 percent of the total nationwide enplaned passengers. **Table 3-3** presents enplaned passenger activity statistics for JAX and the United States overall since 2009. In 2018, approximately 3.2 million passengers were enplaned at JAX, representing 0.37 percent of total enplanements nationwide. Since 2009, passenger activity at JAX has experienced periods of both decline and growth:

TABLE 3-3 HISTORICAL ENPLANED PASSENGERS

CALENDAR YEAR	AIRPORT ENPLANED PASSENGERS	AIRPORT GROWTH	U.S. TOTAL ENPLANEMENTS[1]	U.S. GROWTH	MARKET SHARE
2009	2,781,983	(7.2%)	710,488,751	(4.8%)	0.39%
2010	2,814,734	1.2%	726,144,188	2.2%	0.39%
2011	2,753,413	(2.2%)	739,170,855	1.8%	0.37%
2012	2,594,472	(5.5%)	743,949,432	0.6%	0.35%
2013	2,566,058	(1.4%)	750,735,667	0.9%	0.34%
2014	2,621,650	2.4%	771,670,792	2.8%	0.34%
2015	2,763,518	5.4%	809,039,675	4.8%	0.34%
2016	2,799,363	1.3%	837,865,649	3.6%	0.33%
2017	2,788,885	(0.4%)	865,418,742	3.3%	0.32%
2018	3,234,188	16.0%	883,269,437	2.1%	0.37%
Compound Annual Growth Rate					
2009 - 2018	1.7%		2.4%		

NOTE:
1 2018 United States enplaned passengers are for the four-quarter period ending Q2 2018, the latest period for which data are available.
SOURCES: Jacksonville Aviation Authority, January 2019; U.S. Department of Transportation T-100, 2008 – 2018 passenger data, January 2019.

- 2009-2010: Enplaned passenger volumes declined 7.2 percent in 2009. Seat capacity at the Airport was reduced as airlines responded to the economic recession and lower demand. Every airline serving the airport reduced capacity in 2009. In particular, American reduced capacity 13.9 percent by eliminating service to Raleigh-Durham International (RDU) and reducing the number of seats to its hub airports, while ExpressJet discontinued operations under its independent brand in August 2008. In 2010, enplaned passengers grew 1.2 percent as American and Delta, the two largest carriers serving the Airport at that time, both reintroduced some capacity that had been removed the prior year.
- 2011-2012: Enplaned passenger volumes declined 2.2 percent in 2011 and another 5.5 percent in 2012. In 2011, United reduced its capacity 15.7 percent by removing some flights to its hubs at Newark Liberty International Airport (EWR), Dulles International Airport (IAD), Chicago O'Hare International Airport (ORD), and George Bush Intercontinental Airport (IAH). Southwest, at the time the largest airline operating at the Airport, reduced capacity 1.3 percent in 2011, and 12.7 percent in 2012 as the airline continued to integrate AirTran's network and reduce service to markets historically served by AirTran.
- 2013: Enplaned passenger volumes declined again in 2013, by 1.4 percent. While Silver Airways began service in 2013, Southwest and United both continued reducing service at the Airport. Southwest eliminated service to Philadelphia International Airport (PHL) and Tampa International Airport (TPA), and reduced service to Birmingham-Shuttlesworth International Airport (BHM), McCarran International Airport (LAS), and Norfolk

International Airport (ORF). American and JetBlue both increased capacity in 2013, adding flights to Miami International Airport (MIA) and San Juan-Luis Muñoz Marín International Airport (SJU), respectively.

- 2014-2015: Enplaned passenger activity stabilized in 2014 and 2015, growing 2.4 percent in 2014 and 5.4 percent in 2015. Southwest continued reducing capacity to former AirTran markets in 2014, but this was offset by capacity increases from Delta and JetBlue. Delta added service to Boston Logan International Airport (BOS), and both Delta and JetBlue significantly increased capacity to John F. Kennedy International Airport (JFK). Despite discontinuing SJU service in 2015, JetBlue added over 100,000 departing seats by adding new nonstop flights to Ft. Lauderdale (FLL) and Reagan Washington National Airport (DCA). Allegiant also initiated service at JAX in 2015 with service to Cincinnati/Northern Kentucky International Airport (CVG), and Pittsburgh International Airport (PIT).
- 2016-2017: Enplaned passenger growth continued into 2016, growing 1.3 percent. Allegiant nearly tripled its capacity, adding an additional seven markets from JAX. Southwest's capacity reductions at the Airport ended, and United increased capacity by adding routes to EWR and IAH. In 2017, enplaned passengers declined 0.4 percent, driven in part by American, which reduced capacity 5.1 percent, primarily as a result of discontinuing service to LaGuardia Airport (LGA). This decline was partially offset by United increasing to its IAH and ORD hubs. Hurricane Irma, which struck Florida in September 2017, also contributed to the decline.
- 2018: Enplaned passenger volume grew 16.0 percent in 2018. Frontier initiated service at the Airport in February 2018, and over the course of the year operated approximately 180,000 seats to thirteen destinations. Delta increased capacity to five of the six destinations served from JAX, including BOS, which operated year-round in 2018. United increased seat capacity nearly 30 percent, adding seats to every destination the carrier served from the Airport, and initiating service to Denver International Airport (DEN). Southwest resumed growth at the Airport, increasing capacity 18.6 percent by adding nonstop service to FLL. In addition, Spirit began service from JAX to Detroit Metropolitan Wayne Country International Airport (DTW) and ORD in December 2018.

Table 3-4 presents the historical share of enplaned passengers by airline over the past five years. Delta has enplaned the most passengers at the Airport during this period, but that share has steadily declined from 30.3 percent in 2014 to 26.4 percent in 2018. The five largest carriers have remained the same since 2014. Ultra low-cost carriers (ULCCs) Allegiant, Frontier, and Spirit—have been among the fastest growing airlines at the Airport during this period. Combined, ULCC carriers have grown from 0.9 percent of total enplaned passengers in 2015 to 7.3 percent in 2018.

The Airport primarily serves origin and destination (O&D) passengers, which are passengers beginning or ending their journeys at the Airport. As shown in **Table 3-5,** O&D passengers as a percentage of total passengers grew from a ten-year low of 95 percent in 2011 to 98 percent in 2016 where it has remained at that level since. Historically, connecting passengers at their Airport were typically carried by Southwest and Silver, the latter of which had interline agreements with several larger airlines.

An important airport characteristic is the schedule of nonstop airline service to the airport's largest markets, which is a function of air travel demand and airline profitability or supportability. **Table 3-6** presents historical data on the Airport's top 20 domestic O&D markets during the four quarters ending Q3 2018 (the latest period available for these data), as measured by total O&D passengers. Airlines provided nonstop service (year-round or seasonal) to 17 of the 20 largest markets. Combined, the top 20 markets accounted for more than two thirds of all O&D passengers, while the five largest markets (New York, Washington, D.C., Boston, Atlanta, and Chicago) accounted for more than 34 percent of O&D passengers.

TABLE 3-4 HISTORICAL ENPLANED PASSENGERS BY AIRLINE

CARRIER[1]	2014		2015		2016		2017		2018	
	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE	ENPLANED PASSENGERS	SHARE
Delta	794,071	30.3%	814,592	29.5%	826,234	29.5%	816,283	29.3%	846,520	26.4%
American	729,441	27.8%	767,593	27.8%	751,953	26.9%	715,673	25.7%	738,610	22.8%
Southwest	651,868	24.9%	562,212	20.3%	540,333	19.3%	546,426	19.6%	646,493	19.9%
JetBlue	212,821	8.1%	318,596	11.5%	344,312	12.3%	343,521	12.3%	376,191	11.6%
United	202,765	7.7%	226,896	8.2%	234,945	8.4%	266,173	9.5%	357,313	11.0%
Frontier	0	0.0%	0	0.0%	0	0.0%	0	0.0%	151,128	4.7%
Allegiant	0	0.0%	24,103	0.9%	70,115	2.5%	67,564	2.4%	82,519	2.5%
Silver	30,683	1.2%	49,526	1.8%	27,263	1.0%	23,142	0.8%	17,389	0.5%
Air Canada	0	0.0%	0	0.0%	4,209	0.2%	10,102	0.4%	14,374	0.4%
Spirit	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3,650	0.1%
Airport Total	**2,621,650**	**100.0%**	**2,763,518**	**100.0%**	**2,799,363**	**100.0%**	**2,788,885**	**100.0%**	**3,234,188**	**100.0%**

NOTE:
1 Top 10 carriers by enplaned passengers as of 2018, percentages based on U.S. Department of Transportation data.
SOURCES: Jacksonville Aviation Authority, December 2018; U.S. Department of Transportation T-100 (February 2019).

TABLE 3-5 HISTORICAL O&D AND CONNECTING ENPLANED PASSENGERS

CALENDAR YEAR	O&D ENPLANED PASSENGERS	CONNECTING ENPLANED PASSENGERS	TOTAL ENPLANED PASSENGERS	GROWTH	PERCENTAGE O&D	PERCENTAGE CONNECTING
2009	2,715,499	66,484	2,781,983		98%	2%
2010	2,691,612	123,122	2,814,734	1.2%	96%	4%
2011	2,628,994	124,419	2,753,413	(2.2%)	95%	5%
2012	2,495,419	99,053	2,594,472	(5.5%)	96%	4%
2013	2,479,708	86,350	2,566,058	(1.4%)	97%	3%
2014	2,548,891	72,759	2,621,650	2.4%	97%	3%
2015	2,680,928	82,590	2,763,518	5.4%	97%	3%
2016	2,738,645	60,718	2,799,363	1.3%	98%	2%
2017	2,723,410	65,475	2,788,885	(0.4%)	98%	2%
2018	3,158,992	75,196	3,234,188	16.0%	98%	2%
Compound Annual Growth Rate						
2009-2018	1.7%	1.4%	1.7%			

NOTE: O&D - Origin and Destination, 2018 values estimated based on the four quarters ending Q3 2018.
SOURCE: U.S. Department of Transportation DB1b Survey, February 2019.

TABLE 3-6 TOP 20 JAX DOMESTIC O&D MARKETS (FOUR QUARTERS ENDING Q3 2018)

RANK	MARKET	TOTAL DAILY O&D PASSENGERS (BOTH WAYS)	PERCENTAGE OF TOTAL	AVERAGE FARE	NONSTOP SERVICE
1	New York City[1]	827	11.2%	$151	●
2	Washington, D.C.[2]	645	8.7%	$143	●
3	Boston[3]	390	5.3%	$144	●
4	Atlanta	336	4.5%	$148	●
5	Chicago[4]	334	4.5%	$179	●
6	South Florida[5]	305	4.1%	$112	●
7	Philadelphia	270	3.6%	$154	●
8	Dallas[6]	243	3.3%	$217	●
9	Denver	216	2.9%	$161	●
10	Nashville	204	2.8%	$131	●
11	Los Angeles[7]	177	2.4%	$260	
12	Houston[8]	151	2.0%	$215	●
13	Las Vegas	132	1.8%	$188	●
14	San Francisco[9]	123	1.7%	$253	
15	Cincinnati	117	1.6%	$88	●
16	Minneapolis/St. Paul	117	1.6%	$196	●
17	Pittsburgh	108	1.5%	$120	●
18	Detroit	107	1.4%	$200	●
19	Indianapolis	99	1.3%	$120	●
20	Seattle	96	1.3%	$248	
Total Top 20 Airports		**4,996**	**67.6%**		
Other O&D Markets		**2,395**	**32.4%**		
Total O&D Passengers		**7,391**		**$176**	

NOTES: Nonstop service as of March 2019, passenger volumes and average fares are as of Q3 2018.
1 Includes John F. Kennedy (JFK), LaGuardia (LGA), and Newark, NJ (EWR).
2 Includes Washington Reagan National (DCA) and Washington Dulles (IAD).
3 Includes Logan International Airport (BOS) and T.F. Green Airport (PVD).
4 Includes Chicago Midway (MDW) and Chicago O'Hare (ORD).
5 Includes Fort Lauderdale (FLL), Miami (MIA), and West Palm Beach (PBI).
6 Includes Dallas Love Field (DAL) and Dallas/Fort Worth (DFW).
7 Includes Los Angeles (LAX), Orange County (SNA), Ontario (ONT), Burbank (BUR), and Long Beach (LGB).
8 Includes Houston Hobby (HOU) and Houston Bush Intercontinental (IAH).
9 Includes San Francisco (SFO), San Jose (SJC), and Oakland (OAK).
SOURCES: U.S. Department of Transportation DB1b Survey, March 2019; Innovata, March 2019.

3.1.3 AIRCRAFT OPERATIONS

Table 3-7 depicts historical aircraft operations for passenger airlines, cargo airlines, general aviation/other air taxi, and military activity at JAX. A separate analysis of general aviation and military activity was not included in this Master Plan Update. Forecasts of operations for these activity types will be sourced from the FAA Terminal Area Forecast (TAF).

TABLE 3-7 HISTORICAL AIRCRAFT OPERATIONS

CALENDAR YEAR	PASSENGER AIRLINE	CARGO AIRLINE	GENERAL AVIATION	MILITARY	TOTAL
2014	61,670	2,298	18,411	7,523	89,902
2015	62,386	2,322	18,939	9,462	93,109
2016	61,700	2,404	22,087	17,597	103,788
2017	59,298	2,466	22,635	9,349	93,748
2018	67,402	2,573	23,299	9,075	102,349
Compound Annual Growth Rate					
2014-2018	1.8%	2.3%	4.8%	3.8%	2.6%

SOURCES: Jacksonville Aviation Authority, January 2019; U.S. Department of Transportation T-100, January 2019; Federal Aviation Administration, Operations Network (OPSNET), January 2019.

- Passenger Airline: Passenger airline operations have grown at a 1.8 percent compound annual growth rate (CAGR) since 2014. Passenger airline operations grew to 67,402 in 2018 after declining each year from 2015 through 2017. Increased activity in 2018 is due to new flights added by airlines as they have increased capacity at the Airport as discussed in Section 3.1.2. In addition to adding new flights, airlines have also increased the average size of aircraft operating at JAX over the period shown.
- Cargo Airlines: Cargo airline operations have grown at a CAGR of 2.3 percent since 2014. Growth of cargo aircraft operations in recent years, from 12,886 in 2014 to 13,477 in 2018 has been due to increased activity by FedEx and UPS. Increased e-commerce activity throughout the industry, combined with the construction of two new Amazon distribution centers located near the Airport, have contributed to this growth as well.
- General Aviation: General aviation and other air taxi operations have grown from 18,411 in 2014 to 23,299 in 2018, a 4.8 percent CAGR. Jacksonville is also served by Jacksonville Executive Airport at Craig (CRG), which handles the majority of general aviation aircraft operations in the Jacksonville Area. In 2018, over 140,000 general aviation aircraft operations were conducted at CRG.
- Military: Military activity grew at a 3.8 percent CAGR from 2014 to 2018. Military activity peaked at 17,597 operations in 2016, nearly double the number of operations conducted in any other year since 2014. The Airport is located near three major military installations (Naval Air Station Jacksonville, Naval Station Mayport, and Naval Submarine Base King's Bay). Military activity tends to vary from year to year, and the proximity of JAX to these installations supports increased levels of military activity.

3.2 FACTORS AFFECTING AVIATION DEMAND

This section discusses qualitative factors that may influence future aviation activity at the Airport. These factors were considered, either directly or indirectly, in developing the aviation activity forecasts for the Airport.

3.2.1 NATIONAL ECONOMY

Historically, trends in airline travel have been closely correlated with national economic trends, most notably changes in U.S. Gross Domestic Product (GDP). Section 3.3 provides an overview of the general economic trends, both national and local, that may influence air service demand. National GDP is expected to increase 1.7 percent annually through the forecast period, which will support growth of air service demand. Actual economic activity may differ from this projection, especially on a year-to-year basis, and demand for air service may be impacted by economic fluctuations.

3.2.2 STATE OF THE AIRLINE INDUSTRY

Following the September 11, 2001 terrorist attacks, the U.S. airline industry experienced a material, adverse shift in airline travel demand. This exacerbated challenges the U.S. airline industry was already facing, including a slowing economy and rising labor and fuel costs. The result was four years of reported industry operating losses from 2001 through 2004, totaling more than $22 billion (excluding extraordinary charges and gains). The airline industry recovered from 2005-2007, with U.S. airlines posting combined operating profits in all three years.[3] In 2008 and through the first half of 2009, however, the combination of record-high fuel prices, weakening economic conditions, and a weak dollar created the worst financial environment for U.S. airlines since the September 11 terrorist attacks.

In 2008, many domestic network airlines announced significant capacity reductions, increased fuel surcharges, airfares and fees, and other measures to address these economic challenges. Capacity cuts improved conditions for the airlines, even though the recovery was uneven across different regions. After a $4.6 billion loss in 2009, the global airline industry recovered and has produced annual net profits in each subsequent year. Globally, passenger traffic increased 5.5 percent from 2013 to 2014. After a nearly $19.9 billion net profit for the global airline industry in 2014, the industry recorded $35.3 billion in profits in 2015. Net profits for all North American airlines reached $13.2 billion in 2015, an increase from $11.9 billion in 2014. Declining fuel prices since 2015 have enabled greater capacity growth and sustained profitability. North American airlines increased capacity 4.6 percent in 2016, and another 3.9 percent in 2017. In 2017, all North American airlines' combined net profit reached $15.6 billion, and is projected by the International Air Transport Association to grow to $16.4 billion in 2018.[4]

3.2.3 COST OF AVIATION FUEL

Fuel costs are one of the most significant and volatile factors affecting the airline industry. As of the third quarter of 2018, jet fuel accounted for 20.9 percent of total airline operating costs, second only to labor, according to Airlines for America.[5] In January 2019, the average price of jet fuel was $1.91 per gallon, still well below previously sustained high prices in 2014. **Exhibit 3-2** shows the monthly averages for jet fuel and crude oil prices from January 2009 through January 2019. If jet fuel prices continue to increase over time, passenger volumes may be impacted as airlines could reduce capacity and raise fares to offset higher costs.

3.2.4 THREAT OF TERRORISM AND GEOPOLITICAL ISSUES

The threat of international and domestic terrorism against aviation targets is a significant variable affecting airport activity forecasts. Additional security measures since 2001 have restored public confidence in the integrity of U.S. and international aviation security. However, aviation-related terrorist incidents could have an immediate and significant effect on future demand for aviation services.

3.2.5 OTHER AIRPORTS IN THE REGION

JAX is the primary airport serving the Jacksonville-Palatka-St. Mary's combined statistical area (CSA). Passengers in and around this region have the choice of multiple airports. Four airports with year-round commercial air service are located within a two-hour drivetime of JAX, Brunswick Golden Isles Airport (BQK), Daytona Beach International Airport (DAB), Gainesville Regional Airport (GNV), and Savannah/Hilton Head International Airport (SAV). These airports are shown in **Exhibit 3-3.** Key metrics of air service at each airport are presented in **Table 3-8**.

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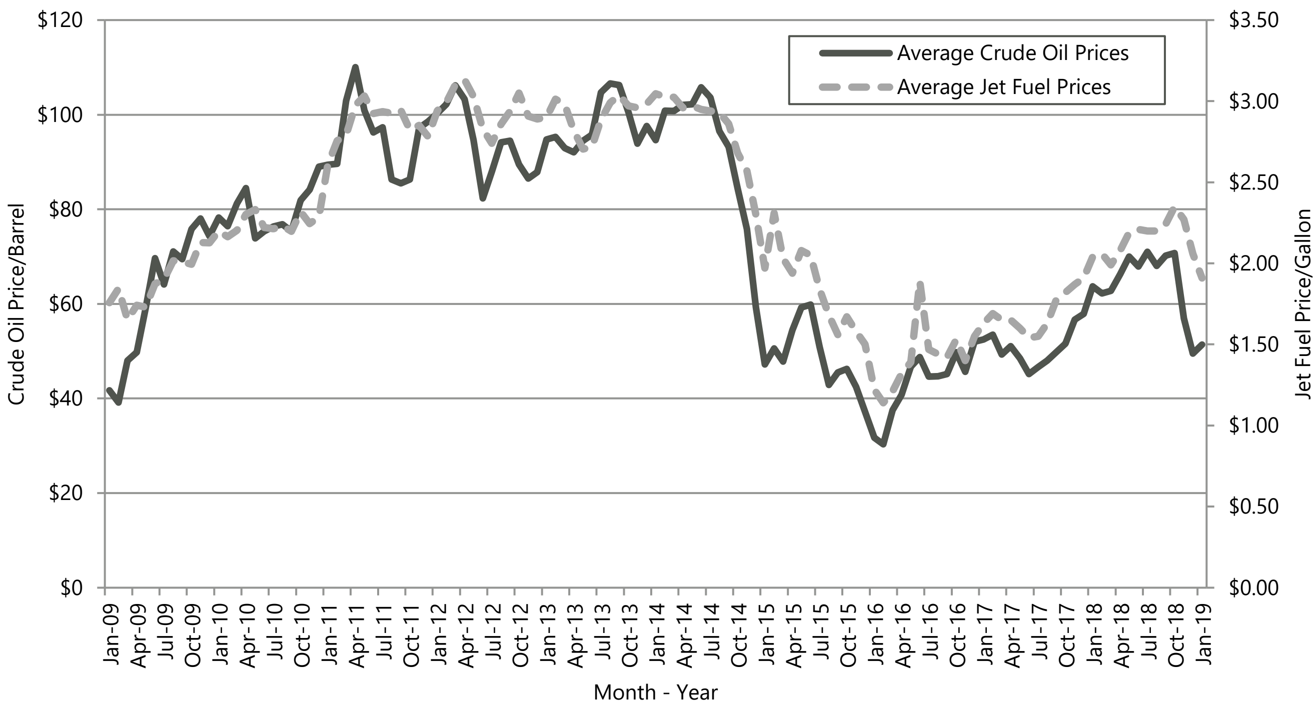
3 Source: Airlines for America, 2009 Economic Report.

4 Source: International Air Transport Association, Airline Industry Economic Performance, December 2017.

5 Source: Airlines for America, Passenger Airline Cost Index (accessed December 2018).

EXHIBIT 3-2 HISTORICAL MONTHLY AVERAGES OF JET FUEL AND CRUDE OIL PRICES



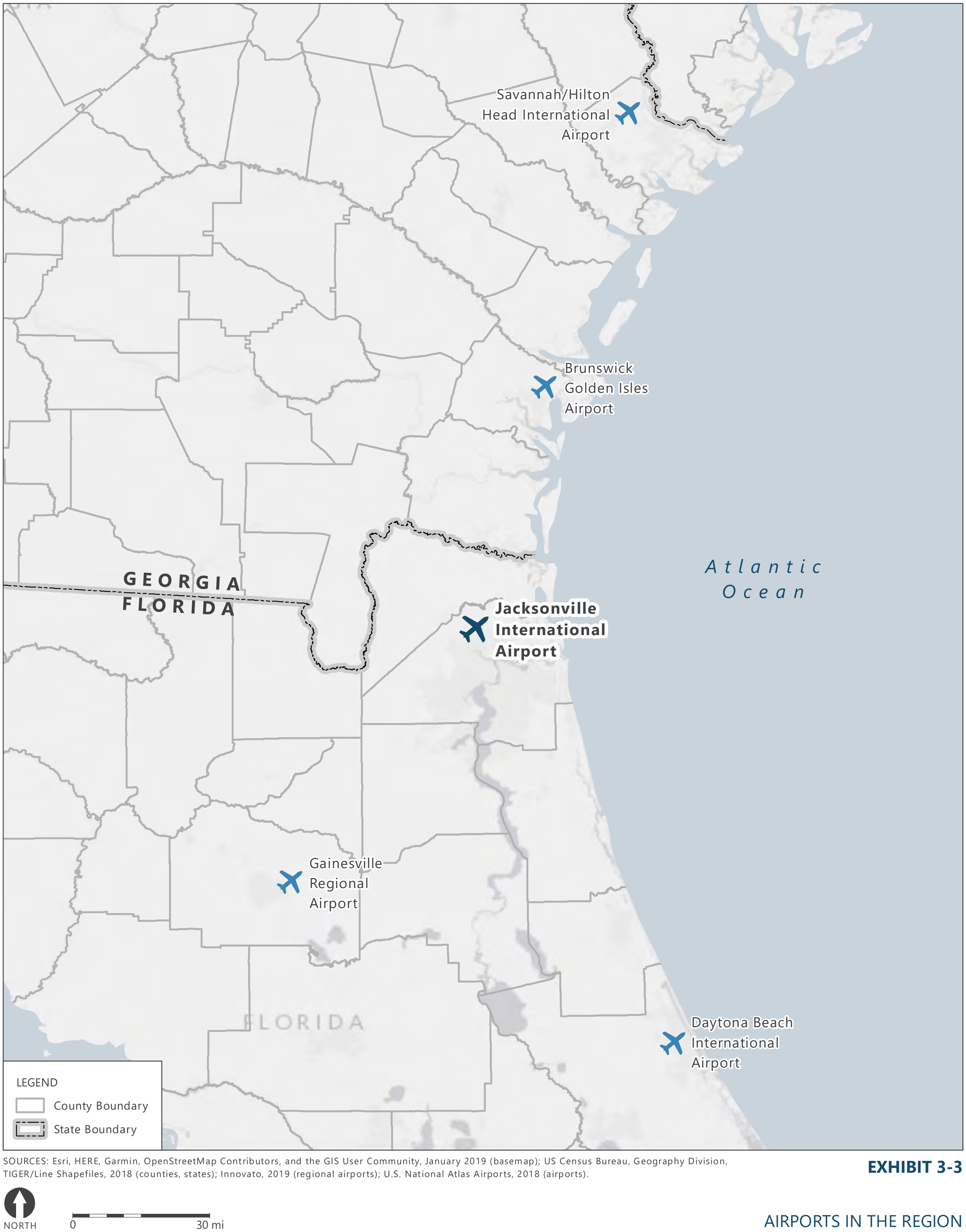
SOURCES: U.S. Bureau of Transportation Statistics, February 2019; U.S. Energy Information Administration, February 2019.

TABLE 3-8 SCHEDULED SERVICE AND AVERAGE FARES AT JAX AND OTHER AIRPORTS IN THE REGION

AIRPORT	DISTANCE FROM JAX	NUMBER OF CARRIERS OPERATING	NUMBER OF NONSTOP DESTINATIONS	AVG. DAILY DEPARTING FLIGHTS	AVG. DAILY DEPARTING SEATS	AVG. DOMESTIC O&D FARE
BQK	54 mi	1	1	3	150	$242
DAB	98 mi	5	6	10	1,144	$176
GNV	66 mi	2	4	13	817	$224
JAX	**N/A**	**9**	**42**	**97**	**11,595**	**$176**
SAV	116 mi	8	32	51	5,057	$178

NOTE: Scheduled activity metrics are for the four quarters ending Q2 2019. Average domestic O&D fare is for the four quarters ending Q3 2018, the latest data available.

SOURCES: Innovata, February 2019; U.S. Department of Transportation DB1b Survey, February 2019.



SOURCES: Esri, HERE, Garmin, OpenStreetMap Contributors, and the GIS User Community, January 2019 (basemap); US Census Bureau, Geography Division, TIGER/Line Shapefiles, 2018 (counties, states); Innovato, 2019 (regional airports); U.S. National Atlas Airports, 2018 (airports).

EXHIBIT 3-3

AIRPORTS IN THE REGION

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- Brunswick Golden Isles Airport (BQK) is located 54 miles north of JAX and is currently served by Delta, which offers approximately three daily flights to its hub at Hartsfield-Jackson Atlanta International Airport (ATL), operated by 50-seat regional jet aircraft. The average domestic O&D airfare from BQK is $242.
- Daytona Beach International Airport (DAB) is located 98 miles south of JAX and is currently served by five airlines which operate year-round service to two destinations, and seasonal service to four destinations, including one international destination, Pearson International Airport (YYZ) in Toronto, Canada. The average domestic airfare from DAB is $176.
- Gainesville Regional Airport (GNV) is located 66 miles southwest of JAX and is currently served by two airlines, American and Delta. American currently operates service to its hubs at Charlotte Douglas International Airport (CLT) and MIA. American is scheduled to begin service to DFW in March 2019. Delta currently operates approximately six daily flights to its hub at ATL. The average domestic airfare at GNV is $224.
- Savannah/Hilton Head International Airport (SAV) is located 116 miles north of JAX and is currently served by eight airlines. These airlines operate an average of 51 daily departures to 32 destinations in the United States and Canada. Of the eight airlines operating at SAV, all but one (Sun County) also operates at JAX. Of the 32 destinations served by SAV, 25 are also served nonstop from JAX. The average domestic airfare at SAV is $178.

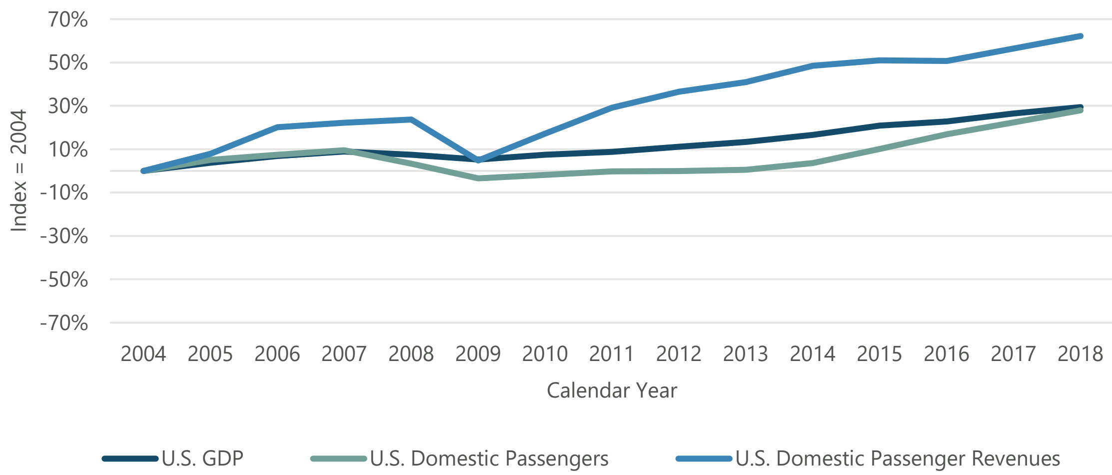
Three of these four airports, BQK, DAB, and GNV, offer limited air service to other airline hubs. Average domestic air fares are higher than JAX at BQK and GNV, while average airfares at DAB are the same as JAX. Given the limited breadth of service offered from these airports and the higher average airfares, it is unlikely passengers in the Jacksonville areas traveling from these airports rather than JAX. Many of the airlines serving SAV also serve JAX, and 25 of the 32 destinations served from SAV are also served from JAX. While airfares are similar at SAV and JAX, the straight-line distance separating them is 116 miles. Because of this distance and the relatively similar air service profiles between the two airports, it is unlikely that passengers are leaking from the Jacksonville area to SAV. However, passengers in the Brunswick, GA area have the option of using SAV and JAX in addition to BQK and may use these three airports interchangeably.

Orlando International Airport (MCO) is located 144 miles south of JAX. While it is located beyond a two-hour drive-time from JAX, it is a major commercial service airport, with nonstop flights to 91 domestic destinations and 54 international destinations. It is possible that passengers residing south of JAX—particularly those south of the CSA—use MCO rather than a closer airport because of the breadth of service and low fares offered from MCO.

3.2.6 INDUSTRY CAPACITY DISCIPLINE AND EFFECTS AT THE AIRPORT

Capacity discipline was a shift in the airline business model, from an environment where market share targets were pursued to one where financial targets are pursued. The new business model contributed to a 10 percent decrease in U.S. domestic seat capacity from the beginning of 2008 to 2014, as airlines eliminated less-profitable capacity and passenger volumes that did not contribute toward the achievement of financial targets. **Exhibit 3-4** illustrates U.S. airline passenger volumes since 2004 relative to the change in U.S. GDP. While domestic passenger volumes did not follow GDP trends in the years following 2009, another measure of passenger demand, passenger revenues, has increased as U.S. airlines focused on achieving financial targets by charging existing passengers higher fares. Since 2015, airlines have begun to increase capacity as declining fuel prices and the growth of ULCCs have allowed airlines to profitably carry the latent demand created by capacity discipline. In this operating environment, airlines have been able to generate additional revenues by carrying more passengers, rather than higher fares.

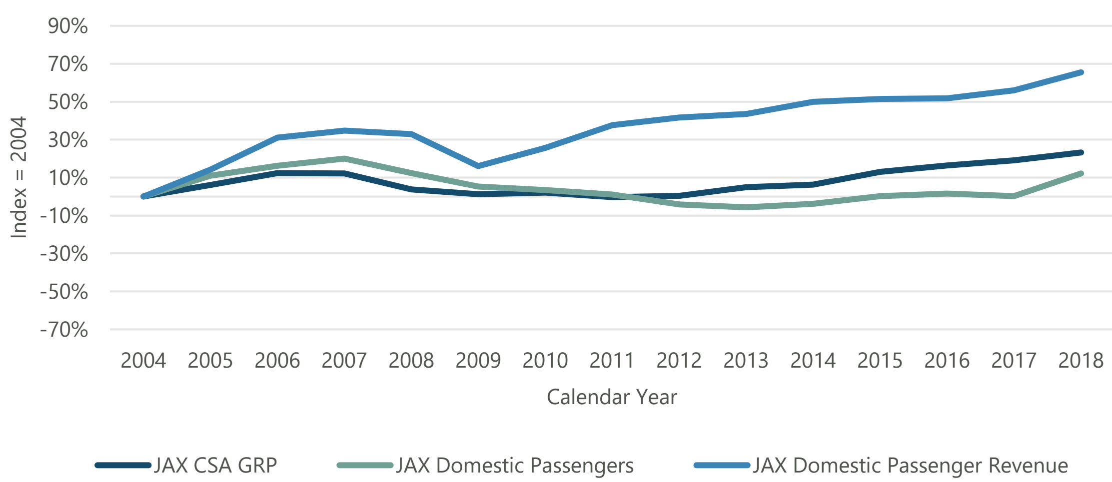
EXHIBIT 3-4 U.S. GDP, DOMESTIC PASSENGERS, AND DOMESTIC PASSENGER REVENUES SINCE 2004



NOTE: GDP – Gross Domestic Product. Data for 2018 are for the four quarters ending Q3 2018.
SOURCES: Woods & Poole Economics, Inc., February 2019; U.S. Department of Transportation DB1b Survey, February 2019.

Exhibit 3-5 illustrates similar trends at JAX. These trends took longer to materialize in JAX as average fares grew from 2009 while passenger volumes remained relatively constant at the Airport between 2009 and 2017. In late 2017, airlines began to increase seat capacity again at JAX, a trend that accelerated in 2018 and is expected to continue into 2019, as shown in **Table 3-9**. From 2017 through the end of 2019, scheduled seat capacity is expected to increase at a CAGR of 14.0 percent. The Airport is now experiencing a re-baselining as airlines are resuming growth after a period of profit improvement marked by capacity discipline. This growth trend is expected to slow in the fourth quarter of 2019, based on published schedule data, as the re-baselining of JAX takes place and capacity at the Airport meets demand.

EXHIBIT 3-5 JACKSONVILLE GRP, DOMESTIC PASSENGERS, AND DOMESTIC PASSENGER REVENUES SINCE 2004



NOTE: GRP – Gross Regional Product. Data for 2018 are for the four quarters ending Q3 2018.
SOURCES: Woods & Poole Economics, Inc., February 2019; U.S. Department of Transportation DB1b Survey, February 2019.

TABLE 3-9 SCHEDULED SEAT CAPACITY GROWTH AT JAX 2017-2019

AIRLINE	2017 DEPARTING SEATS	2018 DEPARTING SEATS	2019 DEPARTING SEATS	2017-2019 CAGR
Delta	978,409	1,024,542	1,163,057	9.0%
America	865,039	883,820	970,446	5.9%
Southwest	652,389	773,593	839,183	13.4%
JetBlue	415,800	450,150	443,480	3.3%
United	330,762	427,560	431,800	14.3%
Spirit	0	4,368	234,818	N/A
Frontier	0	180,840	205,260	N/A
Allegiant	82,130	98,742	79,053	-1.9%
Air Canada	11,969	17,200	5,500	-32.2%
Silver	27,778	20,808	0	N/A
Total	**3,364,276**	**3,881,623**	**4,372,597**	**14.0%**

NOTE: CAGR – Compound Annual Growth Rate. Southwest and Spirit have not published schedule data for the entire calendar year, full year capacity has been estimated

SOURCE: Innovata, March 2019.

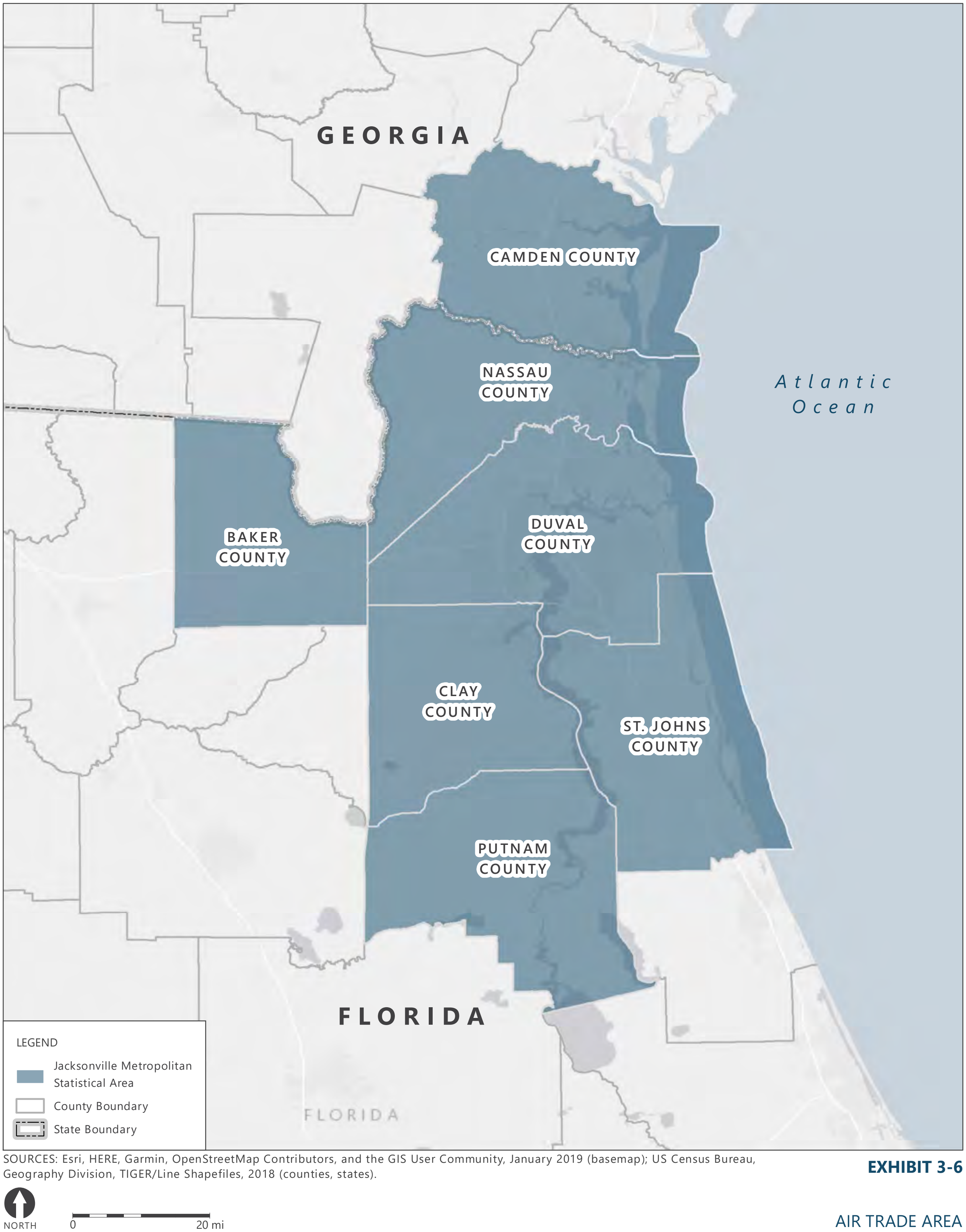
3.3 PASSENGER AIRLINE ACTIVITY FORECAST METHODOLOGY AND RESULTS

Forecasts of passenger airline activity were developed considering historical and expected factors, including passenger volume trends at the Airport and throughout the industry, historical trends and projections of local and national socioeconomic factors, and anticipated trends in the use of the Airport by the airlines serving it. The following subsections provide an overview of the assumptions and methodologies used in forecasting aviation activity at the Airport and present the results of those forecasts.

3.3.1 KEY ASSUMPTIONS

The forecasts are based on several underlying assumptions, including:

- The Airport Trade Area has been defined for the purposes of this Master Plan Update as the seven county Jacksonville-St. Mary's-Palatka CSA, as depicted in **Exhibit 3-6.**
- While year-to-year fluctuations in economic activity are likely, the historical long-term trends of generally expanding economic activity, both locally and nationally, will continue through the forecast period, resulting in increased demand for air service.
- The Airport will continue its role of primarily serving O&D passengers, with most having destinations offered within one stop of the Airport. In most cases, airlines will continue to focus nonstop service from the Airport to their larger connecting hub airports and to major cities.
- Airlines will continue to operate as efficiently as possible, actively managing capacity and seeking to maintain or increase load factors on flights.
- These analyses assumed that no terrorist incidents that would materially impact U.S. air traffic demand during the forecast period. Additionally, any airline bankruptcies or industry consolidation during the forecast period will not result in a major contraction within the aviation industry.



SOURCES: Esri, HERE, Garmin, OpenStreetMap Contributors, and the GIS User Community, January 2019 (basemap); US Census Bureau, Geography Division, TIGER/Line Shapefiles, 2018 (counties, states).

EXHIBIT 3-6

AIR TRADE AREA

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3.3.2 NEAR-TERM (2019) PASSENGER FORECAST METHODOLOGY

Published airline schedules for 2019 were analyzed, and flight segment-level estimates of performance were developed using trends in load factors and airline scheduled service completion rates. These were identified through analysis of actual performance data furnished by the Airport through December 2018, and through analysis of enplaned passenger and O&D data from the U.S. Department of Transportation as of Q3 2018. Estimates of load factors and completion rates were applied to scheduled seat capacity and operations to derive enplaned passenger and operations forecasts for 2019.

3.3.3 LONG-TERM (2020-2038) PASSENGER FORECAST METHODOLOGY

Several methodologies were explored for developing the long-term growth forecast of enplaned passengers at the Airport. These methodologies included market share analyses, and single and multi-variable socioeconomic regression analyses.

A standard measure of how well each socioeconomic variable explains passenger demand is the regression model's coefficient of determination, or r-squared. A result of 100 percent is the maximum value possible for a coefficient of determination, and it represents a perfect fit among the variables analyzed. For the purposes of this analysis, an r-squared value of 70 percent or better was considered adequate. Historical and forecast socioeconomic data for the Jacksonville-St. Mary's Palatka CSA and United States are shown in **Table 3-10**, and the outputs of the regression analyses described below are depicted in **Table 3-11**.

- **Single Variable Regression Analysis – Passenger Volumes:** A function of regression analysis was used to analyze the relationship between O&D passenger volumes as the dependent variable and local or national socioeconomics as the independent variable. This approach yielded a few predictive relationships with adequate r-squared values.
- **Single Variable Regression Analysis – Passenger Revenues:** Regression analysis was used to analyze the relationship between O&D passenger revenues and local or national socioeconomics. This approach yielded several relationships with adequate r-squared values.
- **Multi-Variable Regression Analysis – Passenger Volumes:** Regression analysis was used to analyze the relationship between O&D passenger volumes and the price of fuel and local or national socioeconomics. This approach did not produce any meaningful relationships and was not considered further.
- **Multi-Variable Regression Analysis – Passenger Revenues:** Regression analysis was used to analyze the relationship between O&D passenger revenues and the price of fuel and local or national socioeconomics. This approach yielded multiple relationships; however, the implied growth rates were lower than those identified from the single variable revenue analysis.
- **Market Share**: This approach is based on the expectation of how JAX will grow relative to the rest of the industry. Near-term capacity growth at the Airport represents a realization of latent demand by the airlines serving JAX. Once the Airport is brought up to a sustainable level of capacity in 2020, it will grow as a stable share of U.S. enplaned passengers, as projected in the FAA's *2018 Aerospace Forecast*.

TABLE 3-10 HISTORICAL AND FORECAST SOCIOECONOMIC DATA FOR THE UNITED STATES AND JACKSONVILLE-ST. MARY'S-PALATKA CSA

CALENDAR YEAR	JACKSONVILLE-ST. MARY'S-PALATKA CSA							UNITED STATES						
	POPULATION[1]	EMPLOYMENT[1]	TOTAL EARNINGS (2009$)[2]	PERSONAL INCOME (2009$)[2]	NET EARNINGS (2009$)[2]	PCPI (2009$)[3]	GRP (2009$)[2]	POPULATION[1]	EMPLOYMENT[1]	TOTAL EARNINGS (2009$)[2]	PERSONAL INCOME (2009$)[2]	NET EARNINGS (2009$)[2]	PCPI (2009$)[3]	GDP (2009$)[2]
Historical														
2009	1,460	801	$37,344	$53,200	$51,644	$36,450	$58,923	306,771	174,234	$8,743,722	$12,079,444	$39,376	$7,783,877	$14,320,115
2010	1,474	794	$37,854	$54,677	$52,635	$37,093	$59,341	309,348	173,035	$8,829,868	$12,257,005	$39,622	$7,866,430	$14,618,132
2011	1,486	809	$37,533	$56,215	$52,618	$37,826	$58,001	311,663	176,279	$9,017,120	$12,706,253	$40,769	$8,140,482	$14,792,272
2012	1,504	817	$38,407	$57,275	$52,849	$38,093	$58,443	313,998	179,082	$9,272,654	$13,102,482	$41,728	$8,380,661	$15,115,991
2013	1,519	834	$38,912	$57,066	$53,975	$37,563	$61,081	316,205	182,408	$9,412,786	$13,083,510	$41,377	$8,390,643	$15,415,632
2014	1,544	857	$40,055	$58,988	$55,896	$38,212	$61,850	318,563	186,355	$9,678,829	$13,568,885	$42,594	$8,625,321	$15,860,078
2015	1,572	885	$42,141	$62,769	$58,441	$39,918	$65,705	320,899	190,423	$10,067,003	$14,201,241	$44,255	$8,968,355	$16,447,679
2016	1,603	910	$43,388	$64,154	$60,308	$40,009	$67,695	323,132	193,668	$10,203,884	$14,363,146	$44,450	$9,084,542	$16,708,790
2017	1,628	944	$44,390	$66,307	$61,849	$40,726	$69,321	325,888	198,990	$10,475,887	$14,773,992	$45,335	$9,339,674	$17,204,393
2018	1,654	971	$45,881	$68,735	$64,112	$41,547	$71,686	328,911	202,638	$10,722,936	$15,161,771	$46,097	$9,573,592	$17,602,878
Forecast														
2019	1,681	994	$47,209	$71,046	$66,140	$42,264	$73,798	331,969	205,736	$10,941,891	$15,519,764	$46,751	$9,780,481	$17,957,335
2020	1,708	1,015	$48,421	$73,302	$68,032	$42,916	$75,730	335,058	208,570	$11,144,750	$15,864,181	$47,348	$9,972,501	$18,287,087
2021	1,735	1,036	$49,603	$75,539	$69,875	$43,527	$77,615	338,177	211,558	$11,344,322	$16,203,700	$47,915	$10,161,263	$18,614,867
2022	1,763	1,057	$50,816	$77,858	$71,754	$44,155	$79,550	341,328	214,599	$11,548,203	$16,554,354	$48,500	$10,355,021	$18,949,785
2023	1,792	1,078	$52,041	$80,227	$73,671	$44,782	$81,504	344,505	217,445	$11,755,010	$16,908,591	$49,081	$10,551,706	$19,286,327
2024	1,820	1,098	$53,282	$82,626	$75,588	$45,396	$83,482	347,712	220,327	$11,964,181	$17,264,076	$49,651	$10,750,160	$19,626,972
2025	1,849	1,119	$54,537	$85,099	$77,502	$46,021	$85,485	350,937	223,254	$12,175,743	$17,628,555	$50,233	$10,952,097	$19,971,767
2026	1,878	1,140	$55,807	$87,587	$79,418	$46,628	$87,509	354,177	226,217	$12,389,393	$17,991,563	$50,798	$11,156,286	$20,320,187
2027	1,908	1,161	$57,085	$90,081	$81,335	$47,211	$89,547	357,430	229,158	$12,604,888	$18,351,055	$51,342	$11,361,603	$20,671,067
2028	1,938	1,182	$58,371	$92,596	$83,225	$47,779	$91,596	360,689	232,065	$12,822,036	$18,710,033	$51,873	$11,568,171	$21,023,958
2029	1,968	1,203	$59,662	$95,128	$85,049	$48,332	$93,653	363,960	234,965	$13,040,438	$19,068,275	$52,391	$11,775,833	$21,378,635
2030	1,999	1,223	$60,953	$97,647	$86,839	$48,853	$95,710	367,239	237,848	$13,259,713	$19,420,444	$52,882	$11,983,534	$21,734,514
2031	2,029	1,244	$62,238	$100,091	$88,606	$49,321	$97,756	370,478	240,694	$13,479,134	$19,756,610	$53,327	$12,189,524	$22,090,261
2032	2,060	1,263	$63,512	$102,507	$90,361	$49,762	$99,784	373,667	243,485	$13,698,171	$20,085,547	$53,753	$12,394,767	$22,444,882
2033	2,091	1,283	$64,772	$104,924	$92,132	$50,189	$101,791	376,816	246,223	$13,916,742	$20,412,242	$54,170	$12,600,403	$22,798,304
2034	2,121	1,302	$66,022	$107,367	$93,859	$50,616	$103,780	379,926	248,918	$14,135,088	$20,740,990	$54,592	$12,806,416	$23,150,938
2035	2,152	1,320	$67,264	$109,888	$95,507	$51,065	$105,756	382,998	251,572	$14,353,553	$21,079,895	$55,039	$13,014,051	$23,503,297
2036	2,183	1,338	$68,496	$112,394	$97,079	$51,494	$107,713	386,038	254,184	$14,572,063	$21,414,227	$55,472	$13,221,982	$23,855,200
2037	2,213	1,356	$69,717	$114,824	$98,604	$51,875	$109,652	389,046	256,759	$14,790,701	$21,734,031	$55,865	$13,428,678	$24,206,857
2038	2,244	1,374	$70,925	$117,195	$100,126	$52,218	$111,570	392,027	259,306	$15,009,708	$22,042,756	$56,228	$13,634,663	$24,558,722
Compound Annual Growth Rate														
2009-2018	1.4%	2.2%	2.3%	2.9%	2.4%	1.5%	2.2%	0.8%	1.7%	2.3%	2.6%	1.8%	2.3%	2.3%
2018-2038	1.5%	1.7%	2.2%	2.7%	2.3%	1.1%	2.2%	0.9%	1.2%	1.7%	1.8%	1.0%	1.8%	1.7%

NOTES: GRP – Gross Regional Product; GDP – Gross Domestic Product.

1 In thousands.

2 In millions.

3 Per Capita Personal Income.

SOURCE: Woods & Poole Economics, Inc., February 2019.

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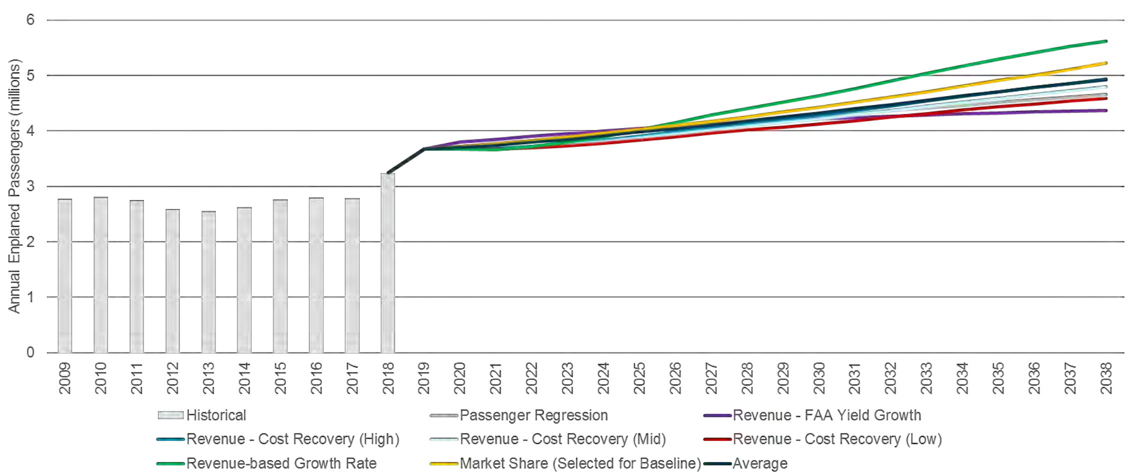
TABLE 3-11 SOCIOECONOMIC REGRESSION ANALYSIS RESULTS

INDEPENDENT VARIABLE	R-SQUARED VALUES	COMPOUND ANNUAL GROWTH RATES (2018-2038)
Single Variable – Passengers	70%-77%	1.9%
Single Variable – Passenger Revenue	86%-92%	2.6%
Multi-Variable – Passengers	<50%	N/A
Multi-Variable – Passenger Revenues	81%-88%	2.4%

NOTES: GRP – Gross Regional Product; GDP – Gross Domestic Product.
SOURCES: Woods & Poole Economics, Inc; U.S. Department of Transportation DB1b Survey; Ricondo & Associates, Inc. (analysis), February 2019.

The analysis of passenger revenues required an additional variable to translate forecasts of passenger revenues to passenger volumes because airlines will generate revenues in three ways: higher fares, increased passenger volumes, or by a combination of these two. Multiple methodologies were used to model how airlines generate these revenues in the future. These methods are based on an assumption of how much cost is recovered through fare growth (i.e., high- medium- and low-passenger growth), as well as assumptions of fare growth based on the FAA's projection of yield growth. The range of 20-year forecasts generated by the socioeconomic regression analyses as well as the market share approach are depicted in **Exhibit 3-7** and **Table 3-12**.

EXHIBIT 3-7 RANGE OF PASSENGER FORECAST SCENARIOS



SOURCES: Woods & Poole Economics, Inc; U.S. Department of Transportation DB1b Survey; Ricondo & Associates, Inc. (analysis), February 2019.

TABLE 3-12 RANGE OF PASSENGER FORECAST SCENARIOS

FORECAST	COMPOUND ANNUAL GROWTH RATES (2018-2038)
Single Variable Passenger Revenue Regression Analysis	2.6%
Market Share	**2.4%**
Revenue – Cost Recovery (High Pax Growth)	2.0%
Average of All Scenarios	2.0%
Revenue – Cost Recovery (Medium Pax Growth)	1.9%
Single Variable Passenger Regression Analysis	1.8%
Revenue – Cost Recovery (Low Pax Growth)	1.7%
Revenue – FAA Yield Growth	1.4%

SOURCES: Woods & Poole Economics, Inc; U.S. Department of Transportation DB1b Survey; Ricondo & Associates, Inc. (analysis), February 2019.

The market share approach was selected for the baseline passenger forecast based on the expectation that recent and scheduled capacity additions reflect a re-baselining, or "right-sizing" of capacity at the Airport, which had previously been restricted due to capacity discipline, as described in Section 3.2.6.

The forecast of enplaned passenger volumes is shown in **Table 3-13**. After growing 12.0 percent in 2019, passenger volume growth is forecast to slow in 2020, as airlines re-baseline JAX to a point where additional capacity growth is profitable and sustainable. Beyond 2020, JAX passenger volumes are forecast to grow at the same year-by-year rate as total U.S. enplaned passengers, as forecast in the FAA's *2018 Aerospace Forecast*. Fluctuations of individual annual growth rates are a result of the annual U.S. enplaned passenger growth rates forecast in the *2018 Aerospace Forecast*. Enplaned passenger volumes are forecast to grow from approximately 3.2 million in 2018 to 5.2 million in 2038, representing a CAGR of 2.4 percent.

TABLE 3-13 O&D AND CONNECTING ENPLANED PASSENGER FORECAST

CALENDAR YEAR	O&D ENPLANED PASSENGERS	CONNECTING ENPLANED PASSENGERS	TOTAL ENPLANED PASSENGERS	ANNUAL GROWTH	PERCENTAGE O&D	PERCENTAGE CONNECTING
Historical						
2009	2,715,499	66,484	2,781,983		98%	2%
2010	2,691,612	123,122	2,814,734	1.2%	96%	4%
2011	2,628,994	124,419	2,753,413	-2.2%	95%	5%
2012	2,502,602	99,338	2,601,940	-5.5%	96%	4%
2013	2,479,708	86,350	2,566,058	-1.4%	97%	3%
2014	2,548,891	72,759	2,621,650	2.4%	97%	3%
2015	2,680,928	82,590	2,763,518	5.4%	97%	3%
2016	2,738,645	60,718	2,799,363	1.3%	98%	2%
2017	2,723,410	65,475	2,788,885	-0.4%	98%	2%
2018	3,158,992	75,196	3,234,188	16.0%	98%	2%
Forecast						
2019	3,549,123	84,482	3,633,605	12.0%	98%	2%
2020	3,600,857	85,714	3,686,571	1.5%	98%	2%
2021	3,645,688	86,781	3,732,468	1.2%	98%	2%
2022	3,701,035	88,098	3,789,133	1.5%	98%	2%
2023	3,764,512	89,609	3,854,121	1.7%	98%	2%
2024	3,830,532	91,181	3,921,713	1.8%	98%	2%
2025	3,898,716	92,804	3,991,520	1.8%	98%	2%
2026	3,966,998	94,429	4,061,428	1.8%	98%	2%
2027	4,035,568	96,061	4,131,629	1.7%	98%	2%
2028	4,111,380	97,866	4,209,246	1.9%	98%	2%
2029	4,194,794	99,852	4,294,646	2.0%	98%	2%
2030	4,277,955	101,831	4,379,786	2.0%	98%	2%
2031	4,366,247	103,933	4,470,180	2.1%	98%	2%
2032	4,456,968	106,092	4,563,060	2.1%	98%	2%
2033	4,551,551	108,344	4,659,895	2.1%	98%	2%
2034	4,650,534	110,700	4,761,234	2.2%	98%	2%
2035	4,745,031	112,949	4,857,980	2.0%	98%	2%
2036	4,840,776	115,228	4,956,004	2.0%	98%	2%
2037	4,942,953	117,660	5,060,613	2.1%	98%	2%
2038	5,049,672	120,201	5,169,873	2.2%	98%	2%
Compound Annual Growth Rate						
2009-2018	1.7%	1.4%	1.7%			
2018-2038	2.4%	2.4%	2.4%			

NOTE: O&D – Origin and Destination. 2018 O&D passenger shares are estimated based on data through the four quarters ending Q3 2018.
SOURCES: Jacksonville Aviation Authority, January 2019 (historical); Ricondo & Associates, Inc., January 2019 (forecast).

Connecting passengers are expected to be a small portion of total traffic at the Airport. Over the forecast period, connecting passenger volumes are assumed to remain a consistent, percentage of total enplaned passengers, representing approximately 2 percent of total enplaned passengers.

The forecasts of aviation activity at the Airport are dependent on several factors that are outside of the Authority's control. These factors could have a material effect on the timing of various activity levels, especially in the longer term. Therefore, to accommodate the dynamic nature of aviation activity, the Master Plan Update is based on demand-level milestones, generally referred to as planning activity levels (PAL), which levels of activity at the Airport regardless of timing.

The use of these PALs will enable the Authority to develop facility plans based on actual demand rather than the estimated timing associated with the activity forecasts. PALs represent demand levels, not necessarily specific years, which can be used as benchmarks for planning, designing, or constructing Airport improvements. In some instances, a projected year of occurrence may be associated with each PAL for general planning purposes, but the timeline alone would not trigger development.

The activity forecasts for the Airport's Master Plan Update are organized into four levels: a baseline of existing demand, and three PALs representing short-term and long-term growth at the Airport. **Table 3-14** presents the PALs for the Airport, defined by total passengers forecast in the Master Plan Update and in the FAA's 2018 TAF.

TABLE 3-14 PLANNING ACTIVITY LEVELS

PAL	TOTAL ENPLANED AND DEPLANED PASSENGERS (MILLIONS)	PROJECTED YEAR OF OCCURRENCE (MASTER PLAN UPDATE)	PROJECTED YEAR OF OCCURRENCE (2018 FAA TAF)
Baseline	7.2		
PAL 1	8.0	2025	2023
PAL 2	9.0	2032	2029
PAL 3	10.0	2037	2034

SOURCES: Jacksonville Aviation Authority, February 2019 (historical); Ricondo & Associates, Inc., February 2019, (forecast); Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

3.3.4 PASSENGER AIRLINE OPERATIONS AND FLEET MIX METHODOLOGY AND RESULTS

The passenger airline operations forecast was developed using the enplaned passenger forecast and an analysis of airline schedule completion rates, load factors, and published airline fleet plans. Long-term passenger growth is forecast to be accommodated through a combination of increased load factors, higher average seats per departure, and growth in operations.

Table 3-15 presents historical and forecast enplaned passengers, passenger airline aircraft operations, load factors, and seats per departure. Passenger airline operations are forecast to grow from approximately 67,400 in 2018 to approximately 90,200 in 2038, a 1.5 percent CAGR. Average seats per departure are forecast to increase from 114.9 in 2018 to 120.5 in 2019 due to of new flights added by ULCCs (Frontier and Spirit using higher capacity aircraft), and upgauging of existing flights by American, Delta, and United. Average seats per departure are forecast to grow to 134.0 by 2038. Average load factors are forecast to grow over the forecast period from 83.5 percent in 2018 to 85.6 percent in 2038.

TABLE 3-15 PASSENGER AIRLINE OPERATIONS FORECAST

CALENDAR YEAR	ENPLANED PASSENGERS	AIRCRAFT OPERATIONS	SEATS PER DEPARTURE	LOAD FACTOR
Historical				
2009	2,781,983	67,476	109.6	76.5%
2010	2,814,734	67,348	109.1	77.1%
2011	2,753,413	69,440	106.3	75.9%
2012	2,601,940	61,470	108.6	78.8%
2013	2,566,058	61,682	105.8	79.4%
2014	2,621,650	61,670	103.5	81.8%
2015	2,763,518	62,386	105.6	82.8%
2016	2,799,363	61,700	108.3	81.7%
2017	2,788,885	59,298	111.5	81.5%
2018	3,234,188	67,402	114.9	83.5%
Forecast				
2019	3,633,605	72,266	120.5	83.4%
2020	3,686,571	72,859	121.3	83.5%
2021	3,732,468	73,037	122.4	83.6%
2022	3,789,133	73,462	123.4	83.7%
2023	3,854,121	74,070	124.4	84.1%
2024	3,921,713	74,468	125.3	84.1%
2025	3,991,520	75,259	126.1	84.2%
2026	4,061,428	76,041	126.8	84.3%
2027	4,131,629	76,816	127.6	84.4%
2028	4,209,246	77,745	128.3	84.5%
2029	4,294,646	78,789	129.0	84.6%
2030	4,379,786	79,790	129.8	84.7%
2031	4,470,180	80,872	130.5	84.9%
2032	4,563,060	82,122	131.0	85.0%
2033	4,659,895	83,430	131.5	85.1%
2034	4,761,234	84,804	132.0	85.2%
2035	4,857,980	86,081	132.5	85.3%
2036	4,956,004	87,367	133.0	85.5%
2037	5,060,613	88,755	133.5	85.6%
2038	5,169,873	90,209	134.0	83.4%
Compound Annual Growth Rate				
2009-2018	1.7%	0.0%		
2018-2040	2.4%	1.5%		

SOURCES: Jacksonville Aviation Authority, January 2019; U.S. Department of Transportation T-100, January 2019; Federal Aviation Administration, Operations Network (OPSNET), January 2019 (historical); Ricondo & Associates, Inc., January 2019 (forecast).

Table 3-16 presents the 2018 base year and forecast fleet mix for aircraft operating at JAX. Passenger aircraft are categorized based on average seat capacity. All-cargo operations are categorized according to aircraft size (small piston/turboprop, narrow-body, and wide-body). Over the forecast period, the critical aircraft[6] at the Airport is expected to be an Airplane Design Group (ADG)-V aircraft, such as the Boeing 777F, Airbus A330, or similar.

6 Per AC 150/5000-17, the FAA defines the critical aircraft as "the most demanding aircraft type or grouping of aircraft with similar characteristics that make regular use of the airport. Regular use is defined as 500 annual operations."

TABLE 3-16 AIRCRAFT FLEET MIX

AIRCRAFT CATEGORY	SEAT RANGE	REPRESENTATIVE AIRCRAFT	2018		2023		2028		2038	
			OPERATIONS	PERCENT	OPERATIONS	PERCENT	OPERATIONS	PERCENT	OPERATIONS	PERCENT
Passenger										
Small Piston/Turboprop/Regional Jet	<51	CRJ-200	7,247	10.8%	5,185	7.0%	2,332	3.0%	0	0.0%
Medium Regional Jet/Turboprop	51-76	CRJ-900; EMB-175	19,221	28.5%	18,888	25.5%	21,769	28.0%	19,846	22.0%
Large Regional Jet/Turboprop	77-100	EMB-190	6,810	10.1%	2,222	3.0%	0	0.0%	0	0.0%
Small Narrowbody	101-130	717; CS100	1,144	1.7%	11,851	16.0%	15,549	20.0%	27,965	31.0%
Medium Narrowbody	131-160	A320; B737-700	19,051	28.3%	15,555	21.0%	13,605	17.5%	7,668	8.5%
Large Narrowbody	161-199	A321; B737-800	13,929	20.7%	19,999	27.0%	23,324	30.0%	31,573	35.0%
High Density Narrowbody	200-230	A321	0	0.0%	370	0.5%	1,088	1.4%	2,887	3.2%
Small Widebody	231+	B787-8	0	0.0%	0	0.0%	78	0.1%	271	0.3%
Subtotal			67,402	100.0%	74,070	100.0%	77,745	100.0%	90,209	100.0%
Cargo										
Small/Standard Body		C208, B757F	648	24.9%	652	23.8%	655	22.9%	689	21.0%
Medium Widebody		B777F, A330	1,622	62.3%	1,734	63.3%	1,835	64.2%	1,967	59.9%
Large Widebody		DC-10F/MD-11F	333	12.8%	353	12.9%	369	12.9%	627	19.1%
Subtotal			2,604	100.0%	2,740	100.0%	2,859	100.0%	3,283	100.0%
General Aviation/Other Air Taxi										
Subtotal			23,498	100.0%	30,543	100.0%	36,137	100.0%	46,253	100.0%
Military										
Subtotal			8,801	100.0%	8,801	100.0%	8,801	100.0%	8,801	100.0%
Airport Total			102,305	100.0%	116,154	100.0%	125,542	100.0%	148,546	100.0%

NOTE:
1 General aviation, other air taxi, and military operations have been sourced from the 2018 TAF.
SOURCES: U.S. Department of Transportation T-100, February 2019; Federal Aviation Administration, Operations Network (OPSNET), February 2019; Federal Aviation Administration *2018 Terminal Area Forecast*, February 2019; Ricondo & Associates, Inc., February 2019 (forecast).

The forecast fleet mix for passenger airlines is based on publicly-available future aircraft orders, known aircraft retirement schedules, and anticipated upgauging of existing aircraft based on the size and types of routes flown from the Airport. Specific assumptions used in developing the passenger airline fleet mix include:

- The use of 50-seat regional aircraft will continue to decline throughout the forecast period as these aircraft are replaced with larger regional jets and small mainline aircraft.
- In general, carriers will continue to upgauge their fleets using higher seat capacity aircraft.
- Delta is in the process of replacing its McDonnell Douglas MD-88s and Boeing 757-200 fleets with a combination of Airbus A321ceo/neo and Boeing 737-900ER aircraft; in many cases this represents an increase in the number of seats per departure.
- Southwest's fleet orders comprise mostly 175-seat Boeing 737 MAX 8 aircraft which will replace some 143-seat Boeing 737-700 aircraft during the forecast period.
- Use of high density narrowbody aircraft by ULCCs will increase over the forecast period.

3.4 AIR CARGO FORECAST

3.4.1 TRENDS AFFECTING AIR CARGO ACTIVITY

This section highlights regional, national, and global trends that may influence air cargo activity at the Airport, including a discussion of Amazon, which has opened two fulfillment centers in the area around the Airport in 2017. At a global and national level, air cargo activity is primarily impacted by broader economic conditions, trade, and fuel prices. Locally, a few large airports account for the majority of regional air cargo traffic.

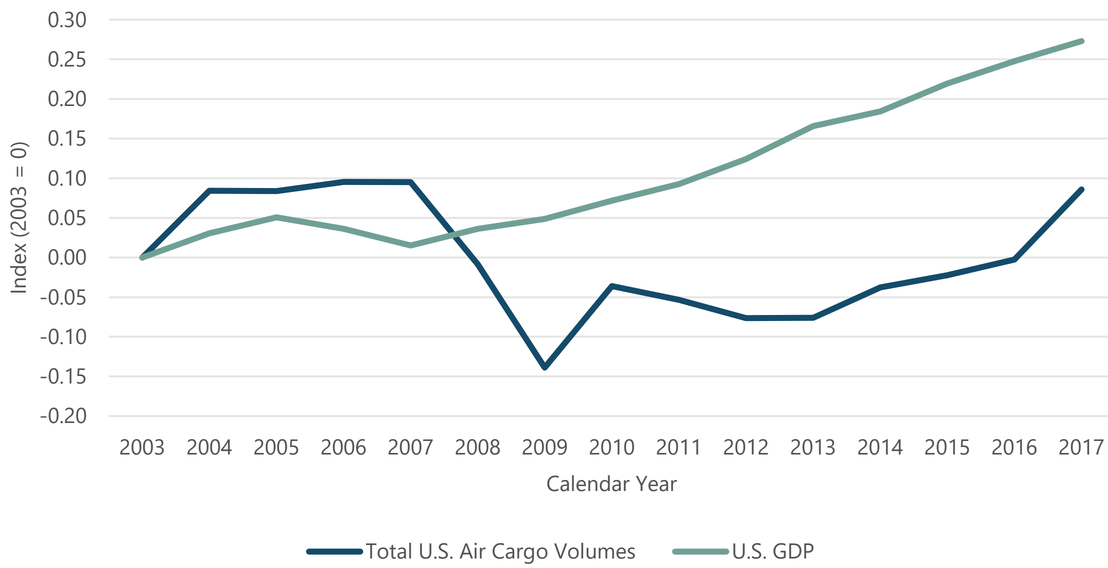
Historically, global air cargo activity has historically been correlated with GDP. Air cargo activity was reduced by the global recession that began in 2008 and has been slow to recover. In 2008 and 2009, total air cargo volume at U.S. airports declined 9.5 percent and 13.1 percent, respectively. As shown in **Exhibit 3-8**, U.S. GDP grew faster than total U.S. air cargo volume between 2009 and 2014. GDP and air cargo volumes grew at similar rates in 2015 and 2016, and air cargo volumes grew faster than GDP in 2017. This strong growth in 2017 was driven by global forces including economic expansion, increased industrial production, and increased international trade.

While growth is not be expected to continue at the pace seen in 2017, according to the Boeing World Air Cargo Forecast, world air cargo activity is expected to continue grow at or above the long-term growth trend over the next few years. Global air cargo should also increase as the global trade in products traditionally transported by air (e.g., high-value consumer electronics and pharmaceuticals), is expected to continue to grow faster than trade in general.

Fuel price volatility remains a risk for global air cargo activity. Fuel is a significant cost for air cargo carriers, and other transportation modes have a significant cost advantage over air cargo. Shipping items by air costs approximately 13 times more than shipping by truck. This is especially important for domestic cargo, which makes up nearly all the air cargo at JAX.

In the southeastern United States, two airports account for over half of all air cargo volume. In 2017, MIA and ATL accounted for 60 percent of total air cargo in the region. As the dominant international gateway to Latin America, MIA accounted for just over 40 percent of total air cargo volumes in the region. While other airports in the region have seen growth in air cargo activity exceeding an average of four percent per year from 2008 to 2017 (such as FedEx Express' Greensboro Mid-Atlantic hub and Charlotte's regional Air Cargo Center), the concentration of air cargo activity at these large airports is not expected to change.

EXHIBIT 3-8 UNITED STATES AIR CARGO VOLUMES AND GROSS DOMESTIC PRODUCT, CHANGE FROM 2003 TO 2017



SOURCES: Woods & Poole Economics, Inc., January 2019 (U.S. GDP); United States Department of Transportation, Form T-100, January 2019 (air cargo volumes).

The global air cargo industry has undergone a major transformation over the past two decades. The significant increase in e-commerce has been a major driver of this growth. E-commerce involves consumers purchasing products on the internet and having them delivered to their door. According to the Boeing World Air Cargo Forecast, global e-commerce is projected to more than double in the next 20 years. Many e-commerce retailers offer expedited shipping, sometimes at no additional cost. Online retailers rely on air cargo to deliver e-commerce goods on-time, to both distribution centers and to end-consumers.

Amazon is the largest e-commerce retailer in the United States, accounting for nearly half of all U.S. e-commerce, according to the Boeing World Air Cargo Forecast. It has a network of an estimated 172 current fulfillment and distribution centers in the United States, with an additional 34 scheduled to open by 2020.[7] These fulfillment centers are a key component in Amazon's distribution network, helping the company meet the two-day delivery guarantee it provides to members of its loyalty plan, Amazon Prime.

Amazon recently opened two fulfillment centers near JAX. The first, called JAX2, opened in September 2017, approximately three miles away from the Airport. It covers approximately 855,000 square feet and is used for the shipment of small items (under 25 pounds). The second, called JAX3, opened in October 2018 approximately 30 miles from the Airport. It is used for large items that cannot fit into boxes for shipment. JAX2 and JAX3 are two of the ten total fulfillment and distribution centers in Florida.

7 MWPVL International, "Amazon Global Fulfillment Center Network," http://www.mwpvl.com/html/amazon_com.html, December 2018 (accessed December 9, 2018).

Another key aspect of Amazon's distribution network is its Amazon Air network. The company currently has a fleet of approximately 40 Boeing 767 aircraft operated by ABX Air, Atlas Air, and Air Transport International and has cargo operations to 20 airports throughout the United States, including two in Florida: MIA and TPA. These airports are generally located near a local/regional sortation center (used to sort packages in preparation for delivery). They also tend to be located at airports with relatively little congestion, both on the airside and landside (especially highway access). Amazon airports have experienced high growth over the past two years, with a CAGR of 9.0 percent for all the airports combined from 2015 to 2017, compared to a 5.4 percent CAGR for all U.S. airports.

While Amazon is still in the early stages of entering the air cargo industry, its entry into the market could stimulate demand for air cargo services as its competitors seek to keep up with the company's fulfillment pace. If Amazon offers spare capacity to other shippers utilizing its technology and possible lower rates, it could generate more air cargo volume in the industry. Approximately 20 different partners currently ship the 600 million packages Amazon sells per year, with FedEx, USPS, and UPS accounting for the greatest volume. However, Amazon's use of third-party shippers and the volumes handled by the leading companies mentioned could be materially affected by the growth of Amazon Air and its rapidly-expanding logistics network, including first-, middle-, and last-mile segments in the shipping chain. The impact of Amazon's growth on airport operators, their tenants, the balance of demand/capacity of on-airport facilities, and the overall tonnage handled is not fully understood, but it is likely that Amazon's growth will have a significant impact on the air cargo industry.

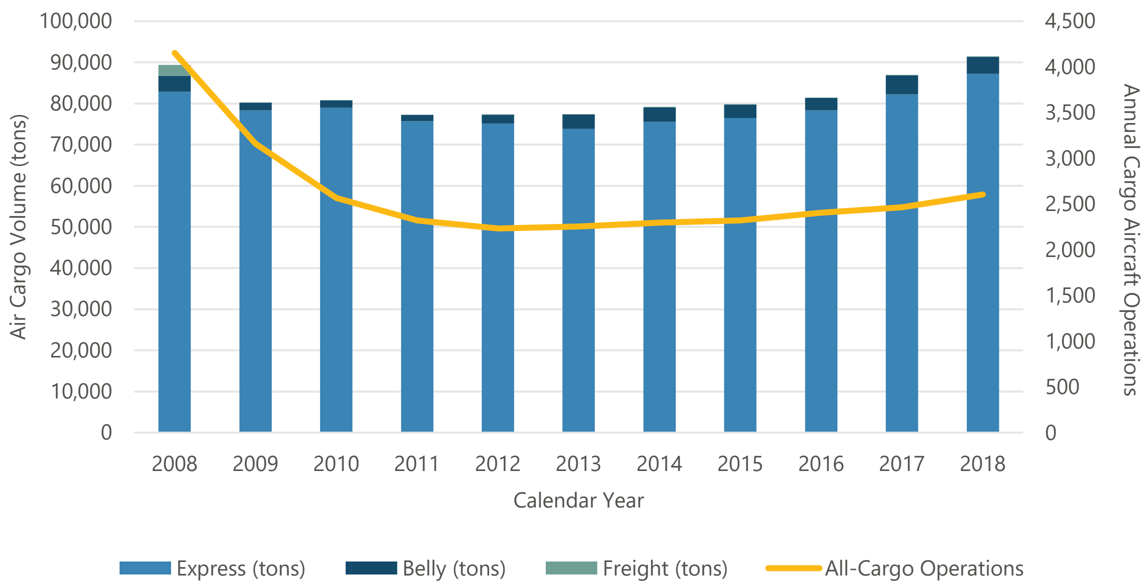
If Amazon begins operating at JAX the Airport could experience rapid growth over a short period of time. At TPA, for example, total cargo volumes increased by nearly 25 percent from 2016 to 2017, driven largely by volumes on Amazon aircraft, which more than doubled in one year. While Amazon Air is expected to add airports to its network as it expands its fleet, and e-commerce continues to grow as a segment of the industry, past decisions by Amazon would not suggest that JAX will see a significant increase in air cargo traffic because of Amazon's presence at other airports in the area.

As mentioned above, the cost to transport cargo by air is approximately 13 times more expensive than transporting the same cargo by truck. For this reason, shippers prefer using truck shipments as much as possible. Federal regulations limit truck drivers to driving 11 hours per day, and JAX is within a six-hour drive of three Amazon Air airports: CLT, MIA, and TPA. Amazon could fly products into any of these airports and truck them to Jacksonville in under one day, and then deliver them the next day, making two-day shipments possible without using JAX as a part of its supply chain.

3.4.2 AIR CARGO FORECAST

Historical cargo activity at the airport over was examined to develop forecasts of total cargo volumes, all-cargo operations, and the cargo fleet mix at the Airport through 2038. As shown in **Exhibit 3-9**, total cargo volumes at the Airport declined from 2008 to 2009 and remained relatively flat through 2016 before increasing in 2017 to near 2008 levels. All-cargo operations have declined from approximately 4,200 annually or 11 per day in 2008 to approximately 2,600, or 7 per day in 2017. **Table 3-17** presents cargo tonnage by carrier from 2008 to 2017. FedEx and UPS combine for approximately 95 percent of total cargo volume at the Airport.

EXHIBIT 3-9 HISTORICAL TOTAL AIR CARGO VOLUMES AND ALL-CARGO OPERATIONS, 2008–2017



SOURCE: United States Department of Transportation, Form T-100, January 2019.

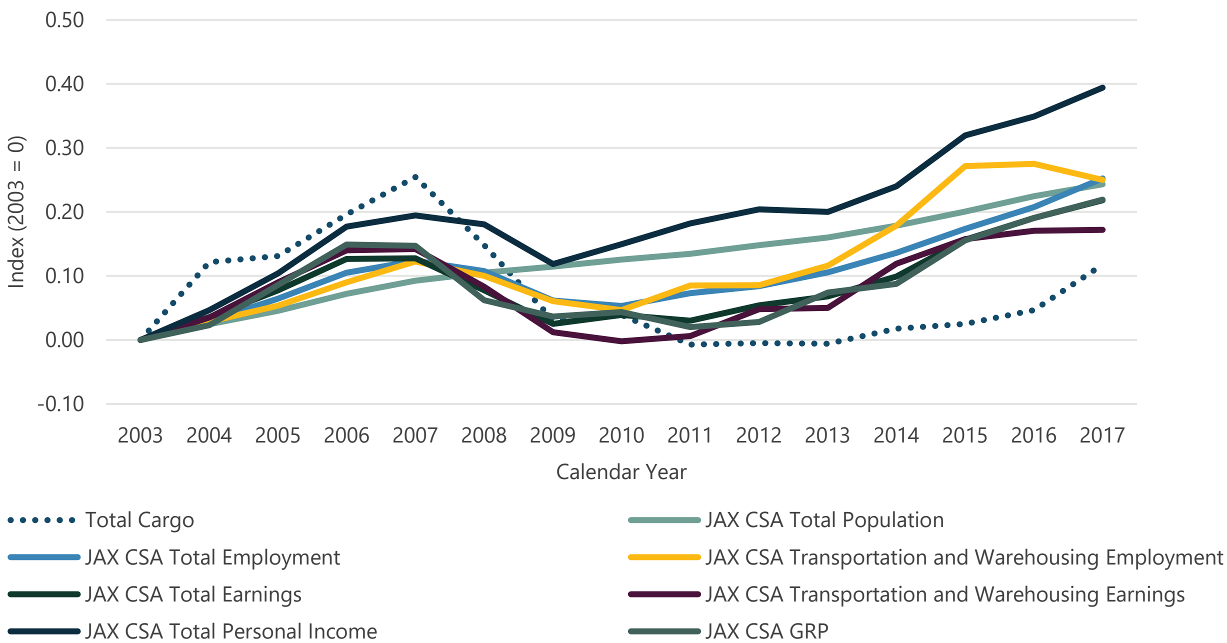
TABLE 3-17 HISTORICAL AIR CARGO TONNAGE BY CARRIER

AIRLINE	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	CAGR (2008–2018)
FedEx	46,928	45,057	46,096	43,757	42,673	42,459	42,960	43,712	44,322	45,011	46,572	-0.1%
UPS	35,922	33,262	32,836	31,904	32,444	31,381	32,599	32,778	34,001	37,224	39,064	0.8%
Delta Air Lines	723	581	593	573	964	2,262	2,417	2,534	2,516	2,747	2,505	13.2%
American Airlines	251	28	56	43	20	32	60	139	161	833	1,242	17.3%
Atlas Air	0	0	126	0	0	54	79	32	0	582	1,094	NA
Southwest Airlines	1,793	938	852	802	894	742	618	421	311	383	641	-9.8%
United Airlines	11	8	14	2	61	42	46	41	51	58	97	24.3%
Other airlines	3,714	353	258	161	363	358	380	91	87	107	221	-24.6%
Total	**89,341**	**80,226**	**80,831**	**77,243**	**77,418**	**77,329**	**79,159**	**79,749**	**81,448**	**86,945**	**91,436**	**0.2%**

NOTE: CAGR – Compound Annual Growth Rate. Sums may not equal total due to rounding. 2018 carrier specific values estimated using U.S. Department of Transportation data.
SOURCE: United States Department of Transportation, Form T-100, January 2019.

Similar to nationwide trends, air cargo activity at the Airport has not been correlated with socioeconomic conditions in recent years, as illustrated in **Exhibit 3-10**. From 2003 to 2007, air cargo volumes at the Airport grew faster than socioeconomic measures for the Jacksonville–St. Mary's–Palatka, FL–GA CSA. During the global recession, air cargo volumes decreased more rapidly than socioeconomic conditions, and air cargo volumes have recovered more slowly than socioeconomic indicators in the area since 2010. Regression analyses of total air cargo volumes on socioeconomic variables confirm this observation: regression models did not show a meaningful relationship between socioeconomic variables and air cargo volumes, and socioeconomic regression modelling was not chosen as the forecast methodology.

EXHIBIT 3-10 JACKSONVILLE INTERNATIONAL AIRPORT AIR CARGO VOLUMES AND COMBINED STATISTICAL AREA SOCIOECONOMIC VARIABLES, CHANGE FROM 2003 TO 2017



SOURCES: Woods & Poole Economics, Inc., January 2019 (socioeconomic variables); United States Department of Transportation, Form T-100, January 2019 (air cargo volumes).

Because cargo activity at JAX has exhibited a similar trend to cargo activity nationwide, a market-share approach was used to forecast total cargo volumes at the Airport. Total cargo volumes at JAX were found to be correlated with U.S. domestic cargo revenue ton miles (RTMs). Using a linear regression model with U.S. domestic cargo RTMs and an indicator variable (equal to zero in 2009 and earlier, and one after 2009), the result was an R-squared value of 73.6 percent, the highest of all models considered. The model output showed an estimated 0.64 percent increase in total air cargo volume at JAX for every 1.00 percent increase in all-cargo domestic cargo RTMs in the U.S. This result suggests that certain underlying conditions are driving cargo activity both at JAX and nationwide that were not evident in the macroeconomic data alone.

Applying the results of the regression analysis to the FAA National Aerospace Forecast for all-cargo domestic cargo RTMs resulted in a forecast CAGR of 1.5 percent from 2018 to 2037 for cargo volumes at the Airport, from 91,436 tons in 2018 to 117,666 tons in 2038. As shown previously in Table 3-17, the majority of the Airport's cargo volume is handled by express carriers; the distribution of cargo carried by express carriers, freight carriers, and passenger carriers (as belly cargo) is forecast to remain unchanged throughout the forecast period at the average over 2016, 2017, and 2018. Historical and forecast cargo volumes are shown in **Table 3-18**.

TABLE 3-18 HISTORICAL AND FORECAST AIR CARGO TONNAGE

CALENDAR YEAR	BELLY CARGO	SHARE OF TOTAL	EXPRESS CARGO	SHARE OF TOTAL	FREIGHT CARGO	SHARE OF TOTAL	TOTAL CARGO
Historical							
2009	1,877	2.3%	78,319	97.6%	30	0.0%	80,226
2010	1,773	2.2%	78,932	97.7%	126	0.2%	80,831
2011	1,582	2.0%	75,661	98.0%	0	0.0%	77,243
2012	2,156	2.8%	75,117	97.0%	145	0.2%	77,418
2013	3,471	4.5%	73,840	95.5%	19	0.0%	77,329
2014	3,500	4.4%	75,559	95.5%	100	0.1%	79,159
2015	3,256	4.1%	76,490	95.9%	2	0.0%	79,749
2016	3,060	3.8%	78,322	96.2%	66	0.1%	81,448
2017	4,603	5.3%	82,235	94.6%	107	0.1%	86,945
2018	4,138	4.5%	87,205	95.4%	93	0.1%	91,436
Forecast							
2019	4,195	4.5%	88,415	95.4%	95	0.1%	92,705
2020	4,253	4.5%	89,627	95.4%	96	0.1%	93,976
2021	4,320	4.5%	91,051	95.4%	97	0.1%	95,469
2022	4,381	4.5%	92,332	95.4%	99	0.1%	96,812
2023	4,444	4.5%	93,658	95.4%	100	0.1%	98,203
2024	4,489	4.5%	94,608	95.4%	101	0.1%	99,199
2025	4,527	4.5%	95,417	95.4%	102	0.1%	100,046
2026	4,560	4.5%	96,102	95.4%	103	0.1%	100,764
2027	4,589	4.5%	96,721	95.4%	103	0.1%	101,414
2028	4,637	4.5%	97,734	95.4%	105	0.1%	102,476
2029	4,708	4.5%	99,228	95.4%	106	0.1%	104,043
2030	4,773	4.5%	100,588	95.4%	108	0.1%	105,468
2031	4,844	4.5%	102,084	95.4%	109	0.1%	107,037
2032	4,913	4.5%	103,539	95.4%	111	0.1%	108,562
2033	4,981	4.5%	104,984	95.4%	112	0.1%	110,077
2034	5,052	4.5%	106,480	95.4%	114	0.1%	111,647
2035	5,116	4.5%	107,817	95.4%	115	0.1%	113,048
2036	5,185	4.5%	109,281	95.4%	117	0.1%	114,583
2037	5,254	4.5%	110,737	95.4%	118	0.1%	116,110
2038	5,322	4.5%	112,225	95.4%	119	0.1%	117,666
Compound Annual Growth Rate							
2009–2018	9.2%		1.2%		13.4%		1.5%
2018–2038	1.3%		1.3%		1.2%		1.3%

NOTE: Volumes shown in tons. Sums may not equal total due to rounding.

SOURCES: United States Department of Transportation, Form T-100, January 2019 (historical); Federal Aviation Administration, National Aerospace Forecast, Fiscal Years 2018—2038, March 2018; Ricondo & Associates, Inc., January 2019 (forecast).

All-cargo operations at the Airport (express and freight) have not grown at the same rate as all-cargo volumes in recent years. From 2009 to 2011 all-cargo operations declined at the Airport. However, between 2011 and 2018 all-cargo operations increased at a CAGR of 1.0 percent, compared to a 1.4 percent CAGR for all-cargo volumes. During this same period, average tonnage per operation increased at a CAGR of 0.40 percent. Part of the increase in average tonnage per operation was due to the use of larger aircraft. The trend in increased tonnage per operation is expected to continue as larger aircraft are deployed in the near term and carriers improve load management. It is assumed that the average payload per all-cargo operation will increase by 0.4 percent each year to 2023 and then remain constant throughout the remainder of the forecast period. **Table 3-19** provides a summary of historical and forecast all-cargo operations, which are forecast to increase at a 1.2 percent CAGR from 2018 to 2038, from 2,604 operations to 3,283 operations.

TABLE 3-19 HISTORICAL AND FORECAST ALL-CARGO OPERATIONS

CALENDAR YEAR	ALL-CARGO VOLUME (TONS)	ALL-CARGO OPERATIONS	ALL-CARGO VOLUME PER OPERATION
Historical			
2009	78,349	3,162	24.78
2010	79,059	2,566	30.81
2011	75,661	2,322	32.58
2012	75,262	2,233	33.70
2013	73,859	2,253	32.78
2014	75,659	2,298	32.92
2015	76,493	2,322	32.94
2016	78,388	2,404	32.61
2017	82,341	2,466	33.39
2018	87,298	2,604	33.53
Forecast			
2019	88,509	2,629	33.66
2020	89,723	2,654	33.80
2021	91,148	2,686	33.94
2022	92,431	2,712	34.08
2023	93,759	2,740	34.22
2024	94,710	2,768	34.22
2025	95,519	2,792	34.22
2026	96,204	2,812	34.22
2027	96,824	2,830	34.22
2028	97,838	2,859	34.22
2029	99,334	2,903	34.22
2030	100,695	2,943	34.22
2031	102,193	2,987	34.22
2032	103,649	3,029	34.22
2033	105,096	3,071	34.22
2034	106,594	3,115	34.22
2035	107,932	3,154	34.22
2036	109,398	3,197	34.22
2037	110,856	3,240	34.22
2038	112,344	3,283	34.22
Compound Annual Growth Rate			
2009–2018	1.2%	-2.1%	3.4%
2018–2038	1.3%	1.2%	0.1%

SOURCES: United States Department of Transportation, Form T-100, January 2019 (historical); Federal Aviation Administration, National Aerospace Forecast, Fiscal Years 2018—2038, March 2018; Ricondo & Associates, Inc., January 2019 (forecast).

As noted above, the fleet mix of all-cargo aircraft at the Airport is generally getting larger in average aircraft size. The most pronounced trend is the predominance of small/standard body aircraft (e.g. Boeing 757F) and medium widebody aircraft (e.g., Airbus A300F, and Boeing 767F). This trend is expected to continue throughout the forecast period, similar to global trends described in the Boeing World Air Cargo Forecast, which forecasts the global fleet of small/standard body and medium widebody aircraft to grow at a 2.9 percent and 3.0 percent CAGR, respectively, compared to 2.0 percent for the large widebody fleet (e.g., DC-10F, MD-11F). At JAX, the share of all-cargo operations on large widebody aircraft is projected to remain near the current level of 12.8 percent. Medium widebody operations are projected to account for 66.0 percent of all-cargo operations in 2037, up from 62.3 percent in 2018. Small/standard body operations are projected to decrease from 24.9 percent of total all-cargo operations in 2017 to 21.0 percent in 2038. **Table 3-20** presents historical and forecast fleet mix by maximum payload.

TABLE 3-20 HISTORICAL AND FORECAST ALL-CARGO FLEET MIX

CALENDAR YEAR	SMALL/STANDARD BODY (0-<45 TONS PAYLOAD)	MEDIUM WIDEBODY (45-80 TONS PAYLOAD)	LARGE WIDEBODY (>85 TONS PAYLOAD)
Historical			
2009	18.2%	65.5%	16.2%
2010	14.0%	65.2%	20.8%
2011	15.7%	65.0%	19.4%
2012	15.5%	66.0%	18.4%
2013	39.7%	37.8%	22.5%
2014	16.0%	59.9%	24.0%
2015	25.1%	62.1%	12.8%
2016	31.2%	68.2%	0.5%
2017	18.2%	65.5%	16.2%
2018	24.9%	62.3%	12.8%
Forecast			
2019	24.7%	62.5%	12.8%
2020	24.5%	62.7%	12.8%
2021	24.3%	62.9%	12.8%
2022	24.1%	63.1%	12.9%
2023	23.9%	63.3%	12.9%
2024	23.7%	63.5%	12.9%
2025	23.5%	63.6%	12.9%
2026	23.3%	63.8%	12.9%
2027	23.0%	64.0%	12.9%
2028	22.9%	64.2%	12.9%
2029	22.6%	64.4%	12.9%
2030	22.5%	64.6%	12.9%
2031	22.2%	64.8%	12.9%
2032	22.1%	65.0%	13.0%
2033	21.8%	65.2%	13.0%
2034	21.7%	65.4%	13.0%
2035	21.4%	65.6%	13.0%
2036	21.3%	65.8%	13.0%
2037	21.0%	66.0%	13.0%
2038	21.0%	66.0%	13.0%

SOURCES: Jacksonville International Airport, All-Cargo Landing Reports, December 2018 (historical); Boeing, *World Air Cargo Forecast 2018-2037*, 2018; Ricondo & Associates, Inc., December 2018 (forecast).

3.5 GENERAL AVIATION AND MILITARY AIRCRAFT OPERATIONS FORECASTS

Forecasts of general aviation/other air taxi and military aircraft operations have been adopted from the FAA's 2018 TAF. The forecasts of general aviation/other air taxi operations, based aircraft, and military operations are shown in **Table 3-21**, **Table 3-22**, and **Table 3-23**, respectively. The TAF has been converted to calendar years for use in this Master Plan Update.

TABLE 3-21 GENERAL AVIATION/OTHER AIR TAXI OPERATIONS FORECAST

CALENDAR YEAR	ITINERANT GA/OTHER AIR TAXI	LOCAL CIVIL	TOTAL
Historical			
2009	19,670	582	20,252
2010	18,312	993	19,305
2011	16,903	934	17,837
2012	18,693	1,062	19,755
2013	17,728	1,464	19,192
2014	17,505	906	18,411
2015	17,952	987	18,939
2016	21,309	778	22,087
2017	21,804	831	22,635
2018	22,310	990	23,299
Forecast			
2019	25,388	1,156	26,543
2020	26,258	1,166	27,423
2021	27,784	1,176	28,959
2022	28,720	1,186	29,906
2023	29,348	1,196	30,543
2024	30,583	1,206	31,788
2025	31,618	1,216	32,834
2026	32,689	1,226	33,915
2027	33,851	1,236	35,087
2028	34,891	1,246	36,137
2029	35,881	1,256	37,136
2030	36,984	1,266	38,250
2031	38,101	1,276	39,376
2032	39,121	1,286	40,407
2033	40,091	1,296	41,386
2034	41,000	1,307	42,306
2035	42,013	1,318	43,331
2036	43,039	1,329	44,367
2037	43,961	1,340	45,301
2038	44,902	1,351	46,253
Compound Annual Growth Rate			
2009-2018	1.5%	6.1%	1.7%
2018-2038	3.5%	1.6%	3.4%

NOTE: The TAF has been converted to calendar year for use in the Master Plan Update.
SOURCES: Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

TABLE 3-22 GENERAL AVIATION BASED AIRCRAFT FORECAST

CALENDAR YEAR	SINGLE	JET	MULTI	HELICOPTER	OTHER	TOTAL
Historical						
2009	5	21	5	0	20	51
2010	8	19	7	0	0	34
2011	11	23	8	0	0	42
2012	6	25	7	0	16	54
2013	5	23	12	0	20	60
2014	5	23	12	0	20	60
2015	3	27	9	0	0	39
2016	2	28	5	0	20	55
2017	3	25	8	0	0	36
2018	3	25	8	0	0	36
Forecast						
2019	3	25	8	0	0	36
2020	3	25	8	0	0	36
2021	3	25	8	0	0	36
2022	3	26	8	0	0	37
2023	3	26	8	0	0	37
2024	3	26	8	0	0	37
2025	3	26	8	0	0	37
2026	3	26	8	0	0	37
2027	3	26	8	0	0	37
2028	3	26	8	0	0	37
2029	3	27	8	0	0	38
2030	3	27	8	0	0	38
2031	3	27	8	0	0	38
2032	3	27	8	0	0	38
2033	3	27	8	0	0	38
2034	3	27	8	0	0	38
2035	3	27	8	0	0	38
2036	3	27	8	0	0	38
2037	3	28	8	0	0	39
2038	3	28	8	0	0	39
Compound Annual Growth Rate						
2009-2018	-5.5%	2.0%	5.4%	NA	NA	-3.8%
2018-2038	0.0%	0.6%	0.0%	NA	NA	0.4%

NOTE: The TAF has been converted to calendar year for use in the Master Plan Update.
SOURCES: Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

TABLE 3-23 MILITARY AIRCRAFT FORECAST

CALENDAR YEAR	TOTAL MILITARY OPERATIONS
Historical	
2009	6,089
2010	6,811
2011	6,995
2012	6,296
2013	7,037
2014	7,306
2015	11,086
2016	15,007
2017	10,495
2018	8,801
Forecast	
2019	8,801
2020	8,801
2021	8,801
2022	8,801
2023	8,801
2024	8,801
2025	8,801
2026	8,801
2027	8,801
2028	8,801
2029	8,801
2030	8,801
2031	8,801
2032	8,801
2033	8,801
2034	8,801
2035	8,801
2036	8,801
2037	8,801
2038	8,801
Compound Annual Growth Rate	
2009-2018	4.2%
2018-2040	0.0%

NOTE: The TAF has been converted to calendar year for use in the Master Plan Update and may differ from historical airport data.
SOURCES: Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

3.6 COMPARISON TO OTHER FORECASTS

This section compares the Master Plan Update forecasts described in this document to the FAA's 2018 TAF.

3.6.1 ENPLANED PASSENGER FORECAST COMPARISON

Table 3-24 compares the forecasts for enplaned passengers in the Master Plan Update and the 2018 TAF, while **Exhibit 3-11** depicts this comparison graphically. Table 3-24 also shows the variance between the Master Plan Update and 2018 TAF. Between 2018 and 2038, the TAF forecasts enplaned passengers to grow at a 3.1 percent CAGR, compared to the 2.4 percent CAGR forecast in the Master Plan update. While differences exist between these forecasts in the composition of enplaned passengers (the Master Plan Update forecast includes nonrevenue passengers, while the FAA's TAF does not), the Master Plan forecast remains within the variance tolerance levels specified by the FAA (within 10 percent over 5 years, and within 15 percent over 10 years).[8]

TABLE 3-24 COMPARISON OF ENPLANED PASSENGER FORECASTS

CALENDAR YEAR	MASTER PLAN UPDATE	2018 TAF	VARIANCE FROM TAF
Historical			
2009	2,781,983	2,802,543	-0.7%
2010	2,814,734	2,727,113	3.2%
2011	2,753,413	2,734,770	0.7%
2012	2,601,940	2,614,884	-0.5%
2013	2,566,058	2,545,262	0.8%
2014	2,621,650	2,576,796	1.7%
2015	2,763,518	2,686,257	2.9%
2016	2,799,363	2,722,195	2.8%
2017	2,788,885	2,675,337	4.2%
2018	3,234,188	2,998,650	7.9%
Forecast			
2019	3,633,605	3,606,479	0.8%
2020	3,686,571	3,715,148	-0.8%
2021	3,732,468	3,819,133	-2.3%
2022	3,789,133	3,916,112	-3.2%
2023	3,854,121	4,009,329	-3.9%
2024	3,921,713	4,096,765	-4.3%
2025	3,991,520	4,182,897	-4.6%
2026	4,061,428	4,268,918	-4.9%
2027	4,131,629	4,360,036	-5.2%
2028	4,209,246	4,452,657	-5.5%
2029	4,294,646	4,549,600	-5.6%
2030	4,379,786	4,649,334	-5.8%
2031	4,470,180	4,754,007	-6.0%
2032	4,563,060	4,863,317	-6.2%
2033	4,659,895	4,972,847	-6.3%
2034	4,761,234	5,083,135	-6.3%
2035	4,857,980	5,192,798	-6.4%
2036	4,956,004	5,304,684	-6.6%
2037	5,060,613	5,414,696	-6.5%
2038	5,169,873	5,530,067	-6.5%
Compound Annual Growth Rate			
2009-2018	1.7%	0.8%	
2018-2040	2.4%	3.1%	

NOTE: The TAF excludes nonrevenue passengers and is presented on a Federal fiscal year basis (October-September). The Master Plan Update forecast includes nonrevenue passengers and is presented on a calendar year basis.

SOURCES: Jacksonville Aviation Authority, February 2019 (historical); Ricondo & Associates, Inc., February 2019, (forecast); Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

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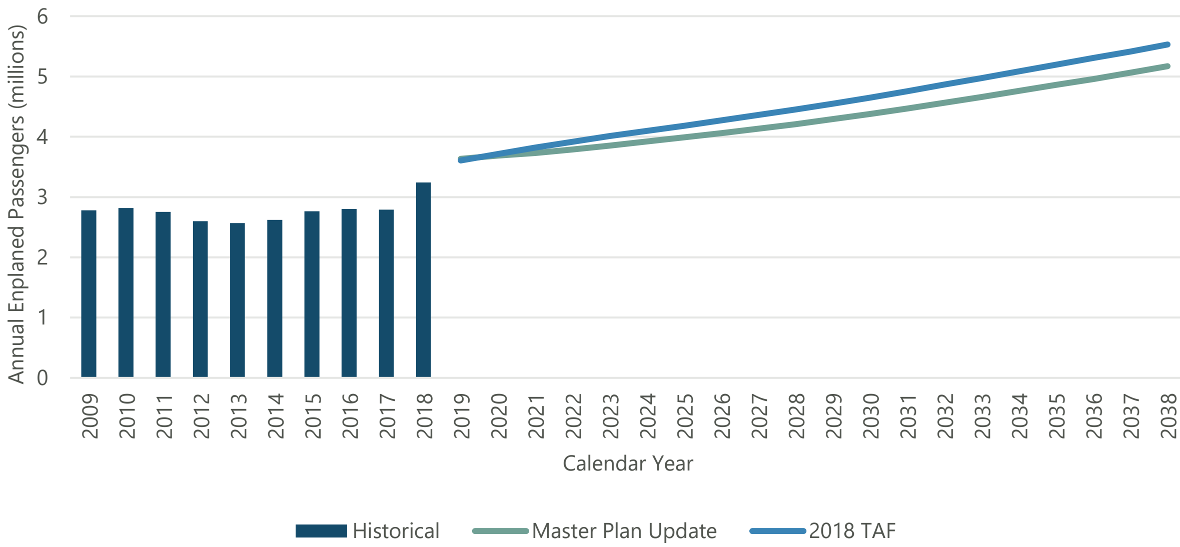
[8] Forecast tolerances are defined in FAA Advisory Circular 150/5070-6B.

EXHIBIT 3-11 COMPARISON OF ENPLANED PASSENGER FORECASTS



NOTE: The TAF excludes nonrevenue passengers and is presented on a Federal fiscal year basis (October-September). The Master Plan Update forecast includes nonrevenue passengers and is presented on a calendar year basis.

SOURCES: Jacksonville Aviation Authority, February 2019 (historical); Ricondo & Associates, Inc., February 2019, (forecast); Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

3.6.2 AIRCRAFT OPERATIONS FORECAST COMPARISON

Table 3-25 compares forecasts of total aircraft operations in the Master Plan Update with the 2017 TAF, while **Exhibit 3-12** presents this information graphically. Table 3-25 also shows the variance between the Master Plan Update aircraft operations forecast and the 2017 TAF. Between 2018 and 2038, the TAF forecasts aircraft operations to grow at a 2.0 percent CAGR compared to a 1.9 percent CAGR forecast in the Master Plan Update.

3.7 DESIGN DAY FLIGHT SCHEDULES

3.7.1 OVERVIEW

For purposes of assessing future facility and operating requirements, design day flight schedules (DDFSs) of Airport aircraft and passenger activity were developed to define the magnitude and characteristics of aircraft utilizing the Airport. The DDFS represents aircraft movements and the distribution of passengers throughout the hours of an average representative day at the Airport.

This section describes the methodology used to define the DDFS, and it also describes the analyses and assumptions that contributed to its development. It is important to recognize the DDFS is foremost a representation of what could be experienced at the Airport at the future activity levels in terms of a peak period average day (PPAD) specifically reflecting hourly arriving and departing passengers and aircraft. The DDFS secondarily provides an indication of future individual airline activity levels and market service patterns.

The following subsections describe the development and results of the Airport's DDFSs for the base year (2019) and the future planning horizons: PAL 1 (8.0 million annual passengers [MAP]), PAL 2 (9.0 MAP), and PAL 3 (10.0 MAP).

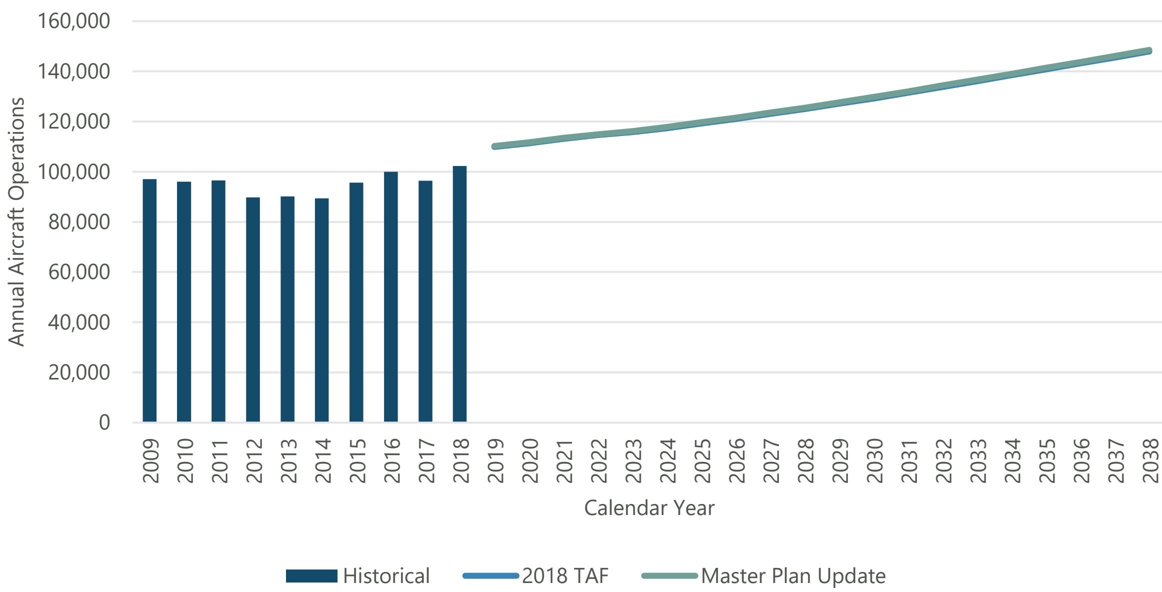
TABLE 3-25 COMPARISON OF AIRCRAFT OPERATIONS FORECASTS

CALENDAR YEAR	MASTER PLAN UPDATE	2018 TAF	VARIANCE FROM TAF
Historical			
2009	96,979	97,625	3.2%
2010	96,030	95,039	-1.0%
2011	96,593	99,002	2.5%
2012	89,753	89,367	-0.4%
2013	90,164	90,911	0.8%
2014	89,902	87,922	-1.6%
2015	93,109	93,697	-2.1%
2016	103,788	101,575	1.6%
2017	93,748	95,204	-1.2%
2018	102,349	99,776	-2.5%
Forecast			
2019	110,239	109,893	-0.3%
2020	111,737	111,278	-0.4%
2021	113,483	113,114	-0.3%
2022	114,881	114,590	-0.3%
2023	116,154	115,752	-0.3%
2024	117,825	117,360	-0.4%
2025	119,686	119,221	-0.4%
2026	121,569	121,079	-0.4%
2027	123,534	123,037	-0.4%
2028	125,542	125,023	-0.4%
2029	127,629	127,097	-0.4%
2030	129,784	129,226	-0.4%
2031	132,036	131,456	-0.4%
2032	134,359	133,777	-0.4%
2033	136,688	136,103	-0.4%
2034	139,026	138,444	-0.4%
2035	141,367	140,773	-0.4%
2036	143,732	143,148	-0.4%
2037	146,097	145,485	-0.4%
2038	148,546	147,931	-0.4%
Compound Annual Growth Rate			
2009-2018	0.6%	0.2%	
2018-2038	1.9%	2.0%	

NOTE: The TAF is presented on a Federal fiscal year basis (October-September). The master plan Update forecast is presented on a calendar year basis. The 2018 TAF has been used to reflect other general aviation and military aircraft operations in the Master Plan Update forecast operations totals.

SOURCES: Jacksonville Aviation Authority, February 2019 (historical); Ricondo & Associates, Inc., February 2019, (forecast); Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

EXHIBIT 3-12 COMPARISON OF AIRCRAFT OPERATIONS FORECASTS



NOTE: The TAF is presented on a Federal fiscal year basis (October-September). The Master Plan Update forecast is presented on a calendar year basis. The 2018 TAF has been used to reflect other general aviation and military aircraft operations in the Master Plan Update forecast operations totals.
SOURCES: Jacksonville Aviation Authority, February 2019 (historical); Ricondo & Associates, Inc., February 2019, (forecast); Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

3.7.2 DESIGN DAY FLIGHT SCHEDULE DEVELOPMENT

The DDFS represents the aircraft and passenger activity anticipated at the Airport during the PPAD. It provides information on aircraft arrival time, aircraft departure time, equipment type, numbers of arriving passengers, numbers of departing passengers, O&D and connecting passengers, seating capacity, load factor, and markets for each commercial flight at the Airport during the design day. A representative airline and/or operator is also included.

3.7.2.1 DESIGN DAY FLIGHT SCHEDULE – 2019

To develop the passenger airline DDFSs, the monthly passenger activity levels (i.e., scheduled seat capacity and operations) for 2019 were reviewed to determine the peak period. Airport data and published data identified March to August as the peak period for passenger airline operations and passenger volumes. **Table 3-26** (passenger airline operations) and **Table 3-27** (historical passenger volumes and 2019 scheduled seat capacity) present 5 years of historical monthly data and 2019 published data.

Due to Saturday airline operations levels (typically less than all other days of the week), the number of operations from March 2019 to August 2019 were totaled to determine both the average day and the average day excluding Saturday. A review of Innovata airline schedules for each day from March 2019 to August 2019 determined that airline operation levels on June 20 represented a reasonable day for DDFS development. Consequently, the June 20 schedule is the base schedule. **Exhibit 3-13** and **Exhibit 3-14** depict March 2019 to August 2019 scheduled passenger airline daily operations and scheduled seat capacity data, respectively. The Innovata airline schedule for the base day provides the airline, type of aircraft, number of seats, origin, destination, and flight times for each scheduled passenger airline flight.

TABLE 3-26 PUBLISHED SCHEDULED PASSENGER AIRLINE OPERATIONS

MONTH	2014	2015	2016	2017	2018	2019
Total Scheduled Passenger Airline Operations						
January	4,907	5,125	4,799	4,835	4,961	5,596
February	4,537	4,783	4,589	4,381	4,533	5,211
March	5,500	5,772	5,345	5,150	5,363	6,266
April	5,348	5,657	5,333	5,126	5,680	6,117
May	5,472	5,621	5,556	5,355	5,917	6,326
June	5,298	5,406	5,396	5,195	5,943	6,265
July	5,386	5,559	5,528	5,281	6,189	6,352
August	5,353	5,327	5,393	5,258	6,229	6,261
September	5,101	4,794	5,004	4,779	5,680	5,845
October	5,365	5,031	5,244	5,024	5,892	6,151
November	5,081	4,874	5,105	4,860	5,518	5,759
December	5,309	5,066	5,255	5,088	5,634	5,920
Total Operations	**62,657**	**63,015**	**62,547**	**60,332**	**67,539**	**72,069**
Peak Month	March	March	May	May	August	July
Average Daily Operations						
January	158.3	165.3	154.8	156.0	160.0	180.5
February	162.0	170.8	163.9	156.5	161.9	186.1
March	177.4	186.2	172.4	166.1	173.0	202.1
April	178.3	188.6	177.8	170.9	189.3	203.9
May	176.5	181.3	179.2	172.7	190.9	204.1
June	176.6	180.2	179.9	173.2	198.1	208.8
July	173.7	179.3	178.3	170.4	199.6	204.9
August	172.7	171.8	174.0	169.6	200.9	202.0
September	170.0	159.8	166.8	159.3	189.3	194.8
October	173.1	162.3	169.2	162.1	190.1	198.4
November	169.4	162.5	170.2	162.0	183.9	192.0
December	171.3	163.4	169.5	164.1	181.7	191.0
Average Daily Operations	**171.7**	**172.6**	**171.4**	**165.3**	**185.0**	**197.4**
Peak Month	April	April	June	June	August	June

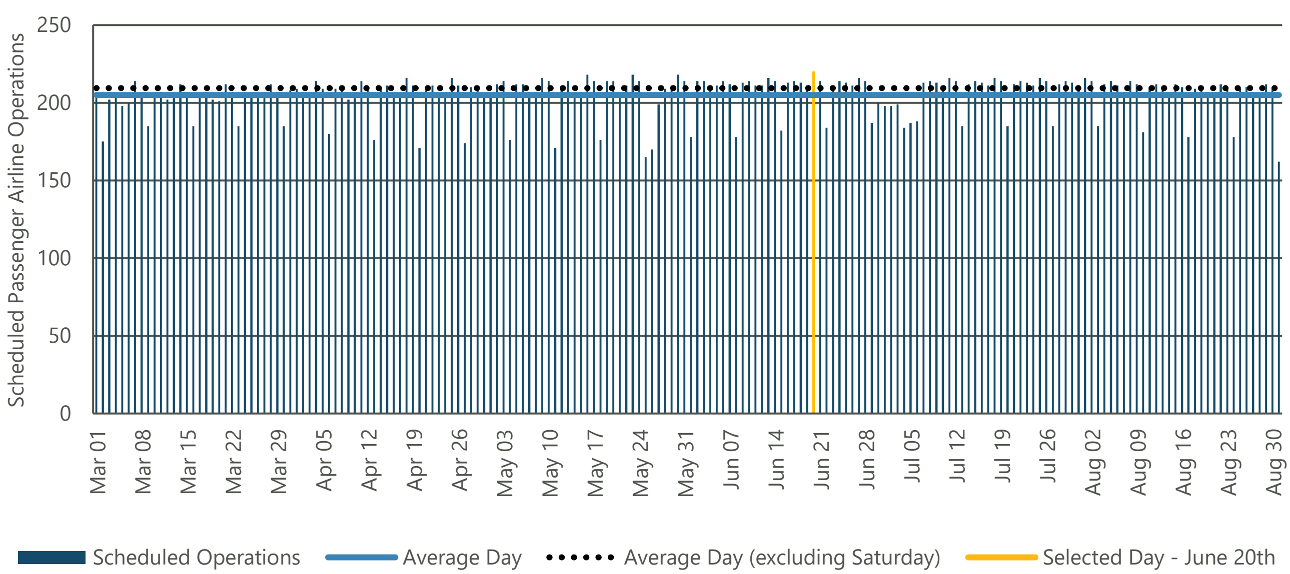
SOURCE: Innovata, January 2019.

TABLE 3-27 HISTORICAL PASSENGER VOLUMES AND 2019 SCHEDULED SEAT CAPACITY

MONTH	2014	2015	2016	2017	2018 [1]	2019 [2]
January	366,287	374,293	379,826	400,980	411,739	668,247
February	356,962	369,443	390,528	382,378	415,897	639,619
March	478,827	485,645	486,396	489,357	521,606	782,730
April	465,137	485,078	467,287	469,073	536,585	761,329
May	480,322	497,209	501,751	491,964	570,582	771,289
June	461,435	485,321	496,023	481,171	571,061	748,675
July	472,837	506,626	493,235	480,581	585,788	750,851
August	448,849	472,712	455,588	452,878	568,962	743,478
September	406,645	428,010	440,084	358,690	503,479	714,674
October	456,239	470,266	430,184	483,646	557,973	756,906
November	410,611	445,216	471,959	472,952	549,402	702,152
December	435,976	442,004	465,255	465,471	549,911	709,614
Total	**5,240,127**	**5,461,823**	**5,478,116**	**5,429,141**	**6,342,985**	**8,749,564**
Peak Month	May	July	May	May	July	March

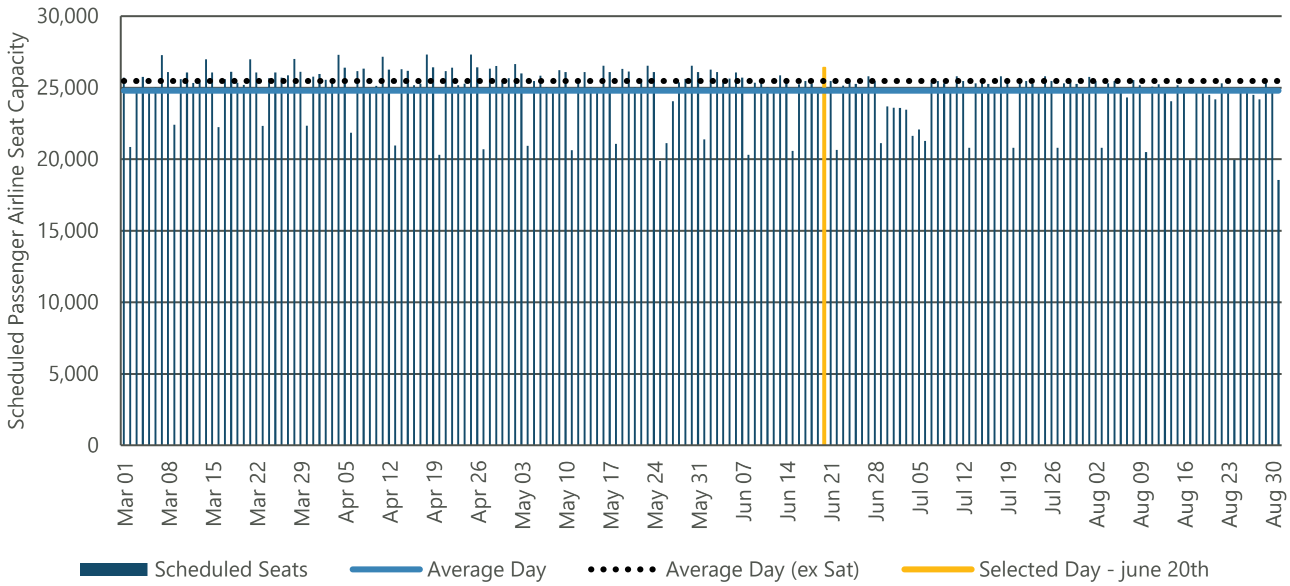
NOTES: Passenger volumes based on U.S. Department of Transportation T-100 data; data may not match actual passenger volumes reported by the Authority.
1 Passenger volumes for November (2018) and December (2018) exclude international data.
2 Scheduled passenger airline seat capacity is shown for all months in 2019.
SOURCES: Innovata, January 2019; U.S. Department of Transportation, T-100, January 2019.

EXHIBIT 3-13 SCHEDULED PASSENGER AIRLINE OPERATIONS – MARCH 2019 TO AUGUST 2019



NOTES:
Average Day = 205 operations
Average Day (excluding Saturday) = 209 operations
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

EXHIBIT 3-14 SCHEDULED PASSENGER AIRLINE SEAT CAPACITY – MARCH 2019 TO AUGUST 2019



NOTES:
Average Day = 24,797 seats
Average Day (excluding Saturday) = 25,469 seats
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

The number of passengers on each flight was determined by calculating the average monthly flight load factor using the number of monthly passengers and the number of monthly seats by airline and market, which was based on June 2018 U.S. Department of Transportation data (T-100 data provided through Innovata databases). This airline/market load factor was applied to the number of seats in the base schedule to determine the number of passengers on each flight for the base year (2019). **Table 3-28** shows the base year DDFS results.

TABLE 3-28 BASE YEAR DESIGN DAY FLIGHT SCHEDULE SUMMARY

MONTH	PASSENGERS	SEATS	LOAD FACTOR	AVERAGE SEATS	OPERATIONS
Arrivals	11,384	13,202	86.2%	120.0	110
Departures	11,580	13,191	87.8%	119.9	110
Total	**22,694**	**26,393**	**87.0%**	**120.0**	**220**

SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., January 2019.

3.7.2.2 SCHEDULED PASSENGER AIRLINES

Future year DDFSs are based on the Master Plan Update baseline forecasts. Overall assumptions used in developing the DDFSs include the following:

- Forecast growth for passengers and operations was based on the corresponding annual growth rates presented in the forecasts. Individual airline and/or market activity forecasts were not applied to the DDFS development.
- Annual passenger airline forecast segments include: Legacy/Big 3 (American Airlines, Delta Air Lines, United

Airlines), Low Cost (JetBlue Airways and Southwest Airlines), Ultra Low Cost (Allegiant Air, Frontier Airlines, and Spirit Airlines), and Foreign Flag (Air Canada).

- The base year PPAD to annual ratio of passengers and operations would remain stable over future years in the planning horizon.
- Input on potential new markets serving JAX were based on forecast O&D demand in top O&D markets without nonstop service in the base year. Forecast annual O&D passenger volumes in these markets were compared to an established threshold based on an average aircraft size (150 seats) with an assumed load factor (85 percent) and being capable of once daily annual service. Some potential top O&D markets were incorporated throughout different years in the DDFS development as forecast O&D passenger volumes reached and/or surpassed the established passenger threshold (approximately 46,500 annual O&D passengers). **Table 3-29** lists the top domestic O&D markets and the forecast annual O&D passenger volumes for potential new markets.
- New destinations and increased service to existing destinations would continue to be served by airlines currently operating at the Airport. Some new destinations were incorporated based on top O&D markets not served in the base (2019) DDFSs.

TABLE 3-29 TOP TEN DOMESTIC ORIGIN AND DESTINATION MARKETS NOT SERVED IN BASE DESIGN DAY FLIGHT SCHEDULE

AIRPORT	DOMESTIC O&D ENPLANED PASSENGERS			
	2019 ESTIMATE	PAL 1	PAL 3	PAL 4
LAX – Los Angeles	50,678	55,670	62,346	69,122
SEA – Seattle	39,682	43,591	48,818	54,124
SAN – San Diego	38,233	41,999	47,036	52,148
PHX – Phoenix	36,205	39,772	44,541	49,382
SFO – San Francisco	34,768	38,192	42,772	47,421
AUS – Austin	33,195	36,465	40,837	45,276
MCI – Kansas City	25,204	28,232	31,013	34,733
BDL – Hartford	24,663	27,626	30,347	33,987
SAT – San Antonio	20,900	23,411	25,717	28,802
CMH – Columbus, OH	19,142	21,441	23,553	26,378

NOTES:
PAL – Planning Activity Level
O&D – Origin and Destination
SOURCES: U.S. Department of Transportation, DB1B Survey, 2018; Ricondo & Associates, Inc., March 2019.

The base year DDFS was used in the progressive development of the PAL 1, PAL 2, and PAL 3 DDFSs. Load factors and available seats were determined through an iterative process that attempted to simulate an individual airline's changes in flight frequency and aircraft size in response to forecast growth in enplaned/deplaned passengers and aircraft operations. The following steps briefly describe the schedule development process:

1. Forecasts of domestic and international passenger and aircraft operation growth rates were applied to the base year schedule to establish “targets” (passenger and aircraft operation levels) for each of the future DDFSs. These targets provide guidance by maintaining forecast market share and identifying the number of additional daily aircraft operations needed in each future schedule.
2. Forecast passenger growth rates from 2019 to PAL 1 were applied to the base schedule on a route-by-route basis. This was followed by a test calculation (run on a route-by-route basis) to determine whether forecast PAL 1 passenger volumes could be accommodated on base-year aircraft seat capacity (i.e., whether the load factor

was below 100 percent). If the load factor was greater than the flight-specific threshold (approximately 95 percent), then the base year aircraft was (1) increased in gauge; (2) unchanged and a new flight was added to the airline-market combination; and/or (3) unchanged if the load factor was below 100 percent to meet forecast operations and projected fleet-mix targets. If the forecast passenger growth resulted in reasonable load factors and acceptable aircraft types/sizes, then the aircraft assigned in the schedule remained unchanged. In some instances, passenger growth resulted in reasonable load factors; however, the aircraft was changed to represent changes in planned airline fleets (i.e., retirement of specific aircraft).

3. In some cases, professional experience and judgment were used to determine whether an increase in aircraft gauge and/or a new flight(s) was added to an airline-market combination. These decisions were based primarily on whether (1) the airline fleet consists of, or the airline has on order for, larger gauge aircraft for the applicable DDFS period; (2) a larger gauge aircraft is available that could reasonably and effectively operate in the market; and (3) a new flight addition would be consistent with forecast growth of additional aircraft operations.
4. If an additional flight(s) was added to an existing market, then passengers were redistributed across all flights in that airline-market combination. Flights added to the DDFS were matched with new flight arrivals/departures and based on typical turnaround times for the specific airline and fleet types serving the Airport. If applicable, new flights were assumed to return to their origins/destinations rather than "flowing through" to other origins and destinations. Times for additional flights to existing markets were established considering flights currently provided by the specific airline, estimates of times airline travelers would typically prefer to arrive at and depart from the Airport, and timings of connections in destination hubs (if applicable).
5. Once the PAL 1 DDFS was complete, the process was repeated for the PAL 2 DDFS, and then again for the PAL 3 DDFS. Each horizon year DDFS was built upon the prior horizon year's DDFS.

It was assumed that aircraft gauge would not decrease in future years, unless (1) no larger gauge aircraft was available in the fleet and (2) the new additional flight in the airline-market combination resulted in unreasonably low load factors for the combination. For example, a single daily Airbus 321 operation may have been down-gauged to an Airbus 320 as a new flight using an Airbus 319 was added to the airline-market combination to maintain reasonable load factors that are consistent with airline practices.

3.7.3 DESIGN DAY FLIGHT SCHEDULE SUMMARY

DDFS results and statistics developed from the baseline forecast for 2019 (base year), PAL 1, PAL 2, and PAL 3 schedules are shown in **Tables 3-30** through **3-38** and on **Exhibits 3-15** through **3-17**.

TABLE 3-30 DESIGN DAY FLIGHT SCHEDULE SUMMARY – TOTAL PASSENGERS

	TOTAL PASSENGERS		
	DDFS	ANNUAL	RATIO
2019	22,964	7,267,210	0.316%
PAL 1	25,257	7,983,039	0.316%
PAL 2	28,282	8,940,360	0.316%
PAL 3	31,491	9,912,008	0.318%
Growth Rate			
2019 – PAL 1	10.0%	9.9%	
2019 – PAL 2	23.2%	23.0%	
2019 – PAL 3	37.1%	36.4%	

NOTES: DDFS – Design Day Flight Schedule
PAL – Planning Activity Level
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

TABLE 3-31 DESIGN DAY FLIGHT SCHEDULE SUMMARY – PASSENGERS BY SEGMENT

	TOTAL PASSENGERS				
	LEGACY	LOW COST	ULTRA LOW COST	FOREIGN FLAG	TOTAL
2019	13,465	6,081	3,337	81	22,964
PAL 1	14,718	6,660	3,791	89	25,258
PAL 2	16,483	7,459	4,245	100	28,287
PAL 3	18,274	8,270	4,707	110	31,361
Change					
2019 – PAL 1	1,253	579	454	8	2,294
PAL 1 – PAL 2	1,765	799	455	11	3,029
PAL 2 – PAL 3	1,791	811	461	11	3,074

NOTE: PAL – Planning Activity Level
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

TABLE 3-32 DESIGN DAY FLIGHT SCHEDULE SUMMARY – TOTAL PASSENGER AIRLINE OPERATIONS

	PASSENGER AIRLINE OPERATIONS		
	DDFS	ANNUAL	RATIO
2019	220	72,266	0.304%
PAL 1	230	75,259	0.306%
PAL 2	246	80,872	0.304%
PAL 3	266	87,367	0.304%
Growth Rate			
2019 – PAL 1	4.5%	4.1%	
2019 – PAL 2	11.8%	11.9%	
2019 – PAL 3	20.9%	20.9%	

NOTES: DDFS – Design Day Flight Schedule
PAL – Planning Activity Level
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

TABLE 3-33 DESIGN DAY FLIGHT SCHEDULE SUMMARY – PASSENGER AIRLINE OPERATIONS BY SEGMENT

	PASSENGER AIRLINE OPERATIONS				
	LEGACY	LOW COST	ULTRA LOW COST	FOREIGN FLAG	TOTAL
2019	140	56	22	2	220
PAL 1	145	58	24	2	229
PAL 2	155	63	26	2	247
PAL 3	168	68	29	2	267
Change					
2019 – PAL 1	5	2	2	0	9
PAL 1 – PAL 2	10	5	2	0	17
PAL 2 – PAL 3	12	5	2	0	20

NOTES: PAL – Planning Activity Level
Totals may not match due to rounding
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

TABLE 3-34 DESIGN DAY FLIGHT SCHEDULE PASSENGER AIRLINE FLEET SUMMARY

	PASSENGER AIRCRAFT OPERATIONS			
	2019	PAL 1	PAL 2	PAL 3
		Regional/Commuter Aircraft		
Operations	68	70	68	66
Seats	4,477	4,755	4,928	4,842
Average Seats	65.8	67.9	72.5	73.4
		Narrowbody Aircraft		
Operations	152	160	178	200
Seats	21,916	23,562	27,080	30,916
Average Seats	144.2	147.3	152.1	154.6
		Widebody Aircraft		
Operations	NA	NA	NA	NA
		Total		
Operations	220	230	246	266
Seats	26,393	28,317	32,008	35,758
Average Seats	120.0	123.1	130.1	134.4
		Share of Passenger Airline Operations		
Regional/Commuter	30.9%	30.4%	27.6%	24.8%
Narrowbody	69.1%	69.6%	72.4%	75.2%
Widebody	0.0%	0.0%	0.0%	0.0%

NOTES: Regional/commuter represents aircraft with seat capacity less than 79 seats. Narrowbody represents single-aisle aircraft with a seat capacity greater than 78 seats. Widebody represents dual-aisle aircraft.
PAL – Planning Activity Level
NA – Not Applicable
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

TABLE 3-35 DESIGN DAY FLIGHT SCHEDULE SUMMARY – PEAK-HOUR PASSENGERS

YEAR	DEPLANED	TIME	ENPLANED	TIME	TOTAL	TIME
2019	1,526	11:00–11:59	1,532	6:10–7:09	2,564	11:00–11:59
PAL 1	1,713	11:00–11:59	1,684	11:20–12:19, 11:30–12:29	2,922	11:00–11:59
PAL 2	1,800	11:00–11:59	1,767	11:20–12:19, 11:30–12:29	3,066	11:00–11:59
PAL 3	1,882	11:00–11:59	1,945	6:10–7:09	3,431	11:00–11:59

NOTE: PAL – Planning Activity Level
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

TABLE 3-36 DESIGN DAY FLIGHT SCHEDULE SUMMARY – PEAK-HOUR PASSENGER AIRLINE OPERATIONS

YEAR	ARRIVALS	TIME	DEPARTURES	TIME	TOTAL	TIME
2019	16	11:00–11:59	16	11:20–12:19, 11:30–12:29	27	11:00–11:59
PAL 1	17	11:00–11:59	17	11:20–12:19, 11:30–12:29	29	11:00–11:59
PAL 2	17	11:00–11:59	17	11:20–12:19, 11:30–12:29	29	11:00–11:59
PAL 3	17	10:10–11:09, 11:00–11:59	18	11:20–12:19	31	11:00–11:59

NOTE: PAL – Planning Activity Level
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

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TABLE 3-37 HOURLY SUMMARY – PASSENGERS

TIME OF DAY (HOURLY)	2019			PAL 1			PAL 2			PAL 3		
	DEPLANED	ENPLANED	TOTAL	DEPLANED	ENPLANED	TOTAL	DEPLANED	ENPLANED	TOTAL	DEPLANED	ENPLANED	TOTAL
0:00 – 0:59	280	0	280	294	0	294	307	0	307	322	0	322
1:00 – 1:59	0	0	0	0	0	0	0	0	0	0	0	0
2:00 – 2:59	0	0	0	0	0	0	0	0	0	0	0	0
3:00 – 3:59	0	0	0	0	0	0	0	0	0	0	0	0
4:00 – 4:59	0	0	0	0	0	0	0	0	0	0	0	0
5:00 – 5:59	0	314	314	0	330	330	0	345	345	0	349	349
6:00 – 6:59	0	1,381	1,381	0	1,444	1,444	158	1,506	1,664	158	1,646	1,803
7:00 – 7:59	86	928	1,014	91	964	1,055	92	1,175	1,268	97	1,311	1,408
8:00 – 8:59	280	539	819	292	567	859	307	600	907	297	597	893
9:00 – 9:59	474	328	802	495	342	837	523	365	888	537	366	903
10:00 – 10:59	860	1,039	1,899	903	1,090	1,993	932	1,128	2,060	1,168	1,155	2,323
11:00 – 11:59	1,526	1,038	2,564	1,713	1,209	2,922	1,800	1,267	3,066	1,882	1,549	3,431
12:00 – 12:59	122	841	963	196	953	1,149	202	1,011	1,213	277	1,072	1,350
13:00 – 13:59	647	250	897	676	263	938	711	276	987	867	509	1,376
14:00 – 14:59	813	703	1,516	988	739	1,726	1,286	775	2,061	1,347	843	2,190
15:00 – 15:59	614	850	1,464	644	1,030	1,674	814	1,333	2,147	939	1,354	2,293
16:00 – 16:59	624	568	1,192	765	598	1,363	926	758	1,684	978	886	1,864
17:00 – 17:59	372	466	838	548	609	1,156	810	890	1,700	954	949	1,903
18:00 – 18:59	589	685	1,274	613	877	1,490	649	1,038	1,687	901	1,171	2,072
19:00 – 19:59	872	771	1,643	920	800	1,720	953	850	1,803	1,005	1,151	2,156
20:00 – 20:59	512	699	1,211	540	736	1,276	561	752	1,313	562	778	1,340
21:00 – 21:59	895	180	1,075	938	185	1,124	990	192	1,182	1,017	192	1,209
22:00 – 22:59	967	0	967	1,014	0	1,014	1,067	0	1,067	1,227	0	1,227
23:00 – 23:59	851	0	851	891	0	891	935	0	935	1,081	0	1,081
Total	**11,384**	**11,580**	**22,964**	**12,521**	**12,736**	**25,257**	**14,021**	**14,261**	**28,282**	**15,613**	**15,878**	**31,491**
Peak Block Hour	1,526	1,381	2,564	1,713	1,444	2,922	1,800	1,506	3,066	1,882	1,646	3,431
Peak Rolling Hour (10-minute intervals)	1,526	1,532	2,564	1,713	1,684	2,922	1,800	1,767	3,066	1,882	1,945	3,431

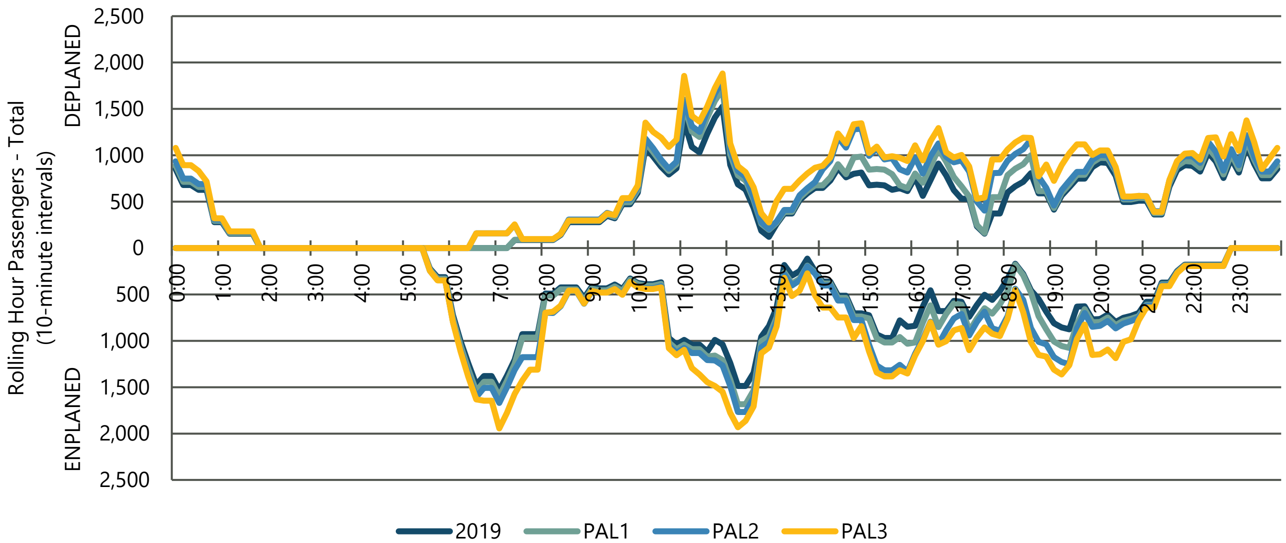
NOTE: PAL – Planning Activity Level
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

TABLE 3-38 HOURLY SUMMARY – PASSENGER AIRLINE OPERATIONS

TIME OF DAY (HOURLY)	2019			PAL 1			PAL 2			PAL 3		
	ARRIVALS	DEPARTURES	TOTAL	ARRIVALS	DEPARTURES	TOTAL	ARRIVALS	DEPARTURES	TOTAL	ARRIVALS	DEPARTURES	TOTAL
0:00 – 0:59	2	0	2	2	0	2	2	0	2	2	0	2
1:00 – 1:59	0	0	0	0	0	0	0	0	0	0	0	0
2:00 – 2:59	0	0	0	0	0	0	0	0	0	0	0	0
3:00 – 3:59	0	0	0	0	0	0	0	0	0	0	0	0
4:00 – 4:59	0	0	0	0	0	0	0	0	0	0	0	0
5:00 – 5:59	0	3	3	0	3	3	0	3	3	0	3	3
6:00 – 6:59	0	13	13	0	13	13	1	13	14	1	14	15
7:00 – 7:59	1	9	10	1	9	10	1	10	11	1	11	12
8:00 – 8:59	2	4	6	2	4	6	2	4	6	2	4	6
9:00 – 9:59	4	3	7	4	3	7	4	3	7	4	3	7
10:00 – 10:59	9	9	18	9	9	18	9	9	18	11	9	20
11:00 – 11:59	16	11	27	17	12	29	17	12	29	17	14	31
12:00 – 12:59	1	9	10	2	10	12	2	10	12	3	10	13
13:00 – 13:59	6	2	8	6	2	8	6	2	8	7	4	11
14:00 – 14:59	8	7	15	9	7	16	11	7	18	11	7	18
15:00 – 15:59	6	8	14	6	9	15	8	11	19	9	11	20
16:00 – 16:59	6	6	12	7	6	13	8	8	16	8	9	17
17:00 – 17:59	4	4	8	5	5	10	7	7	14	8	7	15
18:00 – 18:59	6	6	12	6	7	13	6	8	14	8	9	17
19:00 – 19:59	8	9	17	8	9	17	8	9	17	8	11	19
20:00 – 20:59	4	6	10	4	6	10	4	6	10	4	6	10
21:00 – 21:59	10	1	11	10	1	11	10	1	11	10	1	11
22:00 – 22:59	9	0	9	9	0	9	9	0	9	10	0	10
23:00 – 23:59	8	0	8	8	0	8	8	0	8	9	0	9
Total	**110**	**110**	**220**	**115**	**115**	**230**	**123**	**123**	**246**	**133**	**133**	**266**
Peak Block Hour	16	13	27	17	13	29	17	13	29	17	14	31
Peak Rolling Hour (10-minute intervals)	16	16	27	17	17	29	17	17	29	17	18	31

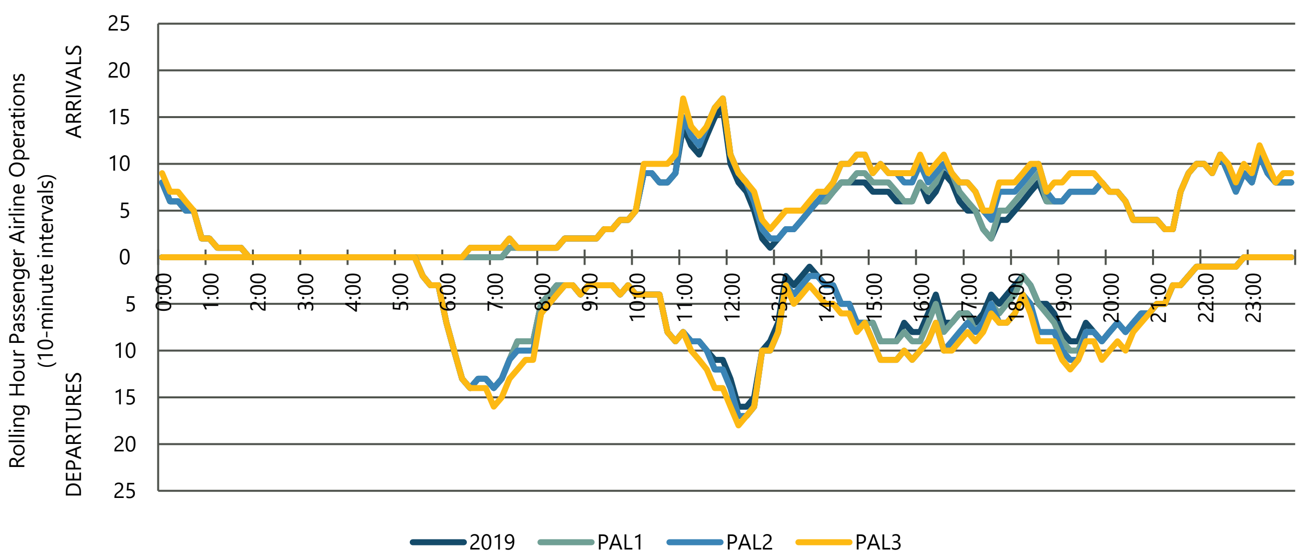
NOTE: PAL – Planning Activity Level
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

EXHIBIT 3-15 ROLLING-HOUR PASSENGERS



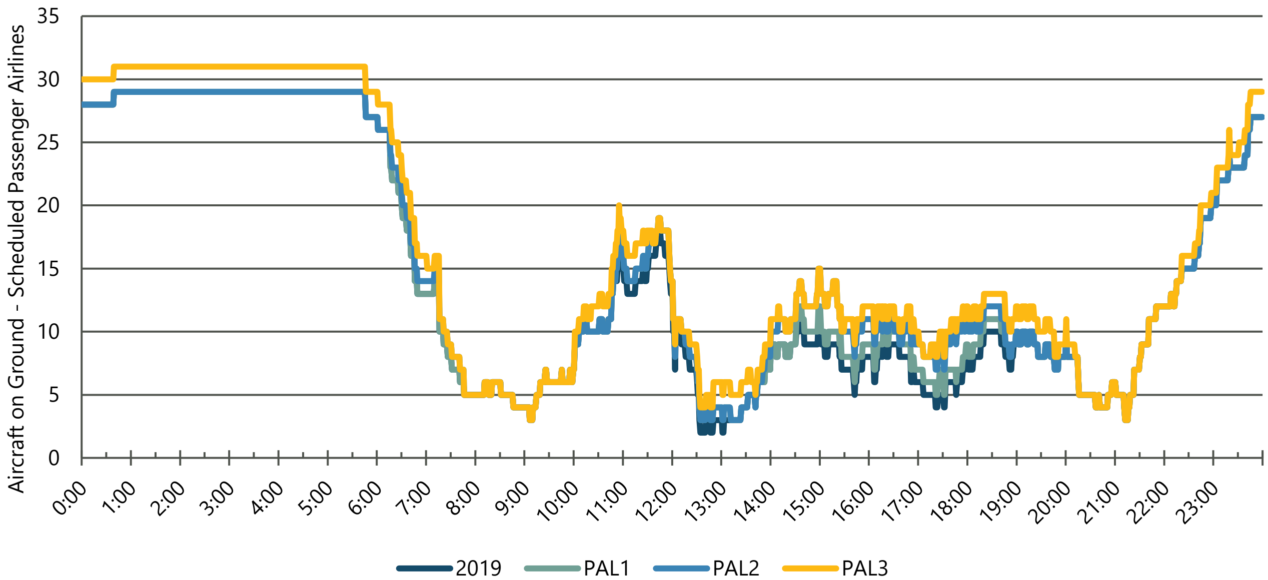
NOTE: PAL – Planning Activity Level
SOURCES: Innovata, January 2019; U.S. Department of Transportation, T-100, January 2019; Ricondo & Associates, Inc., March 2019.

EXHIBIT 3-16 ROLLING-HOUR PASSENGER AIRLINE OPERATIONS



NOTE: PAL – Planning Activity Level
SOURCES: Innovata, January 2019; U.S. Department of Transportation, T-100, January 2019; Ricondo & Associates, Inc., March 2019.

EXHIBIT 3-17 AIRCRAFT ON GROUND – PASSENGER AIRLINES



NOTES: Aircraft on ground is not a direct correlation to gate demand.
PAL – Planning Activity Level
SOURCES: Innovata, January 2019; Ricondo & Associates, Inc., March 2019.

4. DEMAND/CAPACITY AND FACILITY REQUIREMENTS

This chapter identifies the airfield and facility requirements needed to meet forecast demand at JAX through the 20-year planning period. Analyses were conducted to explore the relationships between demand and capacity for various Airport systems, and to assess the degree to which existing facilities will be able to meet projected future demand. The assessments were translated into specific facility requirements for three PALs, which represent threshold activity levels based on the forecasts described in Chapter 3. The analyses are documented in this chapter and categorized into four functional systems:

- **Airfield.** The airfield analysis assessed existing airfield capacity at JAX. Based on the forecast of operations, fleet mix, and peak activity characteristics outlined in Chapter 3, the overall hourly and annual capacities of the airfield were determined. Hourly demand and the extent (frequency and duration) to which this demand exceeds airfield capacity are key for determining the need for taxiway and/or runway enhancements to increase airfield operational capacity.
- **Passenger Terminal**. The major facility components were reviewed to determine if they would meet future passenger demand. These components include: aircraft gates and hardstands (i.e. remote aircraft parking); passenger security screening checkpoints; Departures Level check-in positions and Arrivals Lobby; baggage claim and the Arrivals Lobby; holdrooms; concessions areas; baggage processing (inbound and outbound); and public circulation areas associated with each component. Analysis was not completed for the Federal Inspection Services (FIS) facility at JAX due to there being no forecasted international air service to the airport throughout the planning horizon.
- **Airport/Airline Support.** The general aviation (GA) and air cargo facility requirements necessary to meet both current and projected demand were reviewed. The GA facility requirements that were assessed include a US Customs and Border Protection (CBP) facility for handling international GA passengers. Additionally, air cargo facility requirements were assessed at a high-level, based on the latest FAA TAF. Requirements addressing the Airport facilities necessary to support the airfield, GA facilities, passenger terminal, air cargo areas, and their related activities are also identified in this section, including air traffic control tower (ATCT) requirements.
- **Landside.** Walker Consultants prepared an analysis of on-Airport roadway and parking improvements to meet current and future Airport demand. The parking analysis evaluated current public and employee parking activity and demand profiles and identified potential parking capacity enhancements. In addition, the analysis looked into curbside improvements and consolidation of the rental car facilities.

4.1 PLANNING ACTIVITY LEVELS

As stated in FAA Advisory Circular (AC) 150/5070-6B, Change 1, *Airport Master Plans* (AC 150/5070-6B), forecasts of future aviation activity levels at an airport are the basis of effective planning for future development. Forecasts provide a gauge for the Airport to determine when new facilities or airfield improvements should be constructed. Forecasts also aid in the financial planning of capital improvement projects and airport budgets. The demand forecasts for JAX are organized into four levels: a baseline of existing demand, and three PALs that represent forecast short-, medium-, and long-term growth. AC 150/5070-6B states that short-term forecasts may be used to justify near-term development and support operational planning and environmental improvement programs; mid-term forecasts may be used to plan capital improvements; and long-term forecasts are helpful for general planning. The

PALs are not representative of a specific year in the future, because demand levels are uncertain and growth rates can fluctuate considerably over the course of a forecast period. Instead, the PALs represent demand levels of total passengers and the corresponding number of aircraft operations, and are used as benchmarks for planning, designing, and constructing airport projects. In some instances, the forecast year when a PAL will be reached may be used for general planning purposes, but the timeline alone would not drive development decisions. The PALs are used as references in determining the demand/capacity relationships and facility requirements for the airfield, terminal and support facilities. **Table 4-1** summarizes PALs 1 through 3 for the Airport, as defined in this Master Plan Update in terms of forecasted passenger activity and aircraft operations.

TABLE 4-1 PLANNING ACTIVITY LEVELS

PLANNING ACTIVITY LEVEL (PAL)	ENPLANED PASSENGERS (MILLIONS)	TOTAL PASSENGERS (MILLIONS)	TOTAL AIRCRAFT OPERATIONS
Baseline (CY 2018)	3.6	7.2	102,300
PAL 1	4.0	8.0	119,700
PAL 2	4.5	9.0	134,400
PAL 3	5.0	10.0	146,100

SOURCES: Ricondo & Associates, Inc., Aviation Activity Forecasts, March 2019; FAA Terminal Area Forecast, December 2018.

4.2 AIRFIELD DEMAND/CAPACITY

The capacity of the existing airfield was determined using the methodology outlined in FAA AC 150/5060-5, *Airport Capacity and Delay,* Change 2 (FAA AC 150/5060-5). Airfield capacity, sometimes referred to as throughput capacity, is defined as the maximum number of aircraft operations which can be accommodated on the airport or airport component in one hour. Airfield capacity varies according to weather conditions, aircraft fleet mix, and Air Traffic Control (ATC) procedures. The number and location of runway exits, and the share of touch-and-go operations also affect capacity. Delays in aircraft operations increase exponentially as aircraft demand nears or exceeds the airfield capacity under a specific operating condition. The airfield's hourly throughput capacity and annual service volume (ASV) were calculated using the PALs defined above, combined with a review of the factors affecting airfield capacity.

4.2.1 FACTORS AFFECTING AIRFIELD CAPACITY

The capacity of the existing runway system depends on several factors, as noted above, including aircraft fleet mix, number and configuration of runways and runway exits, meteorological conditions, air traffic control procedures, the type of navigational aids (NAVAIDS) available at the Airport, and the level of touch-and-go activity. These factors are discussed in the following subsections.

4.2.1.1 AIRCRAFT FLEET MIX

To determine the aircraft fleet mix, the aircraft operating at the Airport are categorized into five classes (A, B, C1, C2, and D) according to maximum take-off weight and number of engines, as shown in **Table 4-2**. The airfield's operational capacity decreases as larger aircraft operations (Class C2 and D) are combined with smaller aircraft operations (Class A and B). Larger aircraft create wake turbulence from their wingtips that trails behind and below the aircraft. This results in greater required spacing between large and small aircraft to avoid loss of control incidents either on approach or departure.

TABLE 4-2 AIRCRAFT CLASSIFICATIONS FOR ESTABLISHING AIRCRAFT FLEET MIX

AIRCRAFT CLASS	MAXIMUM CERTIFIED TAKE-OFF WEIGHT (POUNDS)	NUMBER OF ENGINES	WAKE TURBULENCE CLASSIFICATION	REPRESENTATIVE AIRCRAFT TYPES
A	12,500 or less	Single	Small	Piper PA-28, Cessna C-182, Cessna C-210
B	12,500 or less	Multi	Small	Beechcraft King Air C90GT, Cessna Citation CJ1/CJ2
C1	12,501 - 300,000	Multi	Large	McDonnell Douglas MD-80, Learjet 60, Cessna Citation V, B-737/8/9, A319/320/321
C2	12,500 – 300,000	Multi	Large-Heavy	Boeing 757-200/300
D	300,001 or more	Multi	Heavy	Airbus A300, Boeing 767, McDonnell Douglas MD-10/11, Boeing 747

SOURCE: Federal Aviation Administration, AC 150/5060-5, Airport Capacity and Delay, December 1995.

Class A is comprised of single-engine aircraft. At JAX, this category includes a limited number of operations by single-engine aircraft flown by GA pilots. Class B includes light turboprop aircraft, including the Beechcraft King Air C90GT, and light business jet aircraft (e.g., Cessna Citation CJ1 and CJ2). Class C1 includes midsize and heavy business jets, such as the Bombardier Gulfstream Global Express, Cessna Citation X, regional jet aircraft such as the Embraer E145 and Bombardier CRJ-900, as well as narrowbody jet aircraft including the Airbus A320 and Boeing 737. Class C2 consists of the Boeing 757 series. Class C2 was created due to the amount of wake turbulence produced by the 757 being far greater than the aircraft in Class C1 but still less than those aircraft found in Class D.

Class D includes widebody passenger and cargo aircraft, including the Boeing 767 and McDonnell Douglas MD-10 series, as well as large transport and fuel tanker aircraft flown by the United States Air Force. At JAX, Class D aircraft consist mainly of FedEx MD-10s and UPS Airbus A300 operations. The Airport also occasionally accommodates the Boeing KC-135 Stratotanker (operated by the USAF), and the Antonov An-124 cargo aircraft.

These aircraft classifications (Class A, B, C1, C2, and D) are used to determine the mix index, which is required to calculate the throughput capacity of the airfield. The mix index, as defined in FAA AC 150/5060-5, is the percent of Class C aircraft plus three times the percent of Class D aircraft, written as a percentage (C1+2C2+3D). The percentages of Class A and B aircraft are not considered in the mix index, because the wake turbulence generated by these small aircraft dissipates quickly, allowing other aircraft to be spaced closer when on approach.

For the mix index analysis, the Airport's baseline aircraft fleet mix was determined by reviewing the 2017 Airport Noise and Observation Monitoring System (ANOMS) data provided by JAA. Once the baseline fleet mix was established, assumptions were made about the fleet mixes for future years, based on guidance from the Aviation Activity Forecasts discussed in Chapter 3. A summary of the baseline and forecast fleet mix by aircraft class is presented in **Table 4-3**.

TABLE 4-3 BASELINE AND FORECAST FLEET MIX BY AIRCRAFT CLASSIFICATION

AIRCRAFT CLASS	BASELINE	PAL 1	PAL 2	PAL 3
A	5.9%	5.2%	4.4%	4.2%
B	2.5%	1.7%	1.5%	1.2%
C1	85.0%	87.0%	88.5%	89.5%
C2	3.8%	2.8%	2.3%	1.8%
D	2.9%	3.4%	3.4%	3.4%
Mix Index	101	103	103	103

NOTES:
1 Baseline and forecast fleet mix based on ANOMS data and the Aviation Activity Forecasts as noted below.
2 Includes small single-engine aircraft.
3 Includes small multi-engine aircraft, and light business jets.
4 Includes medium and heavy business jets and air carrier aircraft.
5 Includes large aircraft weighing over 300,000 pounds.
6 Totals may not add up to 100 percent due to rounding.
SOURCES: Jacksonville Aviation Authority, *Airport Noise and Observation Monitoring System*, October 2018; Ricondo & Associates, Inc., *Aviation Activity Forecasts,* March 2019.

As shown on Table 4-3, the existing and projected fleet mix at JAX comprises mainly Class C1 aircraft. To determine the existing and projected fleet mix, the following assumptions were made:

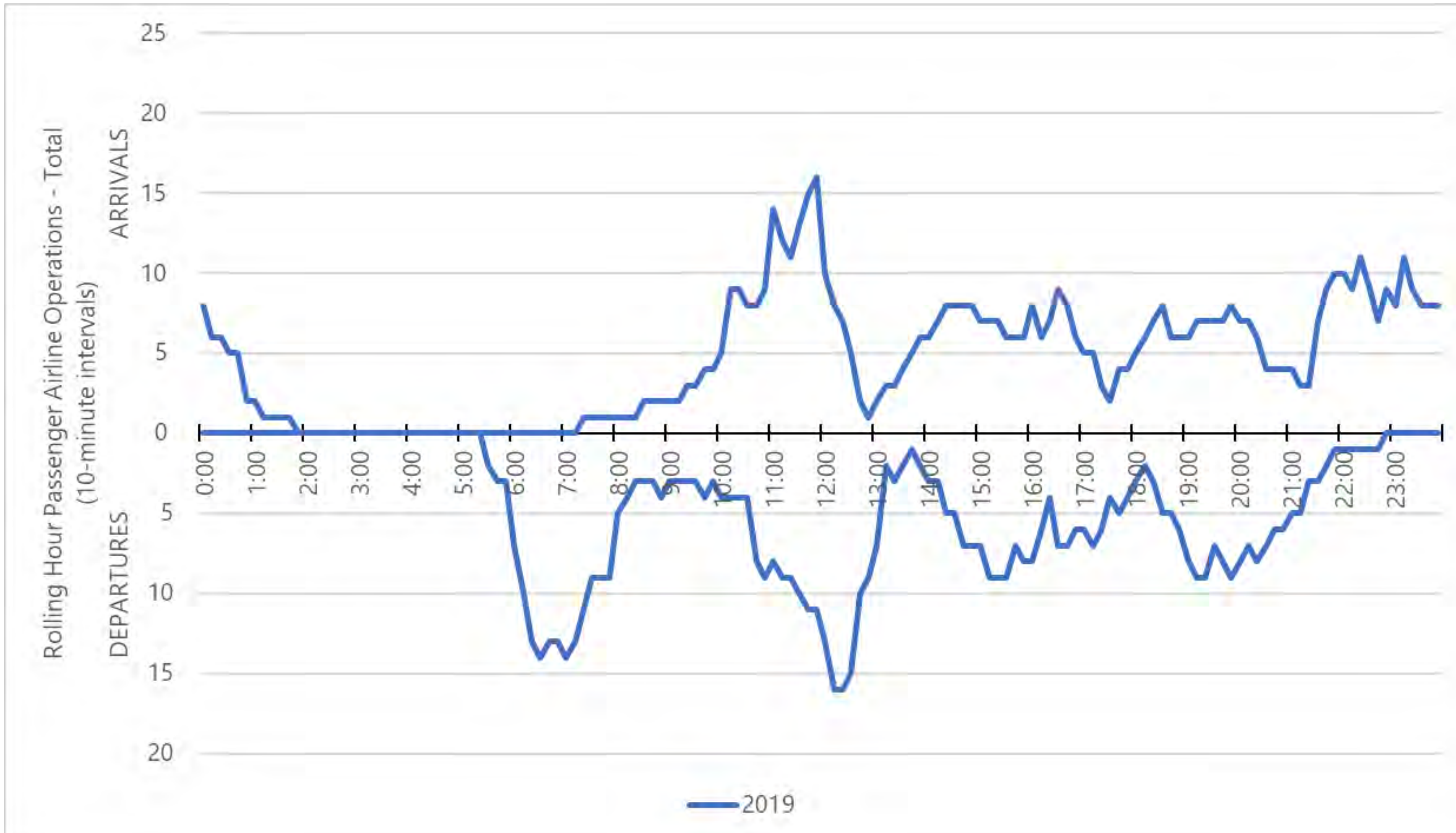
- Usage of Class C aircraft will continue to grow over time due to airlines' preference for mid-sized and large narrowbody jets over smaller regional jets or larger widebody aircraft for operations to and from JAX.
- Class D aircraft usage will grow slightly to accommodate the forecast growth in air cargo operations (discussed in Chapter 3).
- The mix of both Class A and Class B aircraft gradually decreasing over the planning horizon.

4.2.1.2 PERCENTAGE OF ARRIVALS

The relative distribution of aircraft departures and arrivals influences airfield capacity. Generally, a higher percentage of arrivals during a peak operating period will lower airfield capacity, because arriving aircraft spend more time occupying a runway than departing aircraft do. For planning purposes, this airfield capacity analysis assumes an equal 50/50 split between arrivals and departures. This assumption will provide an average measure of overall airfield capacity.

At JAX, there are times when departures exceed arrivals, and vice versa. **Exhibit 4-1** shows the hourly distribution of air carrier arrivals, departures, and total operations during an average, full 24-hour period at the Airport. The Airport experiences mainly departures in the early morning hours (between 6:00 a.m. and 7:00 a.m.) and arrivals in the evening hours (between 10:00 p.m. and 11:00 p.m.). Given this distribution, airfield capacity is higher in the early morning due to the limited number of arrivals and substantial number of departures. Airfield capacity is at its lowest during the mid-day peak when both arrivals and departures are at their highest levels.

EXHIBIT 4-1 HOURLY DISTRIBUTION OF OPERATIONS DURING 24-HOUR PERIOD (ROLLING PEAK HOUR) FOR THE PMAD



SOURCE: Ricondo and Associates, Inc., March 2019.

4.2.1.3 TOUCH-AND-GO OPERATIONS

A touch-and-go operation is an operation by a single aircraft that lands and departs without stopping or exiting the runway. Pilots conducting touch-and-go operations are usually conducting training exercises and stay within close proximity to the Airport.

An aircraft performing touch-and-go operations is only occupying the runway for a very short amount of time. Therefore, as the percentage of touch-and-go's increase, airfield capacity increases as well. Because JAX has a low percentage of touch-and-go operations due to limited pilot training activity, they were not factored into the airfield capacity calculations. This decision was based on guidance presented in FAA AC 150/5360-5, which states that airports with a mix index of 71 to 180 will not factor in any touch and go operations into the capacity calculations.

4.2.1.4 RUNWAY CONFIGURATION

The configuration and number of runways, as well as the lateral separation between parallel runways, directly influence an airfield's ability to accommodate various types of aircraft during a given timeframe. Different runway configurations result in a range of capacity values, due to operational limitations and restrictions.

As documented in Chapter 2, JAX has two runways which form an "open-V" configuration. Runway 8-26, the primary runway, is oriented in an east/west direction, and is 10,000 feet long and 150 feet wide. Runway 14-32, the crosswind runway, is oriented in a northwest/southeast direction and is 7,701 feet long and 150 feet wide.

The runways do not intersect, but aircraft operations on these runways are still dependent. The "open-V" causes the arrival flight tracks in an east flow configuration (Runways 8 and 14) and the departure flight tracks in a west flow configuration (Runways 26 and 32) to intersect. Therefore, aircraft arriving on, or departing from, Runway 14-32 are dependent on aircraft operations on Runway 8-26 during the traffic flows mentioned above. This decreases airfield capacity, compared to if the two runways operated independently.

4.2.1.5 RUNWAY EXITS

Proper placement and amount of exit taxiways, based on the Airport's fleet mix, can reduce runway occupancy times and increase capacity. The more time an aircraft spends on the runway after arriving, the less time the runway is available for the next arrival or departure. Although pilot technique and weather conditions are contributing factors, the FAA has determined optimal distances to exit taxiways based upon the mix index, as shown in **Table 4-4**. The mix index for JAX falls within the 81 to 120 mix index for the baseline and PALs 1 through 3. Therefore, the optimal placement for exit taxiways is between 5,000 and 7,000 feet from the runway threshold.

TABLE 4-4 OPTIMUM TAXIWAY EXIT LOCATION

MIX INDEX	MINIMUM DISTANCE FROM RUNWAY THRESHOLD (FEET)	MAXIMUM DISTANCE FROM RUNWAY THRESHOLD (FEET)
0 to 20	2,000	4,000
21 to 50	3,000	5,500
51 to 80	3,500	6,500
81 to 120	5,000	7,000
121 to 180	5,500	7,500

SOURCE: Federal Aviation Administration, Advisory Circular 150/5060-5, Change 2, *Airport Capacity and Delay*, December 1995.

Highspeed exit taxiways lower runway occupancy time and increase airfield capacity, because they are aligned at an acute angle relative to the runway centerline (between 120 and 135 degrees relative to the runway orientation). This alignment allows landing aircraft to exit the runway at higher speeds than when using standard exit taxiways, which are perpendicular to the runway. Unfortunately, the methodology prescribed in AC 150/5060-5 does not provide a way to quantify the capacity benefits associated with acute taxiway exits. As summarized in **Table 4-5**, primary Runway 8-26 has seven total taxiway exits, two of which are highspeed exit taxiways. Runway 14-32 has six total taxiway exits, three of which are highspeed exit taxiways.

TABLE 4-5 EXISTING RUNWAY EXIT TAXIWAY CONFIGURATIONS

ARRIVAL RUNWAY [1]	EXIT NUMBER FROM APPROACH END / TAXIWAY CONNECTOR	DISTANCE FROM THRESHOLD (FEET) [2]	TAXIWAY EXIT TYPE [3]
8	1 / L	0	Right Angle (runway end)
8	2 / J	2,600	High-Speed (opposite flow)
8	3 / H	4,800	Right Angle
8	4 / G	6,100	High-Speed
8	5 / F	7,900	Right Angle
8	6 / E	9,400	Right Angle
8	7 / C	9,900	Right Angle (runway end)
26	1 / C	0	Right Angle (runway end)
26	2 / E	400	Right Angle
26	3 / F	2,000	Right Angle
26	4 / G	3,600	High-Speed (opposite flow)
26	5 / H	4,800	Right Angle
26	6 / J	7,200	High-Speed
26	7 / L	9,900	Right Angle (runway end)
14	1 / L	0	Right Angle (runway end)
14	2 / P	2,800	High-Speed (opposite flow)
14	3/ Q	4,700	High-Speed
14	4 / R	5,400	High-Speed (opposite flow)
14	5 / T	6,000	Right Angle
14	6 / U	7,600	Right Angle (runway end)
32	1 / U	0	Right Angle (runway end)
32	2 / T	1,500	Right Angle
32	3 / R	2,400	High-Speed
32	4 / Q	3,000	High-Speed (opposite flow)
32	5 / P	4,900	High-Speed
32	6 / L	7,600	Right Angle (runway end)

NOTES:

1 Runway 14-32 taxiway exits M2 and M3 provide access to the Florida Air National Guard facilities and are used only for military aircraft operations. Therefore, exits M2 and M3 were not included.

2 Taxiway exit distance measured from the landing threshold (approach end) to the point on the runway centerline where the centerline of the taxiway exit begins. Distances rounded to the nearest 100 feet.

3 Opposite flow refers to high-speed taxiway exits that are oriented for use when landing from the opposite direction.

SOURCES: Jacksonville Aviation Authority, *2019 Master Plan Update,* Interim Airport Layout Plan; Ricondo & Associates, Inc., March 2019.

4.2.1.6 METEOROLOGICAL CONDITIONS

Meteorological conditions affecting airfield capacity include wind direction and speed, cloud ceiling height, and visibility. Fog, intense storms, and strong crosswinds adversely affect runway capacity and can cause temporary closures of the airfield. Low cloud ceilings and low visibility conditions require greater airspace separations between aircraft and longer runway occupancy times. Low cloud ceilings and visibility may also limit operations to only those runways capable of handling instrument landing system (ILS) approaches. Visual flight rules (VFR) govern the procedures used to conduct flight operations under visual meteorological conditions (VMC). Similarly, instrument flight rules (IFR) govern the procedures used to conduct flight operations under instrument meteorological conditions (IMC). The criteria for determining the two operating conditions are summarized in **Table 4-6.**

TABLE 4-6 OPERATIONAL CONDITIONS

	WEATHER CONDITIONS		
CLASSIFICATION	VISIBILITY		CLOUD CEILING
Visual Meteorological Conditions (VMC)	Greater than or equal to 3 statute miles.	**and**	Greater than or equal to 1,000 feet above ground level.
Instrument Meteorological Conditions (IMC)	Less than 3 statute miles.	**and/or**	Less than 1,000 feet above ground level.

SOURCE: Federal Aviation Administration, AC 150/5060-5, Change 2, *Airport Capacity and Delay*, December 1995.

Ceiling and Visibility

Runway capacity is highest in good weather, when visibility is at its best and VFR is in effect. At JAX, it is estimated the Airport operates under VMC approximately 92.9 percent of the time, and IMC approximately 7.1 percent of the time.[1] With the data provided by the National Climatic Data Center, Ricondo calculated the weather condition percentages by utilizing the Ricondo and Associates Weather Program. The Airport currently has a Category (CAT) II/III approach to Runway 8, which allows for a decision height of less than 100 feet and a runway visual range of less than 1,200 feet but at least 600 feet, during IMC conditions. Beyond these conditions, aircraft may not operate at JAX. For purposes of analyzing future Airport capacity and runway use configurations, it is assumed that the Airport remains operational under IFR conditions.

Wind Conditions

The direction and speed of prevailing winds determine which runways can be used for aircraft operations. Aircraft typically arrive and depart into the wind and can withstand minimal crosswind and tailwind conditions. If the maximum crosswind or tailwind component is exceeded, the aircraft may be required to enter a holding pattern in nearby airspace or divert to another airport depending on fuel capacity. Wind conditions may prevent the use of certain airfield operating configurations, potentially increasing aircraft delays.

Based on the maximum crosswind component for large commercial and military aircraft that utilize the Airport, the current runway system provides close to 100 percent wind coverage. This exceeds the minimum of 95 percent coverage as required by FAA AC 150/5300-13A, Change 1, *Airport Design*.

4.2.1.7 NAVIGATIONAL AIDS

The amount and type of NAVAIDs at an airport affect capacity by extending an airport's operational capabilities during periods of poor visibility and adverse weather conditions. As discussed in Chapter 2, the current NAVAID

[1] National Climatic Data Center, Jacksonville Observation Station (ID #072206), Period of Record: January 1, 2008 through December 31, 2017.

systems at JAX allow for instrument approaches that utilize either ground-based or satellite-based navigational facilities. While these NAVAIDs increase airfield capacity during poor weather conditions by allowing aircraft to operate in lower visibility, the benefits are minimized because of the additional separation standards required for aircraft during these conditions, as mandated by the FAA.

4.2.2 RUNWAY USE CONFIGURATIONS

The Airport currently has two converging, non-intersecting runways: 14-32 and 8-26. Both runways can serve air carrier, cargo, general aviation, or military aircraft. The geometry of the two runways provides for multiple airfield operating configurations, which are grouped in either east flow (aircraft arrive from and depart to the east), or west flow (aircraft arrive from and depart to the west). Weather and ATC preference are the primary factors in determining which operating configuration is used. The east flow configuration is utilized approximately 61 percent of the time, and the west flow is utilized approximately 39 percent of the time. **Exhibit 4-2** presents the five runway use configurations that ATC currently operates during VFR and IFR conditions, as well as the percentage of usage for each configuration. **Table 4-7** summarizes the runway use configurations and the percentages of occurrence during the various weather conditions.

TABLE 4-7 SUMMARY OF RUNWAY USE CONFIGURATIONS

	OCCURRENCE PERCENTAGES OF OPERATIONAL CONFIGURATIONS			
	VFR	IFR CAT 1	IFR CAT II/III	TOTAL
East Flow	56.4%	4.1%	1.0%	61.4%
West Flow	36.5%	1.8%	0.3%	38.6%
Total	92.9%	7.1%		100.0%

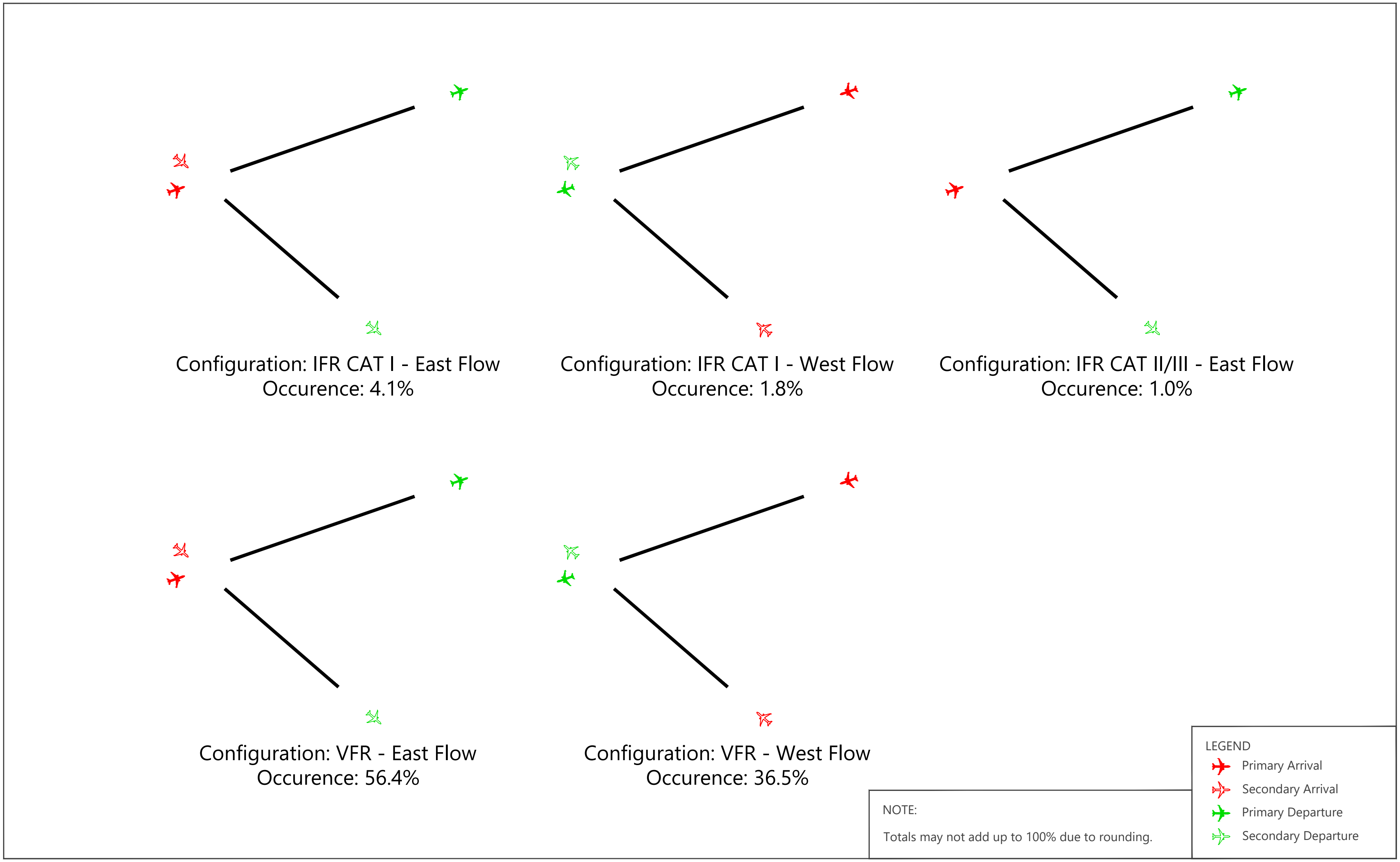
NOTES:
1 Runway 26 currently does not support CAT II/III operations. For 0.3% of the time when CAT II/III conditions are present in west flow, aircraft can either land on Runway 8 (depending on wind conditions), or the Airport would be closed to all operations until conditions improved.
2 Totals may not add up to 100 percent due to rounding.
3 VFR - Visual Flight Rules; IFR - Instrument Flight Rules.
SOURCES: National Climatic Data Center, Jacksonville Observation Station (ID #072206), Period of Record: January 1, 2008 through December 31, 2017; Jacksonville International Airport, 2009 Master Plan; Ricondo & Associates, Inc., March 2019.

4.2.3 ANNUAL SERVICE VOLUME

Annual Service Volume (ASV) is defined in FAA AC 150/5060-5 as "a reasonable estimate of an airport's annual aircraft operations capacity." ASV accounts for hourly, daily, and seasonal variations in aircraft operations at the Airport, as well as the occurrence of low visibility conditions requiring modified ATC procedures to maintain operational safety. ASV can also be used as a reference point for the general planning of airfield capacity-related improvements. Operational delays increase exponentially as the number of annual operations approaches and exceeds the ASV.

4.2.3.1 HOURLY CAPACITY

The first step in determining the ASV requires calculating the number of aircraft operations the Airport can accommodate in one hour under each of the five runway use configurations, as shown in Table 4-7. **Table 4-8** presents the calculated hourly capacities at each PAL for each of the five runway use configurations at the Airport.



SOURCE: Jacksonville International Airport, Interim Airport Layout Plan, January 2019; Ricondo & Associates, Inc., March 2019.

NORTH 0 7,500 ft.

EXHIBIT 4-2

RUNWAY USE CONFIGURATIONS
IFR AND VFR CONDITIONS

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\5.1 - Demand Capacity and Facility Requirements - Ricondo\CAD\Demand-Capacity_Exhibit 4-2.dwgLayout: 8.5x11L Plotted: Mar 13, 2020, 02:15PM

TABLE 4-8 HOURLY THROUGHPUT CAPACITY – EXISTING AIRFIELD CONFIGURATION

PLANNING ACTIVITY LEVEL (PAL)	CALENDAR YEAR	VFR CONFIGURATIONS		IFR CONFIGURATIONS		
		EAST FLOW	WEST FLOW	EAST FLOW CAT 1	EAST FLOW CAT II/III	WEST FLOW CAT 1
Baseline	2018	72	90	59	49	58
PAL 1	2025	71	89	59	49	58
PAL 2	2032	71	89	59	49	58
PAL 3	2037	71	89	59	49	58

SOURCES: Federal Aviation Administration, AC 150/5060-5, Change 2, *Airport Capacity and Delay*, December 1995; Ricondo and Associates, Inc., March 2019.

Using FAA AC 150/5060-5, *Airport Capacity and Delay*, the future capacity of the airfield was calculated for both VFR and IFR operations. The FAA's capacity calculations include several assumptions, "based on runway utilizations which produce the highest sustainable capacity consistent with current ATC rules and practices." These assumptions are as follows:

- The number of arrivals is equal to the number of departures.
- The percent of touch-and-go operations is within the ranges shown in FAA AC 150/5060-5.
- The airfield includes a full-length parallel taxiway, ample runway entrance/exit taxiways, and no taxiway crossing problems.
- There are no airspace limitations that would adversely impact flight operations or otherwise restrict aircraft operating at the Airport. Missed approach protection is assured for all converging operations in IFR weather conditions.
- The airport has at least one runway equipped with an ILS and has the necessary ATC facilities and services to carry out operations in a radar environment. For independent operations, 3,400-foot separation requires Precision Runway Monitor (PRM) equipment with high update radar. If PRM equipment is not available, independent operations will require 4,300-foot separation.

For JAX, hourly capacity of the existing runway system ranges between 71 and 89 operations in VFR conditions. During IFR conditions, the hourly capacity is approximately 58 to 59 in CAT I conditions, and 49 in CAT II/III conditions. Overall, the weighted hourly capacity of the airfield is estimated at 71 operations per hour in the baseline and declines to 70 operations per hour in PALs 1 through 3. Further discussion of these results is provided in the following section.

4.2.4 ANNUAL SERVICE VOLUME CALCULATION

The Airport's ASV was calculated based on FAA AC 150/5060-5, using the fleet mix assumptions and runway use configurations discussed previously. The resulting baseline ASV is 242,800 operations per year. The average hourly capacity for the baseline is 73 operations per hour under VFR conditions and 57 operations per hour under IFR conditions. The ASV for PALs 1, 2, and 3 decreases slightly to 240,100 operations per year. For PALs 1, 2, and 3, the hourly capacity under VFR conditions is 72 operations per hour and 57 operations per hour under IFR conditions. **Table 4-9** summarizes the criteria used to calculate the ASV through the PAL 3 planning period.

TABLE 4-9 ANNUAL SERVICE VOLUME SUMMARY

PAL	BASELINE	PAL 1	PAL 2	PAL 3
Mix Index (VFR & CAT I)	101	103	103	103
Mix Index (CAT II & III)	101	103	103	103
Average VFR Hourly Capacity	73	72	72	72
Average IFR Hourly Capacity	57	57	57	57
Annual Operations	102,349	119,686	134,359	146,097
Average Peak Month Daily Operations (Avg PMDO)	300	351	394	428
Average Peak Month Peak Hour Operations (Avg PMPHO)	30	35	39	43
D = Annual Operations / (Average PMDO)	341	341	341	341
H = (Avg PMDO) / (Average PMPHO)	10	10	10	10
CW = Weighted Hourly Capacity	71	70	70	70
Annual Service Volume: ASV = CW x D X H	242,800	240,100	240,100	240,100

NOTES:
1 Calculations rounded to nearest whole integer.
2 The average peak month peak hour operations are assumed to be 10 percent of the average peak month daily operations for the Baseline, PAL 1, 2, and 3.
3 ASV calculations may not equal 100 due to rounding of Avg PMDO, Avg PMPHO, D, H and CW. ASV calculations rounded to the nearest 100.
SOURCES: Federal Aviation Administration, AC 150/5060-5, Change 2, Airport Capacity and Delay, December 1995; Ricondo & Associates, Inc., Aviation Activity Forecasts, March 2019.

The ASV ratio, which is the ratio of future demand to the ASV for the Airport, can be used to estimate general planning and construction timelines for future runway improvements. The FAA, in Order 5090.3C, *National Plan for Integrated Airport System (NPIAS),* recommends airport sponsors initiate planning/design for new runways when annual demand reaches 60 to 75 percent of the established ASV.

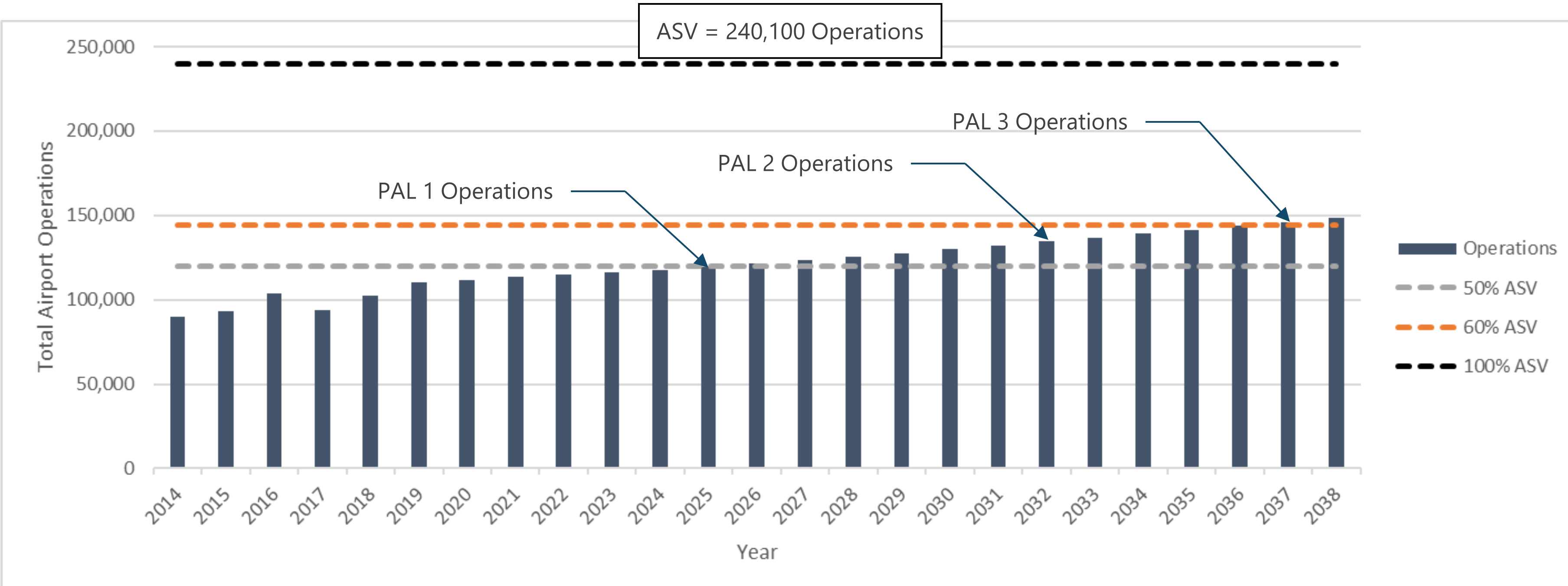
As indicated in **Table 4-10** and **Exhibit 4-3**, per the Aviation Activity Forecasts in Chapter 3, the Airport's annual demand is forecast to increase from 102,349 operations (42 percent of ASV) in the baseline to 146,097 operations (61 percent of ASV) by PAL 3. In comparison and also indicated in Table 4-10, per the 2018 FAA TAF, demand will increase from 99,776 operations (41 percent of ASV) in the baseline, to 145,485 operations (61 percent of ASV) by PAL 3. The Airport's ASV decreases from 242,800 operations to 240,100 operations between the Baseline and PAL 1 due to the forecast increase in widebody cargo aircraft operations. Based on the ASV calculations and the FAA Order mentioned above, JAX should begin planning for additional runway capacity as future activity levels get close to PAL 3 levels (approximately CY 2037). The current Airport Layout Plan (ALP) for JAX includes a future parallel runway (identified as Runway 8R-26L) on the southwestern side of the Airport.

TABLE 4-10 COMPARISON OF ANNUAL DEMAND WITH ANNUAL SERVICE VOLUME

BASED ON PREFERRED FORECASTS	BASELINE	PAL 1	PAL 2	PAL 3
Annual Operations	102,349	119,686	134,359	146,097
ASV	242,800	240,100	240,100	240,100
ASV Ratio	42%	50%	56%	61%
BASED ON FAA 2018 TAF FORECASTS	-	-	-	-
Annual Operations	99,776	119,221	133,777	145,485
ASV	242,800	240,100	240,100	240,100
ASV Ratio	41%	50%	56%	61%

SOURCES: Federal Aviation Administration, AC 150/5060-5, Change 2, *Airport Capacity and Delay*, December 1995; Ricondo and Associates, Inc., Aviation Activity Forecasts, March 2019. Federal Aviation Administration, *2018 Terminal Area Forecast*, February 2019.

EXHIBIT 4-3 ANNUAL SERVICE VOLUME VERSUS PROJECTED DEMAND



SOURCES: Jacksonville Aviation Authority, 2017 ANOMS Database; Federal Aviation Administration, OPSNET Data, March 2019; Ricondo & Associates, Inc., March 2019.

4.3 AIRFIELD REQUIREMENTS

The planning and design of airport facilities depends on the role of the Airport and the critical aircraft expected to operate on the airfield. Adhering to the planning and design guidelines established in FAA ACs will ensure future airfield development projects are constructed in such a way that maximizes the safe and efficient operations of aircraft. The following subsections address the various elements involved with determining airfield facility requirements:

- Airport Reference Code
- Runway Requirements
- Airfield Safety Criteria
- Taxiways
- Summary of Airfield Design Standards

4.3.1 AIRPORT REFERENCE CODE

The Airport Reference Code (ARC) is a coding system outlined in FAA AC 150/5300-13A, Change 1, as the basis for specifying applicable airport design standards. The ARC categorizes aircraft based on physical and performance characteristics (approach speed, wingspan, and tail height). The categories are represented by a letter (A to E) and a Roman numeral (I to VI). The letter designator identifies the Aircraft Approach Category (AAC) based upon aircraft approach speed, and the Roman numeral designates the Airplane Design Group (ADG) classification, based on wingspan or tail height. ARCs form the basis for runway, taxiway, and associated safety area dimensional standards. As stated in FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, the critical design aircraft must have at least 500 annual operations, including both itinerant and local operations, but excluding touch-and-go operations. An operation is defined as either a takeoff or landing.

Table 4-11 summarizes the FAA aircraft classifications in FAA AC 150/5300-13A, Change 1 and lists typical aircraft by AAC and ADG.

AACs A and B typically include small piston-engine and turboprop aircraft and a limited number of smaller business jets having approach speeds of less than 121 knots. Categories C, D, and E consist of larger jet and turboprop aircraft, typically associated with commercial and/or military use. For ADG, ADG I and II primarily include small piston aircraft, light and midsize business jets, and a variety of single- and twin-engine turboprop aircraft. ADG III, IV, and V include a limited number of large business jet models that have entered the fleet over the last five to seven years, including the Bombardier CRJ-700/900 and the Gulfstream G350, G450, and G550, as well as the majority of the commercial jet aircraft fleet. ADG VI includes very large jets such as the Airbus A380, Antonov An-124, and Boeing 747-8 aircraft.

TABLE 4-11 FAA AIRCRAFT CHARACTERISTICS

AIRCRAFT APPROACH CATEGORY (AAC)			
APPROACH CATEGORY	APPROACH SPEED (KNOTS)		EXAMPLE AIRCRAFT BY APPROACH CATEGORY
A	< 91		Cessna 172, Beech Bonanza, Cirrus SR-22, Diamond DA-42
B	91 - < 121		Cessna 441, Beech 1900C, King Air 200, Cessna Citations II/III/V Falcon 2000
C	121 - < 141		Airbus A320, Boeing BBJ, Boeing 737-700, Boeing 757, Boeing767
D	141 - < 161		Airbus A310-300, A330-300, A340, Boeing B-737-800/900 w/winglets, Boeing 747, Boeing 777-300, McDonnell Douglas MD-10/11
AIRPLANE DESIGN GROUP (ADG)			
DESIGN GROUP	WINGSPAN (FT)	TAIL HEIGHT (FT)	EXAMPLE AIRCRAFT BY AIRPLANE DESIGN GROUP
I	< 49	< 20	Cessna 172, C-402, Beech 400A, Cirrus SR-22, Diamond DA-42
II	49 - < 79	20 - < 30	Beech 1900C, King Air 200, CRJ-200, Cessna Citations V & X, Falcon 2000, Gulfstream G350, G450
III	79 - < 118	30 - < 45	CRJ-700, Airbus A318, Airbus A319/320/321, Boeing 737, McDonnell Douglas MD-80
IV	118 - < 171	45 - < 60	Airbus A300/A310, Boeing 757/767, McDonnell Douglas MD-10/11
V	171 - < 214	60 - < 66	Airbus A330, Airbus A340, Airbus A350, Boeing 747/777/787-8/787-9
VI	214 - < 262	66 - < 80	Airbus A380, Antonov An-124, Boeing 747-8

SOURCES: Federal Aviation Administration, AC 150/5300-13A, Change 1, *Airport Design*, February 2014; Ricondo and Associates, Inc., March 2019.

The Airport's existing ARC is designated as D-V on the existing ALP. The activity forecasts support this same designation going forward; the critical aircraft in the future PALs is the Boeing MD-11F. The activity forecasts assume this aircraft will be utilized by the cargo carriers as cargo demand increases throughout the planning horizon. However, due to the age of the MD-11F, there is potential for cargo carriers to utilize the Boeing 777F, or similar type aircraft in the future.

Table 4-12 presents the ADG and Taxiway Design Group (TDG) dimensional design standards set forth in FAA AC 150/5300-13A, Change 1. In general, ADG standards focus on pavement design surfaces and clearance separations, based on maximum wingspan, whereas TDG standards dictate taxiway pavement width, fillet dimensions, and main-gear to taxiway edge of pavement separations.

The terminal area, runways, and major taxiways should be designed to meet ADG V requirements, to the extent practicable, to accommodate the full range of existing and possible aircraft operations. The GA areas should meet ADG III requirements to accommodate the full range of business jet and large turboprop aircraft and should be ADG I and II-compliant in areas specifically designed to accommodate small single- and twin-engine aircraft.

TABLE 4-12 FAA DESIGN STANDARDS

AIRPLANE DESIGN GROUP		
ITEM	ADG IV	ADG V
Taxiway Safety Area (TSA) (full width centered on centerline)	171 ft	214 ft
Taxiway Object Free Area (TOFA) (full width centered on centerline)	259 ft	320 ft
Taxilane Object Free Area (TLOFA) (full width centered on centerline)	225 ft	276 ft
Taxiway Centerline to Parallel Taxiway/Taxilane Centerline	215 ft	267 ft
Taxiway Centerline to Fixed or Movable Object	129.5 ft	160 ft
Taxilane Centerline to Parallel Taxilane Centerline	198 ft	245 ft
Taxilane Centerline to Fixed or Movable Object	112.5 ft	138 ft
Taxiway Wingtip Clearance	44 ft	53 ft
Taxilane Wingtip Clearance	27 ft	31 ft
TAXIWAY DESIGN GROUP		
ITEM	TDG-4	TDG-5
Taxiway Width	50 ft	75 ft
Taxiway Edge Safety Margin (TESM)	10 ft	15 ft
Taxiway Shoulder Width	20 ft	30 ft

SOURCES: Advisory Circular 150/5300-13A, Change 1, *Airport Design,* Federal Aviation Administration, February 2014; Ricondo & Associates, Inc., March 2019.

4.3.2 RUNWAY REQUIREMENTS

Runway requirements consist of, but are not limited to, the following elements:

- runway configuration
- runway width
- runway shoulder width
- blast pads
- runway to taxiway separation distances

4.3.2.1 CONFIGURATION OF RUNWAYS

The configuration of runways includes determining the requisite siting, orientation, and number of runways to accommodate demand. The most important factors affecting runway configuration are wind, airspace availability, noise impacts, capacity requirements, available land, topography, ATCT visibility, and location of existing facilities. All runways should be oriented so that approach and departure areas are free of obstacles, and to the extent possible, directed away from populated areas on either end.

Wind Coverage

The primary runway should be oriented in the direction of the prevailing wind. JAX has two runways: Runway 8-26, the primary runway, and Runway 14-32, the crosswind runway. Based on the existing and future ARC of D-V, the maximum crosswind coverage required at JAX is 20 knots. As indicated in Chapter 2, the runway configuration at JAX provides close to 100 percent coverage for all prevailing wind directions and velocities. Therefore, no additional runways are required to comply with the FAA's wind coverage requirements.

Capacity

The demand/capacity analysis indicated that the Airport may require additional infrastructure to efficiently accommodate forecast demand in the long-term and may potentially include the construction of an additional runway. The potential new runway should meet D-IV standards, based on the forecast fleet mix at JAX. Because the FAA runway and taxiway design standards are similar for aircraft within the C and D AAC categories, provision for a D-IV runway will not require any major changes to the proposed airfield layout that is shown on the Ultimate ALP.

4.3.2.2 RUNWAY WIDTH

The FAA runway width design standard is 150 feet for both ADG IV and V. Runways 8-26 and 14-32 are both 150 feet wide, complying with FAA standards. The potential third runway should also be 150 feet wide.

4.3.2.3 RUNWAY SHOULDER WIDTH

Runway shoulder width standards vary slightly between ADG IV (which requires 25 feet), and ADG V (which requires 35 feet). Existing Runway 8-26 has 35-foot-wide shoulders and meets current FAA design standards for ADG V aircraft. Runway 14-32 currently does not have shoulder pavement along any portion of the runway. To increase safety in the event of a runway excursion and to maintain compliance with FAA AC 150/5300-13A, Change 1, shoulders of at least 35 feet in width should be constructed along both sides of Runway 14-32 for the full length. The potential third runway would require 25-foot wide shoulders to comply with D-IV design standards.

4.3.2.4 RUNWAY BLAST PADS

There is also a slight difference in the FAA design standards for ADG IV and ADG V runway blast pads. ADG IV runways require a blast pad width of 200 feet and a length of 200 feet. ADG V runways require a blast pad width of 220 feet and a length of 400 feet. Existing Runway 8-26 meets current FAA design standards for ADG V aircraft. The blast pads at both ends of Runway 14-32 have a width of 150 feet and a length of 200 feet, which is less than the current FAA design standards for both ADG IV and ADG V aircraft. To meet FAA requirements for ADG V aircraft, the blast pads for Runway 14-32 should be widened by 35 feet on either side and lengthened by 200 feet. The potential third runway would require runway blast pads with dimensions of 200 feet wide and 200 feet long to comply with D-IV design standards.

4.3.2.5 RUNWAY TO TAXIWAY SEPARATION DISTANCE

The FAA's design standards for runway centerline to taxiway centerline separation distances are intended to ensure that aircraft can operate safely and independently on taxiways that are parallel to runways. ADG IV standards require a 400-foot separation distance between the runway centerline and parallel taxiway centerline. ADG V standards require the same 400-foot design standard (for airports at or below an elevation of 1,345 feet mean sea level [MSL]); provided that the runway approach visibility minimums are not less than .5 statute mile. For ADG V aircraft capable of approaches with less than .5 statute mile visibility, the design standard for the separation distance between a runway centerline and parallel taxiway centerline increases to 500 feet. At JAX, Runway 14-32 requires a 400-foot separation design standard. Runway 8-26, which is capable of CAT II, IIIa and IIIb ILS approaches with a minimum approach visibility of less than 0.5 statute mile, requires a 500-foot separation design standard. The existing runway centerline to taxiway centerline separations for both Runway 8-26 and Runway 14-32 are 600 feet and exceed FAA standards of 500 feet and 400 feet, respectively. The potential third runway would require a runway centerline to parallel taxiway centerline separation of 400 feet to comply with D-IV design standards.

4.3.3 AIRFIELD SAFETY CRITERIA

The FAA has several design standards governing airfield safety areas associated with runways and taxiways. Because there have been no major changes to any existing runway approach category from the previous master plan, this subsection will focus only on the safety area requirements of the potential third runway. The existing runway system complies with the required FAA safety area criteria. The elements to be discussed in this subsection include:

- Runway Safety Areas (RSA)
- Runway Object Free Areas (ROFA)
- Obstacle Free Zones (OFZ)
  - Runway OFZ
  - Inner-approach OFZ
  - Inner-transitional OFZ
- Runway Protection Zones (RPZ)

4.3.3.1 RUNWAY SAFETY AREA

The Runway Safety Area (RSA) is a rectangular area centered on the runway centerline, which, under normal (dry) conditions, is capable of supporting aircraft without causing structural damage in the event of a runway excursion. The FAA requires RSAs to be (1) cleared and graded; (2) drained by grading or storm sewers to prevent water accumulation; and (3) free of objects, except those that are necessary within the RSA due to their function (e.g., approach lighting, other NAVAIDS).

Based on FAA design standards, the RSA for the potential third runway would require dimensions of 500 feet wide and 1,000 feet long. The RSA for both existing runways meets the established FAA requirements for D-V operations.

4.3.3.2 RUNWAY OBJECT FREE AREA

The ROFA is a rectangular area 800 feet in width centered on the runway centerline that extends 1,000 feet beyond the end of the runway or stopway, that is required to be clear of objects protruding above the RSA edge elevation, except for those objects that are essential to air navigation or aircraft ground maneuvering.

Based on FAA design standards for a D-IV runway, the ROFA for the potential third runway would need to be 800 feet wide and would extend 1,000 feet beyond both runway ends. The ROFA for both existing runways meets the established FAA requirements for D-V operations.

4.3.3.3 OBSTACLE FREE ZONE

The OFZs are three-dimensional areas of airspace that support the transition of ground to airborne aircraft (and vice versa). The OFZ clearance standards established by the FAA prohibit taxiing and parking of aircraft or locating objects where they would penetrate this airspace, except for frangible NAVAIDS or fixed-function objects. The OFZ consists of the airspace between the established airport elevation and 150 feet above ground level, along the runway and extended runway centerline. The OFZ can be further categorized as runway OFZs, inner-approach OFZs, and inner-transitional OFZs. Each of these OFZ areas are further described below. Both existing runways comply with the required OFZ dimensions.

Runway OFZ

The required OFZ for runways serving large aircraft is typically 400 feet wide and extends 200 feet beyond each runway end. Based on these standards, a potential third runway would require an OFZ width of 400 feet, extending 200 feet beyond each end of the runway.

Inner-Approach OFZ

The inner-approach OFZ is a defined volume of airspace centered on the approach area that applies only to runways equipped with an approach lighting system (ALS). The inner-approach OFZ begins 200 feet before the runway threshold and extends 200 feet beyond the last unit in the ALS. The width is the same as the runway OFZ (400 feet) and rises at a slope of 50:1 away from the runway end. Development of a potential third runway would require an inner-approach OFZ width of 400 feet, beginning 200 feet from the runway threshold and extending 200 feet beyond the last unit in the ALS.

Inner-Transitional OFZ

The inner-transitional OFZ is a defined volume of airspace along the sides of the runway and inner-approach OFZ that rises at a slope of 3:1 until reaching 150 feet AGL. This area only applies to runways with precision instrument approaches with approach visibility minimums lower than .75 statute mile. In the event the potential third runway meets these approach visibility minimums, an inner-transitional OFZ will be required.

4.3.3.4 RUNWAY PROTECTION ZONE

The Runway Protection Zone (RPZ) is a trapezoidal area centered on the extended runway centerline. The length and width of the RPZ are contingent on the size of the aircraft operating on the runway as well as the type of approach (i.e., visual, instrument) and established approach minimums. As a result, the criteria for the RPZ may vary for each runway end.

It is recommended that the potential third runway at JAX be equipped with CAT I approach capabilities for landings to the east and west, requiring inner RPZ widths of 1,000 feet, outer widths of 1,750 feet, and lengths of 2,500 feet. The RPZs for each of the four existing runways ends meet the established FAA requirements.

4.3.4 TAXIWAYS

FAA design standards provide dimensional guidance for the following:

- runway centerline to parallel taxiway centerline
- taxiway centerline to parallel taxiway centerline
- taxiway width
- taxiway shoulder width

The existing runway/taxiway separations for Taxiways A (parallel to Runway 8-26) and N (parallel to Runway 14-32) are 600 feet and both exceed the FAA standard of 400 feet.

Taxiway centerline to parallel taxiway centerline design standards vary slightly between ADG IV (215 feet of separation), and ADG V (267 feet of separation). Taxiways A and B are currently the only two taxiways that run parallel to one another, but are separated by just 260 feet, below the ADG V standard. This deficiency in centerline to centerline separation should be noted on the ALP.

The FAA design standard for taxiway width is 75 feet for both TDG 5 and 6 aircraft, which will accommodate the fleet mix operated by the commercial carriers. All existing taxiways at the Airport are at least 75 feet wide, except for Taxiway G which connects the GA Ramp to Taxiways A and B and Runway 8-26, as well as Taxiways M1, M2, and

M3 which are utilized by the Florida Air National Guard facility. Neither Taxiway G or Taxiways M1, M2, or M3 will require modifications to width through the planning horizon.

Taxiway shoulder width design standards for TDG 4 are 20 feet, and 30 feet for TDG 5 and 6. The existing taxiway system at JAX does not have taxiway shoulders and is non-compliant with FAA AC 150/5300-13A, Change 1 standards. To meet FAA requirements, taxiway shoulders would need to be constructed based on the appropriate ADG dimensional standards.

While the current taxiway system provides sufficient access to all areas of the airfield, taxiway improvements are recommended; both to achieve full compliance with FAA regulations, as noted above, and to increase the airfield's operational efficiency. These improvements are discussed in the following Chapter of this report.

4.3.5 SUMMARY OF AIRFIELD DESIGN STANDARDS

Table 4-13 presents the Airport's existing airfield dimensions, as well as the FAA design standards for ARC D-IV and ARC D-V. Values in the table have been highlighted to depict those airfield elements that do not comply with current FAA standards.

The areas that would require improvements to meet the design standards listed in FAA AC 150/5300-13A, Change 1 are the blast pads at both ends of Runway 14-32, the Runway 14-32 shoulders, and taxiway shoulders for the entire airfield. While blast pads and taxiway shoulders are not critical from an operations standpoint, these elements should be corrected in a timely manner to minimize erosion and foreign object damage.

4.4 AIRCRAFT GATE AND HARDSTAND REQUIREMENTS

To determine the number of required gates and hardstand positions through the planning horizon, a gating analysis was completed for the three (3) Master Plan Update PALs. The primary inputs for this analysis were the DDFSs discussed in Chapter 3 of this document. Ramp charts were created for each PAL using the DDFS and provided a detailed overview of airline operations for the design days. The charts were populated with the following information: airline code, arrival/destination airport, aircraft type, gate information, ground time, and towing operations to/from the hardstands, if required. The charts can be found in **Appendix A**.

The Airport operates a mixture of common-use gates (controlled by JAA) and preferential-use gates (leased by airlines). For this gating analysis it was assumed that a minimum of one-hour ground time would be required between the departure of one flight and the arrival of another one on a single gate when the carriers are not the same. For operations occurring by a single carrier, an assumed 30 minutes would be required between flights.

After discussions with JAA, it was determined the gating analysis should plan for an operational spare gate on each concourse, decreasing the number of usable gates from 20 to 18. The spare gates are necessary to prepare for irregular operations due to maintenance or weather, causing an aircraft to remain on a scheduled gate longer than anticipated.

TABLE 4-13 EXISTING AND REQUIRED FAA MINIMUM AIRFIELD DESIGN STANDARDS FOR AIRPORT REFERENCE CODE D-IV AND D-V

	RUNWAY 8-26 ADG D-V		RUNWAY 14-32 ADG D-V		FUTURE ADG D-IV
DESIGN STANDARDS	EXISTING	FAA DESIGN STANDARD	EXISTING	FAA DESIGN STANDARD	FAA DESIGN STANDARD
Runway Width					
Width	150	150	150	150	150
Shoulder Width	35	35	0	35	25
Runway Centerline to:					
Taxiway Centerline	600	500	600	400	400
Aircraft Parking Area	1,200	500	800	500	500
Runway Object Free Area					
Width	800	800	800	800	800
Length beyond Runway End	1,000	1,000	1,000	1,000	1,000
Runway Obstacle Free Zone					
Width	400	400	400	400	400
Length beyond Runway End	200	200	200	200	200
Runway Safety Area					
Width	800	500	800	500	500
Length beyond Runway End	1,000	1,000	1,000	1,000	1,000
Runway Blast Pad					
Width	220	220	150	220	200
Length beyond Runway End	400	400	200	400	200
Taxiway Width	75	75	75	75	75
Taxiway Shoulder Width	0	30	0	30	20
Taxiway Object Free Area Width	320	320	320	320	259
Taxiway Safety Area Width	214	214	214	214	171
Taxiway Centerline to:					
Parallel Taxiway/Taxilane Centerline	260	267	n/a	267	215
Fixed or Movable Object	160	160	160	160	129.5

NOTE:
1 Values highlighted in yellow indicate airfield elements that do not comply with FAA standards.
SOURCE: Advisory Circular 150/5300-13A, *Airport Design, Change 1*, Federal Aviation Administration, February 2014.

Table 4-14 displays the required number of gates and hardstands for each activity level.

TABLE 4-14 ADDITIONAL AIRCRAFT GATE AND HARDSTAND REQUIREMENTS

REQUIREMENTS	BASELINE	PAL 1	PAL 2	PAL 3
Additional Gates	1	2	2	4
Spare Gates	2	2	2	2
Total Gates	**3**	**4**	**4**	**6**
Additional Hardstands	0	0	0	0
Total Hardstands	**20**	**20**	**20**	**20**

SOURCE: Ricondo & Associates, Inc., May 2019.

Additional airline gate capacity is needed at the time of writing this report. Gate requirements range from three in the baseline (2018) conditions to six in PAL 3. The Airport has initiated design services procurement for the Concourse B Expansion Project, which would add six gates and accommodate the gate requirements through PAL 3.

There are currently enough hardstand positions to accommodate demand, however, when the Concourse B Terminal Expansion Project begins, eight existing hardstand positions will be eliminated and will require replacement elsewhere to meet existing and ultimate hardstand demand. The proposed hardstand layouts will be discussed in the Alternatives Chapter of this study.

4.5 PASSENGER TERMINAL FACILITY REQUIREMENTS

4.5.1 PLANNING CRITERIA

Terminal facility requirements are derived from the Aviation Activity Forecast peak-period demand, industry standard passenger Level of Service (LOS) metrics, passenger attributes, and facility operating parameters. The following subsections outline the methodologies, level of service framework, activity levels, passenger attributes, and operating parameters used to develop terminal facility requirements.

4.5.1.1 METHODOLOGY

Different approaches were used to develop passenger terminal requirements for specific terminal facilities, depending on the function of each. These methodologies included the following approaches:

- Passenger volumes were generated from historical data and forecast Design Day Flight Schedules (DDFS), as described in Chapter 3. The DDFS presents the daily patterns for airline service at the Airport on an average weekday of the peak month including representative information on a flight-by-flight basis pertaining to the time of aircraft arrival or departure, operating airline, aircraft type, domestic/international designation, points of origin and destination, seat capacity, load factor, and number of originating, terminating, and connecting passengers.

- Passenger processing facility requirements were developed using methodologies that are generally consistent with the International Air Transport Association (IATA) Airport Development Reference Manual (ADRM). Modeling was used to synthesize factors that generate demand and to correlate demand to facilities that would be required to achieve prescribed LOS standards. IATA's LOS framework, along with other LOS industry-accepted standards, quantifies the passenger experience in terms of transaction (processing) time and comfort while in process and moving between processes. Each passenger processing system was analyzed separately because LOS standards vary among these systems.
- Performance was analyzed using modeling of individual functional areas and determined facility capacities and requirements under optimized operating conditions (fully-staffed and utilized positions; evenly-distributed passenger traffic). These parameters were maintained throughout the analysis unless otherwise noted.
- Facility space templates represent the optimal operating conditions for each passenger processing function. Templates define minimum spatial requirements for safe and efficient operations around equipment, as well as the required space between different processing areas within a facility. Space templates represent a preferred configuration, highlighting critical dimensions and suggested passenger flows. Actual layouts may vary.
- The functional efficiency, and actualized throughput capacity, of a processing facility was determined by comparing the allocated area to the space that would be required for optimal operations.
- Variability is represented through dynamic modeling of sequential processes, using a predictive probability distribution for average transaction times. Simulation modeling was used to determine requirements for check-in and security facilities.

4.5.1.2 LEVEL-OF-SERVICE FRAMEWORK

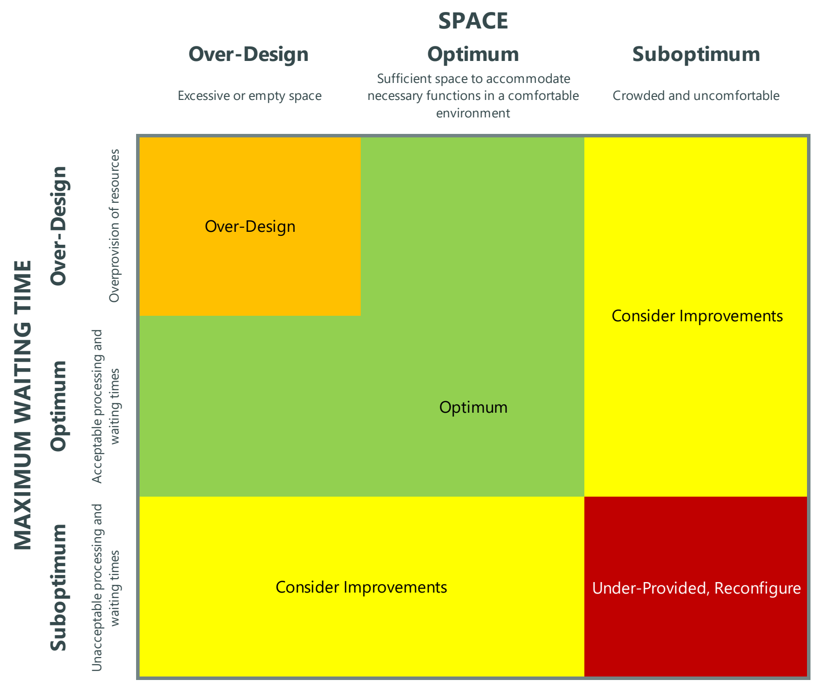
The LOS framework is dependent on variables of space and waiting time, and is defined by efficiency of flow, delay, and level of comfort. Under the IATA's framework, both waiting times and allocated space are categorized as Optimum, Sub-Optimum, and Over-Designed. Optimum LOS represents an acceptable LOS characterized by adequate queuing space and reasonable waiting times during periods of peak activity. Optimum LOS equates to good service at reasonable cost, similar to metrics as LOS C in IATA's prior framework. Short periods of diminished LOS during the highest peak activity are considered acceptable to avoid over-designed facilities. **Exhibit 4-4** illustrates the relationship among these variables for both the current LOS framework (ADRM, 11th edition) and the framework presented in the previous ADRM (9th edition), the last version which used letters to define LOS.[2] A table of space standards and waiting times and a graphic of indicative LOS is illustrated on **Exhibit 4-5**.

4.5.1.3 PLANNING ACTIVITY LEVELS

Peak period demand was calculated using DDFSs (Baseline, PAL 1, PAL 2, and PAL 3), which were developed to correlate with forecast annual passenger activity. As noted previously, the DDFS is one representative example of the daily airline service at the Airport for an average weekday of the peak month including information on a flight-by-flight basis pertaining to the time of aircraft arrival or departure, operating airline, aircraft type, domestic/international designation, points of origin and destination, seat capacity, load factor, and number of originating, terminating, and connecting passengers.

[2] International Air Transport Association, Airport Development Reference Manual, 11th ed., April 2019.

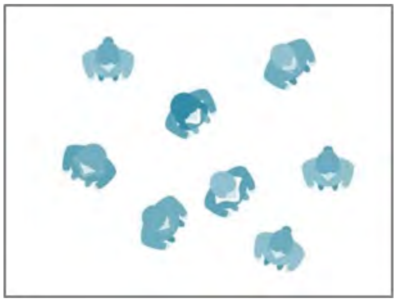
EXHIBIT 4-4 INTERNATIONAL AIR TRANSPORT ASSOCIATION'S LEVEL OF SERVICE SPACE-TIME DIAGRAM



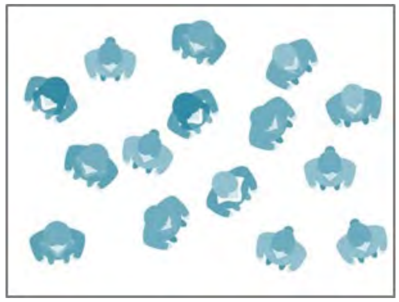
LEVEL OF SERVICE ADRM 11TH EDITION	LEVEL OF SERVICE ADRM 9TH EDITION	FLOWS	DELAYS	LEVEL OF COMFORT
Over-Design	A - Excellent	Free	None	Excellent
Over-Design	B - High	Stable	Very Few	High
Optimum	C - Good	Stable	Acceptable	Good
Suboptimum	D - Adequate	Unstable	Passable	Adequate
Suboptimum	E - Inadequate	Unstable	Unacceptable	Inadequate
Under-Provided	F - Failure	System Breakdown	System Breakdown	Unacceptable

NOTE: ADRM – Airport Development Reference Manual
SOURCES: International Air Transport Association, *Airport Development Reference Manual*, 11th ed., 1st release, April 28, 2019; International Air Transport Association, *Airport Development Reference Manual*, 9th ed., January 2004.

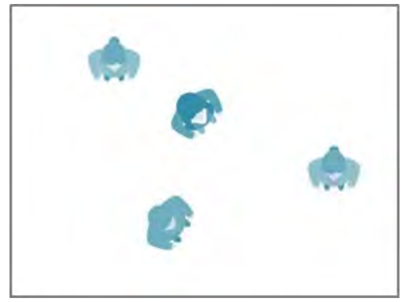
EXHIBIT 4-5 INTERNATIONAL AIR TRANSPORT ASSOCIATION'S LEVEL OF SERVICE METRICS



Optimum: Acceptable level of service; conditions of adequate to above-average space and reasonable to very few delays; appropriate level of comfort.



Suboptimum: Unsatisfactory level of service; conditions that provide crowded and uncomfortable spaces and present unacceptable processing and waiting times; inadequate level of comfort.



Over-Design: Poor level of service; conditions of either excessive or empty space and over provision of resources; immoderate or unacceptable level of comfort.

PASSENGER TERMINAL PROCESSOR	SPACE STANDARDS (SQ FT/PASSENGER)				WAITING TIME (MINUTES)			
ADRM 9th Edition	A B	C	D	E	A B	C	D	E
ADRM 11th Edition	Over-Design	Optimum	Suboptimum	Under-Provided	Over-Design	Optimum	Suboptimum	Under-Provided
Check-in								
Self-Service Kiosk	> 19.4	14.0-19.4	< 14.0		< 0	0-2	> 2	
Bag Drop Desk	> 19.4	14.0-19.4	< 14.0		< 0	0-5	> 5	
Check-in Desk	> 19.4	14.0-19.4	< 14.0		< 10	10-20	> 20	
Security Checkpoint	> 12.9	10.8-12.9	< 10.8		< 5	5-10	> 10	
Immigration Control	> 12.9	10.8-12.9	< 10.8		< 5	5-10	> 10	
Baggage Claim Area	> 18.3	16.2-18.3	< 16.2		< 0	0-15	> 15	

NOTE: ADRM - Airport Development Reference Manual

SOURCES: International Air Transport Association, Airport Development Reference Manual, 11th ed., 1th release, April 2019; International Air Transport Association, Airport Development Reference Manual, 9th ed., January 2004.

Peak hour enplaning and deplaning passenger profiles were calibrated to existing benchmarks and approved by the JAA. These daily and peak period volumes include passengers processed through the Airport and represent the principal demand on concourses and gate facilities. The demand on terminal processing facilities was based on originating and destination (O&D) passenger volumes, which were also derived from the total passenger activity.

Table 4-15 lists the load factor and O&D percentages in the Baseline DDFS by airline. The baseline DDFS was simulated to validate air service characteristics and resulting passenger volumes during the peak period and calibrated against known passenger volumes. **Exhibit 4-6** illustrates the number of departing and arriving seats throughout the design day for 2018 and three PALs. This is without the load factor applied for each flight. The exhibit shows flights per 10-minute periods and passengers during a rolling hour for every 10 minutes.

TABLE 4-15 BASELINE AVERAGE LOAD FACTOR AND AVERAGE ORIGIN AND DESTINATION PASSENGERS

AIRLINE	AVERAGE LOAD FACTOR	AVERAGE O&D[1]
American Airlines	90%	100%
Air Canada	90%	100%
Allegiant Airlines	83%	100%
Delta Air Lines	90%	100%
Frontier Airlines	92%	100%
JetBlue	85%	100%
United Airlines	94%	100%
Southwest Airlines	81%	100%
Spirit Airlines	88%	100%

NOTE:
1 O&D – Origin and Destination Passengers
SOURCE: Ricondo & Associates, Inc., May 2019.

4.5.1.4 PASSENGER ATTRIBUTES

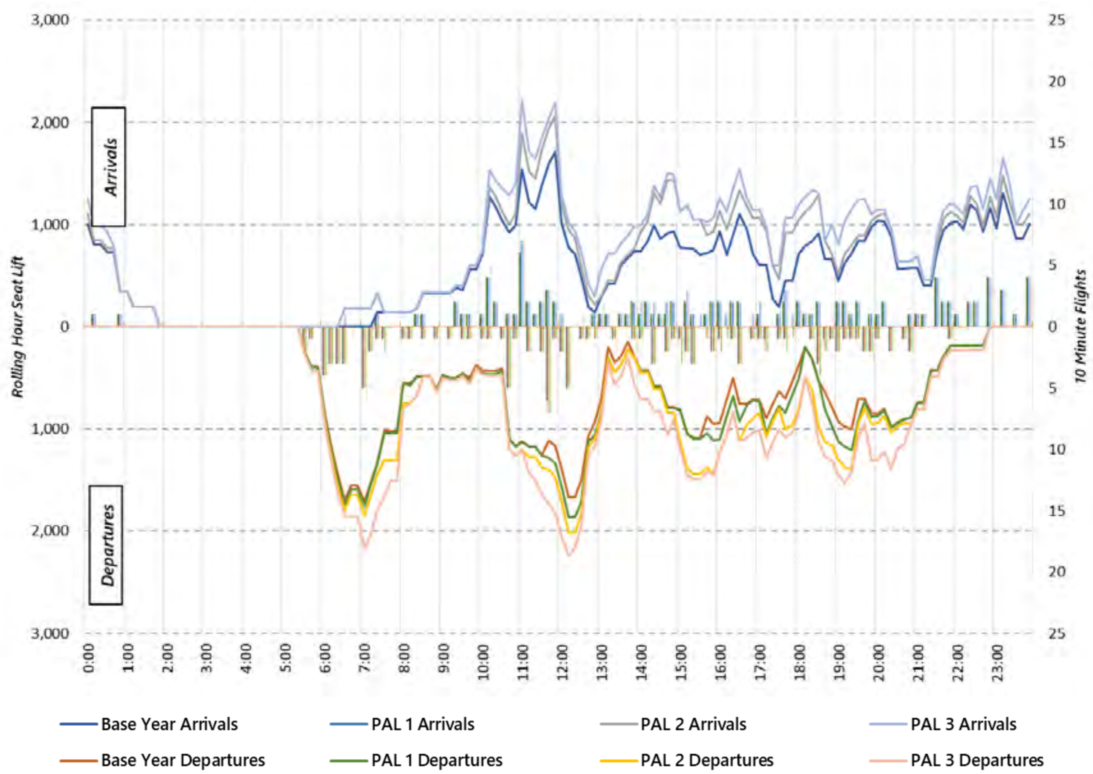
Passenger attributes include all characteristics and assumptions related to passenger behavior using Airport facilities. These characteristics include show-up profiles and individual traveler attributes, (e.g., checked bags per-passenger), and incorporate Airport- and airline-specific factors as well. This information is typically obtained through research of current industry standards and similar facility benchmarking, on-site observations, surveys, and other historical data.

Show-up Profiles

A show-up profile is a distribution curve that represents the amount of time passengers arrive at the terminal before their scheduled departure. Several factors affect arrival profiles, including the type of travel (domestic or international), class of service, whether the passenger is checking baggage, and time of day. These factors result in a metering of passengers that directly influences passenger demand throughout the terminal system.

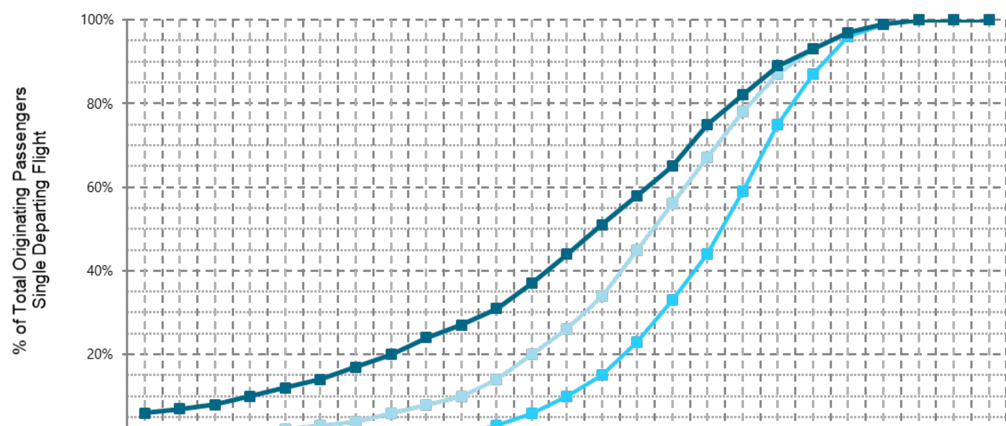
Exhibit 4-7 illustrates the show-up profiles used for this analysis. Show-up profiles for passengers without checked bags and with checked bags are based on Transportation Security Administration (TSA) standards and are representative of passenger behavior nationwide. Off-peak period refers to flights departing between 11 p.m. and 5 a.m.

EXHIBIT 4-6 FORECASTED DAILY DEPARTING AND ARRIVING SEATS



SOURCE: Ricondo & Associates, Inc., May 2019.

EXHIBIT 4-7 SHOW-UP PROFILES



	240	230	220	210	200	190	180	170	160	150	140	130	120	110	100	90	80	70	60	50	40	30	20	10	0
Before 8:30 a.m.	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	3%	6%	10%	15%	23%	33%	44%	59%	75%	87%	96%	99%	100%	100%	100%
Peak Domestic	1%	1%	1%	1%	2%	3%	4%	6%	8%	10%	14%	20%	26%	34%	45%	56%	67%	78%	87%	93%	97%	99%	100%	100%	100%
Off-peak Domestic	6%	7%	8%	10%	12%	14%	17%	20%	24%	27%	31%	37%	44%	51%	58%	65%	75%	82%	89%	93%	97%	99%	100%	100%	100%

SOURCE: Transportation Security Administration, Planning Guidelines and Design Standards for Checked Baggage Inspection Systems, Version 6.0, September 29, 2017.

Checked Baggage

Table 4-16 lists the assumed average checked bags per passenger. The percentage of passengers with checked bags applies to all O&D passengers. These metrics were used in the analysis of check-in, bag make-up, and baggage claim facilities. Southwest has a higher bag per passenger since they currently do not charge passengers for checking bags.

TABLE 4-16 PASSENGERS CHECKING BAGS

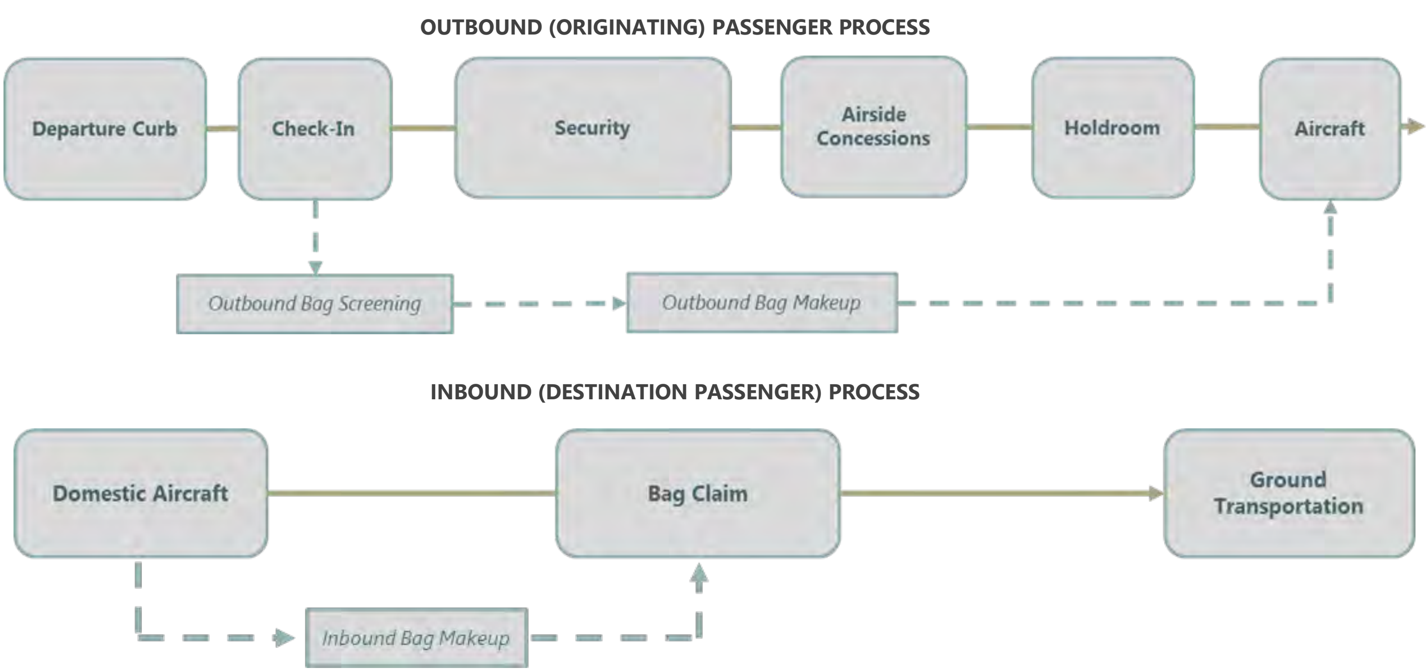
	UNITS	SOUTHWEST AIRLINES	OTHER AIRLINES
Percentage of passengers not checking bags	percent	30	40
Percentage of passengers checking bags	percent	70	60
Overall average bags per passenger	bags	0.8	0.6

SOURCES: Transportation Security Administration, *Planning Guidelines and Design Standards for Checked Baggage Inspection Systems*, Version 6.0, September 29, 2017; Benchmarking studies of comparable airports, Ricondo & Associates, Inc., May 2019.

4.5.2 OPERATING PARAMETERS AND REQUIREMENTS

Operating parameters refer to the processing sequence (how passengers and bags travel through the Airport), and processing rates (usually measured by time and number of passengers). **Exhibit 4-8** illustrates outbound and inbound processes for O&D passengers and baggage.

EXHIBIT 4-8 PASSENGER AND BAGGAGE PROCESS



SOURCE: Ricondo & Associates, Inc., May 2019.

A passenger's time in process is a metric representing the total time from point of entry to process completion Transaction time refers to the time when a passenger is actively interacting with a terminal processing facility to complete a task. In addition to the specific transaction time metric for each discrete process, total time in process accounts for time entering and waiting in queues, moving between processing areas, and potential delays caused by congestion. The time in process provides an accurate assessment of actual processing sequences and passenger activity metering, allowing for variance in waiting times and transaction rates while still meeting overall Level of Service (LOS) goals.

4.5.2.1 CHECK-IN

Check-in is defined as the process by which passengers obtain boarding passes and/or baggage tags and check any baggage with the airline prior to going through passenger security screening checkpoints. As technology advances and evolves, individual check-in counter units are becoming less critical. As a result, preserving the space required for processing and equipment takes precedent.

Baggage acceptance points (BAPs) are areas where airline agents or passengers introduce checked baggage into the baggage system. Space requirements for check-in facilities are driven largely by the processing areas in front BAPs. Each BAP has spatial requirements for queueing, equipment, circulation, and active processing to accommodate passenger demand at a given LOS.

Passenger check-in types are segmented into four categories that reflect the different facilities used in the process:

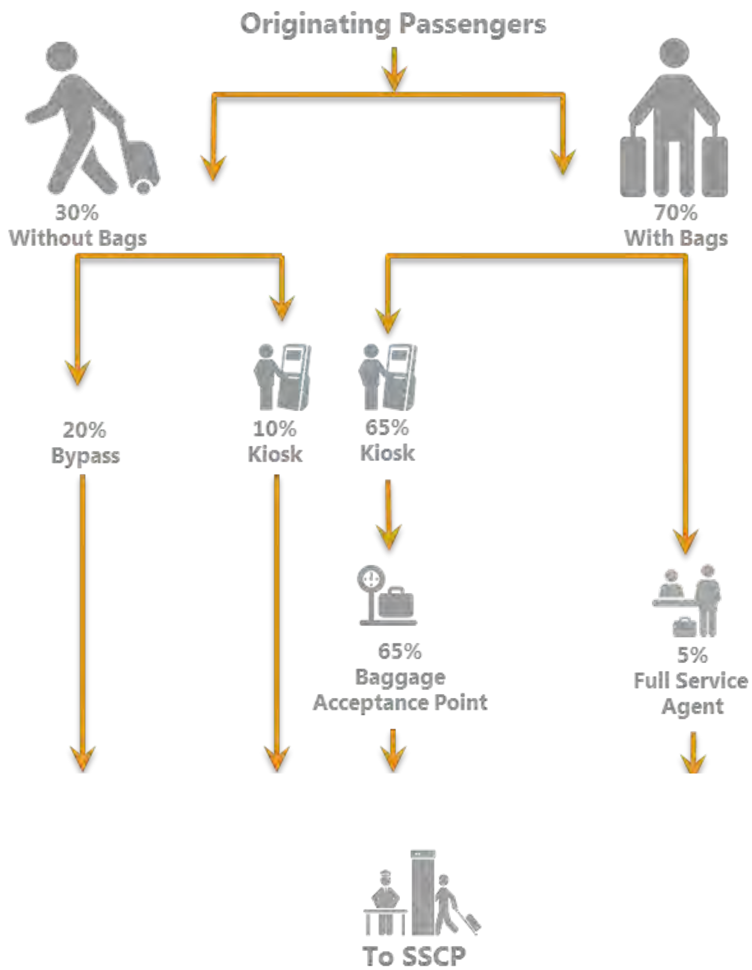
- **Bypass (Internet/Mobile Device) Check-in**. Passengers who do not check bags and check-in remotely prior to showing up at the Airport and, consequently, do not need to use terminal check-in facilities.
- **Kiosk/No Bags**. Passengers receiving boarding passes at stand-alone kiosks that are located either in front of in-line check-in counters, or located remotely from the check-in counter.
- **Kiosk/BAP.** Passengers acquiring boarding passes and printing baggage tags at stand-alone kiosks located in front of in-line positions, and providing baggage to airline staff at the BAP.
- **Full-Service Agent Positions**. Passengers using full-service agent positions, where airline staff assist passengers needing extra time or additional services, or where airlines provide product differentiation/concierge services for premium passengers.

Exhibit 4-9 (Southwest Airlines) and **Exhibit 4-10** (all other airlines) illustrate these passenger check-in operating parameters, including passenger check-in types, and time in process goals.

Check-in facilities can use different configurations, often depending on airline preferences. The configurations may include traditional linear agent counters, with or without built-in self-service devices, island counters, or a mix of remote self-service devices and baggage tag check-in positions.

Advances in check-in technology allow for fewer stationary agents through use of an automated bag-drop position. An automated configuration would allocate a greater proportion of the check-in hall for self-service kiosks with linear baggage induction belts. Space requirements among check-in configurations may differ depending on the size of the equipment. **Exhibit 4-11** shows in-line processing configurations and spatial requirements for full-service and kiosks with BAPs.

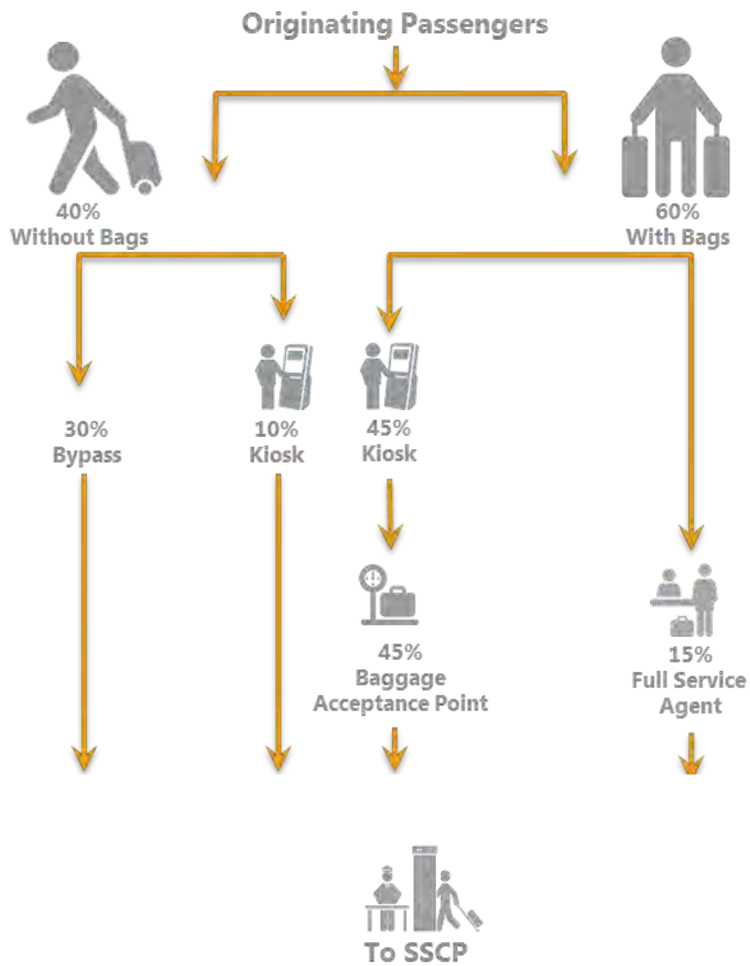
EXHIBIT 4-9 PASSENGER CHECK-IN OPERATING PARAMETERS: SOUTHWEST AIRLINES



CHECK-IN TYPE	PERCENTAGE	AVERAGE WAIT TIME	AVERAGE TRANSACTION TIME
No Checked Bags			
Bypass	20%	n/a	n/a
Kiosk	10%	3 minutes	1.5 minutes
Checked Bags			
Kiosk/Bag Drop	65%	7 minutes	3.5 minutes
Agent	5%	10 minutes	3.5 minutes

SOURCE: Benchmarking studies of comparable airports, Ricondo & Associates, Inc., May 2019.

EXHIBIT 4-10 PASSENGER CHECK-IN OPERATING PARAMETERS OTHER DOMESTIC AIRLINES



CHECK-IN TYPE	PERCENTAGE	AVERAGE WAIT TIME	AVERAGE TRANSACTION TIME
No Checked Bags			
Bypass	30%	n/a	n/a
Kiosk	10%	3 minutes	1.5 minutes
Checked Bags			
Kiosk/Bag Drop	45%	7 minutes	3.5 minutes
Agent	15%	10 minutes	3 minutes

SOURCE: Benchmarking studies of comparable airports, Ricondo & Associates, Inc., April 2019.

EXHIBIT 4-11 CHECK-IN SPACE TEMPLATE

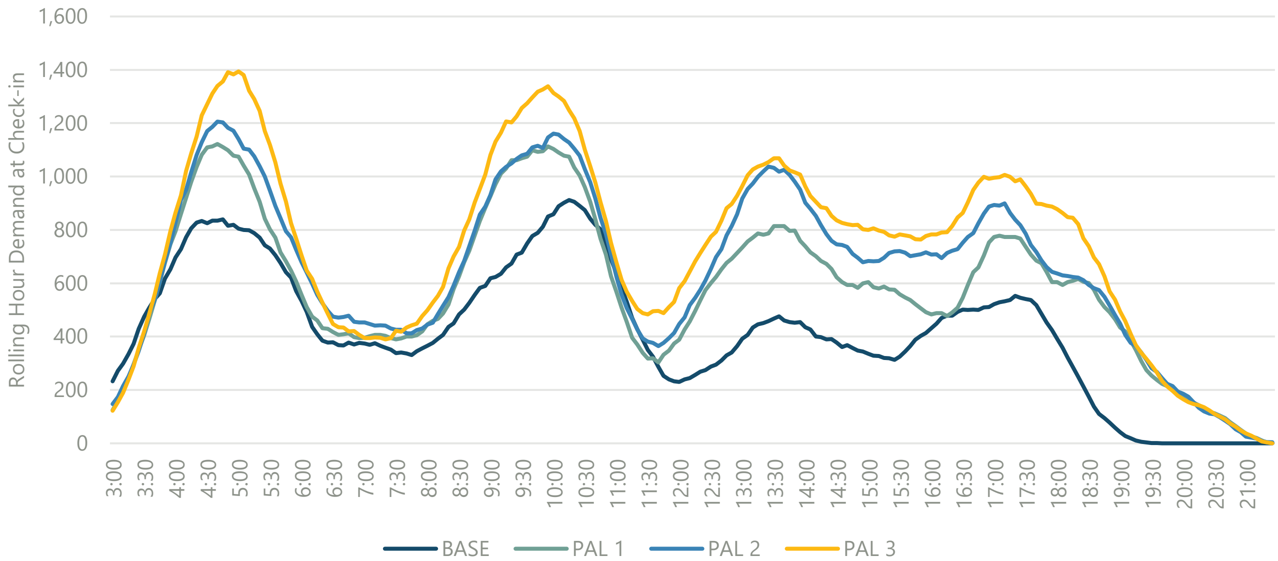
SOURCES: International Air Transport Association, *Airport Development Reference Manual,* 10th Edition, 4th Release, October 2016 (LOS); Airport Cooperative Research Program, *Report 25: Air Passenger Terminal Planning and Design, Volume 1: Guidebook*, 2010 (critical dimensions); Benchmarking studies from comparable airports, Ricondo & Associates, Inc., May 2018 (throughput and space template).

4.5.2.2 BAGGAGE HANDLING SYSTEM

The BHS consists of outbound and inbound baggage sortation and delivery systems. BHS requirements include the inbound and outbound units, and the space needed to sort and handle baggage at each unit. System type and conveyor/track layouts will determine space requirements for connecting and sorting elements. The requirements described in the following subsections represent individual processing areas and do not necessarily reflect all area requirements, as rights-of-way for conveyance elements vary for each terminal configuration.

Dynamic modeling was used to generate peak check-in activity for passengers and baggage based on the DDFS and Airport-specific operational and passenger attributes. Requirements represent the number of units needed to process passenger and baggage demand within the predefined LOS objectives. **Exhibit 4-12** illustrates forecast demand at the check-in hall with the applied passenger show-up profiles at the terminal for the 2018 baseline and PALs 1-3. **Table 4-17** outlines the overall check-in program requirements.

EXHIBIT 4-12 CHECK-IN DEMAND



SOURCE: Ricondo & Associates, Inc., May 2019.

TABLE 4-17 CHECK-IN REQUIREMENTS

	UNITS	EXISTING INVENTORY	2018 BASELINE	PAL 1	PAL 2	PAL 3
Baggage Acceptance Points	each	92 (approx.)	35	41	42	52
Total Passenger Processing Area	sq ft	8,280	8,750	10,250	10,500	13,000
ATO space	sq ft	16,150	6,740	7,890	8,090	10,010

SOURCE: Ricondo & Associates, Inc., May 2019.

Outbound

Outbound airline facilities consist of baggage make-up equipment, areas for staging and loading baggage carts, and baggage cart drive (circulation) aisles. Outbound baggage make-up devices at the Airport currently consist of carousels that allow baggage to continuously circulate, which provides storage capacity and staging area for carts. Carousels can be flat plate units, as JAX has, or slope plate units. Slope plate units provide greater capacity, while flat plate units provide better ergonomics for workers. Make-up devices can also be configured as piers or chutes, which have less storage capacity. Carts can be staged either parallel to make-up devices or perpendicularly if the aisles between devices have sufficient width. Parallel staging is the layout many airlines prefer. Current bag make-up is a combination of piers with parallel staging and circular units with allow either double parallel or perpendicularly staging.

Bag make-up requirements were based on the maximum number of carts staged for flights during individual airline peak periods, and the minimum area required per cart, including the outbound baggage device. Cart requirements by flight were derived using the metrics indicated in **Table 4-18**. Operational parameters for baggage make-up carts are listed in **Table 4-19**.

TABLE 4-18 EXAMPLE NUMBER OF CARTS PER AIRCRAFT

EXAMPLE AIRCRAFT TYPE	MAXIMUM CARTS STAGED
Airbus A319	3
Airbus A320/A321	4
Boeing 737	4
Boeing 757	5
Canadair Regional Jet CRJ700/900	2
Embraer 190	2
McDonnell Douglas MD-82/-83/-88	4

SOURCE: Benchmarking studies of comparable airports, Ricondo & Associates, Inc., April 2019.

TABLE 4-19 OUTBOUND BAGGAGE MAKE-UP OPERATING PARAMETERS

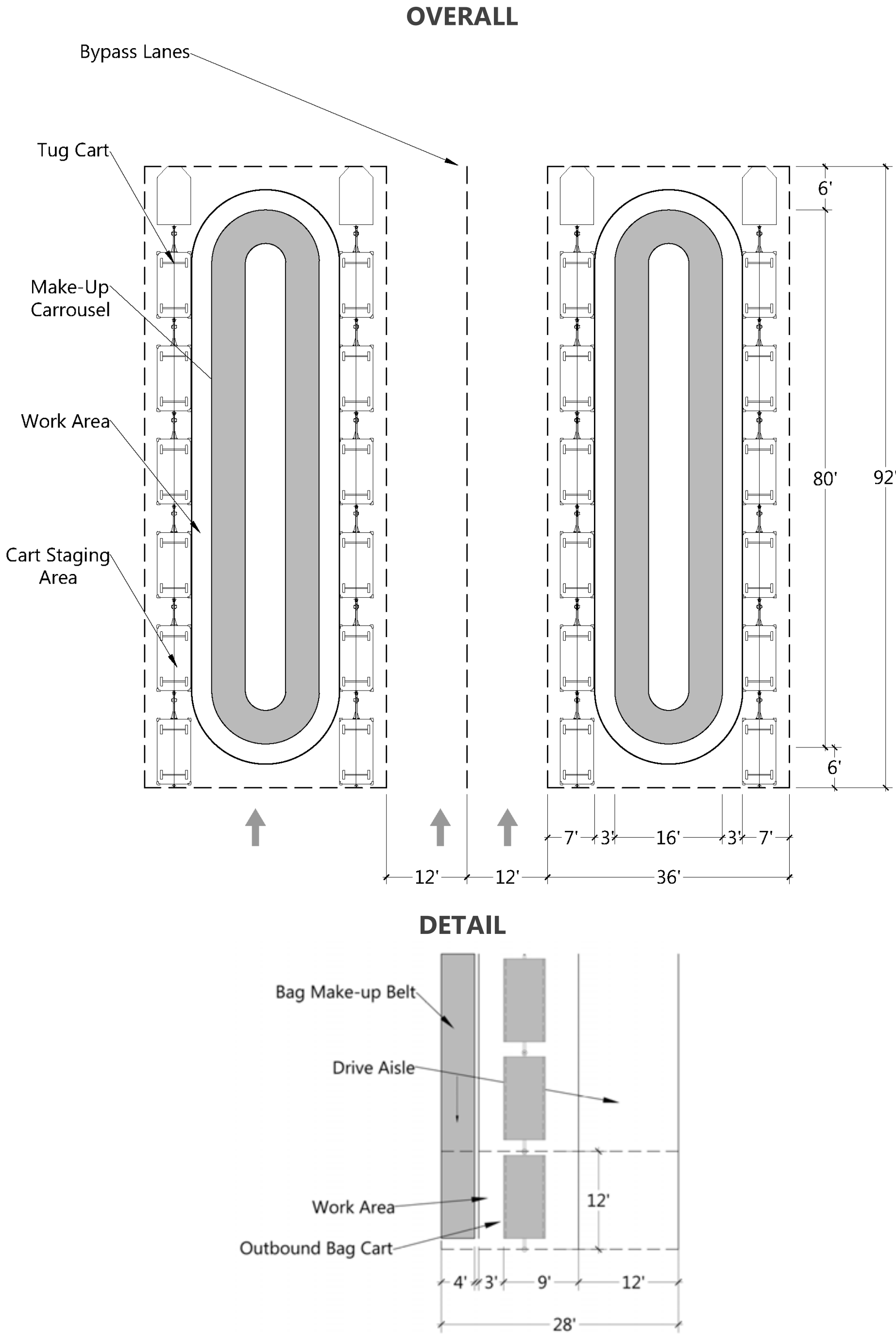
MINUTES PRIOR TO SCHEDULED DEPARTURE TIME	PERCENT OF TOTAL CARTS STAGED	AREA PER CART (SQ FT)
120-100	50%	400
99-30	100%	400

SOURCE: Benchmarking studies of comparable airports, Ricondo & Associates, Inc., May 2019.

Exhibit 4-13 illustrates the template used to develop space requirements for a future typical outbound baggage area. The make-up area includes space for baggage carts, conveyor equipment, work area, and cart staging. Adjacent bypass lanes are important for access around outbound devices and are included. Drive aisles require operational clearances, which are outlined as a component of circulation. Critical outbound make-up dimension clearances include:

- **Baggage Carts**. Baggage carts have lengths between 11 and 15 feet (with the tow bar down) and widths of between 5 feet 7 inches to 5 feet 9 inches.
- **Baggage Containers/Dollies**. Containers/dollies are commonly used for widebody aircraft flights. Containers are carried on dollies that typically have a length of 13 feet 6 inches (with the tow bar down) and width of approximately 6 feet.
- **Work Area**. The area between the carousel and the staged carts is used by workers to load bags and should provide a work aisle that is 3 feet wide with 7 feet of vertical clearance.

EXHIBIT 4-13 OUTBOUND BAGGAGE MAKE-UP SPACE TEMPLATE



SOURCE: Airport Cooperative Research Program, Report 25: *Air Passenger Terminal Planning and Design, Volume 1: Guidebook*, 2010 (critical dimensions).

Inbound

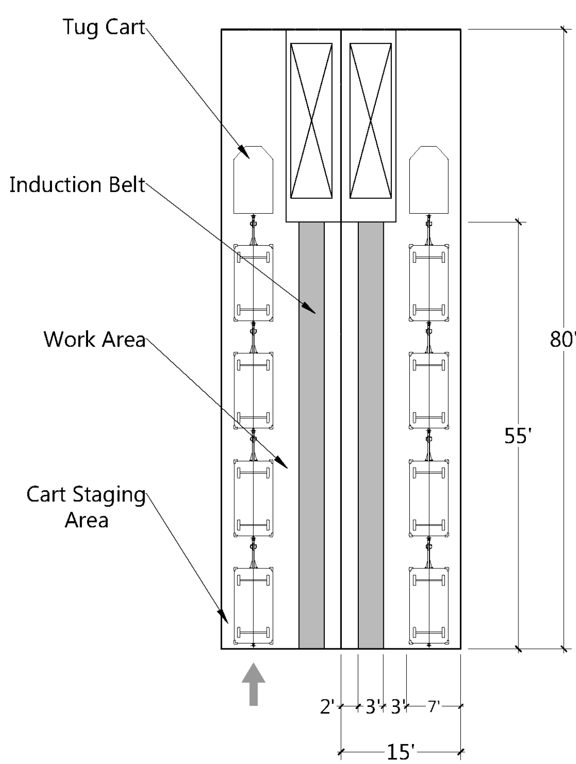
The space for each baggage claim device includes baggage cart circulation and parking, work area, and induction belt. A minimum of one induction belt per baggage claim device is required. **Table 4-20** lists inbound baggage offload units and space requirements. **Exhibit 4-14** illustrates the inbound baggage claim device space template that was used for developing the space requirements.

TABLE 4-20 INBOUND BAGGAGE OFFLOAD DEVICE UNITS AND SPACE REQUIREMENTS

	UNITS	OPERATING PARAMETER
Number of Inbound Piers per Claim Device	each	1
Area per Pier	sq ft	1,200

SOURCE: Benchmarking studies of comparable airports, Ricondo & Associates, Inc. May 2018.

EXHIBIT 4-14 INBOUND BAGGAGE SPACE TEMPLATE



SOURCE: Airport Cooperative Research Program, Report 25: *Air Passenger Terminal Planning and Design, Volume 1: Guidebook*, 2010 (critical dimensions).

The offload zone includes the following components:

- **Induction belt**. Conveyor equipment is used to transport bags from the baggage carts onto the baggage claim device. Conveyor length can vary to accommodate different numbers of carts.
- **Cart staging area**. This area is typically the width of a tug road, approximately 10 feet to 12 feet wide, and is required for carts to park and bags to be unloaded; carts usually park parallel with the induction belt.
- **Work Area**. This area is for bag agents to unload bags onto the belt and is located directly between cart staging and the induction belt with a typical clearance of 3 feet.

Requirements were derived from the operating parameters specific to the Airport's system. Inbound includes area offload pier which feed the claim devices. Both include some provision for drive area. Other drive areas are covered or unenclosed areas which are used by tugs and other service vehicles under the building. **Table 4-21** summarizes the BHS requirements for the Airport.

TABLE 4-21 BAGGAGE HANDLING SYSTEM REQUIREMENTS

	UNITS	INVENTORY	PAL 1	PAL 2	PAL 3
Peak Flights in makeup	each		25	25	27
Outbound Carts Required (Common-use)	each	99	64	67	75
Outbound Baggage Handling Area	sq ft	39,800	25,600	26,800	30,000
Inbound Baggage Handling Area	sq ft	22,500	16,880	16,880	16,880
Baggage Handling System	sq ft	62,300	42,480	43,680	46,880

SOURCE: Ricondo & Associates, Inc., May 2018.

4.5.2.3 DOMESTIC BAGGAGE CLAIM

Baggage claim requirements include the linear feet of presentation frontage at the carousels and associated retrieval areas. The number of devices is dependent on building configuration and equipment being served. Baggage claim requirements are based on the peak accumulation of terminating passengers that have checked bags. The peak number of passengers is based on the time required for baggage to travel from the aircraft to the belt, which is assumed to be 20 minutes. **Table 4-22** summarizes baggage claim operating parameters for domestic baggage claim.

TABLE 4-22 DOMESTIC BAGGAGE CLAIM OPERATING PARAMETERS

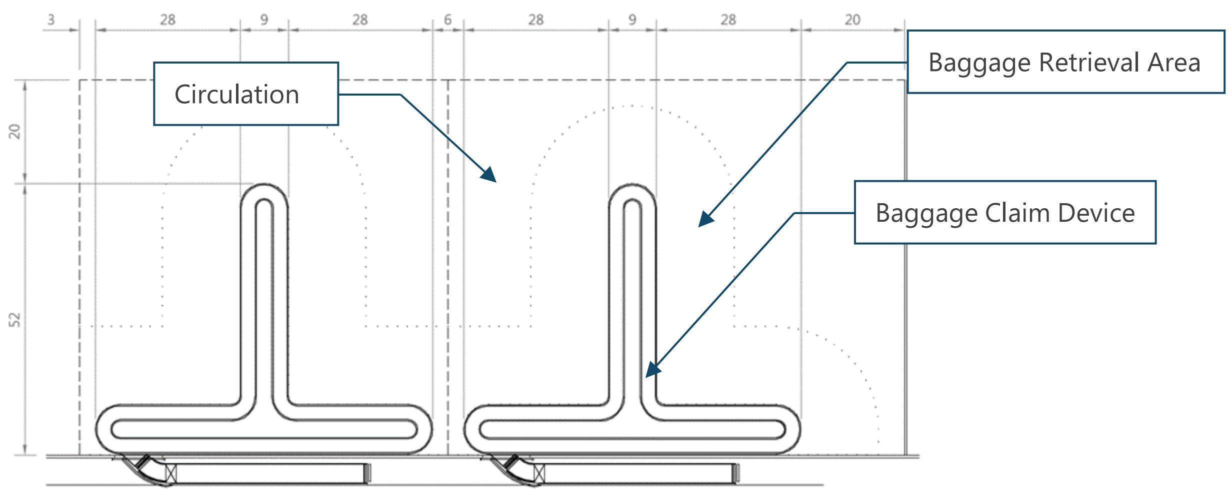
ASSUMPTION	OPERATING PARAMETER
Passengers with Checked Bags	48%
Typical Claim Device Length	190 ft
Typical Claim Device Area	6,157 sq ft
Area per Passenger	16 sq ft

SOURCE: Benchmarking studies of comparable airports, Ricondo & Associates, Inc. May 2019.

Facility requirements for number of units have been based on a single, indicative unit size to allow for flexible future facility configuration and utilization. Baggage claim device size and utilization may vary based on air service characteristics (aircraft size, terminating percentage), building configuration/constraints and number of airlines using a baggage claim area. Currently the airport has eight flat plate claim devices, four t-shaped and 4 U-shaped. **Exhibit 4-15** depicts an indicative baggage claim device for illustrative purposes similar to current devices. Elements illustrated on the exhibit include:

- **Baggage Claim Device and Retrieval Area**. Spatial area allocated for a single claim device includes the area occupied by the equipment and minimum recommended clearance between the equipment and the adjoining devices, walls, or general circulation corridors. A minimum of 15 feet of clearance from the face of the device for passengers to retrieve their baggage is required to allow appropriate access to the device.
- **Circulation**. A circulation corridor of 6 feet between active retrieval areas is provided for passengers and non-passengers moving between baggage claim devices and must be free of any obstructions to allow access and egress to and from individual claim units.

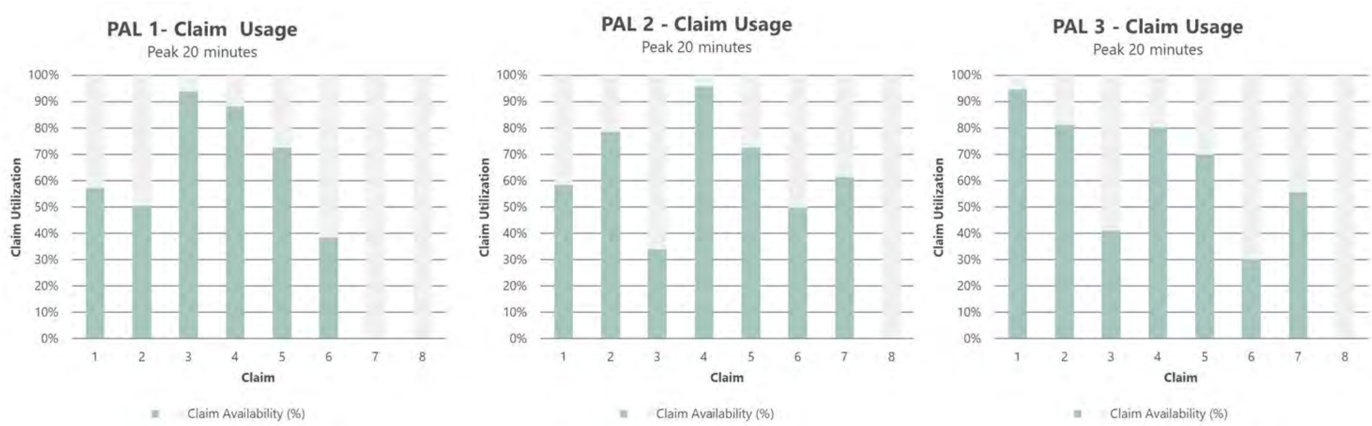
EXHIBIT 4-15 INDICATIVE DOMESTIC BAGGAGE CLAIM DEVICE SPACE TEMPLATE



SOURCE: Airport Cooperative Research Program, Report 25: *Air Passenger Terminal Planning and Design, Volume 1: Guidebook, 2010* (critical dimensions).

Exhibit 4-16 shows the peak 20-minute claim utilization at baggage claim for the peak period based on the existing claim devices. Forecast baggage claim requirements for the 2018 baseline and PALs 1-3 are outlined in **Table 4-23**. It is important to recognize that the baggage claim requirements are based on current passenger baggage-check characteristics, which are highly dependent on airline practices related to checked-bag fees and other restrictions. Changes in checked-bag fees by individual or multiple airlines could significantly affect these requirements and should be monitored closely.

EXHIBIT 4-16 FORECAST BAGGAGE CLAIM UTILIZATION



SOURCE: Ricondo & Associates, Inc., May 2019.

TABLE 4-23 BAGGAGE CLAIM REQUIREMENTS

	UNITS	EXISTING INVENTORY	PAL 1	PAL 2	PAL 3
Rolling 20-minute Operations	Flights	N/A	9	9	9
Rolling 20-minute Passengers	Passengers	N/A	995	1,041	1,072
Baggage Claim Occupancy	Passengers	N/A	598	624	643
Devices Required	Each	8	6	6	6
Baggage Claim Area (square feet)		**49,400**	**37,050**	**37,050**	**37,050**

SOURCE: Ricondo & Associates, Inc., May 2019.

Holdrooms

Holdrooms consist of the preboarding areas adjacent to aircraft gates, which are used for passenger seating and standing, airline agent check-in podiums, and boarding/deplaning queuing spaces and aisles. Holdroom requirements are based on the predominant or largest aircraft supported by the holdroom. For this analysis, requirements for holdrooms were developed based on peak hour passenger demand at scheduled time of departure and peak hour number of gates required. **Table 4-24** lists other planning factors that were applied to the respective aircraft seating capacities in order to develop the individual holdroom space requirements to support a gate.

TABLE 4-24 HOLDROOM PLANNING CRITERIA

PLANNING FACTORS	UNITS	VALUE	SOURCE
Adjoining holdroom credit	percent	0.9	Airport Cooperative Research Program
Agent counter area [1]	square feet	120.0	Airport Cooperative Research Program
Agent counter positions	positions	2.0	Airport Cooperative Research Program
Aisleway [2]	square feet	180.0	Airport Cooperative Research Program
Aisleway	row	1.0	Airport Cooperative Research Program
Holdroom Calculation [3]			
Seated	percentage	60.0	International Air Transport Association
Standing	percentage	20.0	International Air Transport Association
Seated	square feet	18.0	International Air Transport Association
Standing	square feet	12.0	International Air Transport Association
Queuing	square feet	11.0	International Air Transport Association

NOTES:
1 Based on 4 feet wide by 30 feet deep.
2 Based on 6 feet wide and 30 feet deep.
3 Based on 40 percent seated, 30 percent standing, and 30 percent queuing.
SOURCES: Airport Cooperative Research Program, Report 25, *Air Passenger Terminal Planning and Design,* Vol. 1, *Guidebook,* 2010. International Air Transport Association, *Airport Development Reference Manual*, 10th ed., May 2019.

The requirements for holdrooms were based on the gate requirements, which are presented in a later section in this Chapter. The space requirements for a narrowbody holdroom based on IATA planning guidelines is shown in **Table 4-25**.

TABLE 4-25 HOLDROOM REQUIREMENTS

	UNITS	EXISTING	PAL 1	PAL 2	PAL 3
Gates	each	20	24	24	26
Holdrooms	sq ft	52,400	60,480	60,480	65,520

SOURCE: Ricondo & Associates, Inc., May 2019.

4.5.2.4 DEPARTMENT OF HOMELAND SECURITY

As a result of the November 2001 Aviation and Transportation Security Act, the DHS maintains in-terminal facilities to conduct airline security screening principally related to the passenger security screening checkpoint (SSCP), baggage screening areas, and Port of Entry (POE) security. DHS terminal facility requirements are based on the following design guidelines and standards:

- Transportation Security Administration, Recommended Security Guidelines for Airport Planning, Design and Construction, June 15, 2006.
- Transportation Security Administration, Checkpoint Requirements and Planning Guide (CRPG), December 17, 2018.
- U.S. Customs and Border Protection, *Airport Technical Design Standards,* November 2017.

The Transportation Security Administration (TSA) is responsible for enforcing and regulating passenger and baggage screening at the Airport. Facility templates and guidelines published by DHS were referenced to develop space requirements for accommodating equipment as well as passenger queuing and support areas. Although the TSA has direct responsibility for determining the size and configuration of the passenger SSCPs and baggage screening facilities at the Airport, it typically collaborates with airport management to plan locations and passenger screening programs.

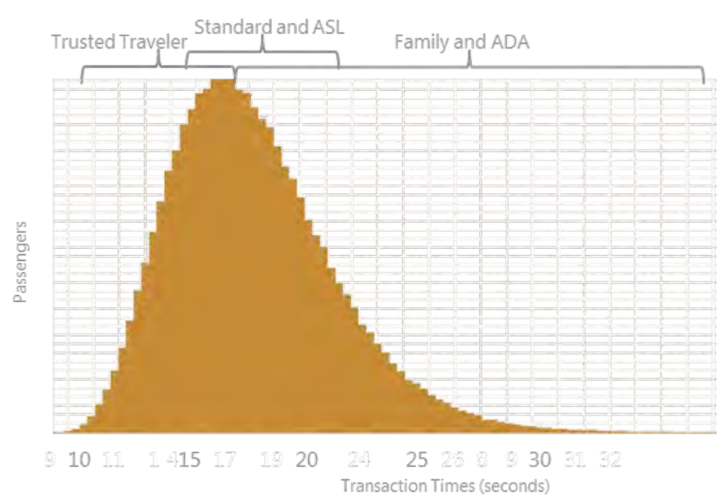
Passenger Screening Checkpoint

Unit requirements for SSCPs were based on TSA goals for expected passenger processing rates. Currently, the Airport operates standard/legacy, the Trusted Traveler Program (Pre✓®), and CLEAR® screening lanes. DHS offers Trusted Traveler Programs to enhance security and system efficiency while improving the passenger experience.

Screening technology and passenger eligibility for these programs will continue to evolve. Future processing rates and program utilization percentages are unknown. To simplify processing variables and provide a realistic assessment of lane and area requirements over time, an average throughput rate was adopted to represent a blended rate for advanced technologies, Pre✓®, family, oversize carry-on, and Americans with Disabilities Act (ADA) passengers. This methodology allows for the randomization of processing times for individual passengers and Trusted Traveler Program distributions that result in a blended average throughput rate of a collective checkpoint based on TSA goals and objectives and observed performance of each lane type. **Exhibit 4-17** identified the distribution for security screening processing rates. **Table 4-26** presents the assumed TSA operating parameters.

Airport employees and flight crews were assumed to have a nominal impact on checkpoint demand and would utilize Trusted Traveler Program lanes or a supplemental employee lane. The master plan has included a supplemental employee lane to protect for area if lane is needed. Further study may be required to evaluate future employee access at the Airport.

EXHIBIT 4-17 PROCESSING RATE DISTRIBUTION EXAMPLE



SOURCE: Benchmarking studies of comparable airports, Ricondo & Associates, Inc. May 2018.

TABLE 4-26 PASSENGER SECURITY SCREENING CHECKPOINT OPERATING PARAMETERS

ASSUMPTION	UNITS	OPERATING PARAMETER
Average Throughput Rate (passengers/hour/lane)	passengers	205
Waiting Time Goal	minutes	10
Queue Capacity	minutes	20
Area per Passenger in Queue	sq ft	10.8
Employee or Crew	lanes	Required Lane +1

NOTE: Area per lane excludes information technology and support functions.

SOURCES: International Air Transport Association, *Airport Development Reference Manual*, 10th Edition, 4th Release, October 2016 (LOS); Airport Cooperative Research Program, Report 25: *Air Passenger Terminal Planning and Design, Volume 1: Guidebook*, 2010 (Critical dimensions); Transportation Security Administration, *Planning Guidelines and Design Standards for Checked Baggage Inspection Systems*, pages 6-1 through 6-2, November 27, 2009 (baggage screening); Benchmarked from comparable airports; Transportation Security Administration, Inc., February 2018 (rates).

Exhibit 4-18 illustrates the space template for the traditional SSCP configuration, which currently exists at JAX, and the ASL configuration for future checkpoints. TSA protocols and lane configurations continue to evolve. The key metric for SSCP templates is the depth and width of available area per lane. Adequate area and building infrastructure to accommodate new technologies, protocols, and configurations must be considered. This functional area should be open, flexible, and incrementally expandable. The template module used to derive space requirements for passenger security screening includes:

- **Queue Area and Document Check Podiums**. There is one ticket and document check podium for each lane. While the waiting time goal is 10 minutes, the TSA recommends preserving a queue capacity of 20 minutes to account for delays in opening lanes and surges in the peak period.
- **Security Screening Area**. This area consists of divesting tables, metal detectors, X-ray equipment, advanced imaging technology (AIT) devices, secondary search/examination space, and a recompose area.

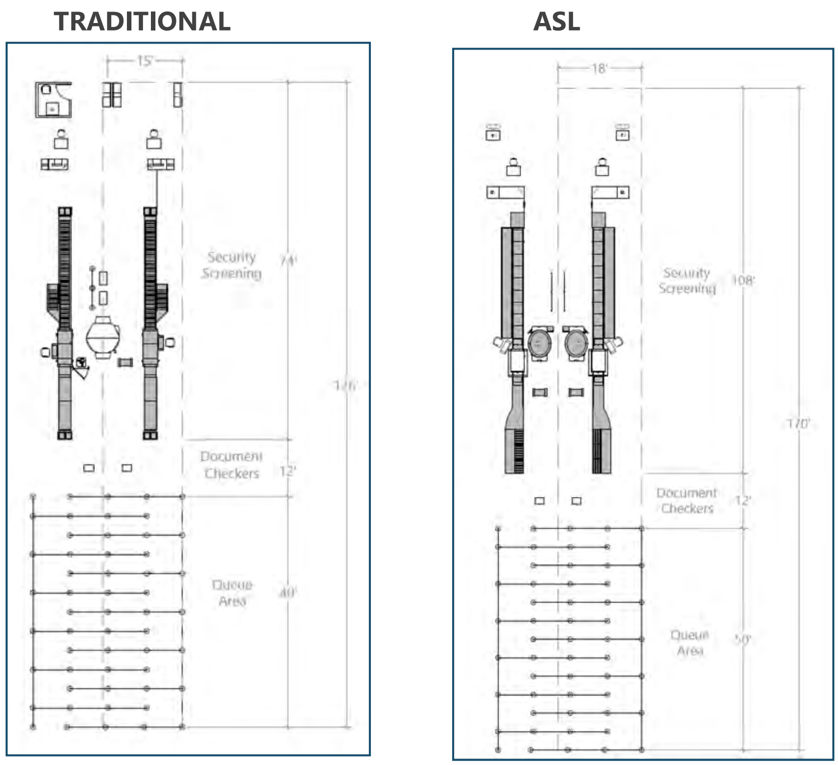
Support areas around the checkpoint such as supervisor workstations, break rooms and training rooms, storage and equipment rooms or common exit circulation corridors beyond the recompose area are not included in the template. The TSA support area based on the TSA's Checkpoint Design Guide (CDG), which recommends 150 square feet per screening lane for these areas. TSA administration office spaces such as Federal security directors (FSD) offices, field support offices, conference rooms and administration support space Are only included at the same ratio as today since TSA can elect to move these administrative spaces off site.

Passengers are metered through a check-in process prior to security, providing a more accurate assessment of demand at the checkpoint. This approach results in lane and queue requirements that are assuming balanced to upstream processing components. Forecast space requirements for TSA equipment, support facilities, passenger processing, and queueing areas, through PAL 3, are listed in **Table 4-27.**

Baggage Screening

The Aviation and Transportation Security Act requires that all checked baggage be screened for explosives through Explosives Detection System (EDS) machines. An in-line baggage system consists of an integrated conveyor system that provides sufficient bag queuing capacity for on-screen resolution while maintaining high throughput and accurate bag tracking.

EXHIBIT 4-18 PASSENGER SECURITY SCREENING CHECKPOINT SPACE TEMPLATE



SOURCE: Transportation Security Administration, Checkpoint Requirements and Planning Guide (CRPG), December 17, 2018.

TABLE 4-27 PASSENGER SECURITY SCREENING REQUIREMENTS

	UNITS	EXISTING	PAL 1	PAL 2	PAL 3
Checkpoint Lanes	each	8	8	9	9
Total Queue Area	sq ft	N/A	4,800	5,400	5,400
Total Passenger Processing Area	**sq ft**	**12,800**	**15,120**	**17,010**	**17,010**

SOURCE: Ricondo & Associates, Inc., May 2019.

The baggage screening facility requirements were sized for each terminal's activity using simulation modeling. Equipment requirements are based on surged flows obtained by multiplying the baggage flow by a TSA provided surge factor. The use of a surge factor is recommended to capture the intrinsic variance of baggage demand and ensure that equipment requirements are not undersized. **Table 4-28** summarizes the baggage screening facility operating parameters.

TABLE 4-28 CHECKED BAGGAGE SCREENING OPERATING PARAMETERS

ASSUMPTION	UNITS	OPERATING PARAMETER
Screening Rate per Device	bags per hour	400-680
Number of EDS Devices	devices	Required Devices +1
Area per Device	sq ft	6,500

SOURCE: Transportation Security Administration, Planning Guidelines and Design Standards for Checked Baggage Inspection Systems Version 5.0, July 2016.

Checked baggage screening requirements were based on the TSA average hourly throughput by device type. Equipment requirements are based on surged flows obtained by multiplying the baggage flow by a surge factor. The use of a surge factor is recommended by the TSA Planning Guidelines and Design Standards for Checked Baggage Inspection Systems to reflect variance in baggage demand and to ensure that equipment requirements are not undersized. The current baggage screening system has been recapitalized and based on system throughput capacity will be sufficient through the planning horizon.

U.S. Customs and Border Protection

All international passengers must be processed at a Port of Entry (POE) prior to entering the United States, whether they are terminating their journey at the Airport or connecting to a domestic flight. The Airport has an international arrivals facility with an approximate capacity of 200 passengers per hour, however, there are no existing, scheduled international flights and no flights are projected in the Aviation Activity Forecast. Therefore, analysis of international arrivals was not included in the Master Plan Update and any concepts should not impact existing facility.

4.5.2.5 SUPPORT SPACES

The following details the methodology for determining requirements for airline and Airport support spaces, as well as for passenger amenities. Support space includes airport offices and operations areas, Airline Ticket Offices, Baggage Service Offices, and commercial support. Passenger amenities include public restrooms and commercial programs. Requirements were developed from planning factors consistent with industry standards and stakeholder input.

Public Restrooms

Public restrooms should be conveniently distributed throughout the public areas of the terminal and spaced no further than 400 feet apart, providing a maximum walking distance of 200 feet to a restroom. Each location should include men’s and women’s facilities, and a separate family/companion care/gender-neutral restroom. **Table 4-29** lists restroom assumptions reflecting metrics provided in ACRP Report 130.[3] Total restroom requirements were based on 100 square feet per fixture. Future restroom requirements were incrementally increased based on future forecast gate requirements.

3 ACRP Report 130, *Guidebook for Airport Terminal Restroom Planning and Design*, 2015.

TABLE 4-29 PUBLIC RESTROOM OPERATING PARAMETERS

	UNIT	OPERATING PARAMETER
Restroom Area	Square feet per gate	1,000
Area per Fixture	square feet	100

SOURCES: ACRP Report 130, *Guidebook for Airport Terminal Restroom Planning and Design*, 2015, Benchmarking studies of comparable airports, Ricondo & Associates, Inc. May 2019.

Support spaces include facilities supporting Airport operation and maintenance. **Table 4-30** summarizes the planning assumptions for each space defined below and do not reflect individual airline or tenant needs.

TABLE 4-30 SUPPORT SPACE OPERATING PARAMETERS

SUPPORT SPACE	VALUE	UNIT	NOTES
Airline Ticket Office	35	square feet	per linear processing
Baggage Service Office	150	square feet	per domestic baggage claim device
Airline Operations and Support	2,000	square feet	per narrowbody equivalent gate
Commercial Program	10	square feet	per 1,000 annual enplaned passengers
Airport Support & Amenities	18,800	square feet	per 5 million annual passengers
Building Services	16	percent	of functional area subtotal
Circulation	26	percent	of functional area subtotal

SOURCE: Based on existing terminal areas, Ricondo & Associates, Inc., May 2019.

- Airline Support
  - **Airline Ticket Offices**. Requirements were based on ACRP recommendations and adjusted to reflect the industry trend for remote offices and advances in technology, resulting in roughly 40 percent less space or 35 square feet per linear feet of processing within the check-in hall.
  - **Baggage Service Offices**: Industry standard is 150 square feet per domestic baggage claim device and includes bag storage and lockers located near the claim devices. Future requirements were based on proportional baggage claim growth.
  - **Airline Operations and Support:** Industry standards are approximately 2,000 square feet per Narrowbody Equivalent Gate. Overall tenant occupancy was extrapolated based on forecast proportional forecast passenger activity growth.
- Other Areas
  - **Commercial Program**. Requirements are based on the existing ratio of 10 square feet per 1,000 annual enplaned passengers. Commercial Program space includes food, beverage, specialty retail, services, convenience retail, and duty free. Support and storage areas for commercial program space were based on the ACRP recommendation of 10-15 percent of the leasable commercial program space.

- **Airport Support & Amenities.** Demand for Airport Support space was based on current conditions. Airport support needs were increased proportionally every million annual passengers (MAP) to reflect incremental facility growth through the planning horizon.
- **Building Services.** Requirements for mechanical, electrical, and plumbing were based on 16 percent of the sub-total of functional areas, based on current areas
- **Circulation.** Requirement based on 26 percent of the sub-total of functional areas, based on current areas.

Other terminal areas are dependent upon the adjacent areas served and a summary can be found below in **Table 4-31**.

TABLE 4-31 OTHER AREA REQUIREMENTS

AREA	UNITS	EXISTING	PAL 1	PAL 2	PAL 3
Commercial Program	sq ft	83,600	105,260	118,420	131,580
Airport Support	sq ft	103,300	150,400	169,200	188,000
Restrooms	sq ft	21,100	20,000	9,000	10,000
Building Services (MEP)	sq ft	81,000	84,500	90,240	100,510
Circulation Area	sq ft	127,500	133,000	142,040	158,210

SOURCE: Ricondo & Associates, Inc., May 2019.

4.5.3 TERMINAL PROGRAM REQUIREMENTS

Table 4-32 summarizes terminal facility requirements for the Airport. Future requirements for airline offices and lounges, concessions, building services, and circulation areas were extrapolated using information gathered through stakeholder interviews and industry metrics. The fluid nature of airline assignments and various forecast scenarios will influence terminal requirements over the planning horizon. A 10 percent increase for Design Configuration Contingency for future years has been added to reflex inefficacy in future program and unusable elements such as columns and shafts.

TABLE 4-32 TERMINAL PROGRAM

FUNCTIONAL AREA	UNITS	EXISTING (SQ FT)	PAL 1 (SQ FT)	PAL 2 (SQ FT)	PAL 3 (SQ FT)
Holdroom Requirements[1]	sq ft	51,800	60,500	60,480	65,520
Airline Facilities					
Check-in	sq ft	8,280	10,250	10,500	13,000
Baggage Handling System	sq ft	62,300	42,480	43,680	46,880
Domestic Baggage Claim	sq ft	49,400	37,050	37,050	37,050
Airline Support	sq ft	50,120	54,740	55,890	60,090
Department of Homeland Security					
Transportation Security Administration					
Checkpoint Total Area	sq ft	12,800	11,340	13,230	17,010
Checked Baggage Screening	sq ft	22,600	22,600	22,600	22,600
Customs and Border Protection	sq ft	26,000	26,000	26,000	26,000
Other Areas					
Commercial Program	sq ft	83,600	105,260	118,420	131,580
Airport Support and Amenities	sq ft	103,300	150,400	169,200	188,000
Restrooms	sq ft	21,100	20,000	24,000	24,000
Building Services	sq ft	81,000	84,500	90,240	100,510
Circulation	sq ft	127,500	133,000	142,040	158,210
Design Configuration Contingency (20%)	sq ft	n/a	78,470	83,800	93,340
TOTAL	sq ft	699,700	863,130	921,780	1,026,710

NOTES:
1 Assumes average of minimum and maximum holdroom area requirements.
2 sq ft = Square Feet
3 Figures are rounded.
4 Figures may not add up due to rounding
SOURCE: Ricondo & Associates, Inc., May 2019.

4.6 PUBLIC PARKING, RENTAL CAR, CURBSIDE, AND AIRPORT ACCESS ROAD FACILITY REQUIREMENTS

This subsection addresses several elements of Airport roadway and parking infrastructure. These include:

- Consolidated Rental Car Facility (ConRAC)
- Parking Lot Allocations
- Air Cargo Parking
- Curbside Recommendations and Circulation
- Future Parking Demand

In June of 2018, JAA requested Walker Consultants (Walker) to conduct additional analyses and provide recommendations for improvements to parking facilities that will be required as a result of future growth. The findings of the Jacksonville International Airport Parking Study – Phase II (the Parking Study) are summarized throughout this subsection, and the full report is provided in **Appendix B**.

4.6.1 CONSOLIDATED RENTAL CAR FACILITY

Ricondo was tasked with developing requirements for relocating the rental car/ready return area from the Hourly Garage to a new on-Airport location as part of the Parking Study. Utilizing industry knowledge and information gathered from discussions with the rental car companies at JAX, facility requirements were developed for a new ConRAC throughout the planning horizon.

In addition to determining the potential location of the new facility, analysis was performed to develop space requirements for various components of the facility, including:

- Customer Service Area
    - counter positions
    - circulation
- Ready/Return and Storage Areas
    - ready spaces
    - return spaces
    - vehicle storage spaces
    - circulation

A detailed breakdown of these space requirements is shown in **Table 4-33**.

While the Airport can accommodate forecast demand for rental vehicle storage spaces through the planning horizon, there are current deficiencies for counter positions and ready/return spaces. There are 30 existing counter positions, while 43 are required in the baseline (2018) and up to 63 are required by PAL 3. For ready spaces, 461 are provided in the existing facility, 719 are required in the baseline, and over 1,000 are required by PAL 3. Return spaces follow a similar trend: there are only 268 existing spaces provided, significantly short of the 457 required in the Baseline and 666 by PAL 3. To accommodate current and future demand, the Parking Study recommends the Airport pursue design and construction of a ConRAC as soon as possible.

TABLE 4-33 NEW RENTAL CAR FACILITY REQUIREMENTS SUMMARY

	EXISTING			2018 REQUIREMENTS			2023 REQUIREMENTS			2028 REQUIREMENTS			2038 REQUIREMENTS		
	QTY	SF	TOTAL SF	QTY	SF	TOTAL SF	QTY	SF	TOTAL SF	QTY	SF	TOTAL SF	QTY	SF	TOTAL SF
Customer Service Area															
Regular Counter Positions	30	290	8,700	43	290	12,500	48	290	13,900	52	290	15,200	63	290	18,200
Circulation	30%		2,600	30%		3,800	30%		4,200	30%		4,600	30%		5,500
Subtotal Regular Counter Positions (SF) + 25% Circulation			11,300			16,300			18,100			19,800			23,700
Ready/Return and Storage Areas															
Ready Spaces	461	444	204,700	719	444	319,200	798	444	354,400	875	444	388,700	1,048	444	465,100
Return Spaces	268	211	56,500	457	211	96,500	508	211	107,100	557	211	117,500	666	211	140,600
Circulation	25%		51,200	25%		103,900	25%		115,400	25%		126,600	25%		151,400
Subtotal Ready/Return (SF) + 25% Circulation	729		312,400	1,176		519,600	1,306		576,900	1,432		632,800	1,714		757,100
Vehicle Storage Spaces	3,200	189	604,800	1,874	189	354,100	2,080	189	393,200	2,282	189	431,200	2,489	189	470,500
Circulation	25%		151,200	25%		88,500	25%		98,300	25%		107,800	25%		117,600
Subtotal Storage Spaces (SF) + 25% Circulation			756,000			442,600			491,500			539,000			588,100

NOTES:
1 Qty – Quantity
2 sf – Square feet
3 All values rounded to the nearest 100
SOURCE: Ricondo & Associates, Inc., *Jacksonville International Airport Rental Car Industry Questionnaire*, August 2018.

While several sites were considered for the ConRAC, the Parking Study recommends locating a four-story facility in the daily surface lot north of the Hourly and Daily Garages, as shown in **Exhibit 4-19**. The fourth level would be required to accommodate the forecast ready/return facility requirements. With this option, the counters would remain in their current location within the terminal. and rental car service/storage facilities would remain in their existing locations as well, off Rental Car Lane.

This option would also utilize a route from the public parking exit plaza, onto Dixie Clipper Road, turning left onto Yankee Clipper Road via the terminal recirculation road, and then turning right onto Pecan Park Road to arrive at the rental car service/storage facilities located along Rental Car Lane. The rental car companies would then proceed back to the new consolidated facility by making a left turn onto Pecan Park Road from Rental Car Lane and a right turn onto Yankee Clipper Road. Both routes are highlighted in Exhibit 4-19.

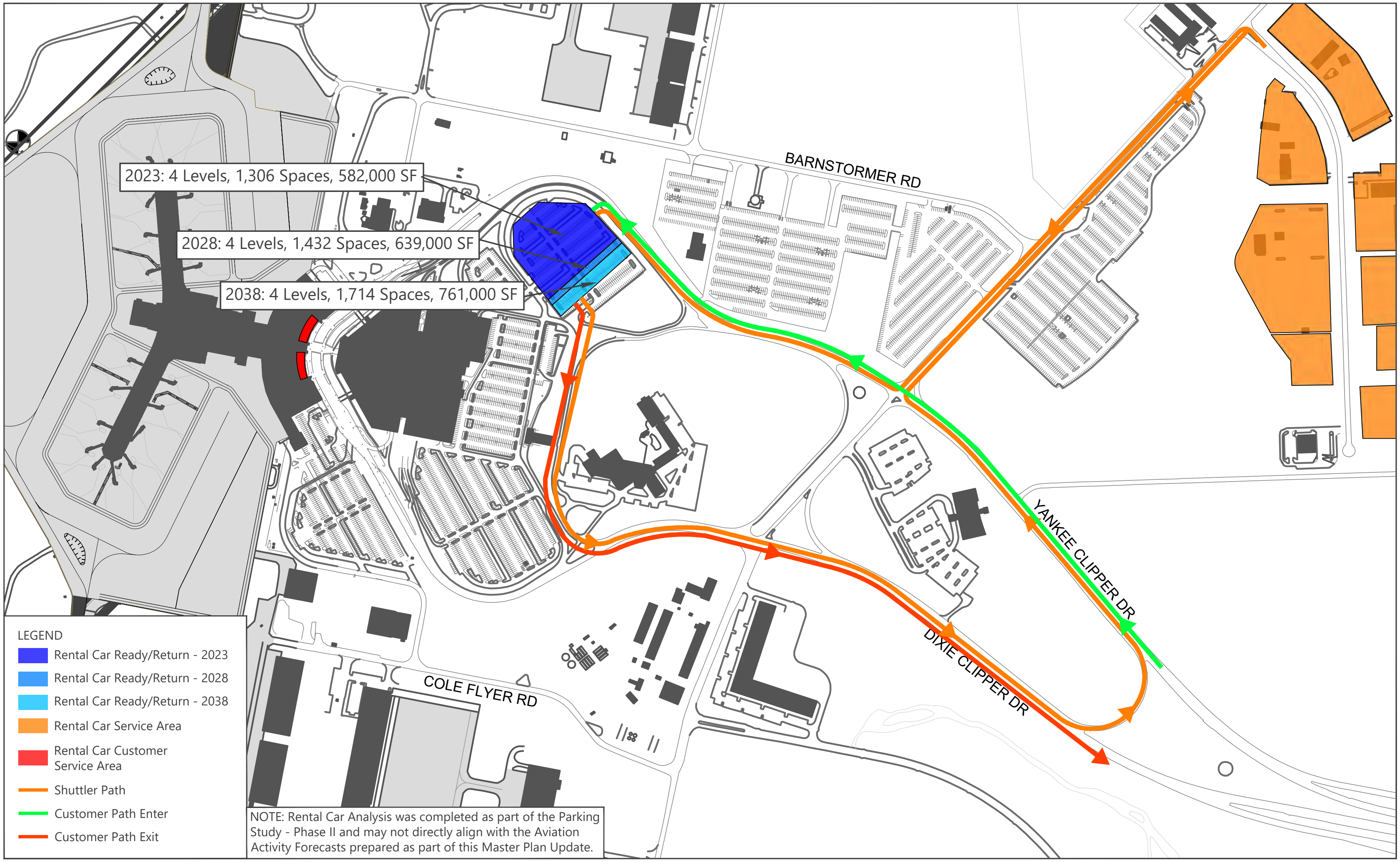
4.6.2 PARKING LOT ALLOCATIONS

A major component of the Parking Study is the reallocation of the various parking products at the Airport to provide increased operational efficiency and to prioritize parking for the traveling public instead of Airport and airline employees. Every recommendation made in the Parking Study, except the Air Cargo parking lot improvements, is dependent upon the relocation of the Employee Lot. **Exhibit 4-20** identifies the existing locations of each parking area, the number of spaces, and the existing space allocation for each. **Exhibit 4-21** and **Table 4-34** identify the proposed parking relocations. The following subsections discuss the recommendations and impacts of each potential parking modification, per the Parking Study.

4.6.2.1 EMPLOYEE PARKING

Airport employees currently park in the designated Employee Lot, but also the Hourly Garage, Daily Garage, Daily Surface Lot, and Economy 1. Because employees are using public parking facilities near the terminal, passengers may have difficulty locating convenient parking spaces during peak hours, lowering customer satisfaction levels. The Parking Study recommends relocating and consolidating all airport employee parking to what is currently shown as the Economy Lot 3, as shown in Exhibit 4-31. This relocation would increase the amount of available close-in parking for the traveling public.

The Parking Study states that approximately 667 parking spaces are currently designated for employees across the various lots. Therefore, Economy Lot 3, which is planned to provide approximately 1,300 parking spaces once converted to the new Employee Lot, would be sufficient to accommodate employee demand. In addition, this lot will require a shuttle to transport employees to and from the terminal, which is a service currently not required at JAX. The shuttle will operate every eight minutes during peak times, and every 15 minutes during off-peak times. To help with overall vehicular circulation at the Airport, the proposed shuttle routes would only use Barnstormer Road and Pecan Park Road, to avoid creating additional traffic on the main Airport entry roads and terminal curbsides. The pick-up and drop-off point for employees will be located within the Pre-Arranged Lot, adjacent to the terminal.



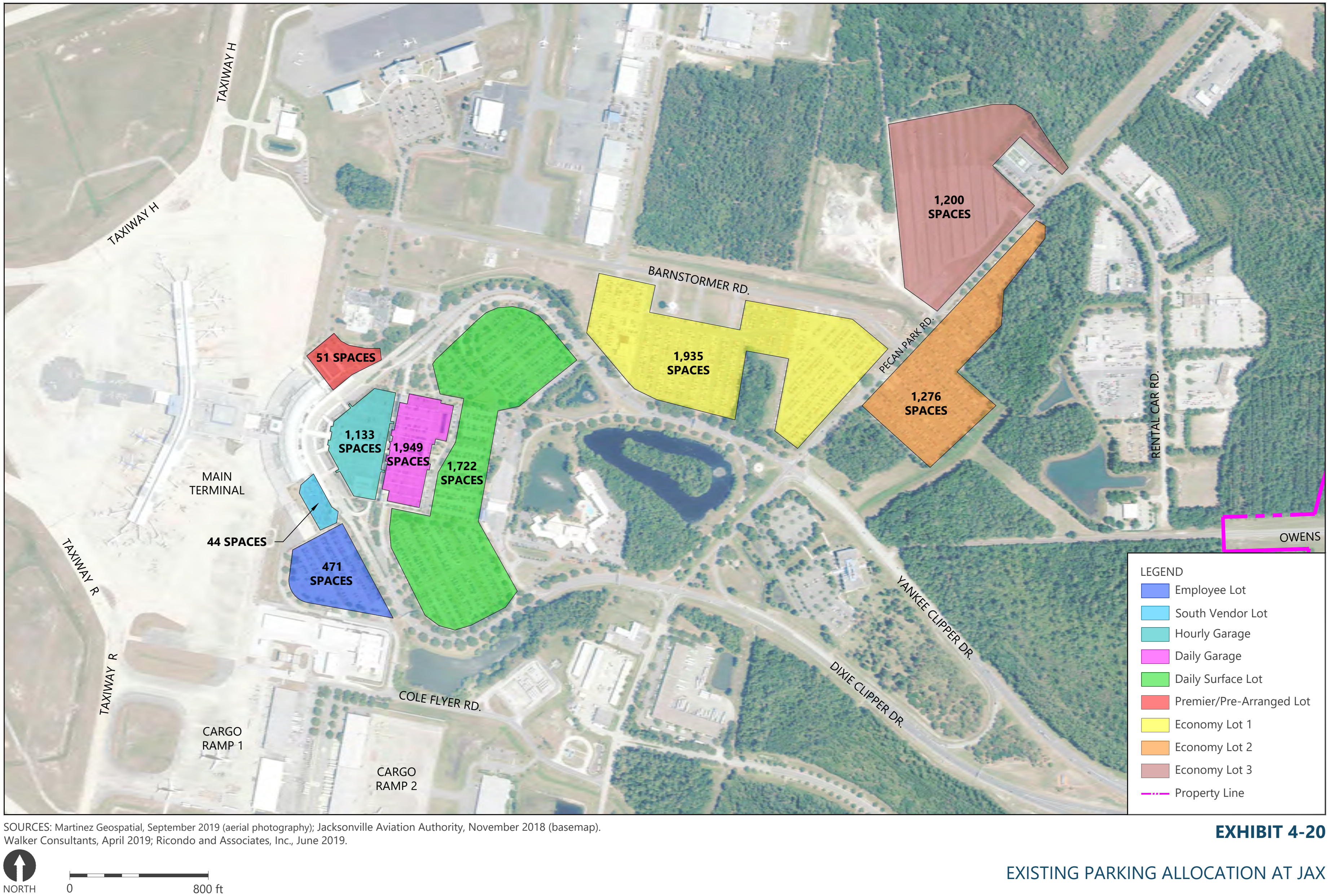
SOURCE: Jacksonville International Airport ALP, 2009.

EXHIBIT 4-19

NORTH 0 700 ft.

READY/RETURN IN DAILY SURFACE LOT NORTH OF THE PARKING GARAGE

Drawing: P:\Project-Chicago\JAX\2018 ConRAC\Concepts\JAX_Exhibit 4-19.dwgLayout: Concept 3 Plotted: Mar 13, 2020, 02:17PM

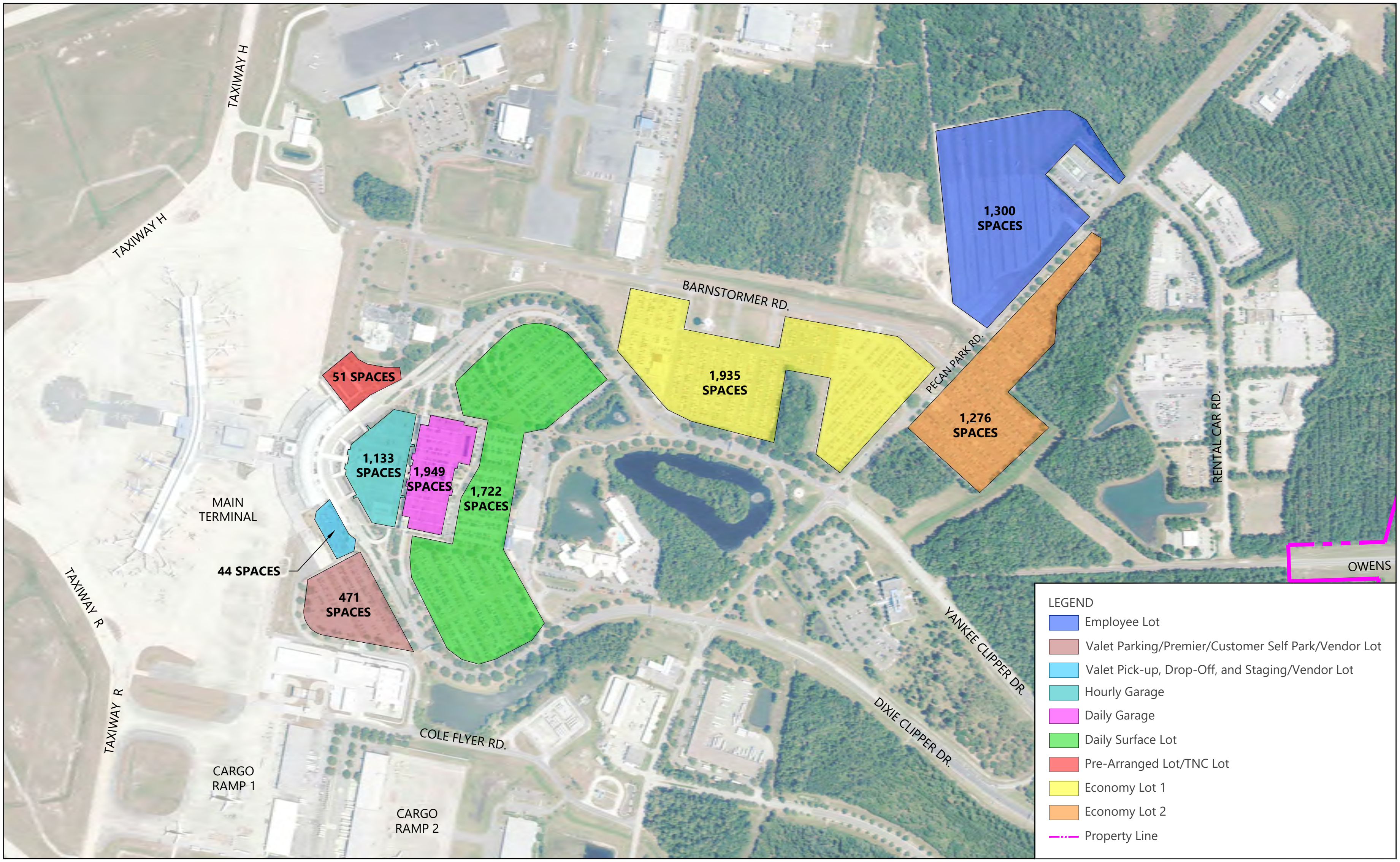


SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (basemap). Walker Consultants, April 2019; Ricondo and Associates, Inc., June 2019.

EXHIBIT 4-20

EXISTING PARKING ALLOCATION AT JAX

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\5.1 - Demand Capacity and Facility Requirements - Ricondo\CAD\Demand-Capacity_Exhibit 4-20.dwgLayout: EXHIBIT 4-20 Plotted: Jan 30, 2020, 01:18PM



SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (basemap). Walker Consultants, April 2019; Ricondo and Associates, Inc., June 2019.

NORTH 0 800 ft

EXHIBIT 4-21

RECOMMENDED PARKING ALLOCATION AT JAX

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TABLE 4-34 EXISTING AND RECOMMENDED PARKING ALLOCATION AT JAX

LOT/AREA NAME	EXISTING PARKING ALLOCATION (SPACES)	MOVEMENT OF PARKING ALLOCATION	PROPOSED NEW PARKING ALLOCATION OF LOT/AREA
Employee Lot	Employee Parking (471)	move Employee Parking to Economy Lot 3	Valet Parking Customer Self-Park Premier Parking Vendor Parking
Hourly Garage	Public Parking Employee Parking (1,133)	no change move Employee Parking to Economy 3	Public Parking only
Daily Garage	Public Parking Employee Parking (1,949)	No change move Employee Parking to Economy 3	Public Parking only
Daily Surface Lot	Public Parking Employee Parking Valet Storage (1,722)	No Change move Employee Parking to Economy 3 Valet Storage moves to former Employee Lot	Public Parking only
Economy Lot 1	Public Parking Employee Parking (1,935)	No change move Employee Parking to Economy 3	Public Parking only
Economy Lot 2	Public Parking (1,276)	No change	No change
Pre-Arranged Parking	Pre-Arranged Parking Premier Program Parking (51)	No Change Valet and/or Customer Self-Park	Pre-Arranged Parking TNC Pick-up
South Vendor Lot	Vendor Parking (44)	Valet and/or Customer Self-Park and/or Loading Dock	Valet Pick-up and Drop-off Valet Staging Vendor Parking
Economy Lot 3	Public Parking – Holidays (1,200)	Absorbed within other lots	Employee Parking
Departures Level Roadway	Valet Stand Valet Staging	South Vendor Lot South Vendor Lot	Passenger Drop-off
Arrivals Level Roadway	TNC Pick-up	Pre-Arranged Lot	Public Roadway

SOURCE: Walker Consultants, *Jacksonville International Airport Parking Study – Phase II*, August 2018.

4.6.2.2 VALET STAND/STAGING AND PARKING AND PREMIER PARKING

After relocating employee parking, the Parking Study recommends shifting the Valet Stand/Staging area and Premier Parking to the South Vendor Lot and previous Employee Lot, respectfully. Moving the Valet operations away from the Departures Level curbside will help to alleviate curbside congestion on this level and will also consolidate the Stand/Staging and Parking operations in adjacent lots, which will significantly reduce the car retrieval time for customers. Currently, Valet employees are required to cross active lanes of traffic on the Departures Level curbside to retrieve cars and are then required to exit the terminal area via Dixie Clipper Road, utilize the terminal recirculation road back on to Yankee Clipper Road and then deliver the car to the Departures Level curbside.

Premier Parking would be moved from the current location in the Pre-Arranged Lot to the former Employee Lot to increase available space in the Pre-Arranged Lot for employee shuttle operations and for the staging of Transportation Network Companies (TNCs). The Parking Study noted that Premier Parking customers may not be pleased with the increased walking distance to the terminal compared to being dropped off at the Pre-Arranged Lot, however, this relocation was deemed the best choice for operational efficiency.

4.6.2.3 TRANSPORTATION NETWORK COMPANY RELOCATION

The Parking Study included analyses and recommendations for the relocation of TNC pick-up areas at the Airport. For the first half of 2018 the Airport experienced 145,546 TNC operations, resulting in approximately $250,000 of fee revenue. Currently, the TNC pick-up area is located on the southern end of the Arrivals Level curbside, which is also utilized for Jacksonville Transportation Authority City bus operations. TNCs dropping off passengers are directed to the Departures Level curbside in front of the terminal entry doors. The Airport does not currently provide staging area for TNCs on Airport property. Geo-fencing technology is used to ensure compliance with established TNC operational regulations.

The Parking Study recommends moving the TNC pick-up area away from the Arrivals Level curbside, because of the other parking reallocations recommended as part of this Study, and to reduce curbside congestion as TNC operations continue to grow over time. Walker provides TNC pick-up relocation recommendations for both the short-term and long-term, as described below.

Short-Term Relocation Recommendation

In the short-term, the Parking Study recommends relocating TNC pick-up operations to the Pre-Arranged Lot, which will provide additional space on the Arrivals Level curbside for other means of transportation. Also, if the Valet is relocated to the South Vendor Lot, the current TNC location (along the curbside) could cause major traffic disruptions during peak periods because of this location’s proximity of the South Vendor Lot entrance. The proposed layout for the TNC’s relocation to the Pre-Arranged Lot is shown in **Exhibit 4-22,** prepared by Walker Consultants.

Long-Term Relocation Recommendation

For the long-term, the Parking Study recommends relocating TNC pick-up operations to the first level of the Hourly Garage. This option, however, is contingent on construction of a new ConRAC, which would remove rental car operations from the Hourly Garage, as discussed previously.

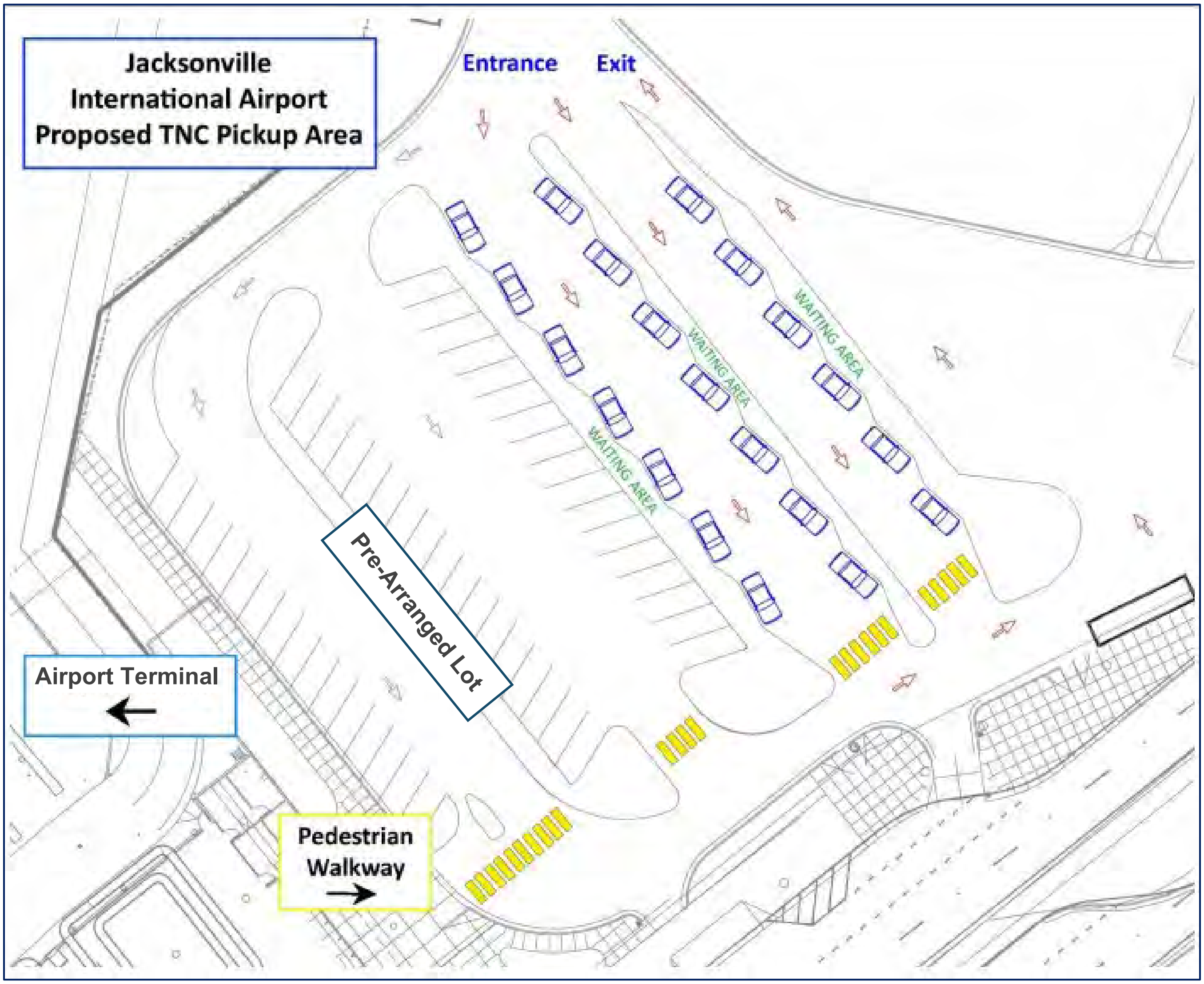
The long-term option would still require TNC vehicles to enter the terminal area through the main entrance roads, while under the short-term option TNC vehicles would use the same route as the recommended employee shuttles from Barnstormer Road to Pecan Park Road before exiting the Airport.

4.6.3 AIR CARGO PARKING

The Parking Study – Phase II recommended an assumption of one (1) space per 1,000 square feet of gross floor area, which results in a shortage of only 28 parking spaces. The Parking Study - Phase 1 previously recommended constructing a 140-150 space parking lot south of Air Cargo Building 2. Following this recommendation, JAA constructed a parking lot with a capacity of approximately 106 spaces.

During a site visit as part of the Phase 2 Study, Walker observed that parking was still very limited within the Air Cargo parking area, even with the additional lot to the south. Walker also observed several instances of vehicles parking in non-designated spaces and in areas reserved for truck docking.

EXHIBIT 4-22 SHORT-TERM TNC RELOCATION RECOMMENDATION



SOURCE: Walker Consultants, *Jacksonville International Airport Parking Study* – Phase II, August 2018.

To address this capacity issue, the Parking Study recommends adding additional parking spaces in the lot south of Air Cargo Building 2 to reach the 140-150 spaces recommended in the Phase 1 Study. The Parking Study also recommends removing the parking islands and other various green spaces from the northern end of the lot near the intersection of Cole Flyer Road and Delivery Road, as well as shifting the FedEx gate over towards Air Cargo Buildings 1 and 2 to provide approximately 68 to 98 additional parking spaces. This recommendation, however, has not been reviewed for code compliance at this time. At the time of this report being written, the Airport has not decided on a solution for the air cargo vehicle parking capacity.

4.6.4 CURBSIDE RECOMMENDATIONS

The Parking Study also analyzed the Airport's curbside roadways and identified improvements that could increase the efficient flow of traffic for both the public and commercial vehicles. These recommended improvements include the following:

- Adding a second entry and exit gate to the commercial lane on the Arrivals Level curbside by removing the existing landscape islands.
  - This improvement will allow traffic to continue flowing if a vehicle is blocking the first gate because of problems opening the gate, or if the first gate encounters technical difficulties.
- Adding an escape lane from the Hourly Garage entry lane back to the arrivals lane by removing a portion of the barrier separating the commercial lane and arrivals lane.
  - Personal vehicles often end up at the commercial access gates by mistake instead of the Arrivals Level curbside, causing a substantial backup of commercial vehicles during peak times.
- Adding signage on the Arrivals and Departures Level curbsides to assist with the enforcement of towing vehicles if vehicles are parked but not actively loading or un-loading.
- Removing the raised section of concrete and handrail from the Arrivals Level curbside near door number two.
  - Pedestrians sometimes mistake the raised pavement for an additional crosswalk. The handrail prevents direct access to vehicles from the curbside, ultimately requiring pedestrians to walk in active traffic lanes to find a crosswalk opening.
  - The Parking Study also suggests adding signage stating pedestrians can only cross the roadway at designated crosswalks.
- Removing the existing ground transportation booth from the Pre-Arranged lot, and re-allocating the employee from the booth to a monitored access gate for the Pre-Arranged lot when TNC operations are relocated

4.6.5 FUTURE PARKING DEMAND

Future passenger demand was projected in the Parking Study using information provided by JAA, as well as the FAA Terminal Area Forecast (TAF). A CAGR of 4 percent was used for the first five years, while a CAGR of 2.7 percent was used through the remainder of the planning horizon. **Table 4-35** shows existing parking capacity and projected demand for both customer and employee parking.

As shown in Table 4-35, the Airport will require additional parking capacity to accommodate future customer and employee demand. The Parking Study developed four alternative phasing plans that increase parking capacity through the planning horizon that will affect the construction timeline of a potential parking structure. While Walker references specific years for the Phasing Plans, it should be noted that the Master Plan Update is based on the PALs developed as part of the Aviation Activity Forecast Chapter in this study. The phasing plans are summarized below:

TABLE 4-35 20-YEAR PARKING DEMAND PROJECTION BY USER GROUP

YEAR	TOTAL ENPLANED PASSENGERS	CUSTOMER PARKING				EMPLOYEE PARKING			
		SUPPLY	EFFECTIVE SUPPLY	DEMAND	ADEQUACY	SUPPLY	EFFECTIVE SUPPLY	DEMAND	ADEQUACY
Existing	3,234,188	7,620	7,010	6,308	702	667	634	625	9
2019	3,633,605	8,276	7,614	6,560	1,054	1,300	1,235	650	585
2020	3,686,571	8,276	7,614	6,822	792	1,300	1,235	676	559
2021	3,732,468	8,276	7,614	7,095	519	1,300	1,235	703	532
2022	3,789,133	8,276	7,614	7,379	235	1,300	1,235	731	504
2023	3,854,121	8,276	7,614	7,674	(60)	1,300	1,235	760	475
2024	3,921,713	8,276	7,614	7,881	(267)	1,300	1,235	781	454
2025	3,991,520	8,276	7,614	8,094	(480)	1,300	1,235	802	433
2026	4,061,428	8,276	7,614	8,313	(699)	1,300	1,235	824	411
2027	4,131,629	8,276	7,614	8,537	(923)	1,300	1,235	846	389
2028	4,209,246	8,276	7,614	8,767	(1,153)	1,300	1,235	869	366
2029	4,294,646	8,276	7,614	9,004	(1,390)	1,300	1,235	892	343
2030	4,379,786	8,276	7,614	9,247	(1,633)	1,300	1,235	916	319
2031	4,470,180	8,276	7,614	9,497	(1,883)	1,300	1,235	941	294
2032	4,563,060	8,276	7,614	9,753	(2,139)	1,300	1,235	966	269
2033	4,659,895	8,276	7,614	10,016	(2,402)	1,300	1,235	992	243
2034	4,761,234	8,276	7,614	10,286	(2,672)	1,300	1,235	1,019	216
2035	4,857,980	8,276	7,614	10,564	(2,950)	1,300	1,235	1,047	188
2036	4,956,004	8,276	7,614	10,849	(3,235)	1,300	1,235	1,075	160
2037	5,060,613	8,276	7,614	11,142	(3,528)	1,300	1,235	1,104	131
2038	5,169,873	8,276	7,614	11,443	(3,829)	1,300	1,235	1,134	101

NOTE: Enplaned passenger volumes are projections from the Aviation Activity Forecasts prepared by Ricondo as part of the Master Plan Update.
SOURCE: Walker Consultants, *Jacksonville International Airport Parking Study – Phase II*, August 2018.

- **Phasing Plan 1.** Under this plan, no modifications to existing parking lots are proposed and a ConRAC is not constructed. Under this plan, a 1,000-space parking structure would be constructed by 2024, and a total of three additional 1,000-space expansions would need to be added in 2028, 2032, and 2036 for the Airport's capacity to remain slightly ahead of demand. Reference Appendix B for a complete description of this phasing plan.
- **Phasing Plan 2.** Under Plan 2, the Daily Surface Lot, Economy Lot 1, and Economy Lot 2 will undergo restriping and landscape removal to provide additional capacity. Construction of a ConRAC is not included in this plan. The parking lot modifications could potentially yield an additional 1,450 parking spaces, offsetting the need for a 1,000-space parking structure until 2029. This plan would only require a total of two additional 1,000-space parking structure expansions, in 2033 and 2037. Reference Appendix B for more detail on this phasing plan. Figure 38 through Figure 40 should be referenced in Appendix B for the proposed restriping of and landscape removal in the Daily Surface Lot, Economy Lot 1, and Economy Lot 2, respectively.
- **Phasing Plan 3.** For Plan 3, no modifications are made to existing parking lots, but this plan does include the construction of a new ConRAC. Once construction of this facility is complete, approximately 729 spaces on the first floor of the Daily Garage will be reallocated to customer parking and TNC operations. With the ConRAC

not being constructed until 2030, a 1,000-space parking structure will be required in 2024, with a total of three additional expansions of 1,000 spaces needed in 2028, 2034, and 2037. Reference Appendix B for a more detailed description of this phasing plan.

- **Phasing Plan 4.** Under Plan 4, restriping and landscape removal will occur in the Daily Surface Lot, Economy Lot 1, and Economy Lot 2, and a new ConRAC will be constructed. This combination would allow the 1,000-space parking structure to be constructed in 2029 and would require only one additional 1,000-space expansion in 2035. Reference Table 21 in Appendix B for a complete description of this phasing plan. Figure 38 through Figure 40 should be referenced in Appendix B for the proposed restriping of and landscape removal in the Daily Surface Lot, Economy Lot 1, and Economy Lot 2, respectively.

JAA is still working through the various recommendations from the Parking Study and have not decided on which Phasing Plan to proceed with at the time this Master Plan Update was prepared.

4.7 AIR TRAFFIC CONTROL TOWER SITING REQUIREMENTS

The ATCT controls, directs and monitors the movement areas of the Airport's airfield as well as the arrival and departure traffic from the Airport and the airspace within five miles of the Airport. In addition to the ATCT facility, other ATC services and communications are provided by the onsite terminal radar approach control (TRACON) and the Jacksonville Air Route Traffic Control Center located in Hilliard, Florida.

The existing ATCT and TRACON at JAX are classified as Level 9 facilities, operating 24 hours per day. They are located north of the main terminal building and accessible via Barnstormer Road. The existing cab size is approximately 520 square feet and provides a cab-eye level elevation of 155 feet MSL or 129 feet AGL. The facilities layout consists of a 12,600 square foot "base" building, an airways facilities system service center, and a 10,900-square foot building that houses air traffic non-operational offices, also referred to as the FAA Airways Facility. The vehicle parking located between the base building and the FAA Airways Facility offers approximately 66 parking spaces. Additional parking is also provided east of the FAA Airways Facility.

The Airway Facilities Tower Integration Laboratory (AFTIL) JAX Quick Look .03, conducted in April 2018, cited visibility concerns with the existing ATCT location following the completion of Concourses A and C. Aircraft pushback onto movement areas from gates A7, A9, C6, C8, and C10 cannot be seen safely from ATC personnel. In addition, the proposed location for Runway 8R-26L and the proposed concourse expansion could also limit ATC staff visibility due to the viewing distance from the existing ATCT cab.

As the Airport continues to expand, line of sight issues could require the existing ATCT to be raised, or a new tower to be constructed. As part of this Master Plan Update, a preliminary site selection analysis was conducted to explore potential ATCT sites in advance of a required FAA siting process through the AFTIL at the William J. Hughes Technical Center in Atlantic City, New Jersey. Four potential ATCT sites were analyzed with various potential ATCT heights to provide a line of sight over existing buildings, as well as height limitations caused by aeronautical surfaces.

4.7.1 STUDY DRIVERS

The AFTIL JAX Quick Look .03 study named the following areas of concern relating to Airport movement area obstructions where depth perception from the existing ATCT is an issue:

- "Unable to see aircraft pushing back from Terminal gates, A9 and C10, which affects Taxiways Romeo and Hotel. Aircraft at those gates are required to report pushback"

- "The control Tower is a considerable distance from the approach ends of runways 14 and 08. In addition, the Kilo pad and the FANG ramps (Mike 1, 2, and 3) are also hard to see without binoculars."

The location and length of the proposed parallel Runway 8R-26L would also present challenges. The Runway 8R approach end would be approximately 11,500 feet from the existing ATCT. At the current site and cab height, visibility to the Runway 8R end and the connecting taxiways would be the most challenging as these areas would the greatest distance from the ATCT. **Exhibit 4-23** illustrates the existing airfield conditions an ATCT location at JAX.

The FAA has commissioned an assessment of the ATCT's physical conditions and remaining service life and was not completed as a component to this Master Plan Update.

4.7.2 AIR TRAFFIC CONTROL TOWER SITING CRITERIA

The FAA utilizes ATCTs to control airport movement areas. The primary visibility requirements for siting of a new ATCT are set forth by FAA Order 6480.4A, *Airport Traffic Control Tower Siting Criteria*, which mandates use of the AFTIL for siting all primary or supplemental ATCTs. These requirements are referenced in the following subsection. The AFTIL includes an ATCT cab simulator that uses a three-dimensional projection of an airport's existing and future building features to evaluate potential ATCT site locations and cab heights. Aircraft movements, airport surfaces, and approach paths are evaluated as part of the simulation.

General ATCT facilities siting requirements are discussed in this section. Final ATCT site selection would need to be conducted through the AFTIL siting process state in FAA Order 6480.4A. The focus of this study is to identify the ATCT requirements at JAX to assess alternative sites for a supplemental or replacement ATCT and to ensure land is adequately preserved for this future Airport ATCT.

4.7.3 VISIBILITY PERFORMANCE

4.7.3.1 UNOBSTRUCTED VIEW OF MOVEMENT AREAS

Per Order 6480.4A, siting of an ATCT should provide for an unobstructed view of all taxiways or taxilanes identified as controlled movement areas. The movement areas at JAX are depicted in Chapter 2, Exhibit 2-3. Maximum visibility of airborne traffic patterns must be maintained for safe arrival and departure operations. A clear, unobstructed, and direct view of the approaches to the ends of the primary instrument runways and all other active runways and landing areas should be available. Line of site requirements are typically determined by the edge of taxiway pavement or the taxiway centerline. During the AFTIL siting process, participants may agree on taxiway visibility reduction, such as a view of the centerline or the fuselage of an aircraft on the centerline.

4.7.3.2 OBJECT DISCRIMINATION ANALYSIS

The distance and height from the ATCT to the airfield must meet minimum visibility requirements for viewing objects on airport movement areas under ATCT control highlighted in Order 6480.4A. An object discrimination analysis must be conducted to determine the probability that an object is detectable based on viewing distance, angle of incidence, ATCT height, and atmospheric and surface conditions. The FAA has developed the Airport Traffic Control Tower Visibility Analysis Tool to complete an object discrimination analysis including the following factors:

- **Object Detection**. The ability to notice the presence of an object on the airport surface without regard to the class, type, or model (e.g., an object such as an aircraft or vehicle).

LEGEND

- Existing ATCT and TRACON Facility Area
- Existing Airfield Pavement
- Existing Building
- Existing Fence Line
- Property Line

NOTES:

- Air Traffic Control Tower (ATCT)
- Florida Air National Guard (F.A.N.G.)
- Terminal Radar Approach Control (TRACON)

1/ Air Traffic Controllers are unable to see aircraft pushing back from Terminal gates A9 and C10, which affects Taxiways H and R. Aircraft at those gates are required to report pushback.

2/ The Air Traffic Control Tower is a considerable distance from the approach ends of Runways 14 and 08. The Taxiway K pad, the F.A.N.G. ramp, and Taxiways M1, M2, and M3 are also hard to see without binoculars.

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 1,200 ft.

EXHIBIT 4-23

EXISTING CONDITIONS

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\4-23 JAX_2018_Existing Conditions.dwgLayout: Existing Conditions Plotted: Jan 30, 2020, 01:28PM

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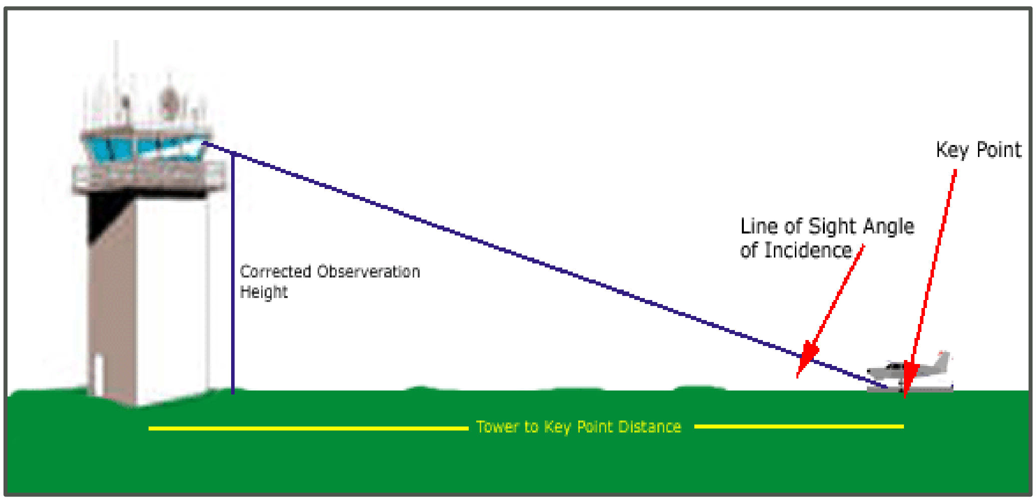
- **Object Recognition.** The ability to discriminate a class of objects (e.g., a class of aircraft such as single engine GA aircraft).

4.7.3.3 LINE-OF-SIGHT ANGLE OF INCIDENCE

The distance from the proposed ATCT to critical airport locations must support requirements for viewing objects on the airport movement areas, taxiways, and nonmovement areas from the ATCT cab based on the requirements of Order 6480.4A. The minimum line-of-sight viewing angle of incidence must be equal to or greater than 0.80 degree. The line-of-sight angle of incidence is used to assess the ability of controllers in the ATCT to observe and detect objects on the airfield as depicted in **Exhibit 4-24**.

EXHIBIT 4-24 LINE OF SIGHT ANGLE



SOURCE: Federal Aviation Administration, Order 6480.7D, Airport Traffic Control Tower and Terminal Radar Approach Control Facility Design Guidelines, August 11, 2004.

4.7.4 AIRSPACE SURFACES REQUIREMENTS

Federal laws, regulations, orders, and standards apply to any structure proposed on or around an airport, including ATCTs with the intention to stay clear of these surfaces. The following summarizes those that pertain to the siting of an ATCT. **Exhibit 4-25** displays the critical airspace areas at JAX.

4.7.4.1 TITLE 14 CODE OF FEDERAL REGULATIONS PART 77

Title 14 Code of Federal Regulations Part 77, *Safe, Efficient Use, and Preservation of Navigable Airspace,* defines several airport "imaginary" surfaces that serve as a basis for evaluating objects as potential hazards to air navigation. These surfaces include the primary surface, the approach and transitional surfaces, the horizontal surface, and the conical surface.

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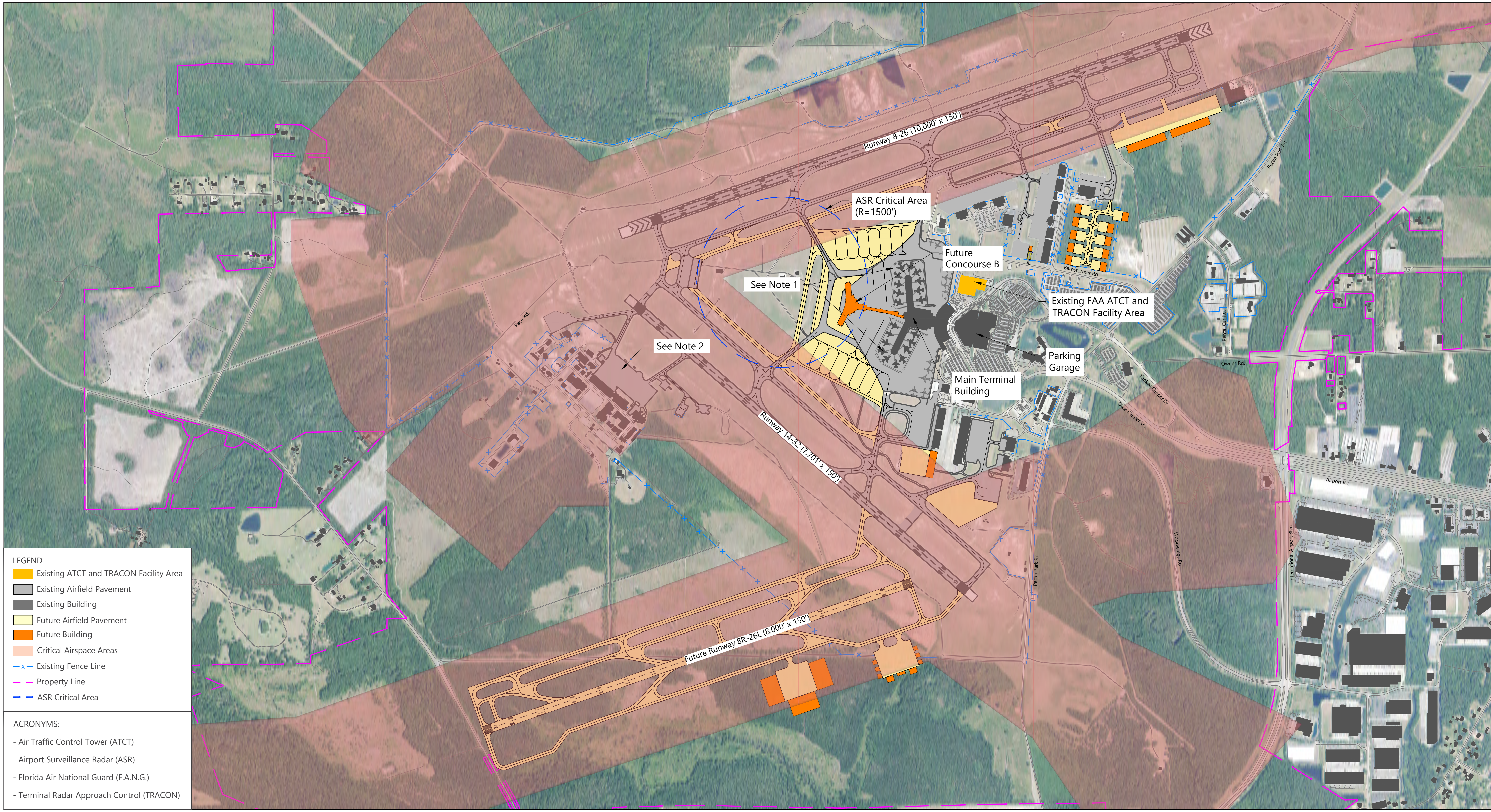

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 1,700 ft.

EXHIBIT 4-25

AIRSPACE STANDARDS

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\4-25 JAX_2018_Airspace Standards.dwgLayout: Airspace Standards Plotted: Jan 30, 2020, 01:35PM

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Penetration to 14 CFR Part 77 surfaces by ATCT construction is often approved by the FAA and mitigated with the installation of obstruction lighting on the building. Additionally, an ATCT must comply with the following surfaces described in FAA AC 150/5300-13A, *Airport Design*: ROFZ, OFA, RSA, RPZ, and Building Restriction Line (BRL).

The approach surface is longitudinally centered and extends outward and upward along the runway centerline from each end of the primary surface. An approach surface is applied to runway ends based on the type of existing or future approach type. The Runway 8, 14, and 26 approach ends are served with precision approaches. The configuration of the approach surfaces are as follows:

- The inner edge of the approach surface has the same width as the primary surface at 1,000 feet and it expands uniformly to a width of 16,000 feet. The approach surface extends for a horizontal distance of 10,000 feet at a slope of 50 to 1 with an additional 40,000 feet at a slope of 40 to 1 for all precision instrument runways.
- The Runway 32 approach end operates as a non-precision approach. The inner edge of the approach surface has the same width as the primary surface at 1,000 feet and it expands uniformly to a width of 3,500 feet. The approach surface extends for a horizontal distance of 10,000 feet at a slope of 34 to 1 with an additional 40,000 feet at a slope of 40 to 1 for all non-precision instrument runways.

The transitional surface extends outward and upward at right angles to the runway centerline, and the transitional surface extends at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface that project through and beyond the limits of the conical surface extend 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.

4.7.4.2 TERMINAL INSTRUMENT PROCEDURES

The obstacle clearance surfaces (OCS) associated with the *United States Standard for Terminal Instrument Procedures* must be examined to determine the maximum height of an ATCT or the effect a new ATCT would have on existing procedures into and out of the Airport. Selection of an ATCT site must include consideration of the various OCS associated with the instrument approach procedures in use at the Airport. These OCS are prescribed in the following FAA documents:

- FAA Order 8260.3b, *United States Standard for Terminal Instrument Procedures (TERPS)*
- FAA Order 8260.58, *United States Standard for Performance Based Navigation (PBN) Instrument Procedure Design*
- FAA Memorandum, *Interim Criteria for Precision Approach Obstacle Assessment and Category II/III Instrument Landing System (ILS) Requirements*

The above documents outline the obstruction clearance requirements for approach, departure, and enroute procedures for airport operations under IFR conditions. The OCS criteria for each instrument procedure vary according to navigational aids, minimum altitudes, and visibility requirements.

The OCS associated with approach procedures tend to be the most height restrictive. Typically, ATCTs are sited adjacent to runways to avoid these approach surfaces. In the case of JAX, the OCS associated with missed approach procedures typically produce the most restrictive height limitations for the area between the runways.

The CAT I ILS missed approach OCS are designed to protect aircraft from obstacles while pilots are executing a missed approach. Per the FAA AC 150/5300-13A, *Airport Design*, the inner-transitional OFZ for a CAT I runway begins at the edges of the runway OFZ and inner-approach OFZ, and rises vertically for a height "H," and then slopes 6 (horizontal) to 1 (vertical) out to a height of 150 feet (46 m) above the established airport elevation. These missed approach surfaces consist of a downward-sloping surface and transitional surfaces, which account for height loss when a pilot pulls up, and an upward sloping segment and associated transitional area, which account for initial climb.

The CAT II/III ILS missed approach OCS protect an aircraft from obstacles when pilots are executing a missed approach procedure. Per the FAA AC 150/5300-13A, the inner-transitional OFZ for a CAT II/III runway begins at the edges of the runway OFZ and inner-approach OFZ, then rises vertically for a height "H," then slopes 5 (horizontal) to 1 (vertical) out to a distance "Y" from runway centerline, and then slopes 6 (horizontal) to 1 (vertical) out to a height of 150 feet (46 m) above the established airport elevation. This area consists of a flat surface, which continues to a point 3,000 feet from the arrival threshold; an upward sloping surface; and three sloping transitional surfaces: B Surface, C Surface, and D Surface. The B Surface slopes upward for 55 feet and outward for 200 feet, resulting in a slope of 200/55:1 or 40/11:1. The C Surface slopes upward from the B Surface for 35 feet and outward for 200 feet, resulting in a slope of 200/35:1 or 40/7:1. The D Surface slopes at a 10:1 slope for 600 feet. These combined surfaces account for an aircraft nearing rollout (the stage of an aircraft's landing during which it travels along the runway while losing speed) on a highly precise approach and is based on the consideration that a pilot may not be able to see identifiers or other locating monuments in the runway environment. If these visual or cockpit cues cannot be identified, the pilot executes a missed approach procedure.

4.7.4.3 NON-PRECISION INSTRUMENT APPROACHES

The Runway 32 approach end at JAX is the only existing runway end that operates as a non-precision instrument approach. Non-precision approaches can be provided at airports through different navigational aids, including the localizer component of an ILS system. The localizer can be used independent of the other ILS components to provide course guidance or non-precision approach capability. In addition, three other navigational systems offer non-precision approaches to JAX: Very High Frequency Omni Directional Range (VOR) Global Positioning System (GPS), and Non-Directional Beacon (NDB). A VOR is a ground-based electronic navigation aid transmitting signals, 360 degrees in azimuth, called radials. The VOR used to conduct approaches at JAX is located at Craig Municipal Airport, approximately seven nautical miles southeast of JAX. This VOR is also equipped with distance measuring equipment (DME). This equipment allows pilots to determine their distances to or from the VOR as various radials are flown.

4.7.5 COMMUNICATIONS, NAVIGATION, AND SURVEILLANCE EQUIPMENT

The FAA requires that an ATCT must not be sited where it will derogate the performance of existing or planned electronic facilities (ILS, VOR, remote transmitter/receiver, etc.), unless deviation is necessary to meet other siting criteria or mitigation strategies are implemented. As part of the AFTIL siting process, the FAA will assess the impacts of the proposed ATCT site on any existing or planned electronic facilities.

4.7.5.1 AIRPORT SURVEILLANCE RADAR

The Airport Surveillance Radar at JAX is an ASR-9 system with an antenna elevation of 81 feet MSL (51 feet AGL). Any new selection of a potential ATCT sites must include consideration of ASR clearance and operational restrictions in use at the Airport. These guidelines are prescribed in the following FAA documents:

- FAA AC 150/5300-13A-Change 1, *Airport Design*
- FAA Order JO 6580.3, *Remote Communications Facilities Installation Standards Handbook*

FAA AC 150/5300-13A notes the ASR antenna and equipment building should be located as close to the ATCT as practical and economically feasible. Antennas should be located at least 1,500 feet (457 meters) from any building or object that might cause signal reflections, and at least 0.5 mile (0.8 kilometer) from other electronic equipment. ASR antennas may be elevated to obtain line-of-sight clearance. Typical ASRs (antenna platform heights – mezzanine level) ranges from 17 to 77 feet AGL. Additional ten-foot sections are usually added incrementally until the radar platform gains the desired elevation. Trees and other structures should always stay below the mezzanine level. The presence of wind turbines near an airport should be carefully evaluated while siting the location of a radar antenna system as such objects cause reflectivity issues and could be the cause of false targets. **Exhibit 4-26** illustrates the ASR critical areas at JAX.

4.7.5.2 GLIDE SLOPE AND LOCALIZER CRITICAL AREAS

Runway 8-26 and the approach end of Runway 14 at JAX operate with a glide slope and localizer. The sites that were evaluated for the ATCT remain outside the glide slope and localizer critical areas outlined in FAA AC 150/5300-13A.

4.7.6 ENVIRONMENTAL REVIEW

The recommended ATCT location will be subject to an Environmental Due Diligence Audit review and to the National Environmental Protection Act (NEPA) process set forth in FAA Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts*, to determine potential impacts. This audit and any NEPA review will be conducted after final site selection through the AFTIL siting process. The environmental impacts to existing wetlands and ponds using the 100-year flood plain analysis were considered when evaluating the potential sites. For this preliminary site selection, the analysis focused on the identification of existing wetlands and 100-year floodplains. The environmental review areas are depicted in **Exhibit 4-27** (Environmental Review of Wetlands and Ponds) and **Exhibit 4-28** (Environmental Review of 100-year Floodplain). The candidate sites were selected to minimize impacts to wetlands and floodplains.

4.7.7 OPERATIONAL REQUIREMENTS

Several ATCT operational siting requirements are set forth in FAA Order 6480.4A. The operational requirements applicable to siting an ATCT, which should be constructed to at least the minimum height required to satisfy siting criteria, are as follows:

- **ATCT Orientation.** Consideration should be given to direct sun glare, indirect sun glare off natural and manmade surfaces, nighttime lighting glare, external light sources, and thermal distortion in determining ATCT orientation. In the northern hemisphere, the ATCT cab should be oriented to face north or, alternatively, east, south, or west, in that order of preference. Orientation that will result in a view of the runway approach in line with the rising or setting sun should be avoided.

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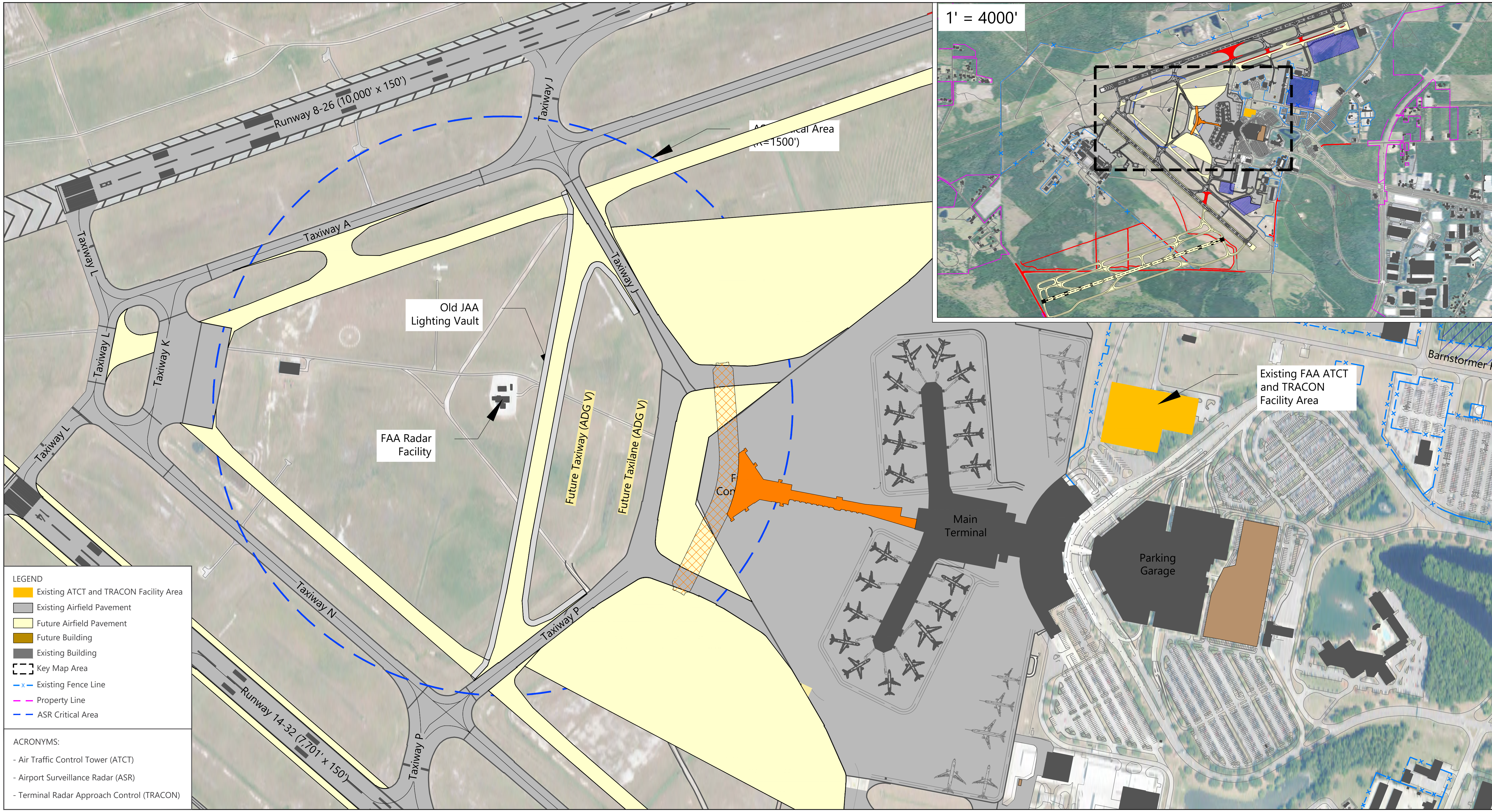

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

EXHIBIT 4-26

AIRPORT SURVEILLANCE RADAR

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\4-26 JAX_2018_Airport Surveillance Radar.dwgLayout: Critical Areas Plotted: Jan 30, 2020, 01:41PM

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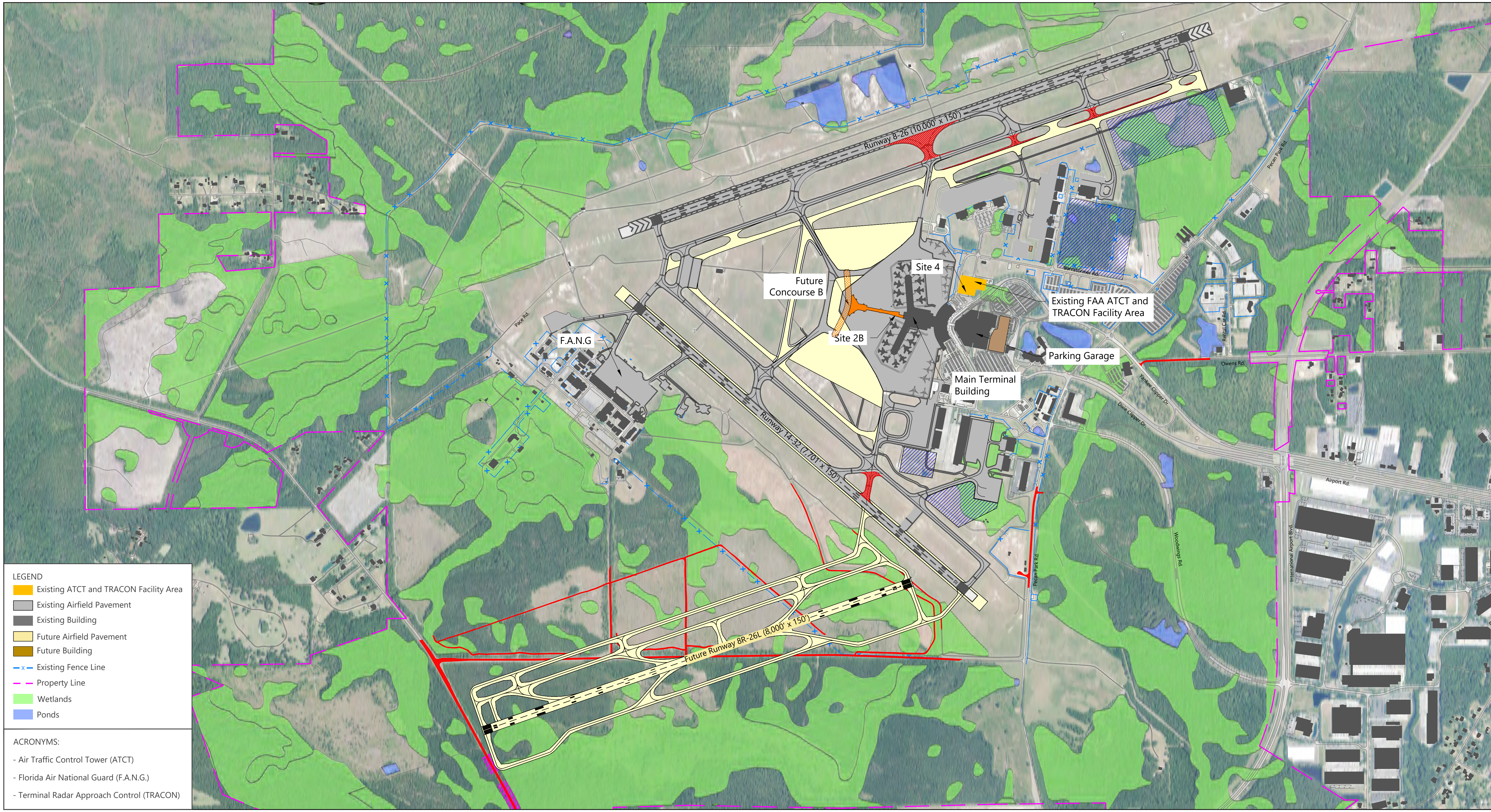

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 1,700 ft.

EXHIBIT 4-27

ENVIRONMENTAL REVIEW OF WETLANDS AND PONDS

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\4-27 JAX_2018_Environmental Review of Wetlands and Ponds.dwgLayout: Wetlands and Ponds Plotted: Jan 30, 2020, 01:46PM

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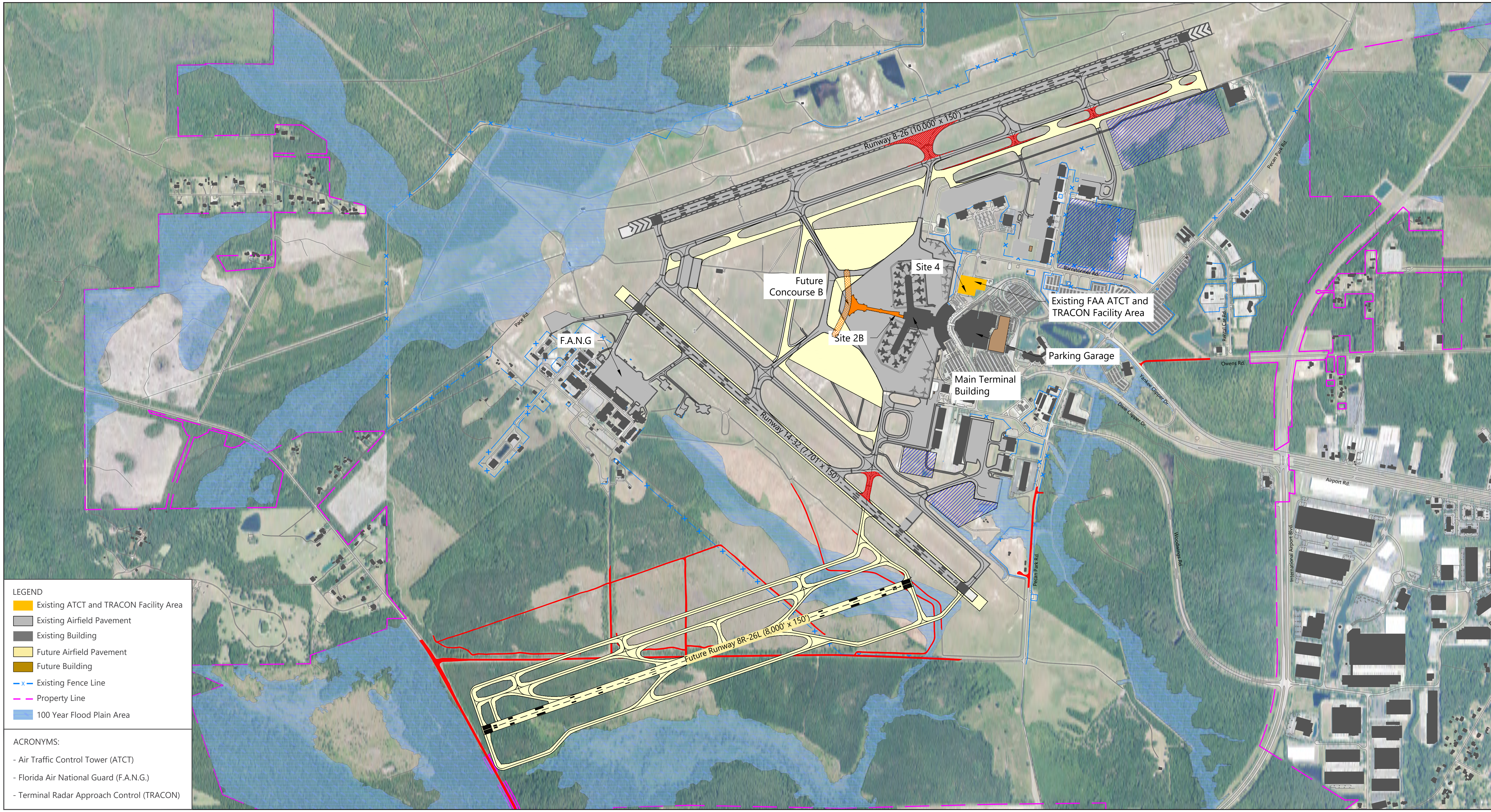

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 1,700 ft.

EXHIBIT 4-28

ENVIRONMENTAL REVIEW OF 100-YEAR FLOOD PLAIN

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\4-28 JAX_2018_Environmental Review of 100-Year Flood Plain.dwgLayout: Flood Plain Plotted: Jan 30, 2020, 02:00PM

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- **Weather.** Using a 10-year weather history, consideration should be given to local weather phenomena that impair visibility. Weather affecting the predominant flow of traffic should be considered in the siting process. Cloud ceilings and visibility should be considered in determining ATCT height.
- **Look-across Line of Sight**. Consideration should be given to visibility from operations positions in the ATCT cab and potential impacts to the line of sight caused by an increase in cab size or ATCT height. The AFTIL cab simulator is used to assess potential line-of-sight impacts caused by the placement of operations positions within the ATCT cab.

4.7.8 ECONOMIC CONSIDERATIONS

When identifying and evaluating alternative ATCT sites, the following economic factors should be considered:

- **Height.** The height of a proposed ATCT should be considered as it is typically the largest contributing factor to project cost. The height of the ATCT must also be balanced between obtaining the maximum line of sight provided while staying below US Standard for Terminal Instrument Procedures OCS. In determining the height of the ATCT at JAX, potential future land uses should be considered so as not to restrict the height of future facilities.
- **Land Use.** The ATCT site should have enough area to accommodate the ATCT, initial base building and TRACON, parking (if landside), personnel, fuel storage tanks for backup generators, exterior transformers, and other necessary facilities. In siting the ATCT at JAX, potential future land uses should be considered so as not to restrict future development.
- **Environmental**. Environmental concerns should be considered and documented as part of the construction cost estimate.
- **Cabling and Utilities.** The connectivity of existing FAA cabling and utilities to the preferred ATCT site should be considered.
- **Access Roadways.** Any necessary new or redesigned site access roadways (if the ATCT is located landside) should be considered.
- **Security.** The impacts of security compliance at the preferred ATCT site should be considered.

4.7.9 FACILITY REQUIREMENT ASSUMPTIONS

This section defines general ATC facility requirements for estimating the tower cab heights and establishes the amount of space needed for site selection. The facility requirements used for this analysis were based on FAA Order 6480.7D, *Airport Traffic Control Tower and Terminal Radar Approach Control Facility Design Guidelines*.

This section describes the basic ATCT components and facility requirements for purposes of this site selection analysis. These are:

- **Construction Phasing.** Impacts to line of site from the existing ATCT should be considered during construction of the new ATCT.
- **Access.** Access to the ATCT should avoid crossing areas of aircraft operations. Typically, landside vehicular access or secured access from a terminal or concourse with nearby vehicular parking is preferred.
- **Cab Size.** The total area of the ATCT cab is based on the activity level of the ATCT, as shown in **Table 4-36**. It was assumed that a replacement ATCT will be classified as a MAJOR ACTIVITY ATCT, as its primary purpose

would be to control aircraft ground movements. The cab size and number of controller positions will be finalized during the AFTIL siting process.

TABLE 4-36 TYPICAL AIRPORT TRAFFIC CONTROL TOWER CAB SIZES

	DESIGN CLASSIFICATIONS			
DESIGN ELEMENT	LOW ACTIVITY	LOW ACTIVITY RADAR	INTERMEDIATE ACTIVITY	MAJOR ACTIVITY
Air Traffic Control Activity Classification	Level I-II	Level III	Level IV	Level V
Control Cab Size (Square Feet)	Over 200	Over 350	Over 350	Over 500
Planned Radar Positions	None	Up to 6	Up to 10	10 or more

SOURCE: Federal Aviation Administration, Order 6480.7D, Airport Traffic Control Tower and Terminal Radar Approach Control Facility Design Guidelines, August 11, 2004.

Based on the information in Table 4-33, the ATCT cab size should be greater than 500 square feet. Consistent with FAA design criteria, the controller's eye elevation was assumed to be 5 feet above the 150-foot MSL elevation of the ATCT cab floor. With the existing ATCT elevation of approximately 170 feet MSL, a 15-foot difference between the eye elevation and the top of the ATCT is calculated.

The primary function of the base building would be to provide space for administrative, training, and operational needs. The base building would be located adjacent to the ATCT and provide an enclosed connection to the ATCT structure. The FAA does not provide specific base building recommendations. The exact base building size and function will be determined during the AFTIL siting process or future planning and design.

Table 4-37 provides the typical site requirements for ATCT facilities. For planning purposes, the ATCT site selection assumes a total site area of 135,500 square feet, including a base building and approximately 75 parking spaces. If the ATCT were to be constructed as a part of a terminal or concourse, the site would not include spaces for vehicle parking.

TABLE 4-37 TYPICAL AIRPORT TRAFFIC CONTROL TOWER SITE REQUIREMENTS

FACILITY TYPE	TOTAL SITE AREA (SQUARE FEET)	VEHICLE PARKING SPACES	AREA (SQUARE FEET)
Low Activity	10,200 to 25,000	10 to 40	2,700 to 10,800
Intermediate Activity	25,000 to 58,000	40 to 60	10,800 to 16,200
Major Activity	62,000 to 135,500	80 to 200	Up to 30,000

SOURCE: Federal Aviation Administration, Order 6480.7D, Airport Traffic Control Tower and Terminal Radar Approach Control Facility Design Guidelines, August 11, 2004.

The unobstructed view of movement areas, object discrimination, and line of sight angle of incidence were considered in evaluating each of the proposed ATCT sites. The results of this analysis are further discussed in Chapter 5.

4.8 GENERAL AVIATION CUSTOMS AND BORDER PROTECTION REQUIREMENTS

CBP is a division of the US Department of Homeland Security, responsible for managing, securing and controlling the nation's borders by enforcing federal laws, including the lawful entry of people and imported cargo into the United States. CBP plays a critical role in screening international arriving passengers and cargo at US airports. Due to the growth in international GA traffic at JAX, there is a need for a CBP GA facility (GAF) for the processing of GA international passengers. These facilities are typically at small airports[4] as JAX processes less than 800 passengers per hour. These facilities provide the necessary CBP infrastructure for processing international arrivals from GA aircraft. This subsection addresses the facility requirements for the GAF, which includes a CBP building, aircraft apron, and an automobile parking lot for CBP employees and GA visitors.

4.8.1 GENERAL CBP FACILITY REQUIREMENTS

Two U.S. Department of Homeland Security documents were assessed to determine the GA CBP facility at JAX. U.S. Customs and Border Protection, *Airport Technical Design Standard Signature Version June 2012* (ATDS) and *General Aviation Facility Design Standard (90% DRAFT)*, were utilized to define the scope and physical characteristics of the proposed GA international arrivals processing facility at the Airport. The US Customs and Border Protection, *General Aviation Facility Design Standard (90% DRAFT)* document was not complete when the GAF analysis was performed, however, the 90% draft document was the most current design guidance available.

GA demand at JAX, including aircraft size and passenger volume, served as the basis for the GAF facility and apron size. The proposed GAF will provide capacity to process up to 20 international GA passengers and their baggage per hour. Typically, GA demand at JAX consists of passengers arriving at the Airport on small private aircraft; however, the proposed GAF would also be capable of processing arriving passengers on larger corporate jets. CBP Technical Design Standards recognize passenger demand in increments of 10. With a 20 passengers per hour (PPH) capacity, the GAF at the Airport is required to be staffed by two CBP officers.

- The GAF must provide CBP officers with a clear, unobstructed view of the international aircraft parking ramp.
- Closed circuit television (CCTV) coverage of the ramp and the route traveled by passengers and baggage, including interior processing areas, must be provided.
- Entry and exit vestibules for protection are required for facilities located in regions with adverse weather conditions (and is recommended for the CBP GAF at JAX).
- True floor to true ceiling (slab to slab) perimeter walls are required if a facility is located within another public facility.
- A transaction window accessible to members of the general public from the domestic side of the facility is required.
- Doors opening into the passenger processing area and public vestibule must have unrestricted ingress and emergency egress.
- All perimeter windows shall be clear tempered glass.

[4] The Space Requirement Matrix identifies spaces for Small, Low volume to mid-size, high volume to mid-size, and large airport facilities.
SOURCE: U.S. Department of Homeland Security, Customs and Border Protection, Airport Technical Design Standard Signature Version, June 2012.

- Standalone facilities shall be equipped with an Intrusion Detection System connected to a Class A monitoring station on all doors and windows.
- An agricultural laboratory is required when an office specializing in agricultural products is present.
- A "post-processing" waiting area is required in facilities where passengers will be re-boarding the aircraft, to prevent commingling of cleared CBP passengers and those who have not yet been cleared.
- Mechanical rooms with access from outside the facility are required.
- Vehicle parking should be in close proximity to the processing facility and provide enough parking spaces for one to two visitors and the two CBP officers.

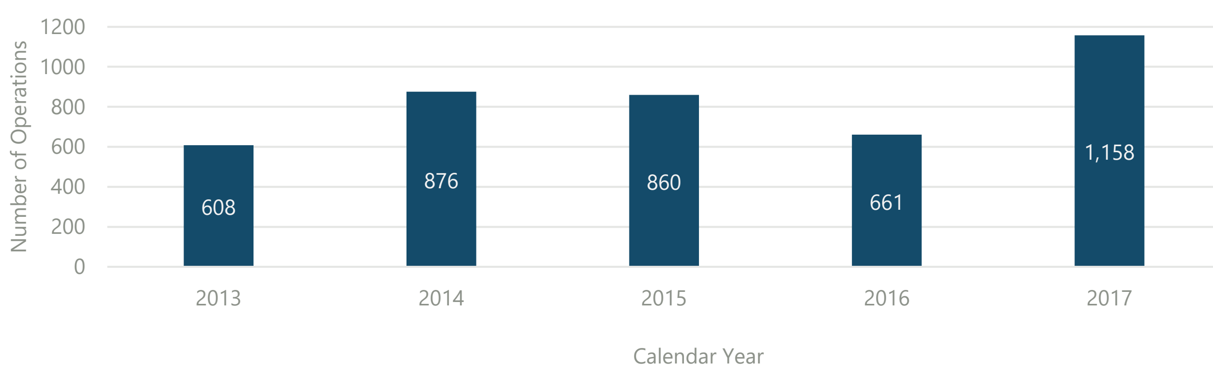
4.8.2 INTERNATIONAL GA DEMAND

The future international GA demand is based off an analysis of the historical international GA flight operations and passenger activity at JAX. The following sections describe the analysis of international GA flight activity and passenger activity, including how this data determined the sizing of the GAF components.

4.8.2.1 INTERNATIONAL GA FLIGHT ACTIVITY

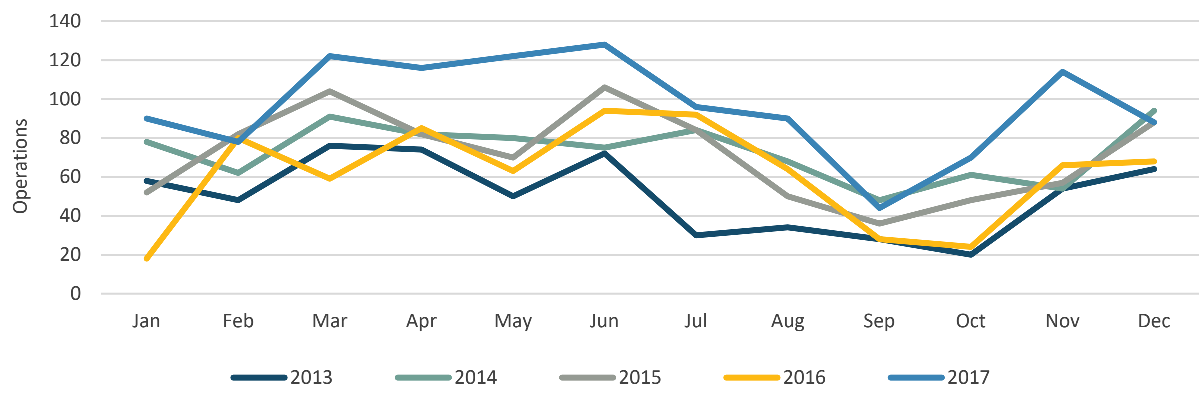
The historical international GA flight activity and passenger demand was analyzed to determine capacity requirements for the future CBP GAF. Records of international GA flight and passenger activity for CY 2013 to 2017 was analyzed. From CY 2013 to 2017, the international GA operations averaged 69 operations per month through this 5-year period. Compound annual growth during this same period was 17.5 percent. As shown on **Exhibit 4-29,** CY 2017 experienced the highest number of international GA operations in the five-year period, with a total of 1,158 operations. Since CY 2017 experienced greater demand than previous years in the data set, it was further evaluated to determine the peak month activity, peak hour activity, PPH, and the critical aircraft. The peak month for CY 2017 was June, with 128 operations. **Exhibit 4-30** indicates the international GA operations by month during the CY 2013-2017 period.

EXHIBIT 4-29 TOTAL INTERNATIONAL GA AIRCRAFT OPERATIONS PER YEAR FOR CY 2013-2017



SOURCE: Jacksonville International Airport Database (CY 2013-2017 Data).

EXHIBIT 4-30 INTERNATIONAL GA AIRCRAFT OPERATIONS PER MONTH FOR CY 2013-2017



SOURCE: Jacksonville International Airport Database (CY 2013-2017 data).

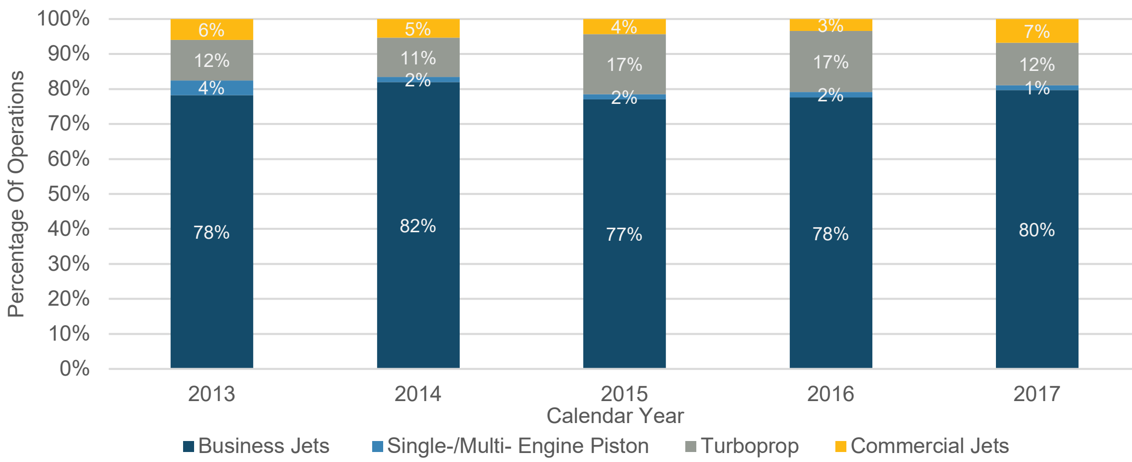
4.8.2.2 INTERNATIONAL GA AIRCRAFT FLEET MIX

The facility size and CBP officer staffing requirements are based on the international GA aircraft fleet mix and the number of passengers expected to be processed through the GAF during the peak hour of operation. This section describes the analysis undertaken to identify the aircraft fleet mix. The volume of passengers to be processed in the peak hour is addressed in section 4.7.2.3.

To determine the international GA aircraft fleet mix, CY 2013-2017 international GA operations data were analyzed to identify the international GA fleet by aircraft type. As shown on **Exhibit 4-31**, from CY 2013 to 2017, the international GA fleet was dominated by business jets, which accounted for 77 to 82 percent of annual GA operations. During the same period, turboprops ranged from 11 to 17 percent of GA operations, and commercial jet GA operations increased from a low 3 percent of operations in CY 2016 to a high of 7 percent in CY 2017. Commercial jets include regional jets and narrow/wide body aircraft such as EMB-135, CRJ-200, Boeing 757 and Boeing 767.

The fleet mix was further analyzed to provide more detailed information about the business jet and commercial jet fleets. The types of international GA aircraft were categorized as: single/multi-engine piston, turboprop, and the business jet category was more specifically segmented as very light jets, light jets, mid-size jets, heavy jets, and the commercial jets were segmented by regional jets, and narrow/wide body. Results were also grouped by major manufacturers of aircraft to provide common examples of each aircraft category indicated in the international GA fleet mix. The operations by each category of aircraft were then divided by total operations to establish a fleet mix percentage.

EXHIBIT 4-31 INTERNATIONAL GA ARRIVALS – FLEET MIX FOR CY 2013-2017



SOURCE: Jacksonville International Airport Database (CY 2013-2017 data).

Table 4-38 provides a breakdown of this analysis by aircraft type. The table also summarizes total operations by percent of aircraft type and the seat count for each type. Mid-size jets are the most common aircraft category, with 41 percent average fleet mix and seat count ranging from 5 to 19. International GA flights with commercial jets will continue to be processed in the Federal Inspection Services (FIS) facility inside the Airport's passenger terminal and were not included in the GAF requirements or sizing of GAF components.

The fleet mix for CY 2017 was also examined independently, and the percentages correlate with the average fleet mix in the CY 2013 – 2017 period. The majority of international GA operations in CY 2017 were conducted by business jet aircraft with seat capacities ranging from 5 to 19. **Table 4-39** displays the number of international GA business jet operations in CY 2017 by aircraft type. **Exhibit 4-32**, illustrates the percentage of international GA operations by each type of business jet during CY 2017.

4.8.2.3 INTERNATIONAL GA PASSENGER ACTIVITY

As discussed previously, passenger activity is vital to many airport facilities as it explains the low or high demand for a particular facility. Even if demand is low during off-peak hours, the GAF needs to be equipped for high demand periods.

The international GA passenger activity during CY 2017 was examined to determine the three highest volume days of the year. The peak days for international GA passenger activity were determined to be May 27, March 18 and June 16. These days were further analyzed through a rolling 24-hour analysis to determine the PPH demand in CY 2017. The PPH for CY 2017 was used as the basis for calculating the facility program requirements inside the GAF. The PPH during 2017 was 16 passengers without crew members and 18 PPH with crew members. A PPH of 18 is used to determine the CBP GAF requirements in the following section.

TABLE 4-38 PERCENT OF INTERNATIONAL GA OPERATIONS BY AIRCRAFT TYPE FOR CY 2013-2017

AIRCRAFT MANUFACTURER	SINGLE/MULTI ENGINE PISTON	TURBO PROP	VERY LIGHT JETS	LIGHT JETS	MID-SIZE JETS	HEAVY JETS	REGIONAL JETS	NARROW/ WIDE BODY
Bombardier	-	-		Learjet 35 Learjet 45	Learjet 55 Challenger 300 Learjet 60 Challenger 600	Global Express	-	-
Cessna	Cessna 206	Cessna 450	Citation Mustang CJ1	-	Citation V Citation VII Sovereign Citation XL	-	-	-
Dassault	-	-	-	-	-	Falcon 7X	-	-
Gulfstream	-	-	-	-	-	Gulfstream IV Gulfstream G450 Gulfstream V	-	-
Hawker Beechcraft	Beech	King Air 350 Beech 1900	-	Beech 400	Hawker 900	-	-	-
Embraer	-	-	Phenom 100	-	-	-	EMB-135	-
Others	Piper Warrior Piper Cheyenne	-	Eclipse 500	-	-	-	CRJ-100 CRJ-200	Boeing 757 Boeing 767
Fleet Mix (CY 2017)[1]	**2%**	**11%**	**3%**	**22%**	**42%**	**10%**	**5%**	**2%**
Average Fleet Mix (CY 2013-2017)[2]	**2%**	**13%**	**3%**	**24%**	**41%**	**8%**	**2%**	**3%**
Seat Count	**2-9**	**5-13**	**4-6**	**6-9**	**5-19**	**8-19**	**50-75**	**150-295**

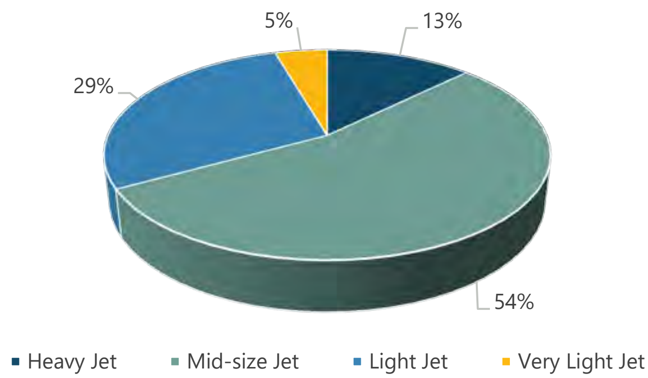
NOTE:
1 All percentages are based on the total international operations for the corresponding calendar years 2017.
2 All percentages are based on the total international operations for the corresponding calendar years 2013-2017.
SOURCE: Jacksonville International Airport Database (CY 2013-2017 Data).

TABLE 4-39 CY 2017 INTERNATIONAL GA BUSINESS JET OPERATIONS

AIRCRAFT TYPE[1]	CY 2017 OPERATIONS
Heavy Jet	112
Dassault Falcon 7X	24
Galaxy	2
Gulfstream	54
Global Express	26
Other	6
Mid-Size Jet	480
Cessna Citation 560/560XL	140
Bombardier Challenger 300-650	88
Cessna Citation Sovereign/Latitude	50
Cessna Citation X	24
Dassault Falcon 50	12
Gulfstream 150-280	56
Hawker Beechcraft 800-900XP	42
Bombardier Learjet 60-75	38
Embraer Legacy 600	18
Other	12
Light Jet	252
Beechcraft Jet 350-400	98
Cessna Citation CJ1-CJ4	42
Learjet 35-45	72
Embraer Phenom 300	40
Very Light Jet	40
Cessna Citation M2	8
Eclipse	4
Embraer Phenom 100	28
Total	**884[2]**

NOTES:
1 The business jet category only includes: Very Light Jet, Light Jet, Mid-Size Jet, and Heavy Jet operations.
2 The total of 884 operations only refers to the total Business Jet Operations for CY 2017.
SOURCE: Jacksonville International Airport Database (CY 2017 data).

EXHIBIT 4-32 CY 2017 INTERNATIONAL GA BUSINESS JET OPERATIONS



SOURCE: Jacksonville International Airport Database (CY 2013-2017 data).

4.8.3 GA FACILITY PROGRAM

The US Customs and Border Protection, *General Aviation Facility Design Standard (90% DRAFT)*, provided the guidelines, that when coupled with the PPH of 18, inform the GA Facility Program space requirements. Because the CBP Technical Design Standards recognize passenger demand in increments of 10 passengers, the facility program was established for a GAF that can process up to 20 passengers and their baggage per hour. The facility program for the GAF is presented in **Table 4-40**.

The processing of international GA passengers arriving on regional and commercial sized aircraft will continue to be accommodated in the existing FIS facility located within the JAX terminal.

Table 4-40 divides the facility areas into three categories: the core facility areas, the required facility areas and the optional facility areas. The total area of the core and required facility areas is 4,258 square feet, while the total building area requirement including the optional facility areas is 4,908 square feet. The total areas exclude building support spaces and circulation. For this Master Plan Update the optional facility spaces are included in the total building area requirement. It is also important to note the square footage standards may be modified due to changes in CBP requirements, once the CBP Design Standards are completed. The Airport Technical Design Standard Signature Version June 2012 (ATDS) from the U.S. Department of Homeland Security is the latest completed CBP standards. The ATDS also provided another form of a guideline to inform the GA facility program space requirements.

4.8.4 GAF AIRCRAFT APRON AND ASSOCIATED TAXIWAYS

The aircraft apron and associated taxilanes will be designed and configured to accommodate the critical international GA design aircraft operating at JAX. CBP provides several requirements to ensure safe maneuvering and operational efficiency on the GAF aircraft apron. These requirements include:

- The GA apron will need to accommodate aircraft during loading and unloading of passengers and/or cargo,
- The GA apron should be capable of maintaining the aircraft for short time periods for CBP.
- Appropriately sized for the critical aircraft that will be using the facility, and the clearance requirements for those aircraft.

TABLE 4-40 PROGRAM SUMMARY AND SPACE ANALYSIS

#	FACILITY ELEMENTS [1]	PLANNING PARAMETERS PER US CUSTOMS AND BORDER PROTECTION-GENERAL AVIATION FACILITIES DESIGN STANDARD 90% DRAFT [1]	QUANTITY	FACTOR	CBP GENERAL AVIATION FACILITIES DESIGN STANDARD 90% DRAFT)
		Passenger Processing Level (PAX/HR):		18 [2]	
Core Facility Areas					Units (sq ft)
1*	Public Female and Male Restroom	Per Code	1	-	55
2	Secure Storage	Per CBP Standards	1	-	150
3	Interview Room	Per CBP Standards	1	-	80
4	Search Room	Per CBP Standards	1	-	80
5	Male Hold Room	Per CBP Standards	1	-	110
6	Female Hold Room	Per CBP Standards	1	-	110
7*	General Office Area	Varies with Staffing; 1-3 CBP Officers	1	2 officers	244
8	General Storage/File Room	Per CBP Standards	1	-	100
9	Departures Airside Vestibule	Per CBP Standards	1	-	65
10	Lactation Support Room	One per CBP facility	1	-	64
11	Supervisor Office	Per CBP Standards	1	-	150
		Subtotal of Core Facility Areas:		**1,208 sq ft**	
Demand Driven Facility Areas (Required)					
12*	CBP Processing Area		1	25	1,660
13	Pre-Processing Passenger Waiting	25 SF per passenger	1	25	450
14	Post-Processing Passenger Waiting	25 SF per passenger	1	25	450
Infrastructure (Required)					
15	Local Area Network Room	Per CBP Standards	1	-	110
16	Mechanical Room	Per CBP Standards	1	-	100
17	Security Local Area Network	Per CBP Standards	1		80
Miscellaneous Areas (Required)					
18*	Emergency Generator Enclosure	Per CBP Standards	1	-	200
		Subtotal of Required Facility Areas:		**4,258 sq ft**	
Optional Facility Areas					
19*	CBP Staff Restrooms	Per Code	1	Optional	100
20*	Men's Locker Room	Per Code	1	Optional	55
21*	Women's Locker Room	Per Code	1	Optional	55
22*	Agriculture Laboratory and Disposal Room	As required by CBP	TBD	Optional	150
23	Staff Break Room	Optional (varies per location)	Optional	Optional	100
24*	Arrivals Airside Vestibule	Optional	Optional	Optional	80
25*	Canine Support Room	Optional	Optional	Optional	55
26*	Bird Quarantine	Optional	Optional	Optional	55
Total Building Area Requirement with Optional Areas:				**4,908 sq ft**[3]	

NOTES:
1 CBP, *General Aviation Facility Design Standards 2018 (90% DRAFT);* document was not complete when this table was prepared.
2 CBP *General Aviation Facility Design Standards 2018 (90% DRAFT)* recognize passenger demand in increments of 10.
3 Excludes building support and circulation spaces.
SOURCE: U.S. Department of Homeland Security, U.S. Customs and Border Protection, *General Aviation Facility Design Standard (90% DRAFT),* 2018.

At JAX, business jet aircraft are the critical international GA aircraft and will dictate apron and taxiway requirements. Accounting for over 41 percent of all international GA operations, the mid-size business jet category serves as the critical aircraft for the GAF apron area requirements. In CY 2017, 54% of the international operations are mid-size business jets which is the largest volume of international aircraft operations at JAX. The largest aircraft within the mid-size jet category is the Cessna Citation Latitude, which is classified as an ADG II. The largest international GA aircraft at JAX is the Bombardier Global Express 6000, which is classified as an ADG III. Incorporating both the international volume and the largest international GA aircraft, the GAF apron area must be able to accommodate two simultaneous Cessna Citation Latitude aircraft operations or a single Bombardier Global Express 6000 aircraft. The required apron area is approximately 40,000 square feet to accommodate the two Cessna Citation Latitudes or a single Bombardier Global Express 6000 aircraft.

Per the US Customs and Border Protection, *General Aviation Facility Design Standard (90% DRAFT), t*o maximize safety, selection of a location for the aircraft apron should include the following considerations:

- safe and easy ingress and egress for aircraft from taxiways and taxilanes
- crew and passengers not required to cross a taxiway to reach their aircraft.
- expandable
- full circulation around parking positions
- ample area lighting
- pull-through parking positions
- adjacent to GAF building
- passenger boarding area
- graded for adjacent hangars
- vehicle access
- visibility from the runway or parallel taxiway
- easy egress to the non-secure side of the fence
- ample parking for several large and small aircraft
- good drainage
- ample signage
- locations for fuel sump dump, chocks, fire extinguisher, and other items
- parking/storage location for ground support equipment

4.8.5 AUTOMOBILE PARKING

The GAF Design Standards provide general requirements for automobile parking at the GAF instead of specific guidelines to determine the required automobile parking space count. These include:

- Access and parking areas for CBP employees and visitors, in a location that is in close proximity to the CBP facility.
- Segregated parking for CBP officers, K9 transports, and other vehicles used in conjunction with CBP operations.
- Safe, easy access to and from the parking area without interfering with possible expansion or construction in surrounding areas.
- Sufficient vehicle parking area outside OFAs, and parking area should meet setback requirements from the AOA.

Since neither CBP nor JAA provide specific vehicle parking requirements, the consultant team relied on code requirements from the City of Jacksonville to determine the automobile parking requirements for the GAF. The City of Jacksonville Zoning Code requires a minimum of three parking spaces for every 1,000 square feet of floor area for office buildings, including business, commercial or governmental. In addition, the Florida Department of Transportation requires one accessible parking space per every 25 parking spaces. These requirements are summarized in **Table 4-41** and **Table 4-42**.

TABLE 4-41 GAF AUTOMOBILE PARKING REQUIREMENTS ONLY

TYPE OF PARKING	QUANTITY	SQUARE FEET[1]
Employee Parking	5	1,080
Visitor Parking	7	1,512
Accessible Parking	1	324
Total	**13**	**2,916**

NOTE:
1 Based on parking spaces 12ft wide and 18ft long; accessible parking space is based on 18ft wide and 18ft long
SOURCE: Florida Department of Transportation; *2017 Florida Building Code- Accessibility*, Sixth Edition; City of Jacksonville Zoning Division Security.

TABLE 4-42 GAF AUTOMOBILE PARKING REQUIREMENTS WITH OPTIONAL AREAS

TYPE OF PARKING	QUANTITY	SQUARE FEET [1]
Employee Parking	5	1,080
Visitor Parking	8	1,728
Accessible Parking	1	324
Total	**14**	**3,132**

NOTE:
1 Based on parking spaces 12ft wide and 18ft long; accessible parking space is based on 18ft wide and 18ft long
SOURCES: Florida Department of Transportation; *2017 Florida Building Code- Accessibility, Sixth Edition*; City of Jacksonville Zoning Division.

4.8.6 SECURITY REQUIREMENTS

Both the interior and exterior of the GAF facility will be equipped with surveillance cameras to monitor arriving international GA passengers in processing areas, crew members, and baggage processing. All custom security area access points must be equipped with CCTV cameras. CBP requires all exits to be supplemented with CCTV cameras that are integrated with the facility alarm system, and that will prompt the camera to automatically record any area where an alarm is triggered. Installation of cameras is not limited to critical locations within terminal buildings, hangar complexes and parking lots.

Security fences and gates are required on the perimeter of all protected areas within the GAF. Specific mechanical requirements apply to CBP GA facilities. Specifically, the US Customs and Border Protection, *General Aviation Facility Design Standard (90% DRAFT)* requires that the GAF complies with the current approved code, Unified Facilities Criteria 4-022-03, *Security Fences and Gates.*

4.9 AIR CARGO REQUIREMENTS

Most air cargo at the Airport is accommodated through the three cargo buildings immediately south of the main terminal complex. Building No. 1 is occupied by a variety of tenants, including Delta Air Lines, Gate Gourmet, the FAA, Majestic Terminal Services, and Freedom Interstate Shippers. Building No. 2 hosts UPS and John Bean Technologies, and Building No. 3 is solely occupied by FedEx.

Based on the Aviation Activity Forecast, as discussed in Chapter 3, no additional air cargo facilities will be required through the planning horizon. While the current forecasts do not indicate a need for cargo facility expansion, the Airport should still identify areas where these facilities could be constructed in the future. Forecasts are subject to change; by developing a plan for future cargo expansion, and adding proposed facility locations to the Ultimate ALP, JAA ensures the Airport can handle future increases in cargo demand.

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5. ALTERNATIVES

A key objective of the master planning process is to identify alternative development solutions that accommodate any existing or anticipated operational challenges, as well as, future aviation activity demand at JAX. To accomplish this objective, this chapter identifies and evaluates alternatives to meet the needs identified in Chapter 4 and provides a planning framework to assist in decision making for future Airport development.

Each alternative is assessed based on the impacts to the existing and future airfield, airport operations, and environmental impacts. The preferred development will be evaluated by the Jacksonville Aviation Authority (JAA) to ensure their needs and desires for the Airport are met.

The ever-changing demand in the aviation industry can cause challenges to the planning process. Therefore, it is necessary for JAA and other stakeholders to make planning level decisions that will provide safe and efficient operations, in addition to allowing flexibility for future development. For example, the general aviation and air cargo facilities were reviewed more broadly to provide maximum flexibility in development alternatives and to allow the Airport to respond to changes in the general aviation and cargo demand profiles at JAX as well as independent developer interest.

5.1 NO-BUILD ALTERNATIVE

The consequences of a "no-build" alternative were reviewed and compared to each development alternative. The "no-build" alternative represents the baseline condition at the Airport and would keep JAX in its current condition, as discussed in the Inventory chapter without any additional improvements.

The review of the no-build scenario confirmed, in most cases, that this alternative would decrease the quality of services provided to passengers, potentially hinder the Airport's ability to attract new or additional air service and could potentially weaken the local economy. The comparison of the no-build alternative to the various build alternatives is discussed in greater detail in the subsequent sections of this chapter.

5.2 AIRFIELD ALTERNATIVES

The airfield infrastructure was evaluated in Chapter 4 to determine its annual operational capacity or ASV and its ability to accommodate the projected demand levels established for PALs 1, 2 and 3. The airfield alternatives presented in the following sections provide options for meeting the projected demand beyond PAL 3.

The previous Master Plan and ALP depicted a fourth proposed runway located north of and parallel to Runway 8-26. This proposed north runway has been removed as an alternative in this Master Plan because the demand projections do not justify a fourth runway. As determined in Chapter 4, the aircraft operations demand at JAX is not projected to exceed 60 percent of the ASV for the Airport until late in PAL 3, at which point it would be appropriate to begin planning for a third runway. Due to the likely environmental impacts and the need to acquire additional land for the proposed north runway it was determined this runway should be removed from the ALP and would not be included in the airfield alternatives evaluation for this Master Plan Update.

This Master Plan Update excluded airfield runway analysis and adopted the proposed south runway, as identified in the previous 2010 Master Plan and depicted on the Airport Layout Plan (ALP). Therefore, additional analysis on the proposed south runway was not completed as part of this Master Plan Update.

5.2.1 RUNWAY DESIGNATIONS

Each runway end is identified by a two-digit number indicating the magnetic azimuth of the runway in the direction of operations to the nearest 10 degrees. Therefore, the existing 10,000-foot long runway has a magnetic azimuth of 77 degrees and is designated as "Runway 8." The opposite end of this runway has a magnetic azimuth of 257 degrees and is designated as Runway 26. This runway is referred to as Runway 8-26. The crosswind runway is designated as Runway 14-32 due to its magnetic azimuth. Over time the magnetic azimuth of the runway ends will change. When the previous Master Plan was prepared the runway designations at the Airport were Runway 7-25 for the 10,000-foot long runway and Runway 13-31 for the crosswind runway.

When distinguishing between two parallel runways the letter "R" is used for indicating the runway on the right and "L" for the runway on the left, relative to the view of the approaching aircraft. This chapter will refer to the existing Runway 8-26 as Runway 8L-26R because a third runway is proposed to the south of and parallel to the existing Runway 8-26 alignment. The proposed south runway will be referred to as "Runway 8R-26L".

East flow traffic is anticipated to operate on the parallel Runways 8L and 8R. Conversely, west flow traffic will operate on the Runways 26L and 26R. **Table 5-1** provides a summary of the future runway end designations.

TABLE 5-1 EXISTING VS. FUTURE RUNWAY END DESIGNATIONS

	EXISTING DESIGNATION	FUTURE DESIGNATION
Existing Runway 8-26	8-26	8L-26R
Existing Runway 14-32	14-32	Same
Future South Parallel Runway	N/A	8R-26L

SOURCE: Federal Aviation Administration Advisory Circular 150/5300-13A, Change 1.

5.2.2 PREVIOUS STUDIES

In the 1990s, JAX began planning for a new, third runway that was originally depicted on the 1997 ALP. The recommendation at the time, was to build a new runway parallel to and south of existing Runway 8-26. After the approval of the 1997 ALP, the Airport began to acquire land to accommodate the proposed south runway and to protect the surrounding areas from non-compatible land uses. Master Plan updates since then have also adopted this general proposed runway alignment with refinements.

The 2009 ALP was produced along with the 2010 Master Plan Update and identifies an Airport Reference Code (ARC) of D-IV for the proposed south runway. The proposed runway would be separated by approximately 7,500 feet from existing Runway 8-26. Due to the proposed length of 8,000 feet and positioning of the runway, Terrell Road, Lem Turner Road, Pecan Park Road and FANG Drive will require realignment to remain outside the footprint of the proposed runway, its RPZs, and associated taxiways.

Additional analysis for the alignment and positioning for the proposed south runway were not requested services in this Master Plan Update. The alignment and positioning depicted in the 2009 ALP are adopted for this Master Plan Update and its associated ALP.

5.2.3 NO-BUILD ALTERNATIVE

As illustrated on **Exhibit 5-1**, the no-build alternative assumes that a new runway will not be constructed and that current commercial, air cargo, general aviation, and military operations would continue to utilize existing Runways 8-26 and 14-32. This alternative serves as the baseline for environmental conditions and is evaluated against all alternatives that encounter environmental impacts.

The no-build alternative assumes the distribution of aircraft operations between the two existing runways would remain as they currently operate, however, the number of operations on each runway would increase as air traffic increases at the Airport. Although, this alternative provides the least amount of impact in terms of development, it would not accommodate the long-term airfield capacity requirements. As indicated in Chapter 4, proposed improvements are required to accommodate the future aviation activity demand levels and to ensure the airfield continues to operate in a safe and efficient manner without creating unacceptable aircraft operational delays. This alternative has been eliminated from further consideration for failing to meet the requirements established in the previous chapter.

5.2.4 PREFERRED RUNWAY ALTERNATIVE

The preferred south parallel runway alternative has been adopted from the previous Master Plan and consists of the construction of a new 8,000-foot long runway located approximately 7,500 feet south of existing Runway 8-26, as illustrated on **Exhibit 5-2**. As noted in the 2010 Master Plan, this alternative was chosen because no additional land acquisition would be required, there would be minimal impacts to public roadways, and limited impacts on the commercial development properties in the area.

The proposed south parallel runway is planned to be constructed to Runway Design Code (RDC) D-IV standards, which will accommodate the majority of the projected fleet mix through PAL 3. The current layout illustrates two parallel taxiways, located on either side of the proposed runway. All associated taxiways are planned to Taxiway Design Group (TDG) 5 design standards. The runway to parallel taxiway separation distance is planned to be 500 feet, which will provide the required separation to allow for acute-angled “high-speed” taxiway exits.

In addition to the airfield improvements required for the proposed runway to tie into the existing airfield, this alternative will require realignment of several landside roadways to meet current design standards. FAA AC 150/5300-13A, Change 1, requires all public roadways to remain outside of the RPZ to ensure high level of safety for land compatibility and airport operations. The proposed runway position will require Terrell Road, FANG Drive, Lem Turner Road, and Pecan Park Road to be realigned to remain outside of runway and associated taxiway footprint as well as the RPZs off each proposed runway end. Furthermore, at the time of the Pecan Park Road realignment an additional portion of the road will need to be realigned outside of the RPZs for the existing Runway 26 and 32 ends

5.2.5 NON-STANDARD PAVEMENT AREAS

Airfield alternatives were developed to address the non-standard pavement areas on the airfield. The non-standard areas, as interpreted from FAA AC 150/5300-13A, that were addressed in the airfield alternatives consisted of the following:

- Non-perpendicular runway crossing
- Direct access from apron to runway
- Complex geometry (more than three taxiways intersecting at the same point)
- Crossover taxiway aligned with runway entrance
- Co-located high-speed taxiway exits

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SOURCE: Martinez Geospatial, September 2019 (aerial photography)

EXHIBIT 5-1

NO-BUILD ALTERNATIVE - EXISTING CONDITIONS

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-1_No Build Alternative.dwgLayout: Airfield Layout Plotted: Jan 30, 2020, 02:30PM

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SOURCE: Martinez Geospatial, September 2019 (aerial photgraphy).

EXHIBIT 5-2

PREFERRED SOUTH PARALLEL RUNWAY

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-2_Preferred Runway Alternative.dwgLayout: Airfield Layout Plotted: Jan 30, 2020, 02:35PM

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Exhibits 5-3 and **5-4** illustrate the non-standard pavement areas to be removed and pavement areas to be constructed to bring the airfield into compliance with FAA AC 150/5300-13A. In this case, JAA staff preferred a no-build scenario over the proposed alternatives citing the airfield geometry has been grandfathered in and would not be subject to guidance provided in FAA AC 150/5300-13A. Therefore, these alternatives were eliminated from evaluation in this chapter, but are provided for future reference should conditions change.

5.3 TERMINAL ALTERNATIVES

New terminal development concepts were not requested as a component of this Master Plan Update. The preferred Concourse B expansion concept was developed and adopted by the JAA in a previously completed project. The configuration of the proposed Concourse B has been incorporated into this Master Plan Update. As discussed in Chapter 4, Concourse B will provide sufficient gate capacity to meet PAL 3 demand.

However, the terminal analysis conducted as a part of Chapter 4 resulted in the identification of SSCP deficiencies. The existing area dedicated to security screening will be inadequate by PAL 2 and additional screening lanes are required by PAL 3. The alternatives developed to address these findings are described in section 5.3.2 Passenger Security Screening Checkpoint Alternatives.

5.3.1 CONCOURSE EXPANSION – CONSTRUCTION CONCOURSE B

The proposed Concourse B layout depicted on the latest FAA-approved ALP has been adopted as the preferred terminal concourse development plan in this Master Plan. Electronic files of the proposed Concourse B were provided by JAA and have been incorporated into the Master Plan alternatives.

5.3.2 PASSENGER SECURITY SCREENING CHECKPOINT ALTERNATIVES

The Security Screening Checkpoint (SSCP) is located on the second level of the Terminal Courtyard, west of the main terminal and prior to entering the secure concourse areas, as shown on **Exhibit 5-5**. JAX currently operates with eight X-ray machines, four magnetometers, and three Advanced Imaging Technology (AIT) Full Body Scanners. Six of the screening lanes are designated as standard/legacy lanes and the remaining two are designated as Pre✓® lanes. These lanes provide the necessary equipment and throughput to accommodate the average passenger flow. However, as defined in the Demand/Capacity and Facility Requirements chapter the overall area of the SSCP will be deficient by PAL 2 and by PAL 3 additional SSCP throughput will be required. Therefore, the area of the SSCP will need to be expanded and additional screening lanes need to be added to the SSCP. As shown on **Exhibits 5-6** through **5-8**, three alternatives were developed to increase the number of screening lanes and replace the standard lanes with automated screening lanes. These alternatives were developed with the intent to limit impacts to the existing terminal courtyard.

5.3.2.1 PASSENGER SECURITY SCREENING CHECKPOINT – ALTERNATIVE 1

Alternative 1, illustrated on Exhibit 5-6 provides a concept that replaces six of the existing eight lanes of standard/legacy security screening equipment with six ASLs leaving two standard/legacy machines for PreCheck operations. The ASL hourly throughput is approximately 205 passengers, while the standard lanes are only approximately 150 passengers. With this alternative, the checkpoint is expanded to the east and reduces the adjacent existing landside concessions areas by approximately 4,780 square feet and extends the passenger queue area to 6,480 square feet. The exit corridor, approximately 20 feet wide, remains located on the north side of the checkpoint as currently configured.

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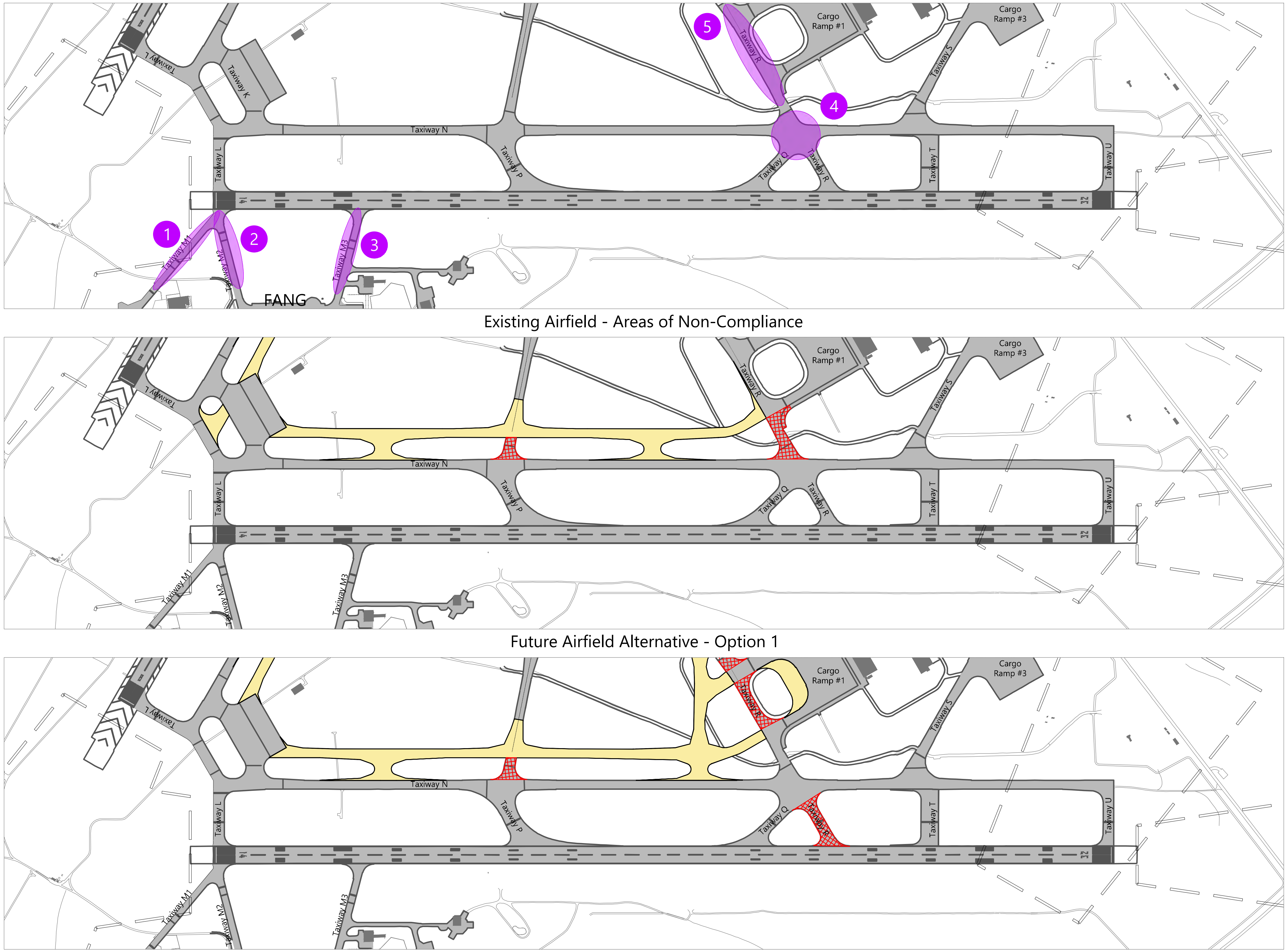

Existing Airfield - Areas of Non-Compliance

Future Airfield Alternative - Option 1

Future Airfield Alternative - Option 1

1 Non-perpendicular runway crossing*
Direct access from apron to runway

2 Non-perpendicular runway crossing*
Direct access from apron to runway

3 Direct access from apron to runway*

4 Complex Geometry (Exceeds 3-node Concept)

5 Direct access from apron to runway

* Areas of non-compliance in accordance with FAA AC 150/5300-13A, Change 1 are identified as part of this task, however due to military operations no airfield geometry modifications are recommended for areas 1, 2, and 3 as part of this Master Plan.

LEGEND
- Areas of Non-Compliance
- Existing Airfield Pavement
- Existing Buildings
- Pavement to be Removed
- Future Airfield Pavement

SOURCE: Martinez Geospatial, September 2019 (aerial photography).

NORTH 0 1,000 ft.

EXHIBIT 5-3

NON-STANDARD PAVEMENT AREAS - RUNWAY 14-32

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-3 & 5-4_Existing Airfield_Non-Compliance.dwgLayout: Exhibit 5-4 Plotted: Mar 13, 2020, 02:21PM

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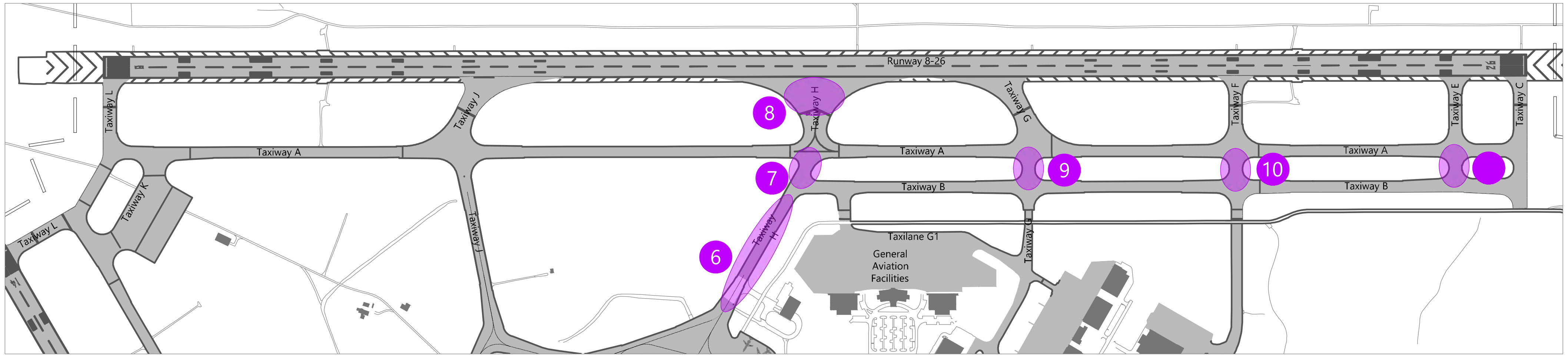
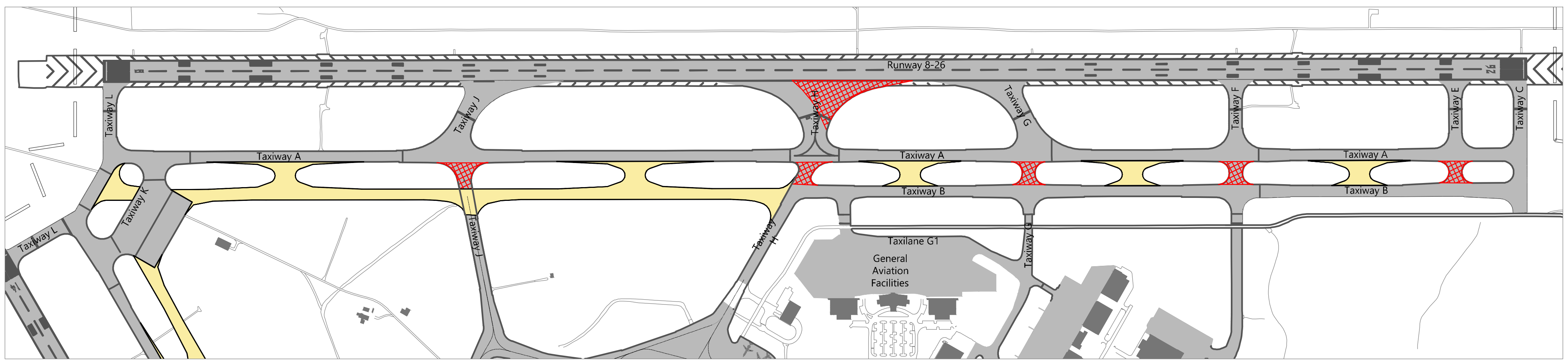
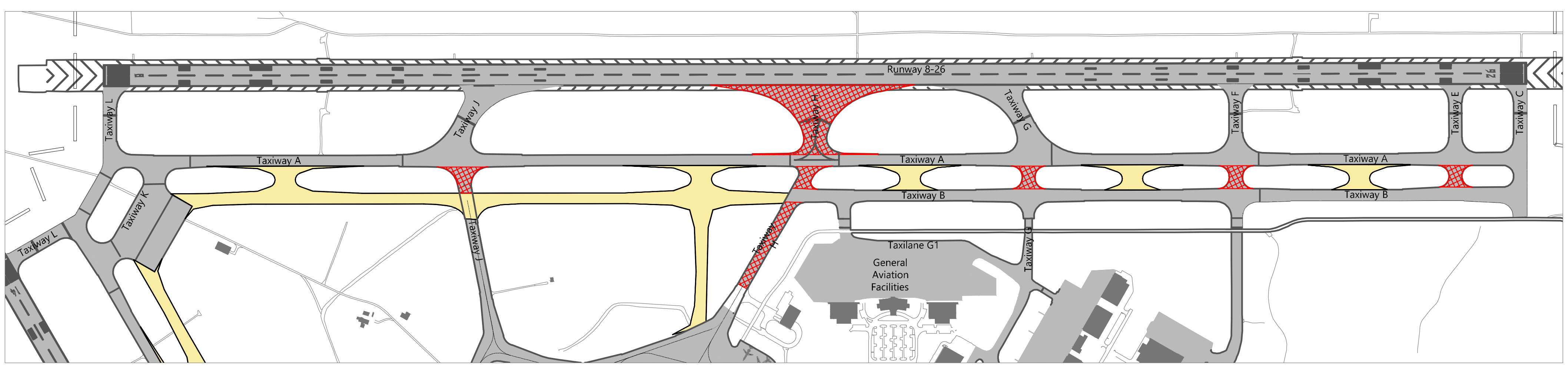


Existing Airfield - Areas of Non-Compliance

6 Direct access from apron to runway
7 Crossover taxiway aligned with runway entrance
8 Co-located high-speed taxiway exits
9 Crossover taxiway aligned with runway entrance
10 Crossover taxiway aligned with runway entrance
11 Crossover taxiway aligned with runway entrance



Future Airfield Alternatives - Option 1



Future Airfield Alternatives - Option 2

LEGEND
Areas of Non-Compliance
Existing Airfield Pavement
Existing Buildings
Pavement to be Removed
Future Airfield Pavement

SOURCE: Martinez Geospatial, September 2019 (aerial photography).

NORTH 0 1,000 ft.

EXHIBIT 5-4

NON-STANDARD PAVEMENT AREAS - RUNWAY 8-26

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-3 & 5-4_Existing Airfield_Non-Compliance.dwgLayout: Exhibit 5-3 Plotted: Mar 13, 2020, 02:20PM

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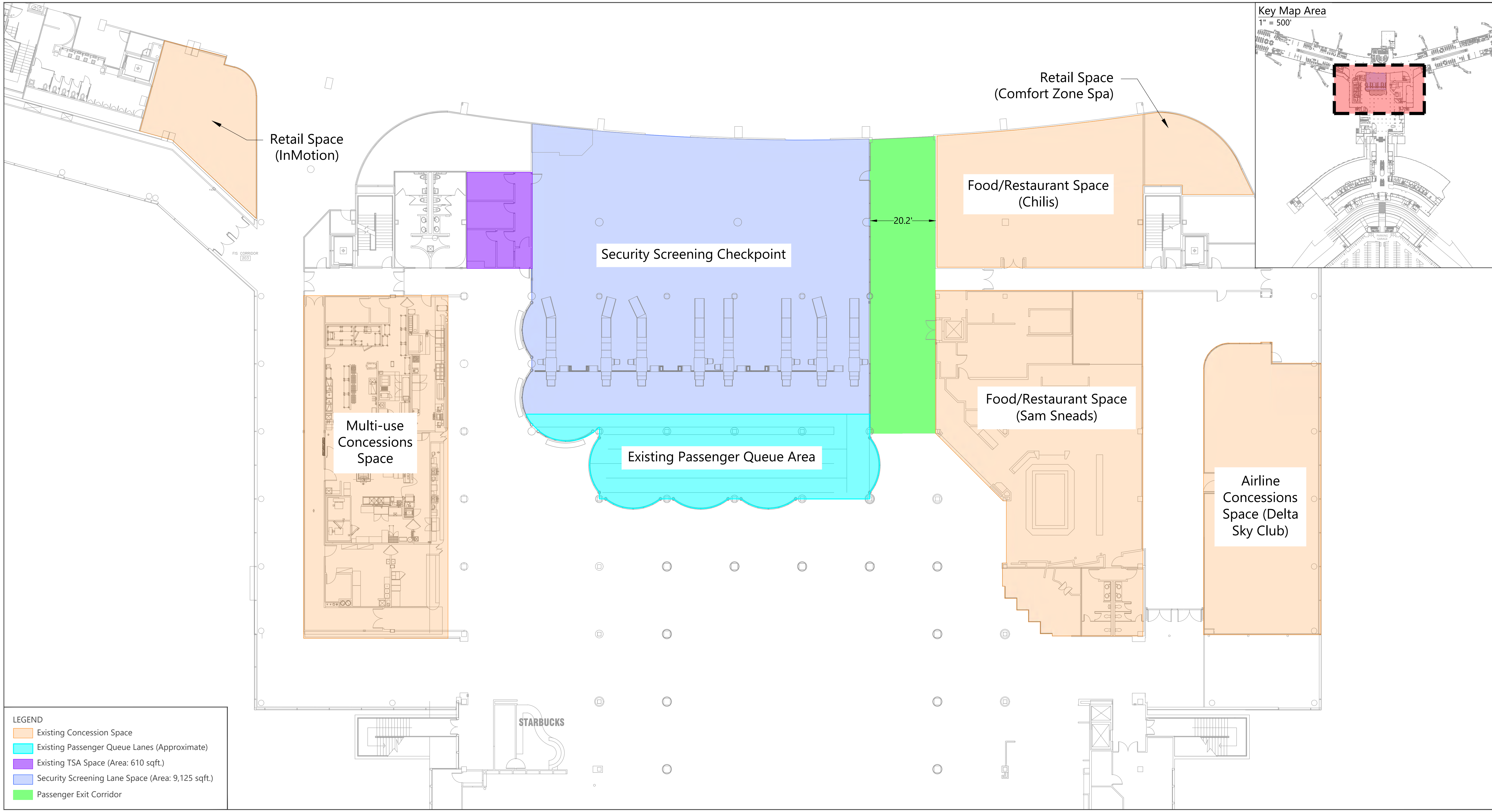

SOURCE: Jacksonville Aviation Authority, November 2018 (landside basemap).

EXHIBIT 5-5

PASSENGER SECURITY SCREENING CHECKPOINT
EXISTING CONDITIONS

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\CAD\6 - Security Screening Checkpoint\Exhibit 5-5_SSCP_Existing Conditions.dwgLayout: Exhibit 5-5 Plotted: Jan 30, 2020, 02:44PM

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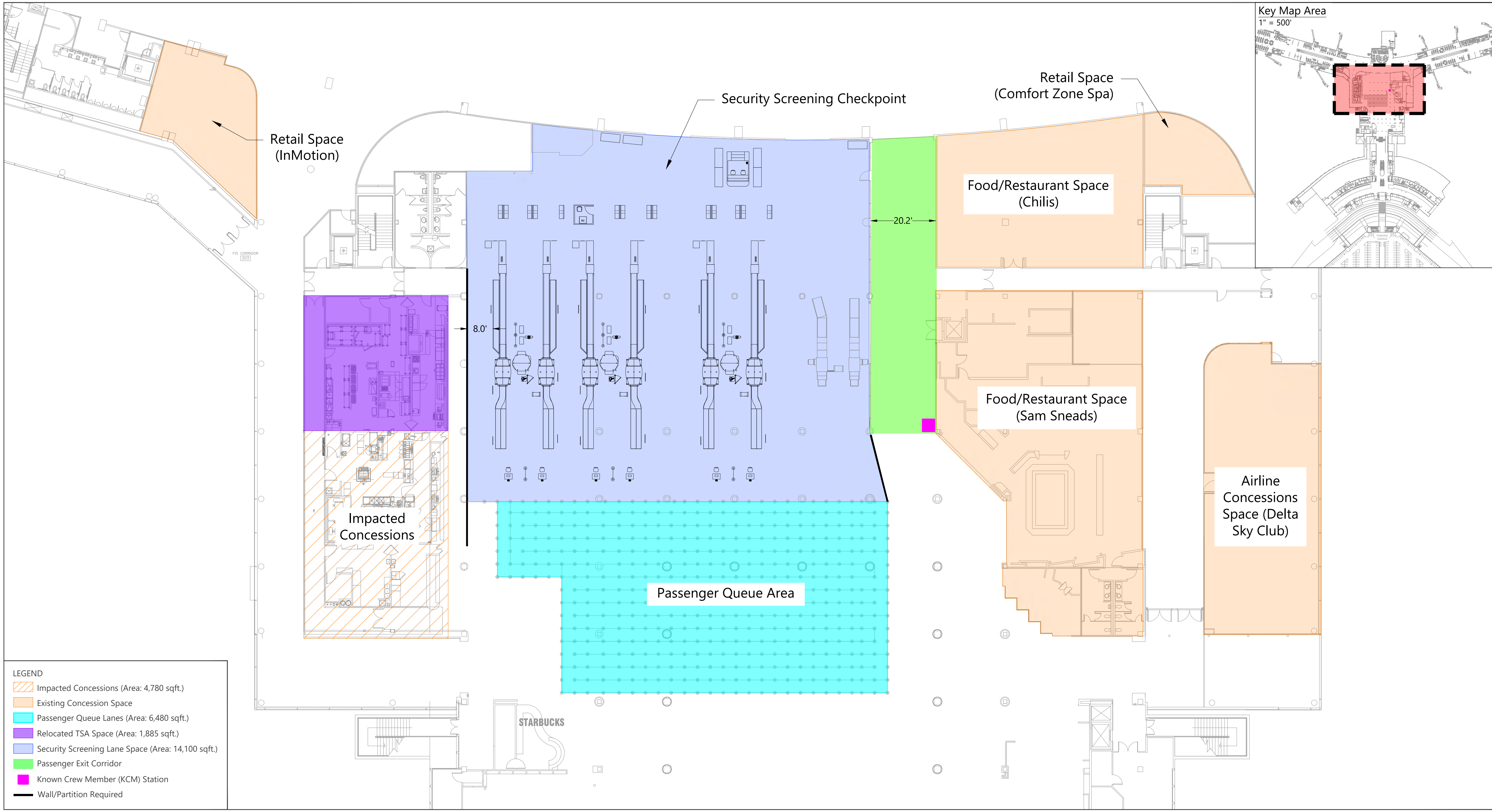

SOURCE: JAA; ACRP 25: Airport Passenger Terminal Planning and Design, March 2019; Ricondo & Associates, Inc., March 2019.; Base Map, JAA, March 2019.

NORTH 0 30 ft

EXHIBIT 5-6

PASSENGER SECURITY SCREENING CHECKPOINT
ALTERNATIVE 1

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\CAD\6 - Security Screening Checkpoint\Exhibit 5-6_SSCP_Alternative 1.dwgLayout: Exhibit 5-6 Plotted: Jan 30, 2020, 02:49PM

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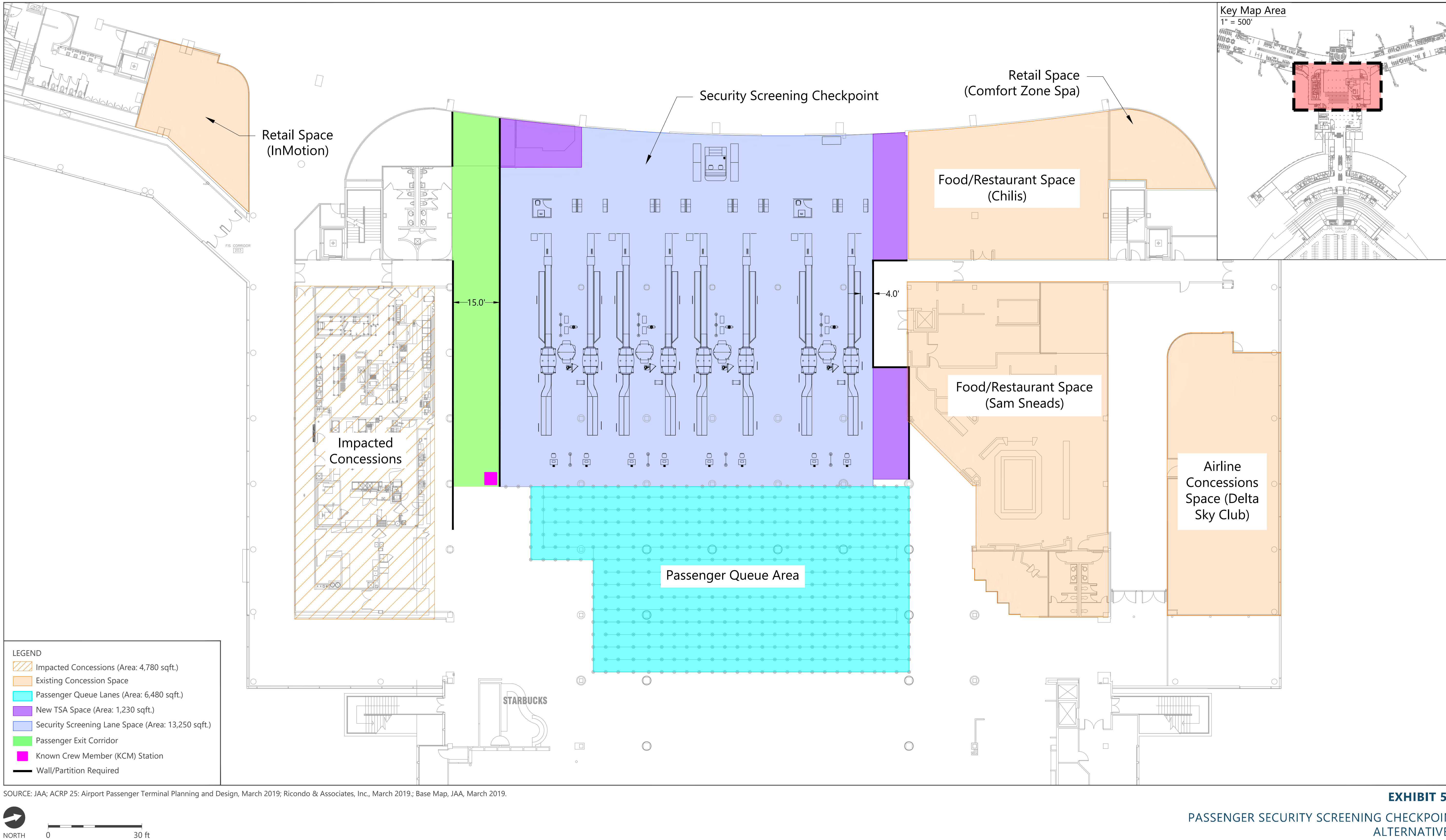

SOURCE: JAA; ACRP 25: Airport Passenger Terminal Planning and Design, March 2019; Ricondo & Associates, Inc., March 2019.; Base Map, JAA, March 2019.

EXHIBIT 5-7

PASSENGER SECURITY SCREENING CHECKPOINT
ALTERNATIVE 2

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\CAD\6 - Security Screening Checkpoint\Exhibit 5-7_SSCP_Alternative 2.dwgLayout: Exhibit 5-7 Plotted: Jan 30, 2020, 02:50PM

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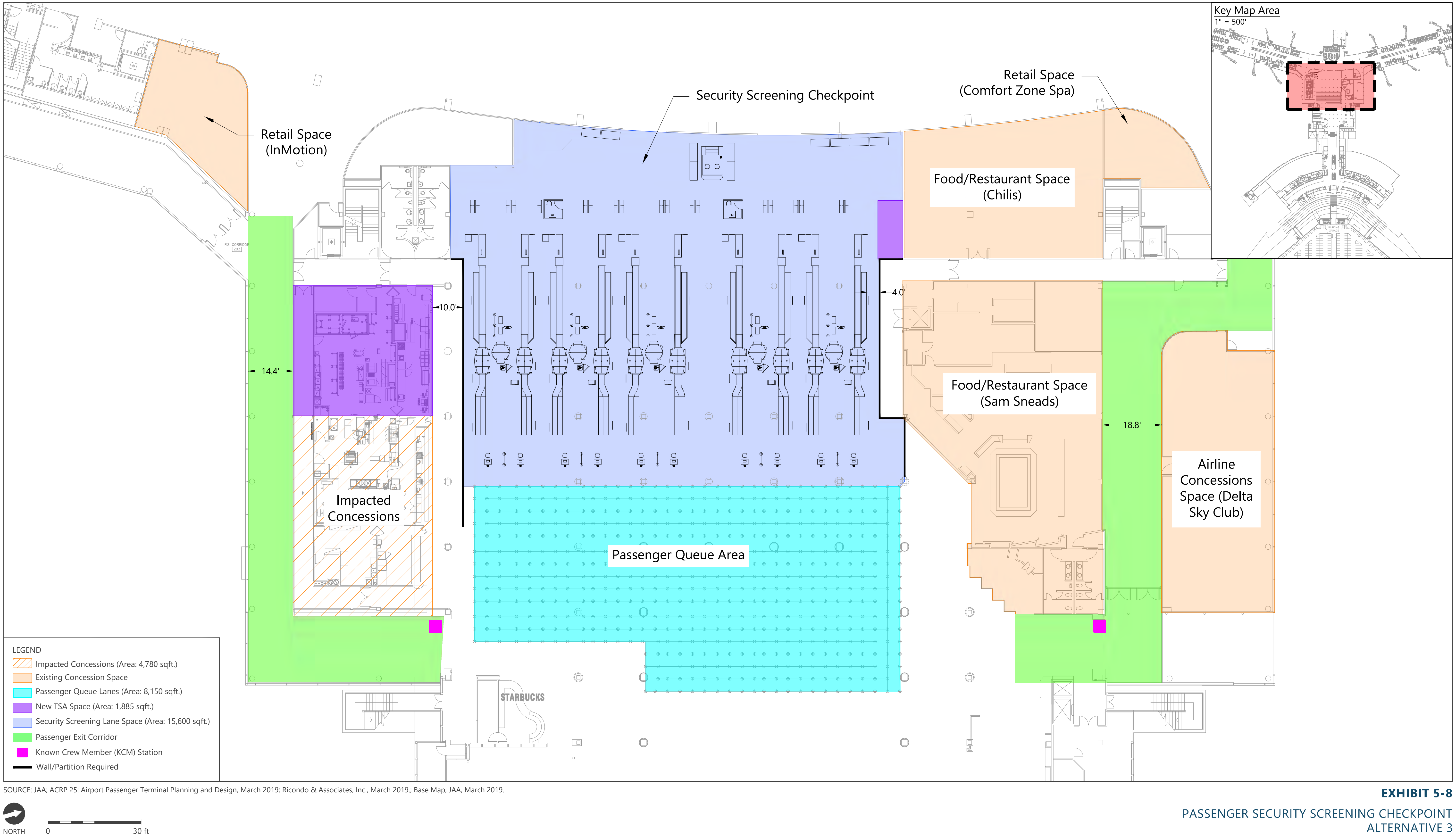

SOURCE: JAA; ACRP 25: Airport Passenger Terminal Planning and Design, March 2019; Ricondo & Associates, Inc., March 2019.; Base Map, JAA, March 2019.

EXHIBIT 5-8

PASSENGER SECURITY SCREENING CHECKPOINT
ALTERNATIVE 3

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\CAD\6 - Security Screening Checkpoint\Exhibit 5-8_SSCP_Alternative 3.dwgLayout: Exhibit 5-8 Plotted: Jan 30, 2020, 02:52PM

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5.3.2.2 PASSENGER SECURITY SCREENING CHECKPOINT – ALTERNATIVE 2

Alternative 2, depicted on Exhibit 5-7, replaces the existing eight standard/traditional screening lanes with eight ASLs and expands the passenger queue area to 4,780 square feet. However, this concept shifts the footprint of the checkpoint to the north into the area that is currently the exit corridor and a new, narrower exit corridor is relocated to the south side of the checkpoint, reducing existing landside concessions areas by approximately 2,820 square feet. This alternative also offers slightly more TSA storage space (approximately 620 square feet), but the areas are not conjoined.

5.3.2.3 PASSENGER SECURITY SCREENING CHECKPOINT – ALTERNATIVE 3

Alternative 3, as shown on Exhibit 5-8, widens the checkpoint boundary to encompass the existing exit corridor and replaces the existing eight screening lanes with 10 ASLs. As with the previous alternatives, the landside concessions areas adjacent to the checkpoint would be reduced by approximately 4,780 square feet and TSA office space would be relocated into this area. This concept expands the passenger queue area to 8,150 square feet. Two new exit corridors are provided with this alternative that are not contiguous to the checkpoint. This alternative proposes new exit corridors to the north and south sides of the screening area by repurposing existing access corridors from the airside to the landside.

5.3.2.4 PASSENGER SECURITY SCREENING CHECKPOINT – PREFERRED ALTERNATIVE

Alternative 3 was selected by JAA staff as the preferred alternative as this concept would increase the overall area of the SSCP and would accommodate the larger ASLs while providing the necessary passenger throughput to meet the increased passenger demand levels projected in PAL 2 and PAL 3.

5.3.3 AIRCRAFT HARDSTAND PARKING ALTERNATIVES

The existing terminal area apron layout at JAX consists of two apron areas adjacent to Concourses A and C, which provide a total of 12 aircraft hardstand parking positions, seven positions adjacent to Concourse A and five positions adjacent to Concourse C. In addition to these aircraft parking positions there are eight additional aircraft parking positions located on the west side of Concourses A and C, where the proposed Concourse B will be located. These aircraft parking positions are illustrated on **Exhibit 5-9**.

Once construction begins on the proposed Concourse B the eight aircraft hardstand parking positions located within this footprint will no longer be available. A total of 17 hardstand positions are projected to accommodate the growing demand for RON positions through the 20-year planning period. Alternative concepts were developed to meet or exceed this demand while minimizing the impacts to existing conditions and meeting the operational requirements of JAA. These alternatives were evaluated based on, but not limited to the following factors: ability of the concept to provide required capacity, operational impacts; potential impacts to existing taxiways/taxilanes, apron areas, and construction phasing/implementation complexity.

5.3.3.1 AIRCRAFT HARSTAND PARKING – NO BUILD

Two no-build aircraft hardstand parking alternatives were identified, as shown in **Exhibits 5-10** and **5-11**. These alternatives recommend restriping the existing aircraft hardstand aprons to provide a more efficient and optimized layout. The first no-build alternative, as shown in Exhibit 5-10, provides parking positions only for ADG II and ADG III, which adds five additional parking positions, for a total of 17 positions, between the hardstand aprons adjacent to Concourses A and C. The second no-build alternative, as shown in Exhibit 5-11, includes additional parking positions for ADG IV/V aircraft in place of some of the smaller ADG II/III aircraft. This alternative yielded a total increase of 1 parking position between the hardstand aprons east of Concourses A and C. JAA staff were not in favor of the no-build aircraft hardstand parking alternatives and requested these alternatives be eliminated from further evaluation, but are provided for future reference should conditions change.

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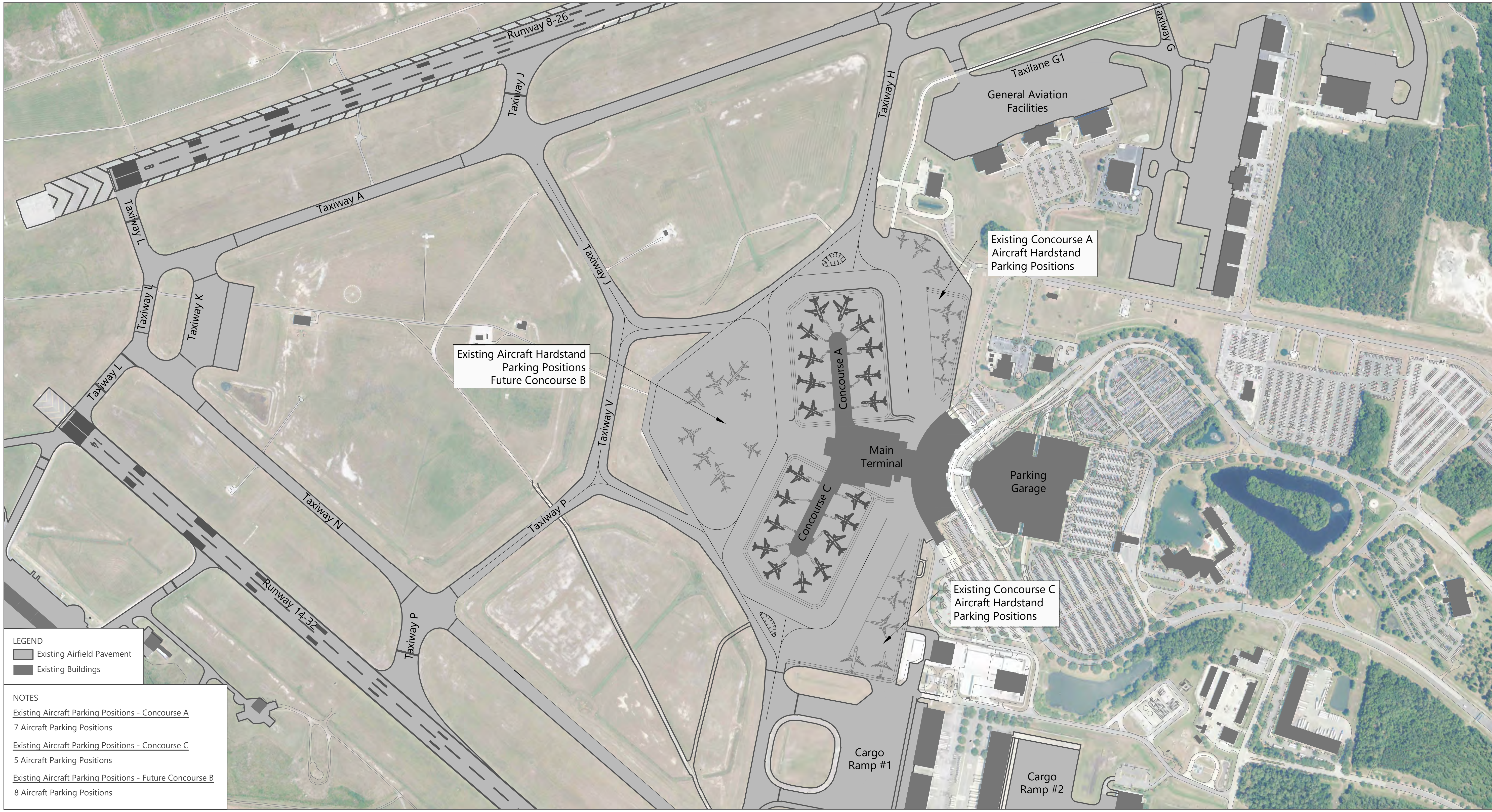

SOURCE: Martinez Geospatial, September 2019 (aerial photgraphy); Jacksonville Aviation Authority, January 2019 (RON aircraft parking positions); Ricondo & Associates, Inc., March 2019 (existing airfield).

NORTH 0 600 ft.

EXHIBIT 5-9

AIRCRAFT HARDSTAND PARKING
EXISTING CONDITIONS

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-9_Aircraft Hardstand Parking - Existing Conditions.dwgLayout: Exhibit 5-6 Plotted: Jan 30, 2020, 02:45PM

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Remain Over Night (RON) Parking Positions
Existing Terminal Area Apron

	Narrowbody Aircraft	Widebody Aircraft
Concourse A RON Parking Positions	5 1/	2
Concourse C RON Parking Positions	3 1/	2

Note:
1/ CRJ aircraft are included in this quantity.

Remain Over Night (RON) Parking Positions
Existing Terminal Area Apron

	ADG-II Aircraft	ADG-III Aircraft
Concourse A RON Parking Positions	2	7
Concourse C RON Parking Positions	1	7

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, January 2019 (RON aircraft parking positions); Ricondo & Associates, Inc., March 2019 (existing airfield).

NORTH 0 600 ft.

EXHIBIT 5-10

AIRCRAFT HARDSTAND PARKING - NO BUILD ALTERNATIVE 1

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-10_Aircraft Hardstand Parking_Conc A&C - Alternative 1.dwgLayout: Concourse RON (ADG-III) Plotted: Jan 30, 2020, 02:58PM

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Remain Over Night (RON) Parking Positions
Existing Terminal Area Apron

	Narrowbody Aircraft	Widebody Aircraft
Concourse A RON Parking Positions	5 1/	2
Concourse C RON Parking Positions	3 1/	2

Note:
1/ CRJ aircraft are included in this quantity.

Remain Over Night (RON) Parking Positions
Existing Terminal Area Apron

	ADG-II Aircraft	ADG-III Aircraft	ADG-IV Aircraft
Concourse A RON Parking Positions	2	2	3
Concourse C RON Parking Positions	1	3	2

Note:
1/ ADG-IV parking positions provide sufficient wingtip clearance to accommodate ADG-V aircraft.

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, January 2019 (RON aircraft parking positions); Ricondo & Associates, Inc., March 2019 (existing airfield).

NORTH 0 600 ft.

EXHIBIT 5-11

AIRCRAFT HARDSTAND PARKING - NO BUILD ALTERNATIVE 2

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-11_Aircraft Hardstand Parking_Conc A&C - Alternative 2.dwgLayout: Concourse RON (ADG-III) Plotted: Jan 30, 2020, 03:02PM

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5.3.3.2 AIRCRAFT HARDSTAND PARKING - ALTERNATIVE 1

Alternative 1, depicted on **Exhibit 5-12**, proposes two additional hardstand parking aprons located to the north and south of the existing terminal area apron. The north hardstand apron is approximately 107,000 square yards and can be accessed via existing Taxiways H and J. This alternative provides an ADG-V taxiway on the north and ADG-V taxilane along the south side of the apron allowing for pull-through taxi capability. The apron is proposed to accommodate up to seven independent ADG-IV aircraft parking positions or a larger number of smaller ADG aircraft mix. During the initial review of the hardstand alternatives, JAA staff requested that each of the aircraft hardstand parking alternatives be sized for ADG IV aircraft parking positions and include the ability for aircraft to taxi into and out of the hardstand under their own power versus being towed into and out of the parking positions. Each hardstand parking alternative was modified to include this capability.

The taxiways and taxilanes in each aircraft hardstand parking alternative were proposed at TDG 5 at the request of the JAA to meet the needs of the existing and future design aircraft for the Airport, which is ADG V and TDG 5 In addition, the aircraft hardstand parking positions were designed to accommodate a smaller ADG; ADG IV or B757 aircraft, as the anticipated passenger service aircraft fleet are projected to be ADG V or smaller.

To the west of the existing terminal area apron, a parallel taxiway and taxilane providing ADG V separation are proposed to provide access from the proposed north hardstand apron to the proposed south hardstand apron. The dual taxiway/taxilane design would provide more efficient access for cargo aircraft taxiing to/from Runway 8-26 to remain separate from commercial air service and avoid taxiing through the terminal apron area.

To the south of the existing terminal apron area is the second proposed hardstand apron, which is similar to the north hardstand apron. This apron also provides an ADG-V taxiway and taxilane at the back and front of stand, respectively. The apron can be accessed via existing Taxiways P and R and includes seven ADG-IV or smaller aircraft hardstand parking positions that allows for pull-through taxi capability. The proposed ADG-V taxiway on the south side of the apron provides direct access to Cargo Ramp #1.

This alternative allows for future airfield improvements, such as, the extension of Taxiway B without impacting the operations of the proposed hardstand aprons.

5.3.3.3 AIRCRAFT HARDSTAND PARKING - ALTERNATIVE 2

Alternative 2, as illustrated on **Exhibit 5-13**, proposes an additional hardstand apron to the north of the existing terminal area as in Alternative 1. This proposed north hardstand apron is also approximately 107,000 square yards and can accommodate seven ADG-IV or smaller aircraft parking positions and allows for pull-through taxi capability. This alternative also provides the same dual ADG-V taxiway and taxilane located on the north and south sides of the proposed north apron.

An ADG-V taxilane extends from the western edge of the proposed north apron to the south, extending around the terminal area and to the east to connect with the existing terminal apron by Concourse C providing access around the terminal area.

Alternative 2 includes an additional ADG-V taxiway to allow for independent ADG-V aircraft operations to/from Runway 8-26 and the cargo area. The taxiway extends south from Taxiway J where it then turns southeast to run parallel to Taxiway N and connects into the Cargo Ramp #1 apron. This alternative also proposes the elimination of Taxiway P, the connection of Taxiway J from the terminal area to Taxiway A and the connection of Taxiway H from the terminal area to Taxiway A to eliminate direct access from the apron to the runway compliance concerns.

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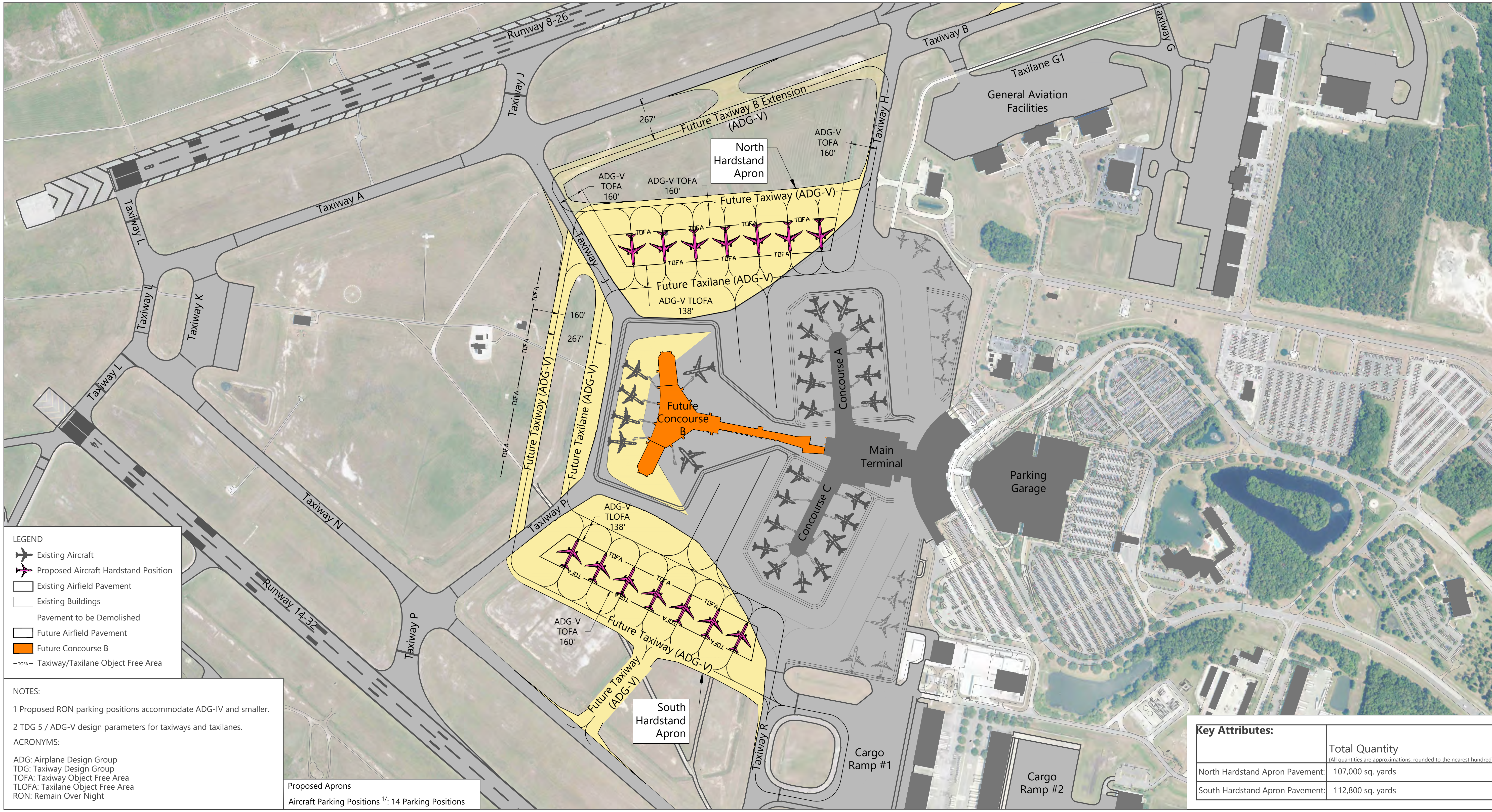

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, January 2019 (RON aircraft parking positions); Ricondo & Associates, Inc., March 2019 (existing airfield); Ricondo & Associates, Inc., March 2019 (future airfield alternatives).

NORTH 0 600 ft.

EXHIBIT 5-12

AIRCRAFT HARDSTAND PARKING
ALTERNATIVE 1

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-12_Aircraft Hardstand Parking - Alternative 1.dwgLayout: Exhibit 5-8 Plotted: Jan 30, 2020, 03:05PM

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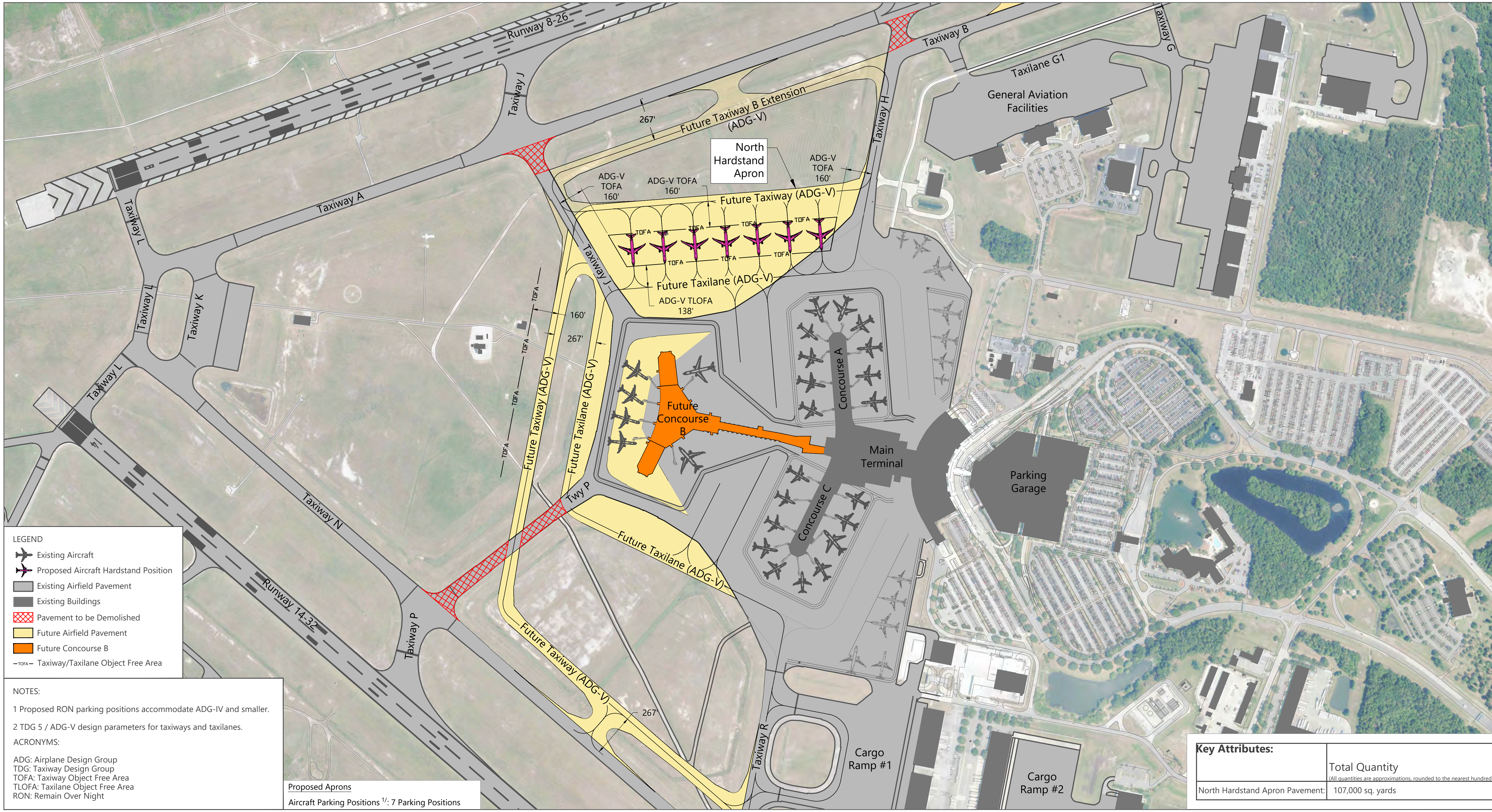

NOTES:

1 Proposed RON parking positions accommodate ADG-IV and smaller.

2 TDG 5 / ADG-V design parameters for taxiways and taxilanes.

ACRONYMS:

ADG: Airplane Design Group
TDG: Taxiway Design Group
TOFA: Taxiway Object Free Area
TLOFA: Taxilane Object Free Area
RON: Remain Over Night

Proposed Aprons

Aircraft Parking Positions [1]: 7 Parking Positions

Key Attributes:	Total Quantity (All quantities are approximations, rounded to the nearest hundred)
North Hardstand Apron Pavement:	107,000 sq. yards

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, January 2019 (RON aircraft parking positions); Ricondo & Associates, Inc., March 2019 (existing airfield); Ricondo & Associates, Inc., March 2019 (future airfield alternatives).

NORTH 0 600 ft.

EXHIBIT 5-13

AIRCRAFT HARDSTAND PARKING
ALTERNATIVE 2

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-13_Aircraft Hardstand Parking - Alternative 2.dwgLayout: Exhibit 5-9 Plotted: Jan 30, 2020, 03:21PM

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5.3.3.1 AIRCRAFT HARDSTAND PARKING - ALTERNATIVE 3

Alternative 3, is illustrated on **Exhibit 5-14**, and proposes the construction of a hardstand apron to the west of the existing terminal area apron and proposed Concourse B. This apron is approximately 125,000 square yards and provides pull-through taxi capability to six ADG-IV aircraft parking positions. The apron is accessible via existing Taxiways J and P. The apron is also flanked by an ADG-V taxiway on the west and an ADG-V taxilane on the east.

ADG-V taxilanes are proposed to extend from Taxiway J to Taxiway H on the north and from Taxiway P to Taxiway R on the south to provide taxi capability to/from the terminal area to the proposed apron.

This alternative also includes an extension to Taxiway B connecting Taxiway H to northern corner of the proposed hardstand apron by Taxiway J. At the southern corner of the proposed hardstand apron an ADG-V taxiway is proposed to extend from Taxiway P to the Cargo Ramp #1 apron, parallel to Taxiway N.

5.3.3.2 AIRCRAFT HARDSTAND PARKING - ALTERNATIVE 4

Alternative 4, as depicted on **Exhibit 5-15**, constructs two proposed hardstand aprons to the north and the south of the existing terminal area apron. The proposed north hardstand apron is approximately 130,400 square yards and ties into proposed Taxiway B extension in between existing Taxiways H and J and provides five ADG-IV aircraft hardstand positions in a nose to tail configuration.

The proposed south hardstand apron is approximately 87,800 square yards and is accessed from existing Taxiway N via a proposed ADG-V taxiway. This apron provides three ADG-IV aircraft hardstand parking positions in a side by side configuration that allows for pull-through taxi capability and provides direct access to Cargo Ramp #1.

A proposed ADG-V taxilane located west of the proposed Concourse B expansion, would connect the two proposed hardstand aprons to provide greater flexibility for commercial and cargo operations. This pavement is designated as a taxilane to avoid the future aircraft gate positions for future Concourse B to push back into an active taxiway.

5.3.3.3 AIRCRAFT HARDSTAND PARKING EVALUATION

These four aircraft hardstand parking alternatives were assessed using a set of evaluation criteria established in the Master Plan Update scope of work to facilitate the identification of the preferred alternative. These criteria are described below.

- Ability of the concept to provide required capacity
- Operational impacts
- Potential impacts to existing airfield infrastructure
- Construction phasing and implementation complexity

Table 5-2 provides a comparison of each aircraft hardstand parking alternative and how they ranked against the criteria.

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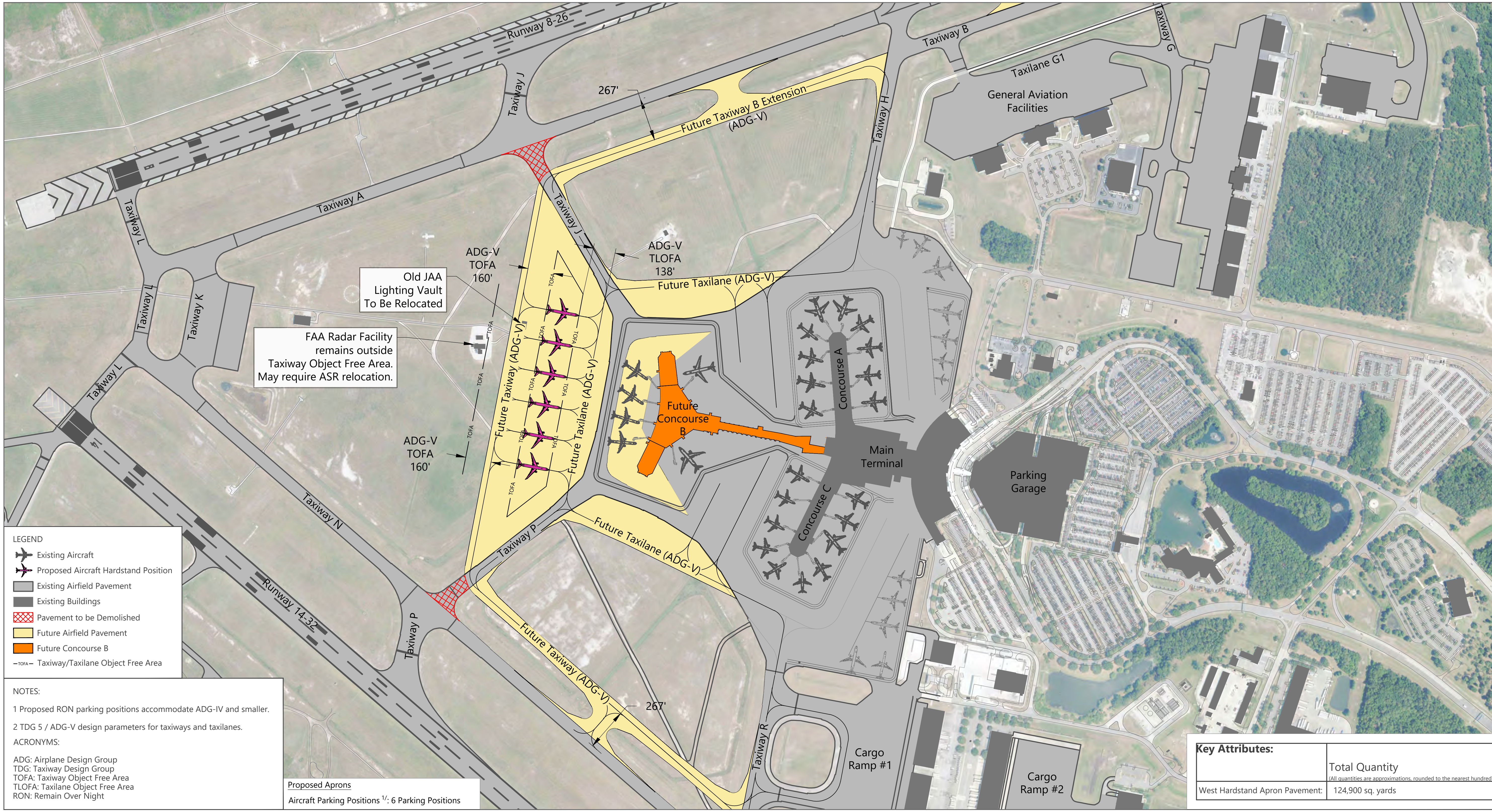

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, January 2019 (RON aircraft parking positions); Ricondo & Associates, Inc., March 2019 (existing airfield).

NORTH 0 600 ft.

EXHIBIT 5-14

AIRCRAFT HARDSTAND PARKING ALTERNATIVE 3

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-14_Aircraft Hardstand Parking - Alternative 3.dwgLayout: Exhibit 5-10 Plotted: Jan 30, 2020, 03:22PM

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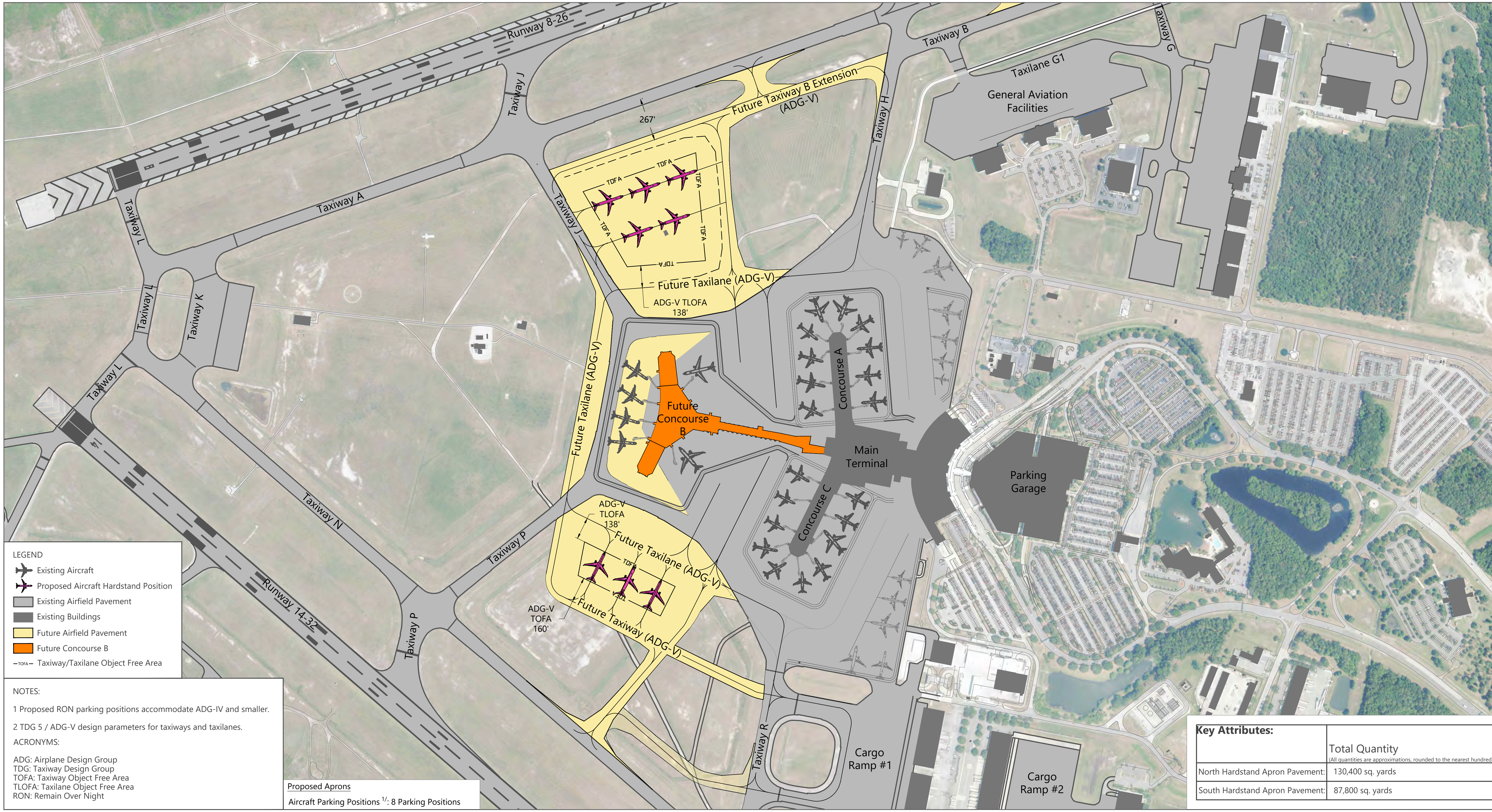

Key Attributes:	Total Quantity (All quantities are approximations, rounded to the nearest hundred)
North Hardstand Apron Pavement:	130,400 sq. yards
South Hardstand Apron Pavement:	87,800 sq. yards

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, January 2019 (RON aircraft parking positions); Ricondo & Associates, Inc., March 2019 (existing airfield); Ricondo & Associates, Inc., March 2019 (future airfield alternatives).

NORTH 0 600 ft.

EXHIBIT 5-15

AIRCRAFT HARDSTAND PARKING
ALTERNATIVE 4

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-15_Aircraft Hardstand Parking - Alternative 4.dwgLayout: Exhibit 5-10 Plotted: Jan 30, 2020, 03:24PM

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TABLE 5-2 AIRCRAFT HARDSTAND PARKING EVALUATION MATRIX

	OVERALL RANKING	INDIVIDUAL RANKINGS						
		CONSTRUCTION COSTS	REQUIRED CAPACITY/ CAPABILITY	GEOMETRY IMPACTS	IMPLEMENTATION COMPLEXITY	OPERATIONAL FLEXIBILITY	IMPACTS ON FACILITIES	JAA REQUIREMENTS
Alternative 1	**1**	4	1	1	3	1	2	1
Alternative 2	**3**	1	2	3	2	2	2	3
Alternative 3	**2**	2	3	2	1	3	1	2
Alternative 4	**4**	3	4	4	4	4	2	4

NOTE:
1 Scoring is ranked 1 through 4 (1 is Very Minimal Impact and 4 is the Highest Impact).

LEVEL OF IMPACT	DESIGNATED COLOR
Very Minimal Impact	
Minimal Impact	
Moderate Impact	
High Impact	

SOURCE: Ricondo & Associates, Inc., May 2019.

5.3.3.4 PREFERRED AIRCRAFT HARDSTAND PARKING ALTERNATIVE

Evaluation of the alternatives resulted in Alternative 1 achieving the best overall ranking and is identified as the preferred aircraft hardstand parking alternative. This alternative was identified as the preferred alternative due to its ability to efficiently expand the airport while providing flexibility to airfield operations to accommodate the future activity demand.

5.3.3.5 BUS GATE ALTERNATIVES

During the preparation of this Master Plan Update, JAA initiated design services for the proposed Concourse B. However, it is anticipated that gate demand will exceed gate capacity before the additional Concourse B gates are operational in PAL 1. To provide for aircraft parking capability, the aircraft hardstand alternatives discussed in the previous section were prepared. The aircraft hardstand aprons will allow for the boarding and deplaning of passengers onto and off aircraft from the hardstand in lieu of a contact gate. During these “hardstand operations” passengers will need to be bussed to/from the terminal and aircraft which requires an access point in the terminal for passengers to traverse to/from a bus. **Appendix C** provides three bus gate alternatives illustrating options for passengers to traverse from the concourse level of the terminal to/from the ramp level to access a bus. These concepts were not requested in the Master Plan Update scope of work and not were not evaluated in this chapter. The bus gate concepts were provided to offer JAA several options that could be implemented quickly and inexpensively to support hardstand operations during or prior to Concourse B construction.

5.4 LANDSIDE ALTERNATIVES

Landside alternatives, including terminal curb front and rental car facilities, were not developed as part of this Master Plan. JAA contracted Walker Consultants to prepare an Airport Parking Study to address landside access, ground transportation needs, and parking expansion. This Parking Study can be found in Appendix B of this Master Plan.

5.5 AIRPORT AND AIRLINE SUPPORT FACILITIES ALTERNATIVES

5.5.1 AIR CARGO FACILITIES

The existing air cargo area is located southeast of the terminal apron area and north of the approach end of Runway 32. This area encompasses approximately 24 acres. A second location for air cargo development was identified by JAA prior to this Master Plan Update and is located on the north side of the Airport, adjacent to the approach end of Runway 26, based on discussions with JAA.

While air cargo operations have a large presence at JAX, there was minimal growth in air cargo operations and air cargo tonnage projected in the Aviation Activity Forecast. As a result, the air cargo development alternatives proposed in this chapter are not driven by demand. These alternatives were developed to provide JAA with feasible development options should air cargo grow at a greater rate than projected at JAX. Alternatives were prepared for three types of cargo operations, which include: Multiple Tenant, Integrator, and Online Retailer (e-commerce). Alternatives were developed to provide additional cargo aircraft apron area, cargo buildings, landside automobile parking and roadway access.

5.5.1.1 AIR CARGO - ALTERNATIVE 1: MULTI-TENANT CONCEPT - EXISTING CARGO AREA

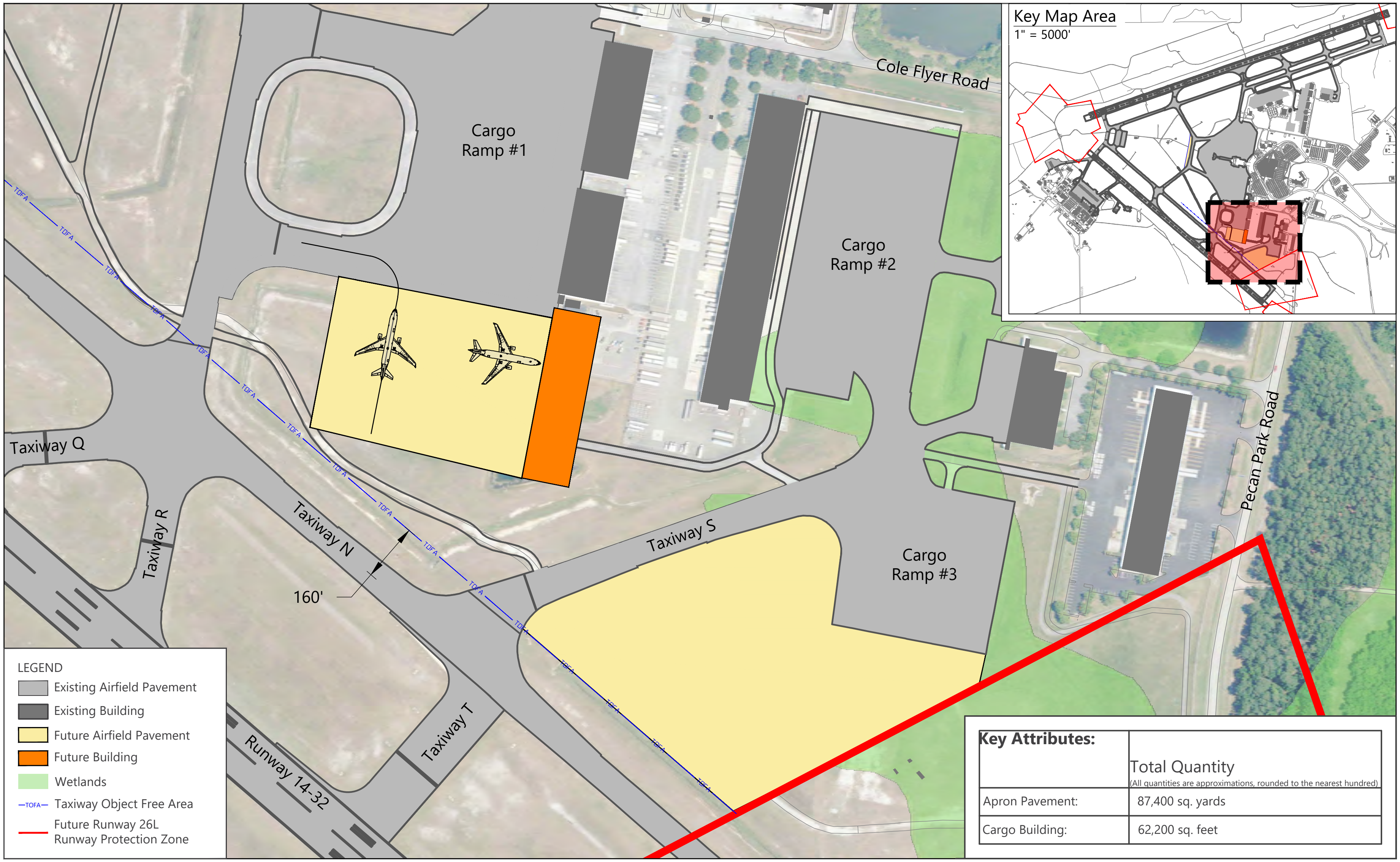
Alternative 1, proposes one additional multi-tenant cargo building comprising 62,200 square feet, similar to Cargo Buildings #1 and #2. This expansion alternative is depicted on **Exhibit 5-16** and includes the expansion of Cargo Ramp #1 to provide approximately 28,800 square yards of additional apron, south of the existing apron. As part of this alternative, an additional 58,600 square yards of apron pavement will extend Cargo Ramp #3 east of existing Taxiway S to the southeast and parallel to Taxiway N for a total of 87,400 square yards of apron pavement. Both proposed apron pavements will remain outside of the existing Taxiway N object free area and future RPZs to comply with airfield design requirements.

5.5.1.2 AIR CARGO EXPANSION - ALTERNATIVE 2: MULTI-TENANT CONCEPT - NORTH CARGO AREA

Alternative 2 includes three different variations of multi-tenant cargo development in the north cargo area, which is located in the northeast quadrant of the airfield, south of existing Taxiway B and east of existing Taxiway F. All three options are depicted on **Exhibit 5-17**. This alternative provides three concepts to reflect potential site orientations that are modular and easily phased as well as provide the efficient vehicular landside access. It should also be noted that all three concepts would be constructed over existing wetlands.

Concept 1 depicts a multiple tenant layout that includes five cargo buildings totaling approximately 191,500 square feet. These facilities are located southeast of the proposed apron that measures approximately 88,000 square yards. The apron would be accessible from the airfield via existing Taxiways C and F. The landside area includes truck docks and automobile parking, accessed by a nonpublic roadway extending from the existing United States Postal Service – Air Mail Facility roadway. This nonpublic roadway is located along Pecan Park Road approximately three-quarters of a mile north of Barnstormer Road.

Concept 2 also illustrates a multiple tenant layout that includes six warehouse facilities totaling approximately 229,900 square feet with a centralized ramp measuring approximately 90,800 square yards. Airfield access to this site would be provided by a taxiway connection extending south from existing Taxiway B. The landside access would be provided by a new roadway that would extend from Pecan Park Road. As shown in Exhibit 5-17, this concept could be constructed in two separate phases or as one phase.



Key Attributes:	Total Quantity (All quantities are approximations, rounded to the nearest hundred)
Apron Pavement:	87,400 sq. yards
Cargo Building:	62,200 sq. feet

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 400 ft.

EXHIBIT 5-16

AIR CARGO EXPANSION - ALTERNATIVE 1
MULTI-TENANT CONCEPT - EXISTING CARGO AREA

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-16_Air Cargo Facilities - Alternative 1.dwgLayout: Exhibit 5-12 Plotted: Jan 30, 2020, 03:28PM

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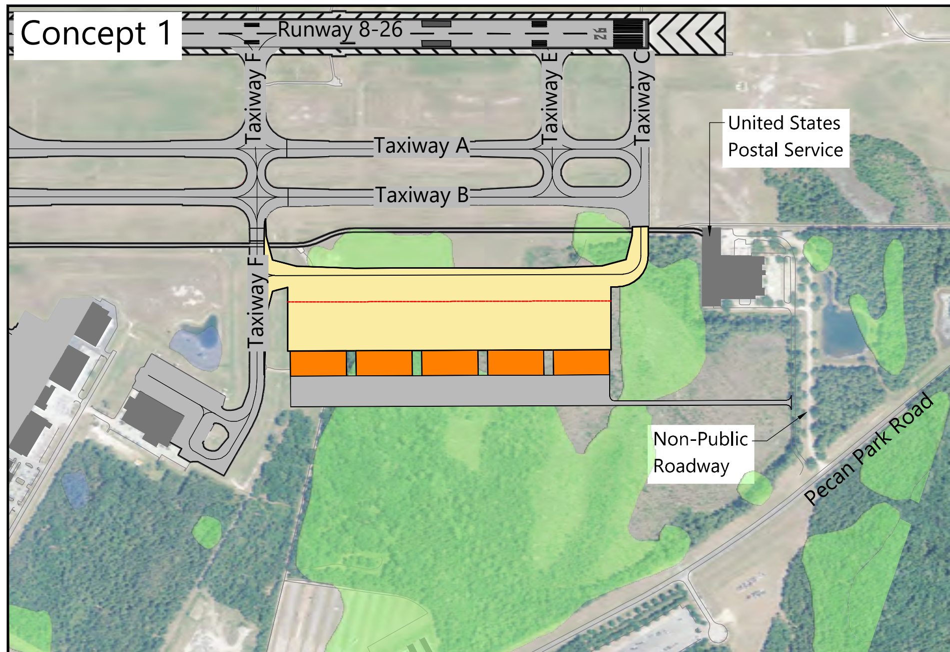

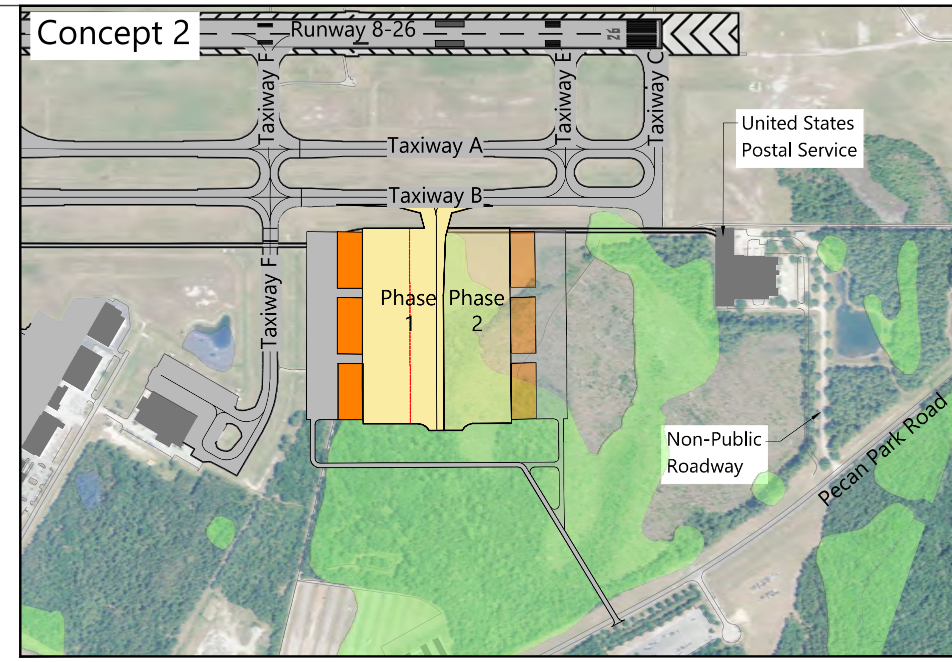

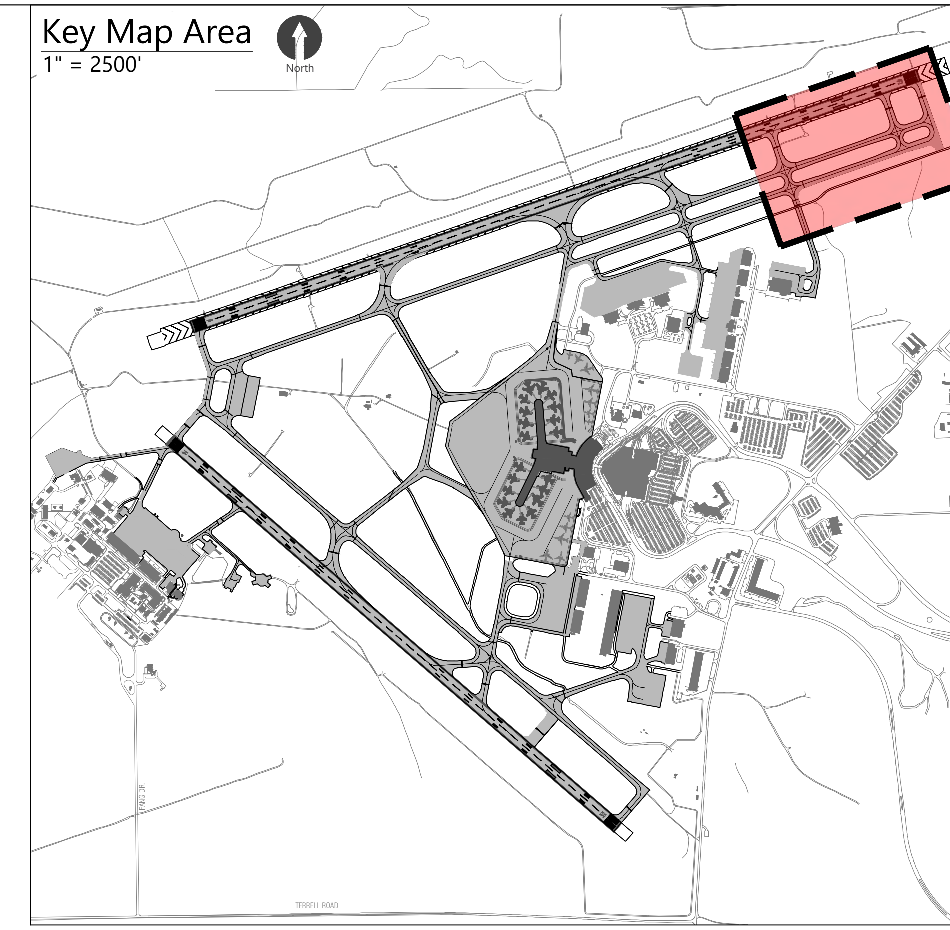

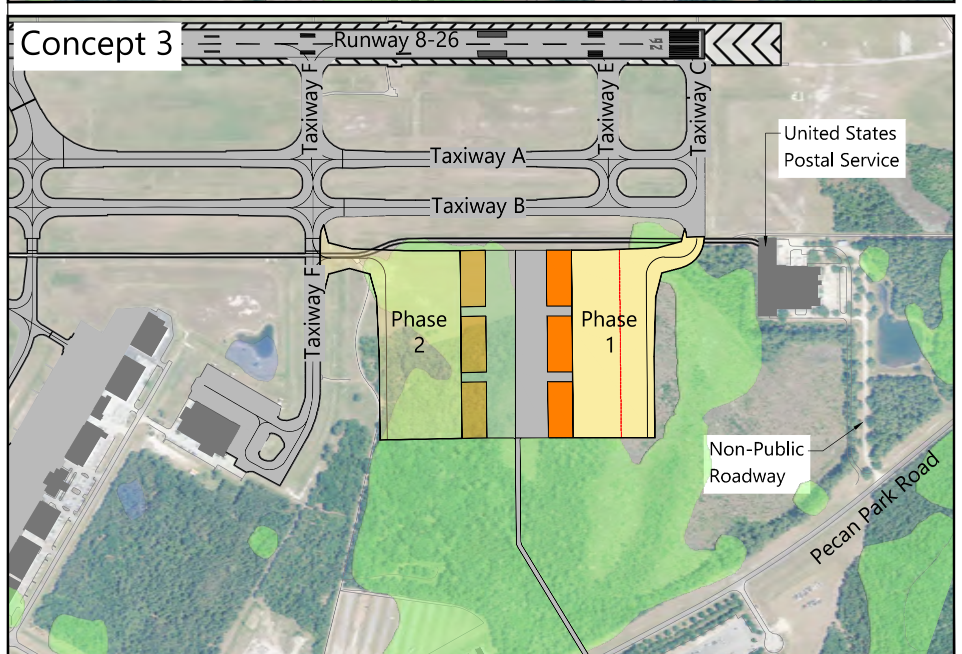

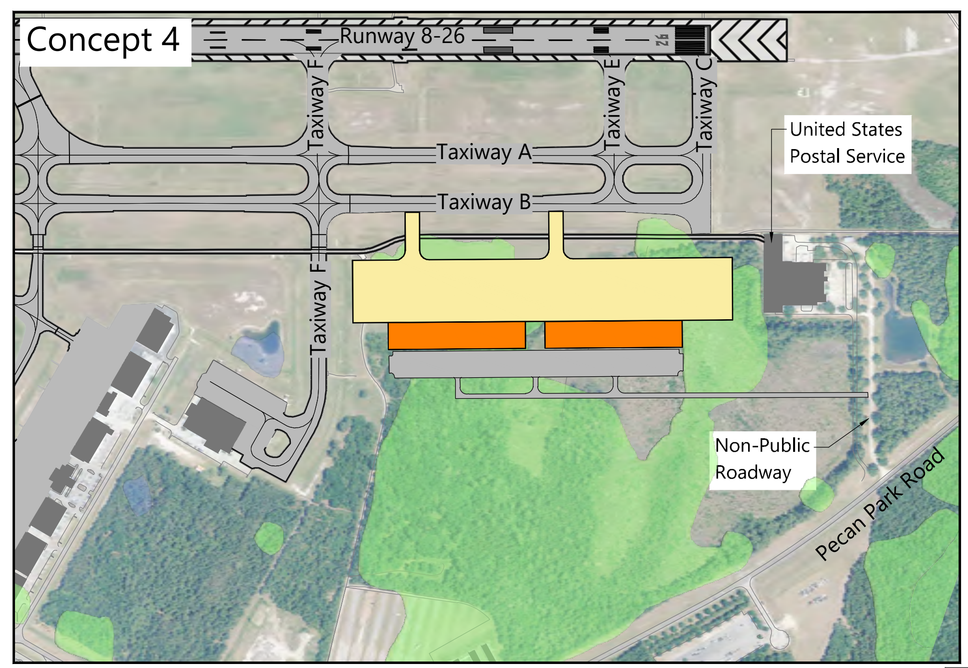

LEGEND
- Future Airfield Pavement
- Cargo Warehouse/Building
- Wetlands
- Taxiway/Taxilane Centerline
- Landside Parking/Roadway

Key Attributes:	Total Quantity (All quantities are approximations, rounded to the nearest hundred)			
	1	2	3	4
Apron Area:	88,000 sq. yards	90,800 sq. yards	103,100 sq. yards	75,700 sq. yards
Cargo Building:	191,500 sq. feet	229,900 sq. feet	229,900 sq. feet	200,200 sq. feet
Landside Pavement:	31,900 sq. yards	45,900 sq. yards	40,800 sq. yards	30,100 sq. yards

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (future airfield alternatives).

NORTH 0 1,000 ft.

EXHIBIT 5-17

AIR CARGO EXPANSION - ALTERNATIVE 2
MULTI-TENANT CONCEPTS - NORTH CARGO AREA

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-17_Air Cargo Facilities - Alternative 2.dwgLayout: Exhibit 5-13 Plotted: Jan 30, 2020, 03:30PM

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Concept 3 also shows a multiple tenant layout and has a similar layout to Concept 2 but proposes the cargo buildings to be constructed back-to-back versus on opposite sides of the apron. This layout includes six warehouse facilities totaling approximately 229,900 square feet. These facilities are adjacent to two separate aprons totaling to approximately 103,100 square yards which are accessed from the airside via existing Taxiway C. The landside area would be accessed by a new roadway that would extend from Pecan Park Road. As shown in Exhibit 5-18, this concept could also be constructed in phases.

Concept 4 shows a multiple tenant layout proposed by JAA. This concept includes two buildings parallel to Taxiway B that total to approximately 200,200 square feet. The facilities are adjacent to a large apron that connects to Taxiway B and totals to approximately 75,800 square yards. The landside area would be accessed by an extension of the nonpublic roadway leading to the United States Postal Service – Air Mail Facility. This nonpublic roadway is located along Pecan Park Road approximately three-quarters of a mile north of Barnstormer Road.

5.5.1.3 AIR CARGO EXPANSION - ALTERNATIVE 3: INTEGRATOR CONCEPT - NORTH CARGO AREA

The three cargo development concepts proposed in Alternative 3 are designed for an Integrator type facility that includes a long and narrow cargo building (a depth less than 150 feet) with an apron spanning the length of the building. The Integrator concepts are also intended for a single operator to utilize the proposed facilities. These concepts are illustrated on **Exhibit 5-18** and are proposed in the north cargo area south of existing Taxiway B and east of existing Taxiway F. These three concepts offer various site orientations to provide the best use of the existing airfield, allow for expandability over time, and provide efficient landside access. It should also be noted that all three concepts would be constructed over existing wetlands.

Concept 1 is an integrator layout that includes two large cargo buildings totaling approximately 215,900 square feet and are separated by a 79,300 square yard apron. The apron would be accessible via existing Taxiway B. Landside access would be provided via an extension from Pecan Park Road. As shown in Exhibit 5-18, this concept could be constructed in two phases.

Concept 2 is the inverse of Concept 1 with two large cargo buildings also totaling to approximately 215,900 square feet. This concept requires two separate apron areas that total approximately 96,400 square yards. Landside access would be provided via an extension from Pecan Park Road. As shown in Exhibit 5-18, this concept could also be constructed in two phases.

Concept 3 proposes an integrator layout that is oriented parallel to Taxiway B. This concept includes one large cargo building approximately 224,300 square feet in size. The proposed apron is approximately 86,100 square yards and is adjacent to Taxiway B. Airfield access would be provided via Taxiways C and F. Landside access would be provided by a nonpublic roadway that currently provides access to the United States Postal Service – Air Mail Facility. This nonpublic roadway is located along Pecan Park Road approximately three-quarters of a mile north of Barnstormer Road.

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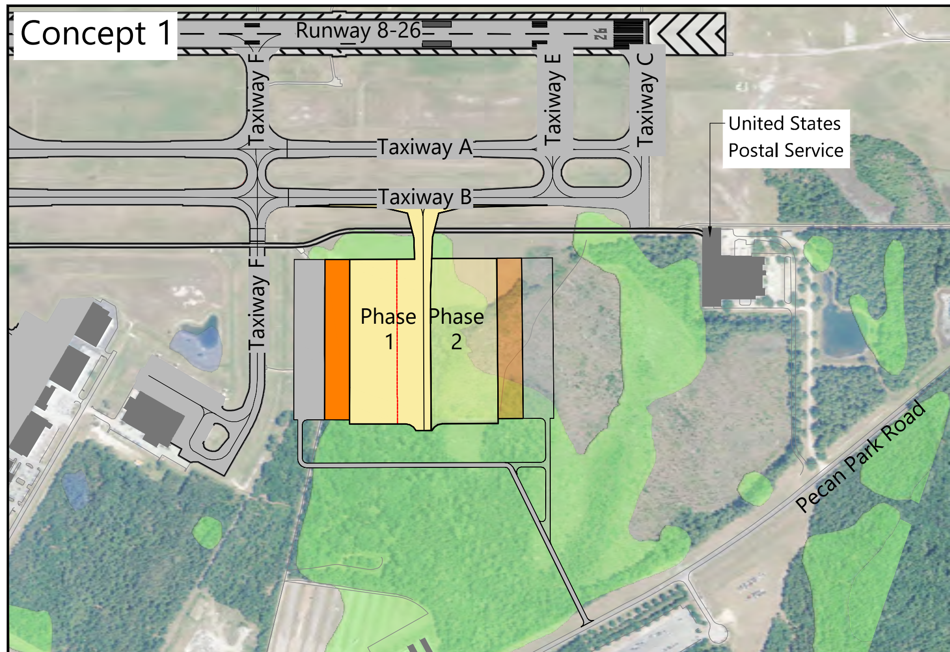

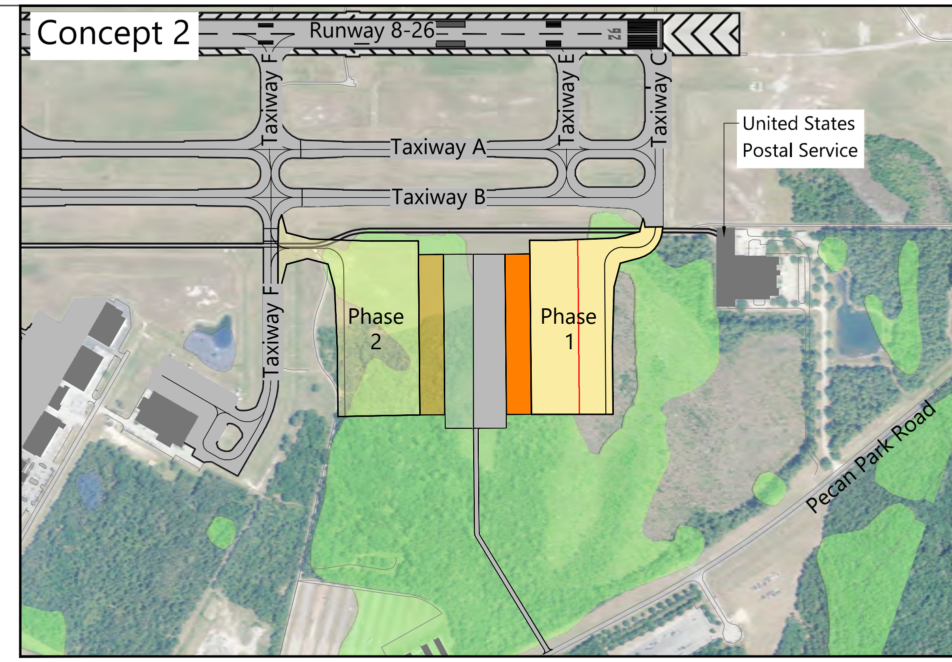

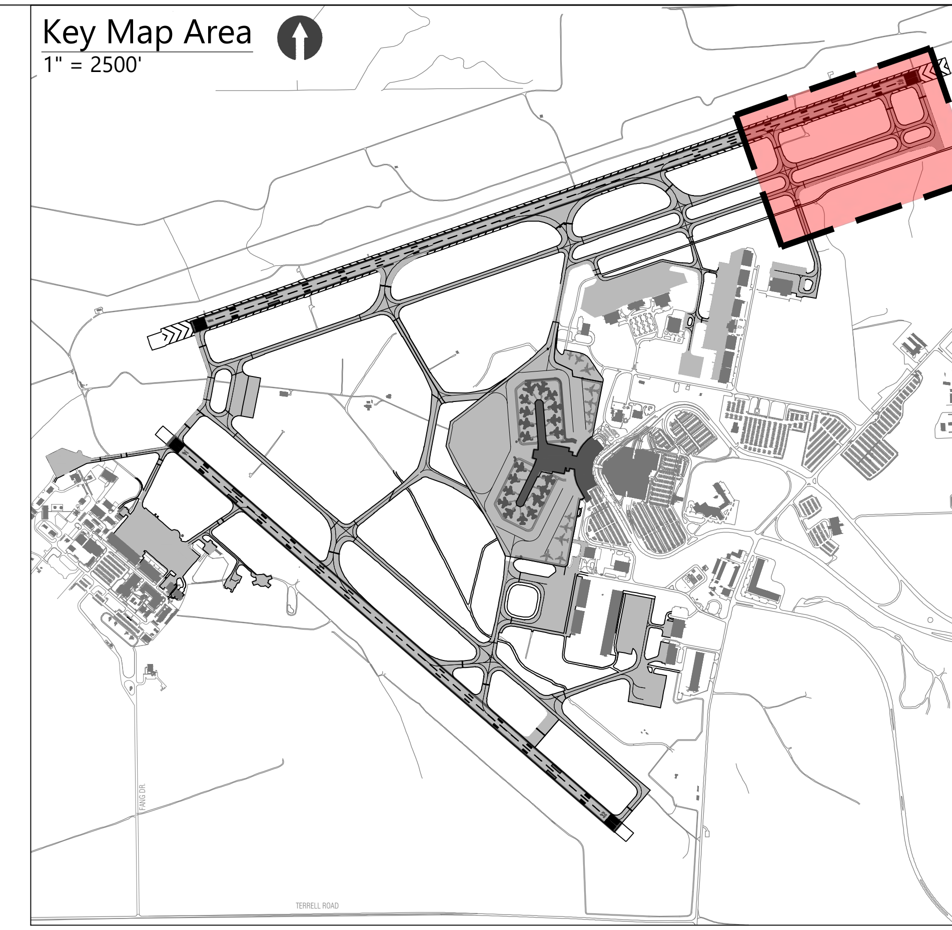

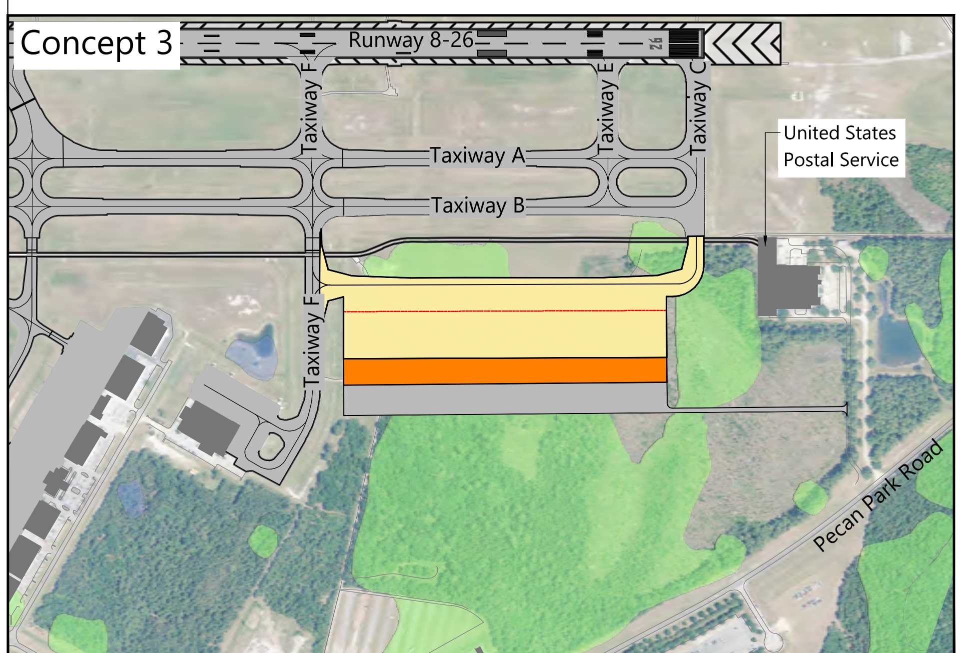

LEGEND
- Future Airfield Pavement
- Cargo Warehouse/Building
- Wetlands
- Taxiway/Taxilane Centerline
- Landside Parking/Roadway

Key Attributes:	Total Quantity (All quantities are approximations, rounded to the nearest hundred)		
	1	2	3
Apron Area:	79,300 sq. yards	96,400 sq. yards	86,100 sq. yards
Cargo Building:	215,900 sq. feet	215,900 sq. feet	224,300 sq. feet
Landside Pavement:	37,800 sq. yards	35,300 sq. yards	32,300 sq. yards

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (future airfield alternatives).

NORTH 0 1,000 ft.

EXHIBIT 5-18

AIR CARGO EXPANSION - ALTERNATIVE 3
INTEGRATOR CONCEPTS - NORTH CARGO AREA

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-18_Air Cargo Facilities - Alternative 3.dwgLayout: Cargo Alts 3 Plotted: Jan 30, 2020, 03:39PM

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5.5.1.4 AIR CARGO EXPANSION - ALTERNATIVE 4: ONLINE RETAILER (E-COMMERCE FACILITY) - NORTH CARGO AREA

Alternative 4, as depicted on **Exhibit 5-19**, proposes an online retailer (e-commerce) type facility that would require a large area to store significant volumes of cargo with a dedicated apron. Examples of this type of retailer might include Amazon or Wayfair. The site for this alternative is the north cargo area and consists of one large warehouse approximately 600,000 square feet in size. The apron is 88,600 square yards and is parallel to Taxiway B. Airfield access would extend from Taxiways C and F and from a new taxiway connector extending from Taxiway B. It should also be noted that this alternative would be constructed over existing wetlands.

Landside access would be provided by a new roadway extending from Pecan Park Road. The new roadway would be located approximately 400 feet southwest of the United States Postal Service – Air Mail Facility.

5.5.1.5 AIR CARGO EXPANSION – PREFERRED ALTERNATIVE

After reviewing the preliminary cargo development concepts, JAA staff determined their preferred cargo expansion would include cargo development Alternative 1, located at the existing cargo area, as well as cargo development in the north cargo area. JAA's preferred development plan for the north cargo area is the cargo layout provided by JAA staff and identified in this chapter as Air Cargo Expansion – Alternative 2, Concept 4. Therefore, the cargo development concepts were not evaluated, and the preferred north cargo development alternative carried forward in the Master Plan is the layout provided by JAA. **Exhibit 5-20** illustrates JAA's preferred cargo concepts: cargo expansion Alternative 1 and Alternative 2, Concept 4.

5.5.2 GENERAL AVIATION FACILITIES

The general aviation facility alternatives presented in this section were not developed based on projected demand but were provided in the event a private developer becomes interested in constructing corporate hangars or an additional FBO operator decides to enter the market. **Exhibit 5-21** illustrate the GA development alternatives. These alternatives assume the focus of GA development at JAX would cater to FBO operations or corporate business jets and have been sized accordingly to allow for a mix of common corporate jet aircraft.

5.5.2.1 GENERAL AVIATION FACILITIES – ALTERNATIVE 1

Alternative 1 proposes incremental development to extend from the end of Taxiway F. The layout includes ten corporate hangars with independent aprons. The hangar space for the ten hangars totals approximately 177,000 square feet and the ten aprons total approximately 32,000 square yards. Landside access would be provided from Barnstormer Road and Yonge Drive.

5.5.2.2 GENERAL AVIATION FACILITIES – ALTERNATIVE 2

Alternative 2 proposes extending Taxiway F approximately 1,100 linear feet to the south. This concept provides a split development on the east and west sides of Taxiway F. This layout includes ten corporate hangars totaling to approximately 216,000 square feet and with approximately 62,700 square yards of apron space. Landside access to the east side development would be provided via a new entrance drive extending from Barnstormer Road. Yonge Drive would provide access to the west side development area.

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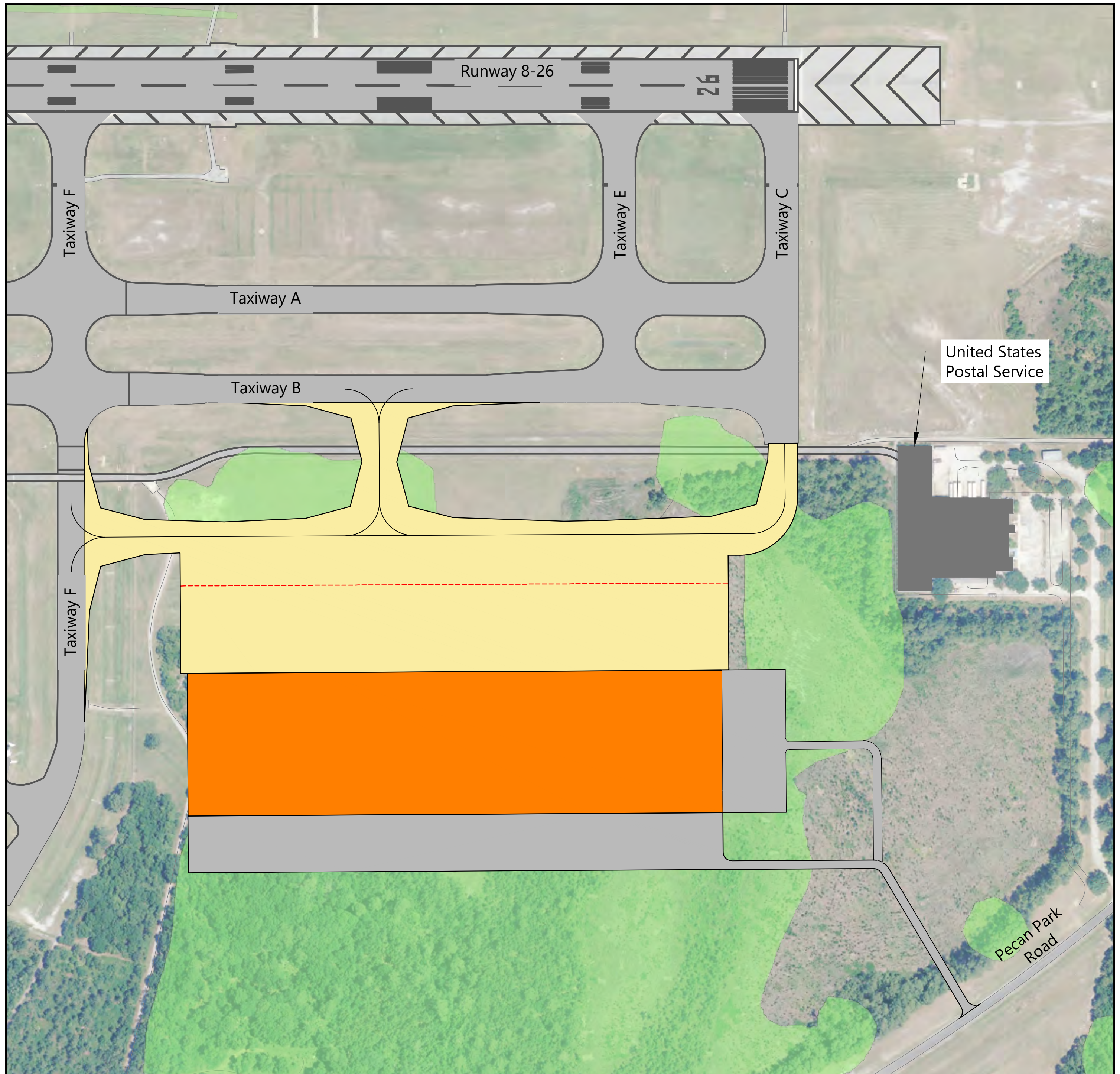

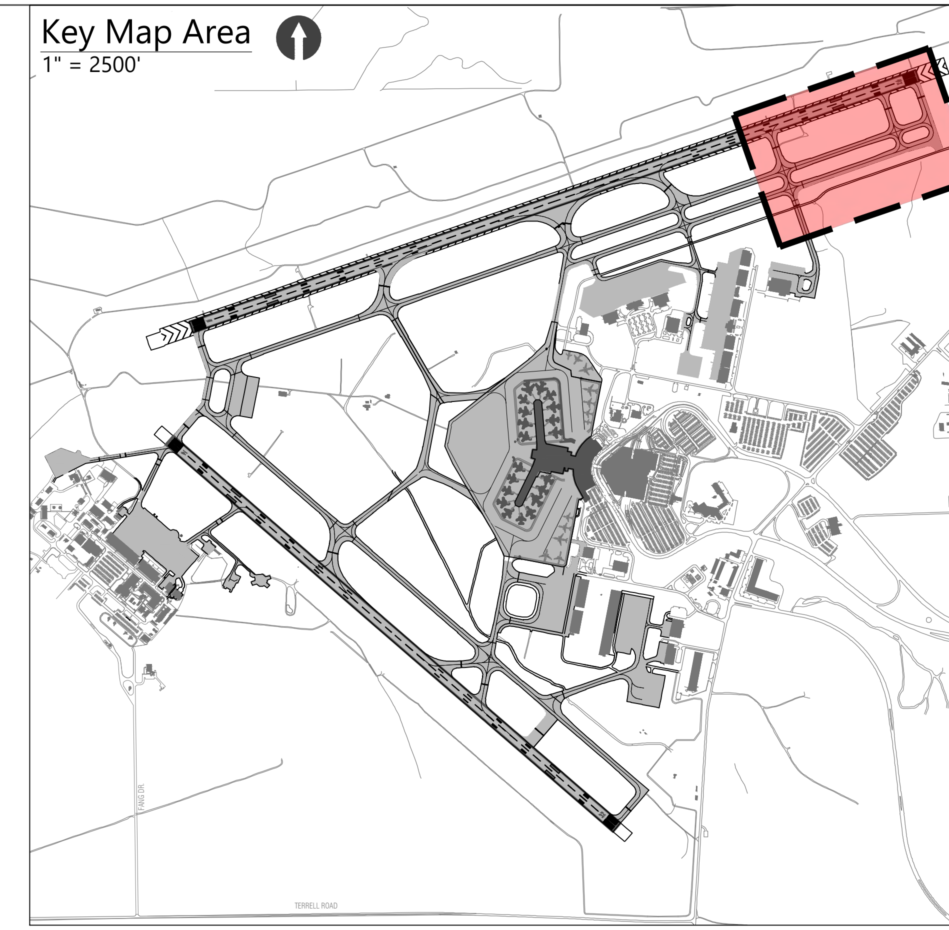

LEGEND
- Future Airfield Pavement
- Cargo Warehouse/Building
- Wetlands
- Taxiway/Taxilane Centerline
- Landside Parking/Roadway

Key Attributes:	Total Quantity (All quantities are approximations, rounded to the nearest hundred)
Apron Area:	88,600 sq. yards
Cargo Building:	600,000 sq. feet
Landside Pavement:	38,600 sq. yards

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (future airfield alternatives).

NORTH 0 400 ft.

EXHIBIT 5-19

AIR CARGO EXPANSION - ALTERNATIVE 4
ONLINE RETAILER (E-COMMERCE FACILITY) - NORTH CARGO AREA

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-19_Air Cargo Facilities - Alternative 4.dwgLayout: Cargo Alts 1 Plotted: Jan 30, 2020, 03:44PM

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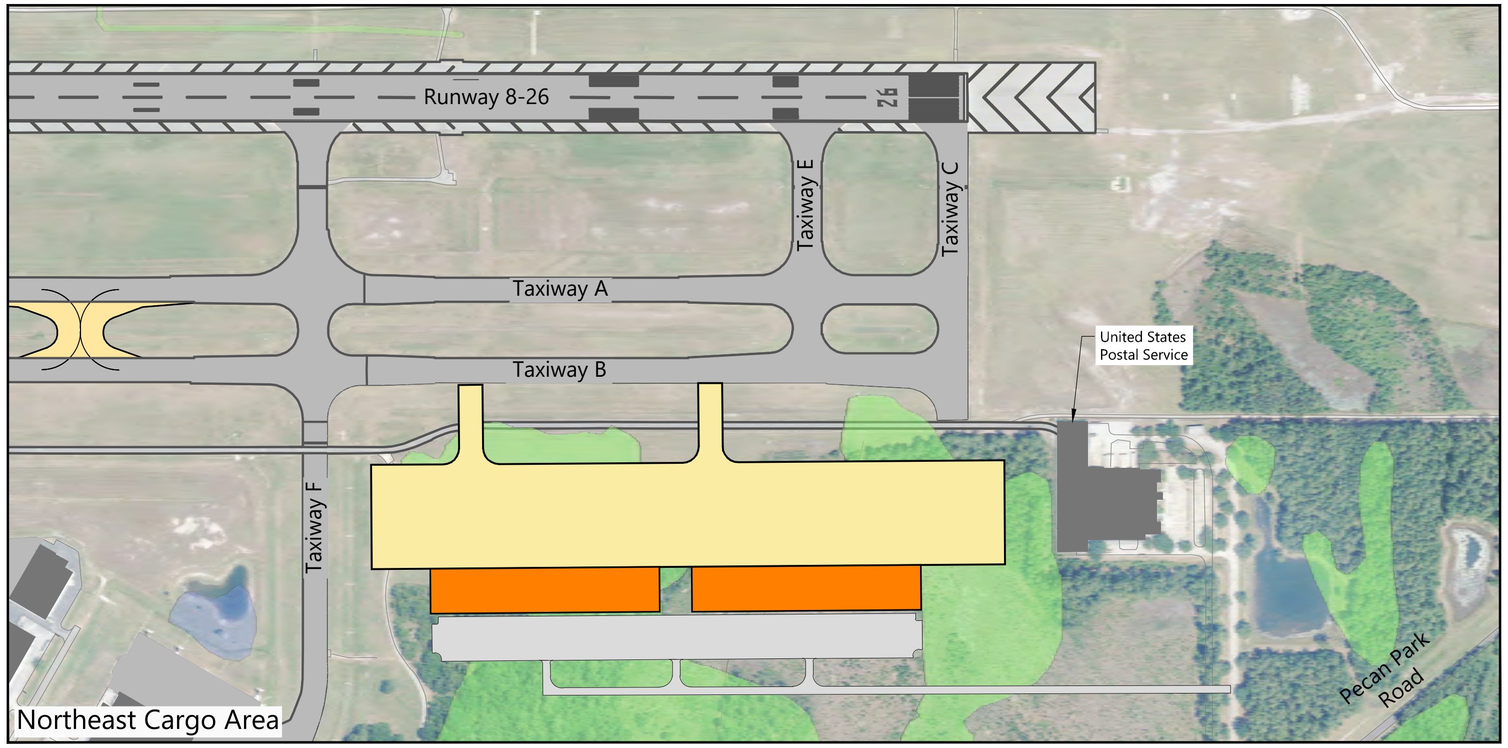

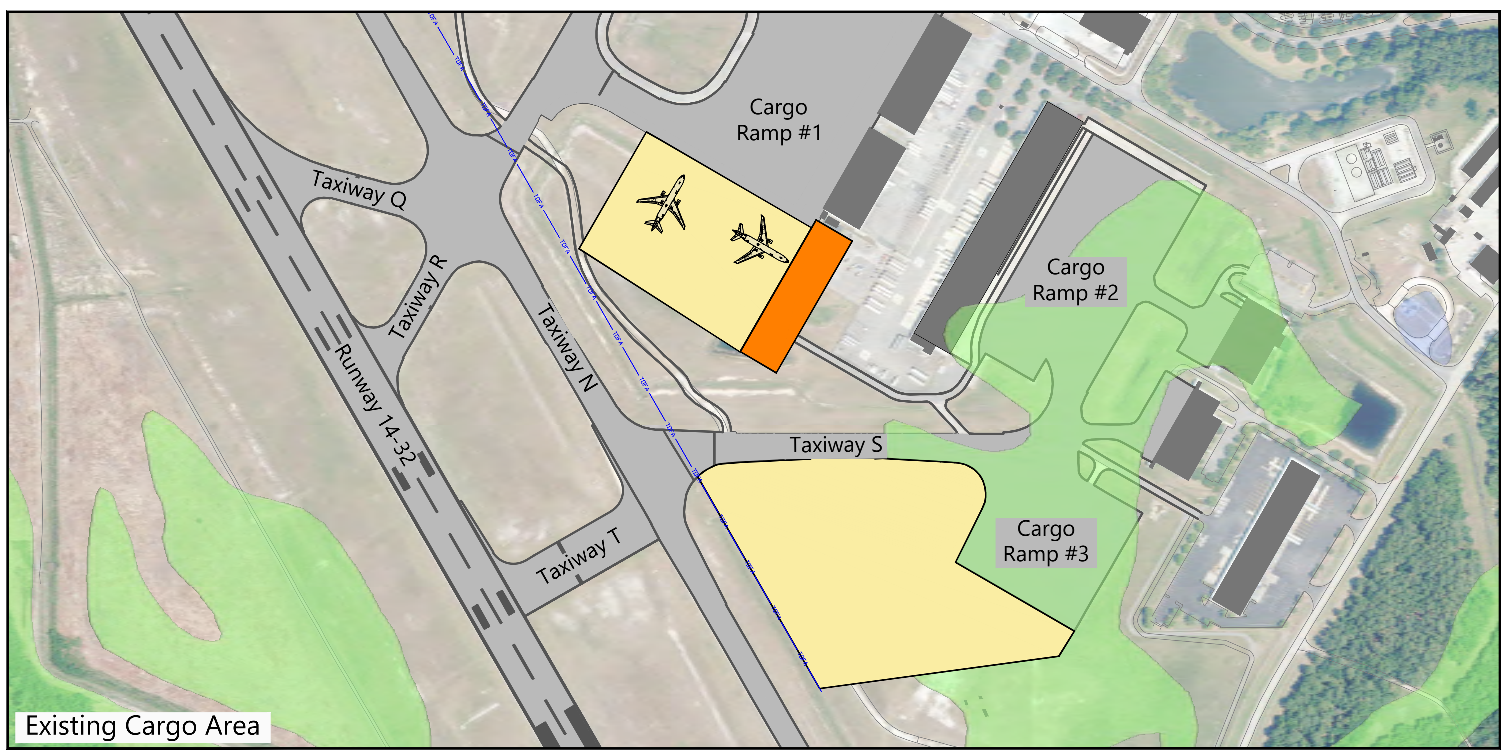

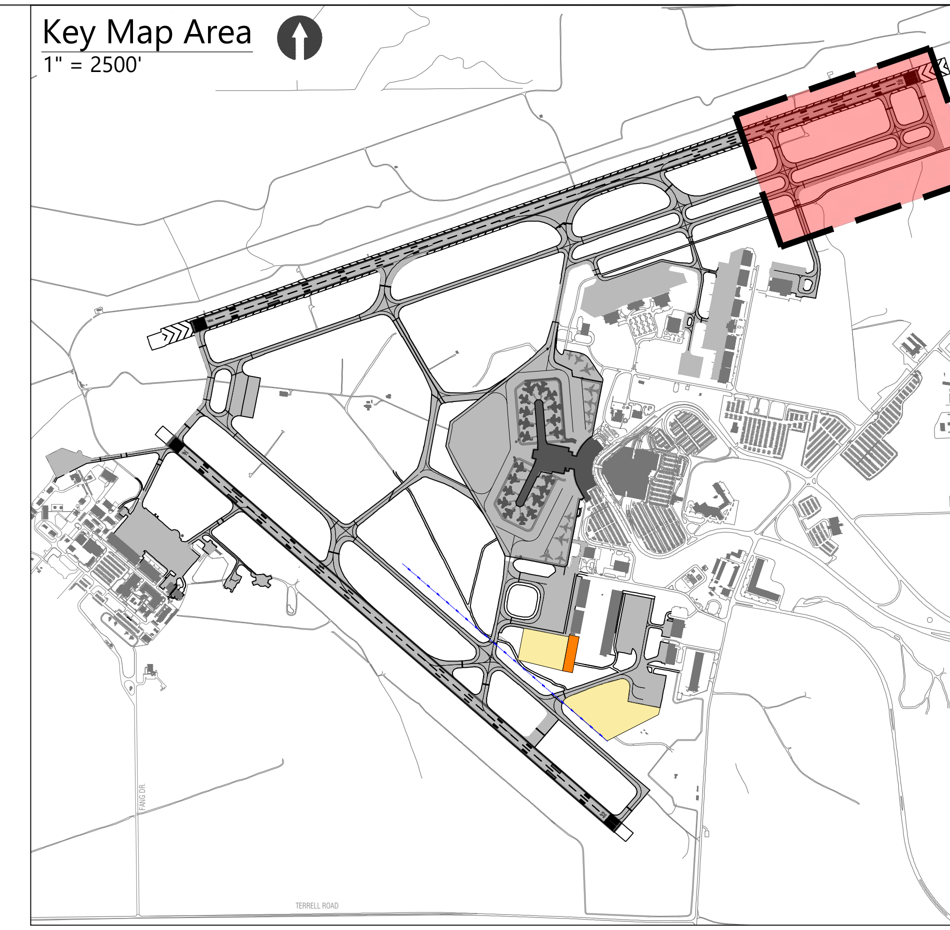

LEGEND
- Future Airfield Pavement
- Cargo Warehouse/Building
- Wetlands
- Landside Parking/Roadway

Northeast Cargo Area

Key Attributes:	Total Quantity (All quantities are approximations, rounded to the nearest hundred)
Apron Area:	75,700 sq. yards
Cargo Building:	200,200 sq. feet
Landside Pavement:	30,100 sq. yards

Existing Cargo Area

Key Attributes:	Total Quantity (All quantities are approximations, rounded to the nearest hundred)
Apron Pavement:	87,400 sq. yards
Cargo Building:	62,200 sq. feet

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Jacksonville Aviation Authority, November 2018 (future airfield alternative).

NORTH 0 600 ft.

EXHIBIT 5-20

AIR CARGO EXPANSION
PREFERRED ALTERNATIVES

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-20_Air Cargo Facilities - Preferred Alternatives.dwgLayout: Cargo Alts 1 Plotted: Jan 30, 2020, 03:46PM

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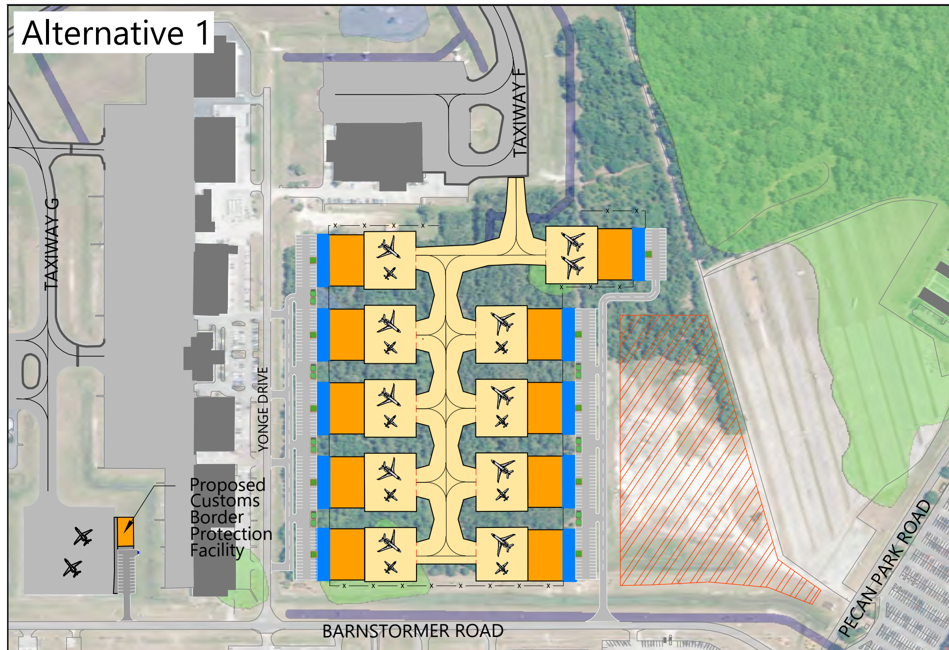
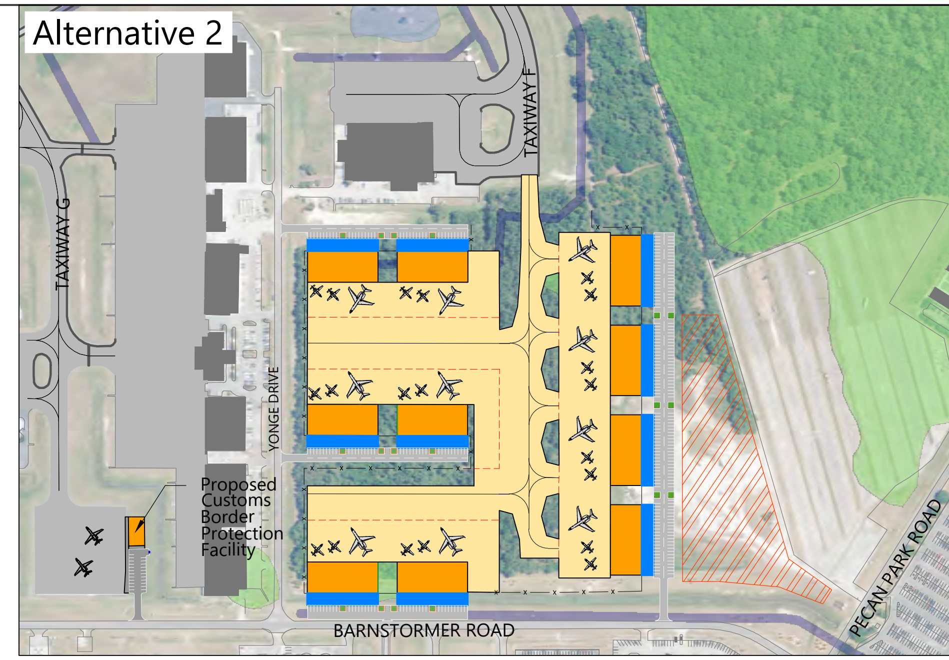
Alternative 1

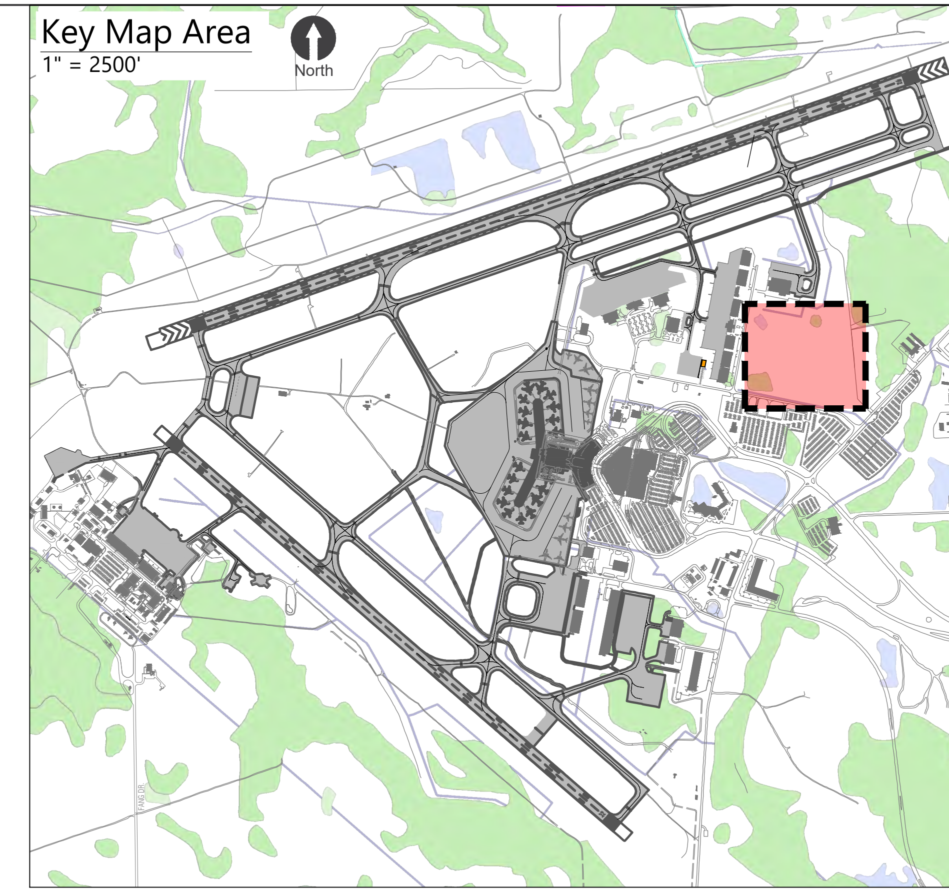


Alternative 2



Key Map Area

1" = 2500'



LEGEND

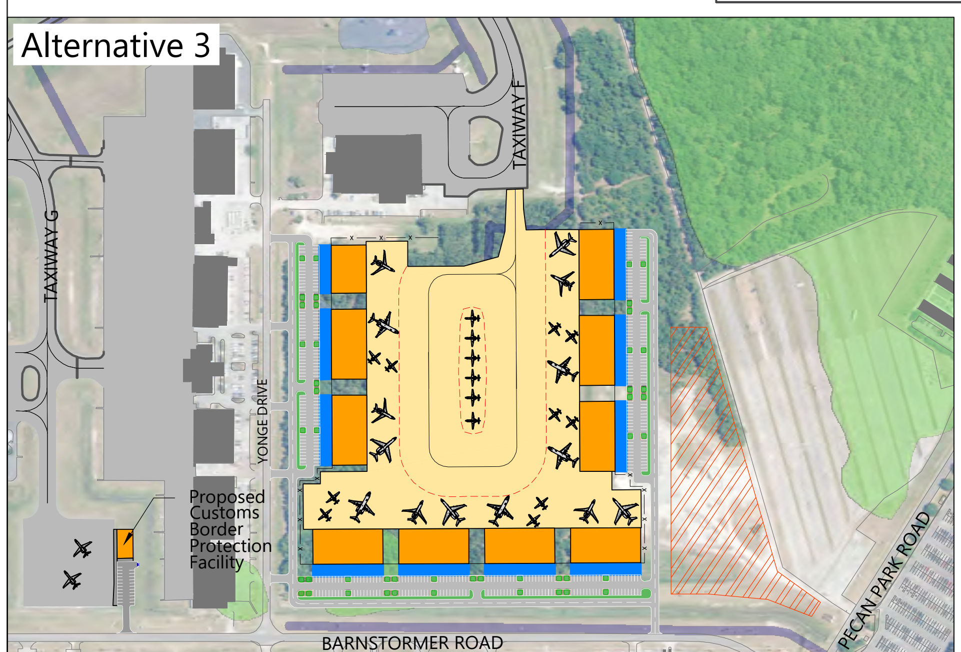
- Proposed Pavement
- Hangar/FBO Space
- Office
- Wetlands
- Drainage
- Aviation/Non-Aviation Related Development
- Taxiway/Taxilane Centerline
- Taxiway/Taxilane Object Free Area
- Key Map Area
- Proposed Fence Line

Key Attributes: Total Quantity

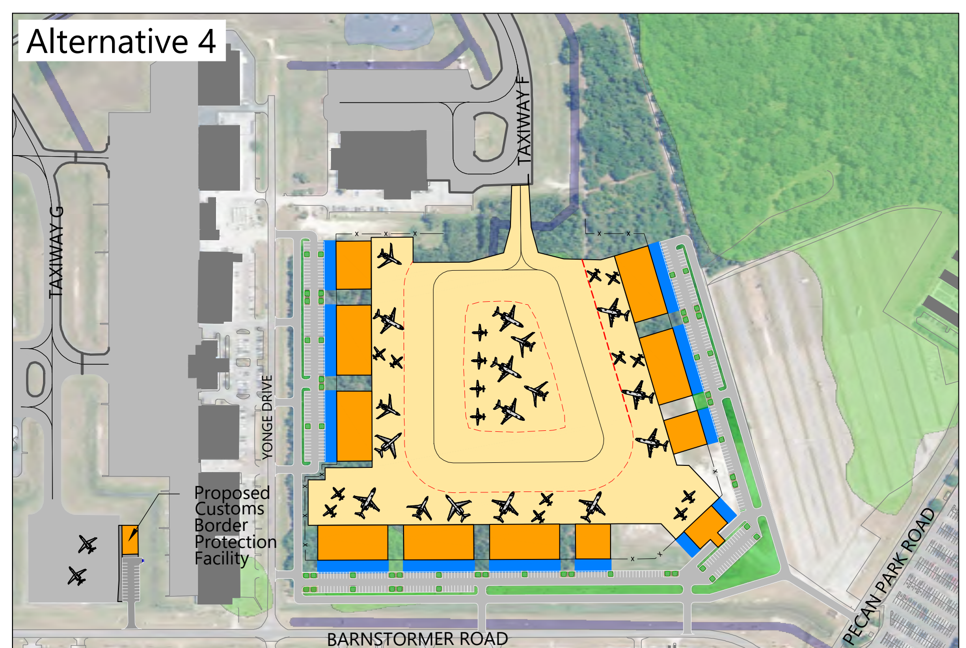
(All quantities are approximations, rounded to the nearest hundred)

	1	2	3	4	5
Parking Spaces:	300	314	372	408	86
Hangar Space:	177,000 sq. feet	216,000 sq. feet	239,000 sq. feet	217,700 sq. feet	83,100 sq. feet
Apron:	32,000 sq. yards	62,700 sq. yards	72,600 sq. yards	89,500 sq. yards	25,300 sq. yards

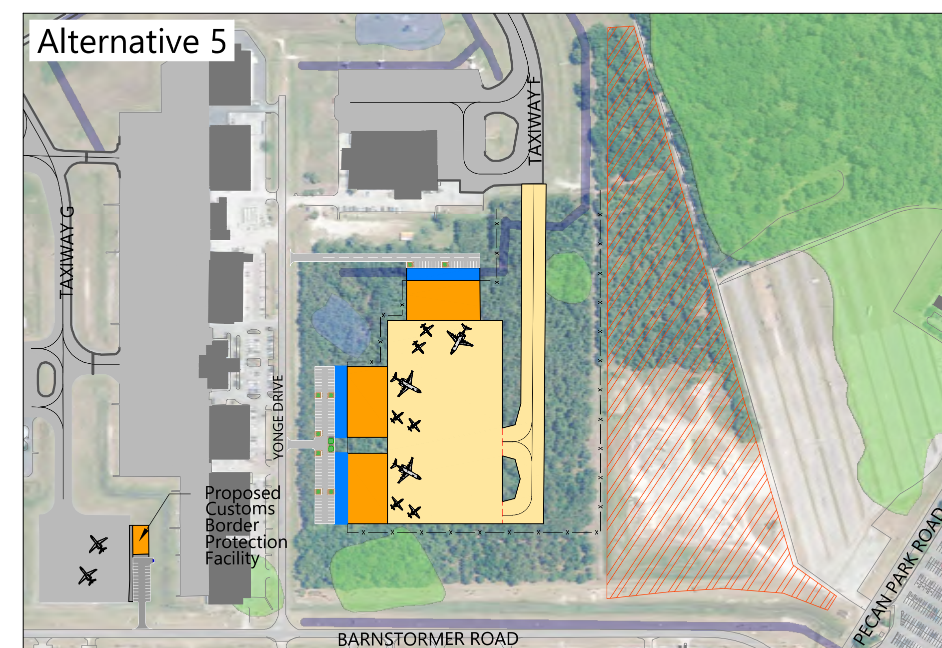
Alternative 3



Alternative 4



Alternative 5



SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (future airfield alternatives).

NORTH 0 600 ft.

EXHIBIT 5-21

GENERAL AVIATION DEVELOPMENT ALTERNATIVES

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-21_GA_Development_Alternatives 1-5.dwgLayout: Overview Plotted: Jan 30, 2020, 03:50PM

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5.5.2.3 GENERAL AVIATION FACILITIES – ALTERNATIVE 3

Alternative 3 provides a large, shared apron extending from the end of Taxiway F. This layout includes ten corporate hangars totaling approximately 239,000 square feet located on three sides of the apron. The proposed apron is approximately 72,600 square yards in size. Landside access to the east and south side developments would be provided via a new entrance drive extending from Barnstormer Road and landside access to the west side provided via Yonge Drive.

5.5.2.4 GENERAL AVIATION FACILITIES – ALTERNATIVE 4

Alternative 4 is a variation of Alternative 3. This layout provides 11 corporate hangars totaling approximately 217,700 square feet with a proposed apron area of approximately 89,500 square yards. Landside access to the east side development is provided from Pecan Park Road and the south side can be accessed from both Pecan Park Road and Barnstormer Road. The west side development would be accessed from Yonge Drive; however, a proposed roadway extends around all three sides.

5.5.2.5 GENERAL AVIATION FACILITIES – ALTERNATIVE 5

Alternative 5 proposes an extension of Taxiway F approximately 1,000 feet to the south, which joins to a 25,300 square yard apron. This alternative proposes three corporate hangars totaling to approximately 83,100 square feet and are located on the north and west sides of the apron. Landside access to all three hangars would be provided by Yonge Drive. This proposed development remains outside existing wetland areas.

5.5.2.6 GENERAL AVIATION FACILITIES – PREFERRED ALTERNATIVE

JAA staff reviewed the GA facilities development alternatives and identified Alternative 2 as their preferred alternative. Per JAA direction, Alternative 2 has been adopted as the preferred GA development alternative.

5.5.3 CUSTOMS AND BORDER PROTECTION GENERAL AVIATION FACILITY ALTERNATIVES

Due to the growth in international General Aviation (GA) activity at JAX, there is a need to construct a Customs and Border Protection General Aviation Facility (GAF) to process international GA passengers. The overall and individual sites are identified on **Exhibit 5-22** and described in detail below.

To define the physical characteristics of the proposed international arrivals processing facility at the Airport, the General Aviation Facilities Design Standard 90 Percent Draft was used to satisfy the U.S Customs and Border Protection (CBP) requirements. The general aviation demand, including aircraft size and passenger volume, at JAX were the primary drivers of the CBP general aviation facility (GA facility) and apron requirements. For further details of the GA Facility Requirements, refer to Chapter 4.

The proposed GA facility site includes several components that contribute to the overall size of the site. These components included the CBP GA facility site and the GA facility, the aircraft apron as well as the employee and visitor automobile parking. As described in Chapter 5, the projected size requirement for each component of the site is based off the international GA demand.

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SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 400 ft.

EXHIBIT 5-22

UNITED STATES CUSTOMS AND BORDER PROTECTION
GENERAL AVIATION FACILITY ALTERNATIVES

Drawing: \\ricondo.com\access\projects\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.1 - Alternatives - Ricondo\Documentation\CAD\Exhibit 5-22_CBP GAF_Alternatives 1-3.dwgLayout: FIS CBP Facility Site Overview Plotted: Jan 30, 2020, 03:59PM

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Given the anticipated demand the CBP GA facility is sized with the ability to process up to 20 international passengers and their baggage per hour and is just over 4,900 square foot, including an additional 650 square feet for areas identified as optional in the CBP General Aviation Facilities Design Standard 90 percent Draft document.

The proposed aircraft apron will be sized to accommodate two simultaneous Cessna Citation Latitude aircraft operating independently or a single Global Express 6000 aircraft. The apron area required to meet these parameters is approximately 4,400 square yards.

The automobile parking lot was sized for the anticipated CBP employee demand and the City of Jacksonville zoning code requirements, which resulted in a total of 14 parking spaces and encompasses an area of approximately 3,100 square feet.

The area for the GA facility, the aircraft apron and the automobile parking were added together to determine the total area requirement for the GA facility site. The minimum total area required for the GA Facility site was identified to be approximately 47,400 square feet.

Before potential GA facility sites were identified, initial site-location criteria were developed. The first set of siting criteria established for the GA Facility were: size of the potential site and proximity to the two existing fixed base operators (FBOs). The potential GA facility sites had to be large enough to accommodate the minimum area requirements for each of the components and needed to be located near the SheltAir and Signature FBOs that serve the international GA flights. These criteria helped to narrow down the focus area for a suitable GA facility site and the focus area was concentrated around the existing GA area located north of Barnstormer Road.

Three independent sites with five alternative layouts were developed and are identified on Exhibit 5-22. Each of the alternative layouts are described in the following sections. Alternative 1 has two sites, 1A and 1B, which represent the first independent concept for the GA facility. Alternative 2 also has two sites identified as 2A and 2B, while Alternative 3 has one concept.

5.5.3.1 CUSTOMS BORDER PROTECTION GENERAL AVIATION FACILITY – ALTERNATIVE 1 SITE 1A

This site is located adjacent to the City Ramp and is in close proximity to both the SheltAir and Signature Flight Support FBOs. Site 1A is located south east of the Fidelity Hangar and to the south west of the Signature Flight Support GA facilities. Site 1A is adjacent to the City Ramp which would provide the apron area associated with the GA facility and accessibility to/from the airfield would be provided by Taxiway G. The GA facility is planned to be located on the northwest side of the City Ramp with the automobile parking south of the GA facility.

5.5.3.2 CUSTOMS BORDER PROTECTION GENERAL AVIATION FACILITY – ALTERNATIVE 1 SITE 1B

Site 1B is very similar to Site 1A and is located on the opposite side of the City Ramp. This site is also near the SheltAir and Signature Flight Support FBO facilities and includes an existing apron with the City Ramp and airfield accessibility vis Taxiway G. Site 1B is located south east of the Fidelity Hangar and south west of the Signature Flight Support GA facilities. For this alternative, the CBP building and parking will be on the east side of the City Ramp.

5.5.3.3 CUSTOMS BORDER PROTECTION GENERAL AVIATION FACILITY – ALTERNATIVE 2 SITE 2A

Site 2A is located adjacent to the existing GA area, north of the Signature Flight Support facilities and south of Taxiway B. Site 2A is a greenfield location and does not currently offer airfield infrastructure. The landside accessibility would require an extension of Yonge Drive to allow for automobile accessibility to the GA facility and associated automobile parking.

5.5.3.4 CUSTOMS BORDER PROTECTION GENERAL AVIATION FACILITY – ALTERNATIVE 2 SITE 2B

Site 2B is the second alternative for this site and is located to the northeast of site 2A. Site 2B is east of the Taxiway F and south of Taxiway B. This alternative is also in a greenfield site and does not currently provide any airfield infrastructure and requires a new access roadway for landside accessibility. This site was identified in the previous Master Plan for general aviation development.

5.5.3.5 CUSTOMS BORDER PROTECTION GENERAL AVIATION FACILITY – ALTERNATIVE 3

Alternative 3 is located within a GA development area on the Future ALP and is located east of east of Yonge Drive and south of the Signature Flight Support hangar adjacent to Taxiway F. This location is also a greenfield site and does not offer any existing airside or landside accessibility.

5.5.3.6 SITES EVALUATED

Each of the five alternatives for the GA facility site were evaluated against a set of evaluation criteria, more stringent than the initial siting criteria, to facilitate the identification of the preferred site. The evaluation criteria are described below.

- Wetland or retention pond impacts – does the site impact any known wetlands or retention ponds?
- Pull-through apron parking positions – could the site be configured in a manner to accommodate pull-through apron parking with a separate entrance and exit for ease of aircraft maneuverability?
- Airside accessibility – would additional airfield infrastructure be required for aircraft access the site?
- Proximity to FBOs – is the site close to both FBOs and equal distance from each?
- Impacts to previous master plan – does the site impact development previously proposed in the 2010 Master Plan?
- Maximizes development space – does the site make the best use of the space available?
- Expansion opportunity – could the GA facility be expanded at this site?
- Landside accessibility – would additional landside roadway infrastructure be required for automobiles to access the site?

Each alternative received a green, yellow, or red indicator to gauge its potential impact to the criterion. Green indicates the site would have a low impact to the criterion, yellow represents moderate impact and red indicates a high impact.

5.5.3.7 SITE 1A

Site 1A was identified as a moderate impact to the wetland/retention pond criteria due to the likely impact of the alternative on the existing retention pond that is west of the City Ramp. This alterative was ranked green or minimal impact in the pull-through apron capability. The City ramp doesn't offer pull-through capability; however, the City Ramp is much larger than required and could provide several independent aircraft parking positions. Site 1A also received a minimal impact rating in the categories of airside accessibility, proximity to the FBOs, impacts to the proposed development under the previous Master Plan, maximizes development space, expansion opportunity and landside accessibility. This site offers airside accessibility through Taxiway G and is somewhat centrally located to both FBOs. This site would also have lower development costs since an aircraft apron is existing. This GA facility could also be expanded on this site to accommodate future growth on the west side of the facility. The landside accessibility has a low impact since the site is near Barnstormer Road.

5.5.3.8 SITE 1B

The Evaluation Matrix for Site 1B reflects the same impact designations as Site 1A since both alternatives are located within the same site. The difference between these two sites are the location of the GA facility and the parking area. In Site 1B the GA facility and the parking area are located on the east side of the aircraft apron which maximizes future development space on the west side of the aircraft apron.

5.5.3.9 SITE 2A

Site 2A is located within an existing wetland area and was ranked as a high impact in the wetland/retention pond criteria. This site is located in a greenfield area and was rated as a low impact to pull-through apron parking position as the aircraft apron could be designed to allow for ingress and egress points. The site is adjacent to Taxiway B, which would offer convenient airside accessibility and earned a low impact rating for this criterion. Proximity to FBOs and impacts to the proposed development under the previous Master Plan both received a low impact rating since the site is located near the existing FBOs and in a location that was not previously identified for development. Site 2A received a moderate impact in the maximizes development space criterion as the site intrudes on an existing airfield service road. This site received a ranking of low impact to the expansion opportunity criterion as there is the ample room to expand to the west and east side of the facility. Landside accessibility ranked as a moderate impact as Yonge Drive would have to be extended to allow vehicles to access the facility.

5.5.3.10 SITE 2B

Site 2B is located on the opposite side of Taxiway F from Site 2A. The wetland/retention pond criterion was rated as a moderate impact since the location of Site 2B would impact the retention pond that is below Taxiway B and north of the proposed GA facility. The pull-through apron parking positions received a moderate impact rating as a single point of ingress/egress isn’t optimal. Airside accessibility was ranked as a low impact as the GA facility apron would be constructed adjacent to Taxiway F. Proximity to FBOs received a moderate impact rating due to the distance of this site from both FBOs. This site is also located within a GA development area proposed in the previous Master Plan and was rated as a high impact. The accommodation of the GA facility in this location does not maximize development space and could restrict development of another FBO and was rated as a high impact. This site would offer ample opportunity to expand and was rated as a low impact to the expansion opportunity criterion. Lastly, the landside accessibility was rated as a high impact since there is no close-in access to existing landside roadways and a new road would have to be constructed to Barnstormer Road.

5.5.3.11 SITE 3

Site 3 was designated as a low impact to the wetland/retention pond impacts criterion since the site would not impact existing wetlands or retention ponds. Pull-through apron parking positions and airside accessibility were rated as a moderate impact as a second ingress/egress point would increase the development costs of this site and this site doesn’t offer close access to Taxiway F. The proximity to FBOs criterion received a high impact since the site is not close to SheltAir and could create an unfair advantage for Signature Flight Support. Site 3 is located in an area the previous master plan identified for GA/corporate hangar development and is rated as a high impact. Implementation of Site 3 would have a moderate impact on the maximizes development space criterion, as future hangar development could be restricted. This site is a greenfield site currently and could accommodate future expansion, therefore it was rated as a low impact for this criterion. The landside accessibility for this site is comparable to that for Sites 1A and 1B and was rated as a low impact for this criterion.

5.5.3.12 PREFERRED SITE SELECTION

The rating for each criterion under the five alternatives is provided in the Evaluation Matrix shown in **Table 5-3**. While Sites 1A and 1B both resulted in the same ranking and scored higher than the other alternatives, Site 1B is the preferred location for the GA facility site at JAX. Site 1B was chosen as the preferred site to allow for future development of a large hangar in the Site 1A location. In addition, it is expected that Site 1B would have less of a wetland or retention pond impact relative to Site 1A.

Table 5-3 provides a comparison of each of the alternatives against the evaluation criteria.

TABLE 5-3 CUSTOMS AND BORDER PROTECTION GENERAL AVIATION FACILITY - EVALUATION MATRIX

EVALUATION MATRIX OVERVIEW	1A	1B	2A	2B	3
Wetland or Retention Pond Impacts					
Pull-through Apron Parking Positions					
Airside Accessibility					
Proximity to FBOs					
Impacts to Proposed Development Under the Previous Master Plan					
Maximizes Development Space					
Expansion Opportunity					
Landside Accessibility					

NOTE:

LEVEL OF IMPACT	DESIGNATED COLOR
Low Impact	
Moderate Impact	
High Impact	

SOURCE: Ricondo & Associates, Inc., November 2018

5.5.4 FLORIDA AIR NATIONAL GUARD ARM/DE-ARM PADS FOR F-35

The Master Plan Update scope of services called for the Planning team to meet with the Florida Air National Guard (FANG) to discuss the need to incorporate their future development plans in the Master Plan Update. The FANG did not respond to requests for a meeting and did not provide future development plans. The JAA Project Manager decided there would not be any FANG development plans developed as a part of the Master Plan Update.

5.5.5 AIRCRAFT RESCUE AND FIREFIGHTING FACILITY

The future location of the Aircraft Rescue and Firefighting (ARFF) facility was adopted from the previously FAA-approved ALP. ARFF alternatives and requirements were not analyzed as part of this Master Plan.

5.5.6 JAA AND FAA AIRPORT MAINTENANCE FACILITIES

As suggested in the previous 2010 Master Plan, the Airport Maintenance Facilities were relocated north of Cargo Ramp #1 and Cole Flyer Road and was under construction during the preparation of this Master Plan. Due to the recent relocation no additional alternatives were developed as part of this Master Plan.

5.5.7 AIR TRAFFIC CONTROL TOWER ALTERNATIVES

In April 2018 the Airway Facilities Tower Integration Laboratory (AFTIL) JAX Quick Look .03, documented visibility concerns from the existing location of the Air Traffic Control Tower (ATCT) following the completion of Concourses A and C. Movement areas along the west side of the terminal area apron are obstructed from the ATCT's line of sight. With the future expansion of the terminal area with proposed Concourse B and the proposed south parallel runway, alternate sites and various ATCT heights were analyzed to eliminate line of sight visibility issues. The alternatives are depicted on **Exhibits 5-23** through **5-27** and are described in more detail below.

Preliminary siting criteria were established to identify the areas at JAX that could be suitable for potential ATCT development. The total site area of 135,500 square feet was assumed to include an ATCT, a base building for the TRACON, and a vehicle parking area. If the ATCT were to be implemented as a part of the Concourse B expansion, the site would not include an area for vehicle parking. Visibility performance requirements and considerations were the primary factors for analyzing alternative ATCT sites, as well as meeting airspace requirements, staying outside essential airfield safety areas, not interfering with existing equipment performance, environmental impact, accessibility, construction phasing, and tower eye elevation.

Evaluations for each site were first conducted at the existing tower eye elevation of 155 mean sea level (MSL). When visibility criteria at 155 MSL did not meet the minimum standard requirements, the tower eye elevations were raised until requirements were met. Establishing these criteria narrowed down focus areas suitable for potential ATCT development.

The existing site with a raised tower eye elevation and three alternative sites were analyzed as part of the selection process. These sites are identified on Exhibit 5-23, Alternative ATCT Site Selection Overview with each of the options and their site evaluations discussed in the following sections. Site 1, 2, and 3 represent the alternative ATCT site locations. Site 4 is identified at the existing ATCT location with an increased tower eye elevation.

5.5.7.1 SITE 1

This site is located just south of the existing FANG facility area, North of future Runway 8R-26L. Site 1 was analyzed as an option providing a more centralized position on the airfield. Its location away from other major airfield facilities would allow for minimal operational disruptions to ATCT and TRACON personnel. Landside accessibility would require roadway pavement to be extended from Fang Drive to allow for vehicular access to parking at the facility. Exhibit 5-24 provides an illustration of this alternative.

5.5.7.2 SITE 2

Site 2 is located between Concourse A and Concourse C at the stem of where future Concourse B is planned to begin. This site would be built as a part of the Concourse B expansion project. This site would not provide space for a collocated TRACON or vehicular access. ATCT personnel would access this site via the terminal. A satellite TRACON and parking area would need to be planned if the ATCT is relocated to this site. An ATCT at this site would provide clear visibility to both existing and future movement and non-movement areas. Exhibit 5-25 provides an illustration of this alternative.

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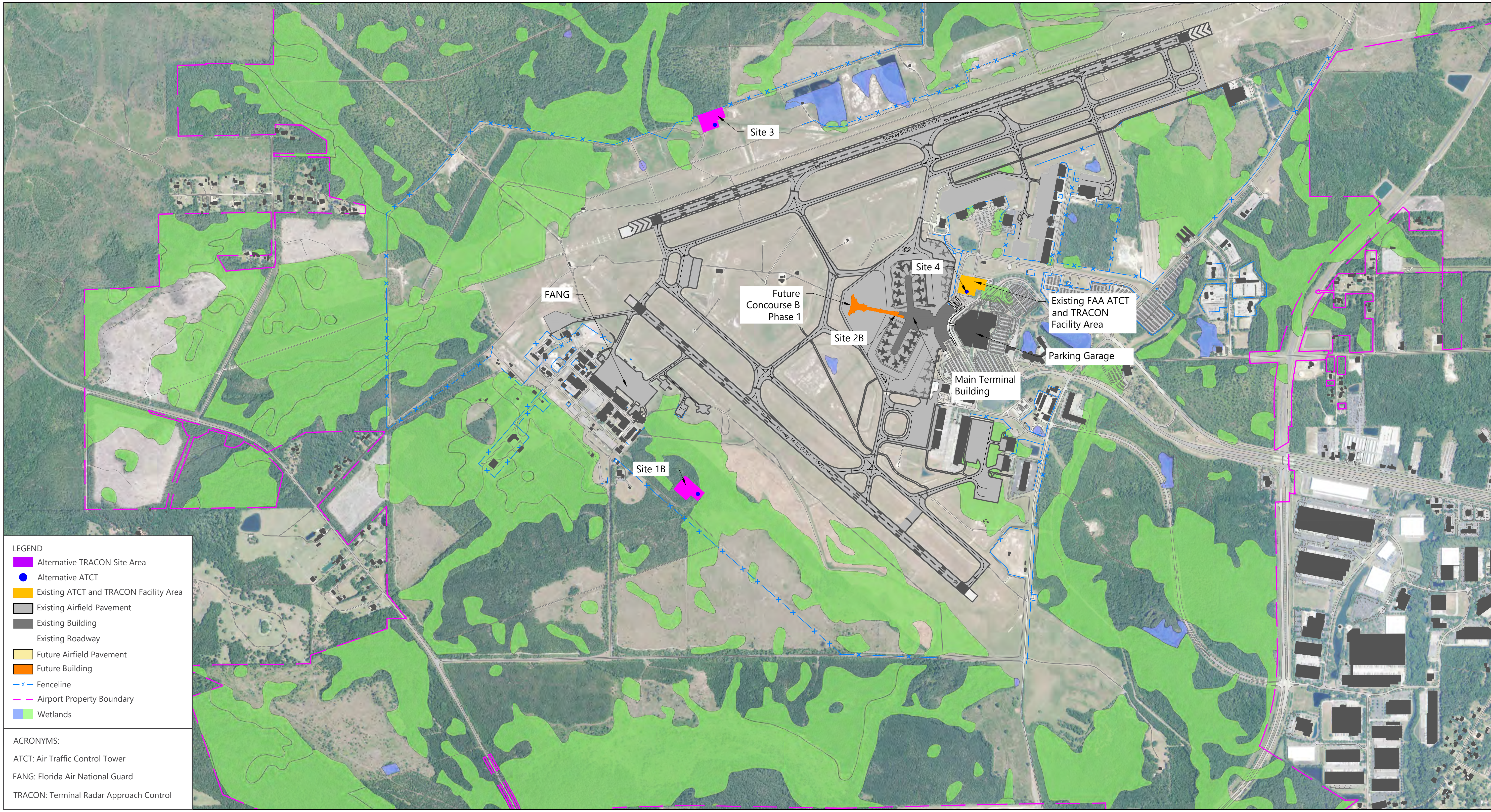

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (ATCT site alternatives).

NORTH 0 1,700 ft.

EXHIBIT 5-23

AIR TRAFFIC CONTROL TOWER
ALTERNATIVE SITE SELECTION OVERVIEW

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\Exhibit 5-23_Air Traffic Control Tower Alternative Site Selection Overview.dwgLayout: Site Alternatives Overview Plotted: Mar 13, 2020, 02:30PM

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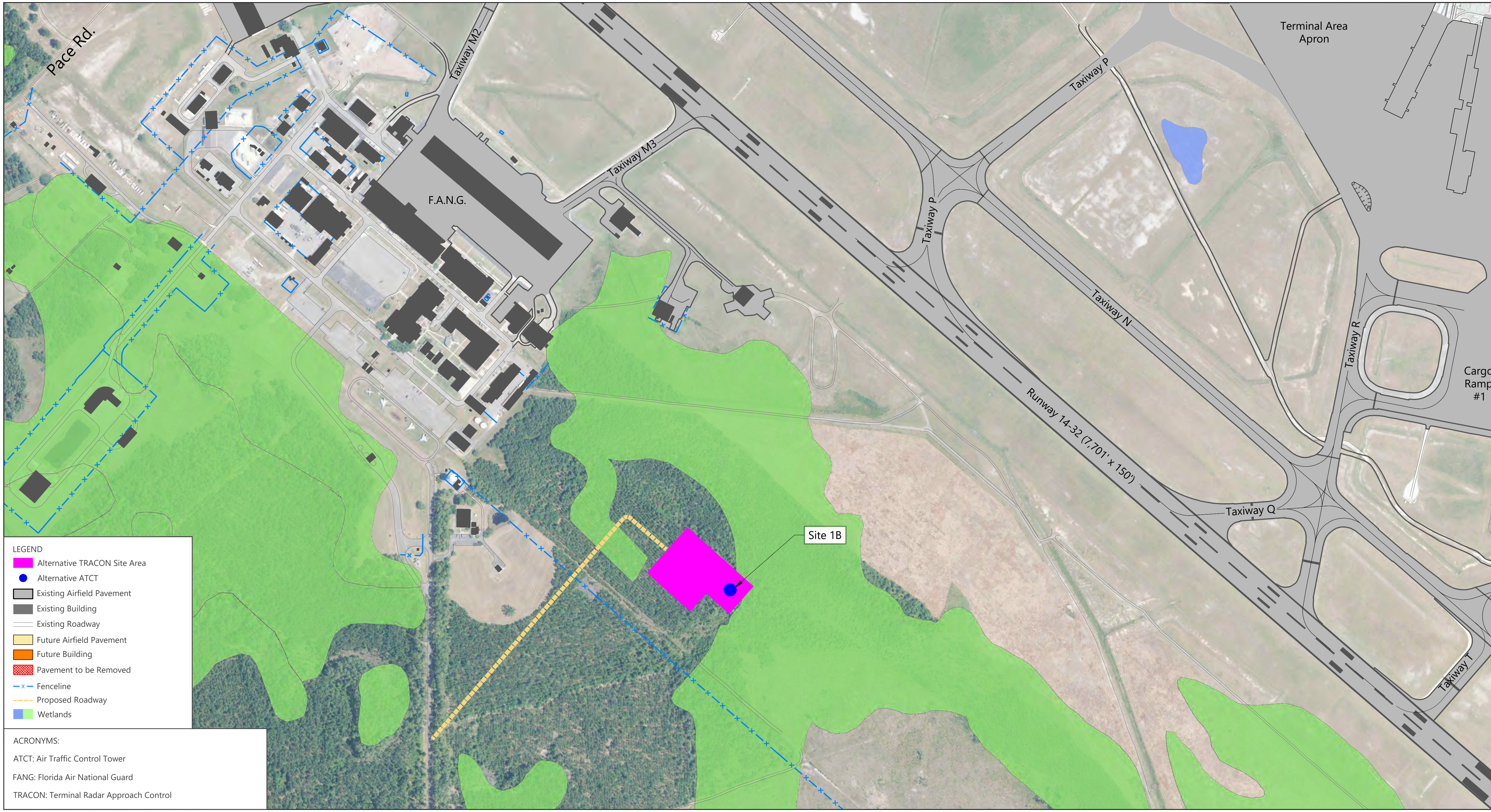

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (ATCT site alternatives).

NORTH 0 500 ft.

EXHIBIT 5-24

AIR TRAFFIC CONTROL TOWER ALTERNATIVE - SITE 1B
265 FOOT MSL TOWER EYE ELEVATION

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\Exhibit 5-24_Air Traffic Control Tower Alternative – Site 1B.dwgLayout: SITE 1B Plotted: Mar 13, 2020, 02:31PM

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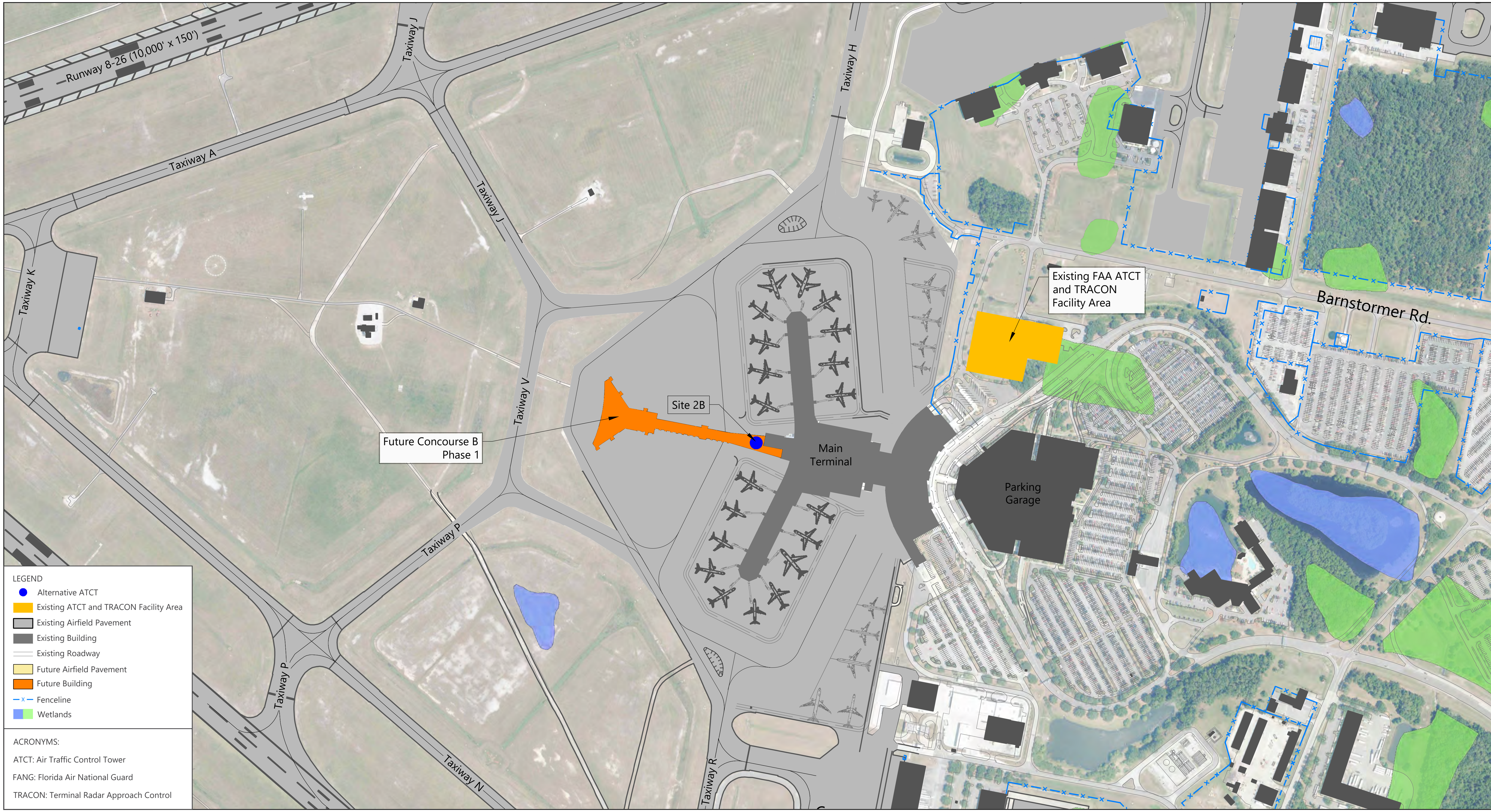

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (ATCT site alternatives).

NORTH 0 500 ft.

EXHIBIT 5-25

AIR TRAFFIC CONTROL TOWER ALTERNATIVE - SITE 2B
230 FOOT MSL TOWER EYE ELEVATION

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\Exhibit 5-25_Air Traffic Control Tower Alternative – Site 2B.dwgLayout: SITE 2B Plotted: Mar 13, 2020, 02:32PM

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SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (ATCT site alternatives).

EXHIBIT 5-26

AIR TRAFFIC CONTROL TOWER ALTERNATIVE - SITE 3
200 FOOT MSL TOWER EYE ELEVATION

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\Exhibit 5-26_Air Traffic Control Tower Alternative – Site 3.dwgLayout: SITE 3 Plotted: Mar 13, 2020, 02:33PM

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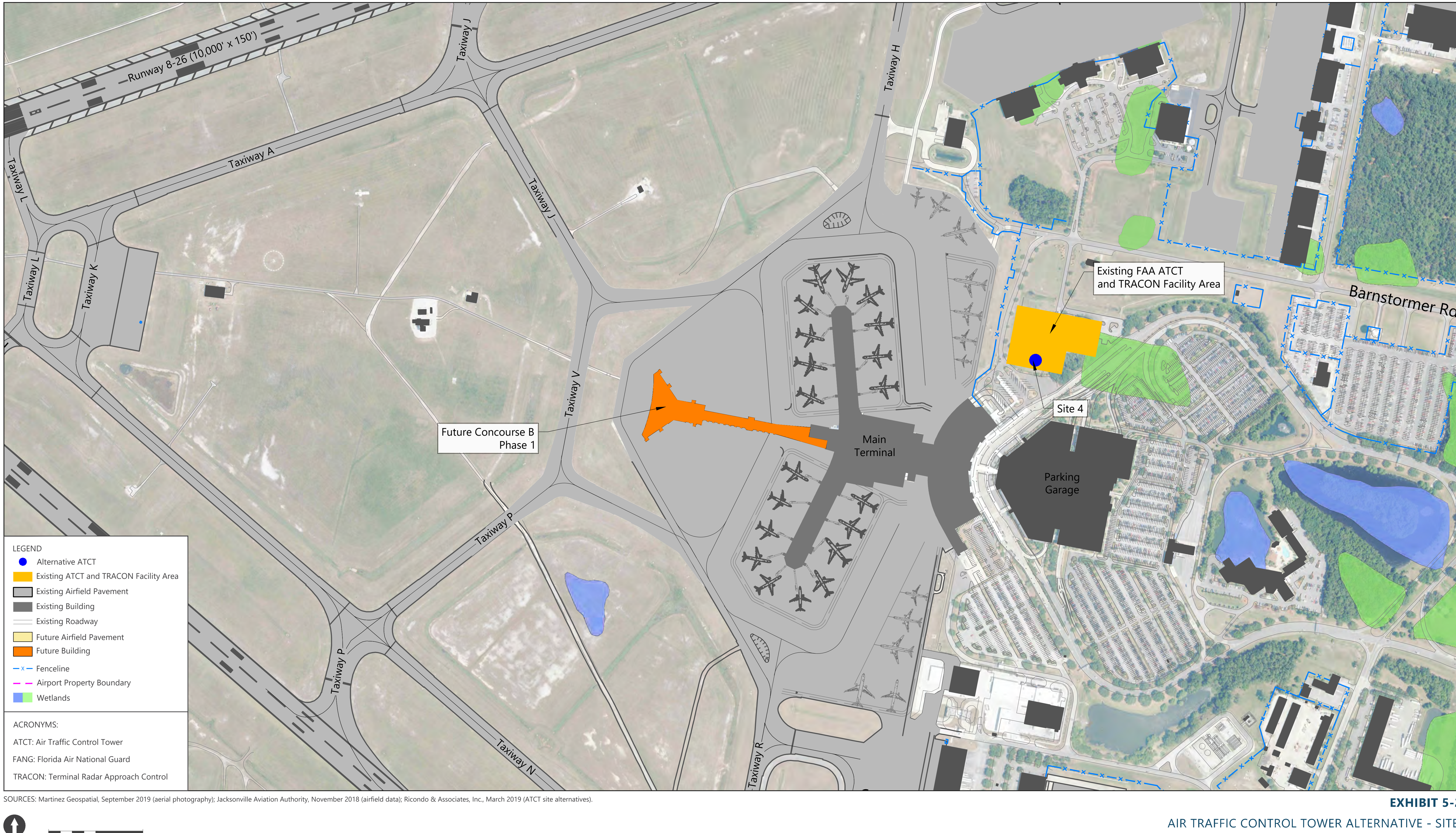

SOURCES: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data); Ricondo & Associates, Inc., March 2019 (ATCT site alternatives).

EXHIBIT 5-27

AIR TRAFFIC CONTROL TOWER ALTERNATIVE - SITE 4
325 FOOT MSL TOWER EYE ELEVATION

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\6.4 - Identification of ATCT Sites - Ricondo\CAD\Exhibit 5-27_Air Traffic Control Tower Alternative – Site 4.dwgLayout: SITE 4 (325' ATCT) Plotted: Mar 13, 2020, 02:34PM

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5.5.7.3 SITE 3

This site is located on the Northern side of JAX adjacent to existing Runway 8-26. This site would require roadway pavement to be extended from Pecan Park Road and would be located away from other major airfield facilities allowing for minimal operational disruptions to ATCT and TRACON personnel. An ATCT at this site would provide visibility to existing and planned runways and connecting taxiways. Exhibit 5-26 provides an illustration of this alternative.

5.5.7.4 SITE 4

Site 4 is where the existing ATCT site is currently located. This site is adjacent to the terminal at the intersection of Barnstormer Road and Whirlwind Ave. This site would allow for minimal impact to existing ATCT operations with options to either build a new ATCT with a higher tower eye elevation of 230 feet or increase the tower eye elevation of the current tower. With the existing TRACON and vehicular access staying in place, personnel operating at these facilities would not have to be relocated. Exhibit 5-27 provides an illustration of this alternative.

5.5.7.5 AIR TRAFFIC CONTROL TOWER SITE EVALUATION CRITERIA

These four ATCT site alternatives were assessed using a set of evaluation conditions to facilitate the identification of alternative sites. These conditions are described below.

- Visibility performance – does the ATCT eye elevation at this site meet all mandatory visibility requirements?
- Airspace – does this site impact the surrounding airspace at JAX?
- Impacts to NAVAIDS (navigational aids) – does this site interfere with or reduce existing NAVAID performance?
- Environmental impacts – does this site impact any known wetlands or retention ponds?
- Cab orientation – does the cab orientation for this site increase of reduce sun glare?
- Construction phasing – would constructing an ATCT at this site impact current airport operations?
- Vehicular accessibility – would additional roadways be required for vehicles to access this site?
- FAA personnel accessibility – are FAA personnel impacted accessibility limitations to this site?
- Economic considerations – would the required tower elevation at this site have direct economic impacts?
- Collocated TRACON – does this site allow enough space and accessibility for a collocated TRACON?

Each alternative received a green, yellow or red impact rating to measure the potential effect to the set criteria. Green indicates a low impact, yellow represents a moderate impact, and red indicates a high impact.

5.5.7.6 SITE 1

Site 1 failed to meet the visibility performance requirements at 155 feet MSL, however, at 265 feet MSL, visibility performance requirements are met. At this elevation, Site 1 is given a high impact rating on economic considerations due to the extra cost of constructing an ATCT at a substantially higher elevation than existing. This site has an adequate amount of area for developable land. Building a collocated TRACON at this site would be feasible giving these criteria a minimal impact rating. Accessibility for FAA personnel was given a low impact rating since there would be direct access to the facilities without having to go through the terminal. This site would have a medium environmental impact due to its proximity to wetland areas east of the Florida Air National Guard (FANG) facilities. A medium impact rating was given to vehicular access category, since an existing roadway to this site does not currently exist. Site 1 also received a low impact rating in the categories of airspace and NAVAIDS due to its location on the airfield outside of critical performance areas. Site 1 was given a low impact rating for cab orientation due to its centralized location on the airfield and visibility to all runway ends. An ATCT at this location would not interfere with the existing ATCT observation field of view so, construction phasing was given a minimal impact rating.

5.5.7.7 SITE 2

An ATCT at this location would have no environmental impact to wetland areas. Since this site is located as an add-on to the existing and future terminal area and is given a high impact rating for the inability to provide both vehicular access and a collocated TRACON. Economic considerations and cab orientation both earn a low impact rating. The ATCT eye elevation of this site at 175 feet MSL has only a 20-foot MSL increase in tower eye elevation compared to the existing ATCT eye elevation of 155 feet MSL. The cab orientation for this site provides a full visibility range of the existing and future airfield. Construction phasing and FAA personnel accessibility are given a medium impact rating since this site would be built into plans for future Concourse B expansion. This site could create a visibility obstruction for the existing ATCT during construction. FAA personnel would be required to share access with passengers through the terminal instead of having ATC staff only access points to the tower. A low impact rating was given to airspace and NAVAIDS due to the location of Site 2 being built in conjunction with existing and planned airport facilities.

5.5.7.8 SITE 3

Site 3 meets the visibility performance requirements at a tower eye elevation of 200 feet MSL and is given a high impact rating for economic considerations due to the extra cost in constructing an ATCT with a substantially higher elevation than existing. Other than wetland impacts, Site 3 is not constricted by existing facilities around it. This site has an adequate amount of area for developable land. Building a collocated TRACON at this site would be feasible giving these criteria a low impact rating. Accessibility for FAA personnel was given a low impact rating due to the ability to provide direct access to the facilities without having to go through the terminal. This site would have a high environmental impact due to its proximity to wetland areas. A high impact rating was given to vehicular access category, since an existing roadway to this site does not currently exist. Site 3 also received a low impact rating in the categories of NAVAIDS due to its location on the airfield away from existing NAVAIDS. Airspace is given a medium impact rating for its proximity to the CAT II/III precision approach at the Runway 8 approach end. Site 3 was given a medium impact rating for cab orientation for its primarily southward field of view, creating sun glare concerns. Construction phasing was also given a low impact rating at this location. Construction at Site 3 would not obstruct this existing ATCT observation field of view to the airfield and would not affect existing airport operations.

5.5.7.9 SITE 4

Site 4, with a tower eye elevation of 230 feet MSL, was given a low impact to visibility performance, airspace, NAVAIDS, the environment, cab orientation, vehicular access, FAA personnel accessibility, economic considerations, and providing for a collocated TRACON. Since this is already the existing ATCT site, nine of the ten evaluation categories were given a minimal impact rating These categories would be minimally impacted during an increase to the existing ATCT elevation or during construction of a new ATCT at this site. Construction phasing for Site 4 was given an impact rating of medium due to the challenges presented with maintaining normal airport operations while construction at this location would be taking place given the limited size of the site.

5.5.7.10 PREFERRED SITE SELECTION

The rating for each category for the four alternatives are provided in the Evaluation Matrix shown in **Table 5-4**. Site 4 or the existing ATCT site location is the preferred site at JAX. Site 4 was chosen as the preferred site to allow for future development while not having significant impact on other criteria in the Evaluation Matrix. If the operational restrictions of the ATCT being collocated within the terminal footprint could be overcome, then Site 2 may be considered in the future.

TABLE 5-4 AIR TRAFFIC CONTROL TOWER ALTERNATIVES - EVALUATION MATRIX

EVALUATION MATRIX OVERVIEW	1B	2B	3	4
Visibility Performance				
Airspace				
Impacts to NAVAIDS				
Environmental Impacts				
Cab Orientation				
Construction Phasing				
Vehicular Access				
FAA Personnel Accessibility				
Economic Considerations				
Collocated TRACON				

NOTE:

LEVEL OF IMPACT	DESIGNATED COLOR
Low Impact	
Moderate Impact	
High Impact	

SOURCE: Ricondo & Associates, Inc., November 2018

5.5.8 WATER TOWER/AIRPORT ROTATING BEACON

As suggested in the previous 2010 Master Plan, the Water Tower/Airport Rotating Beacon are identified to be relocated just to the east of the existing site location and south of Barnstormer Road. Due to this previously selected site no additional alternatives were developed as part of this Master Plan.

5.5.9 ELECTRICAL VAULT

Since the completion of the previous 2010 Master Plan, the JAA electrical vault has be relocated to the east of its original location and adjacent to the existing Taxiway K run-up area. Due to the recent site relocation no additional alternatives were developed as part of this Master Plan.

5.5.10 SUMMARY

The preceding sections have identified and analyzed several future development alternatives for JAX including airfield design standard improvements, aircraft gate expansion, aircraft hardstand parking positions, ATCT relocation, GA airfield improvements, GA CBP facility, and air cargo facility expansion. These alternatives were created to accommodate the facility requirements as identified in Chapter 4. Positive and negative attributes of each alternative were presented and discussed to help JAA and other stakeholders make planning level decisions that allow maximum flexibility for future development.

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6. ENVIRONMENTAL OVERVIEW

This section provides a general overview of the potential environmental consequences and environmental review requirements associated with the Master Plan projects recommended under the MPU. Prior to implementation, the potential environmental effects of each project must be reviewed in accordance with NEPA requirements and implementing guidance in FAA Orders 1050.1F, *Environmental Impacts: Policies and Procedures*, and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, or the latest versions of those Orders at the time of environmental review.

A project is considered ready for environmental review under NEPA when construction is expected to be initiated within a few years. As a general rule of thumb, construction should begin within three to five years after the FAA issues a finding. A project's required level of environmental documentation depends on the project type, the potential environmental effects of the project, and the types of environmental resources that the project could impact. The three levels of environmental documents prepared for NEPA compliance are listed below:

- **Categorical Exclusion (CATEX)**. FAA Order 1050.1F specifies projects that typically do not result in significant adverse impacts. These projects are eligible for a CATEX if no extraordinary circumstances are involved. Documentation to support exclusion is prepared by the airport sponsor.
- **Environmental Assessment (EA)**. An EA involves evaluation of the potential environmental effects of a project, and documents whether the project has the potential to result in significant adverse impacts to the environment. The airport sponsor prepares an EA for projects that are not eligible for a CATEX. If no significant impacts would be expected to occur, or if it can be demonstrated that any potential impacts could be mitigated to a level below significance, the FAA may issue a Finding of No Significant Impact. If the adverse environmental impacts cannot be mitigated below a level of significance, further analysis—in the form of an Environmental Impact Statement (EIS)—may be required.
- **Environmental Impact Statement**. An EIS is prepared by the FAA and provides detailed analyses of the environmental effects of a project. The EIS process provides full public disclosure of significant environmental effects, identifies practicable alternatives that would avoid or minimize these adverse effects, and describes mitigation for those effects that cannot be avoided.

6.1 PROJECTS POTENTIALLY ELIGIBLE FOR CATEGORICAL EXCLUSION

Table 6-1 lists the Master Plan projects identified during the Airport MPU planning process, by PAL as well as those included as part of the Ultimate Conditions at the Airport. The projects and infrastructure identified in the Ultimate Conditions are those that would be required to accommodate demand beyond the Master Plan planning horizon and are included to ensure that the Airport is adequately preserving area for these future needs. As this table shows, the majority of Master Plan projects are potentially eligible for CATEX under NEPA. Table 6-1 also cites the relevant paragraphs in FAA Order 1050.1F that define the potential eligibility for NEPA CATEX. While at least one CATEX paragraph is identified for most projects, some projects would not likely be CATEX eligible because of the project's scale or the presence of extraordinary circumstances (e.g., wetland effects). Furthermore, multiple projects may be assessed together as a single "action" under NEPA if they are connected by implementation timing or proximity, or where one project enables implementation of another. Connected and enabling projects comprising a single action under NEPA may or may not collectively meet the criteria for CATEX eligibility. Therefore, Table 6-1 is merely provided as a reference to support future consideration of NEPA review needs.

TABLE 6-1 POTENTIAL CATEGORICAL EXCLUSION ELIGIBILITY

PROJECT NUMBER[1]	PROJECT NAME[2]	PRELIMINARY EVALUATION OF CATEGORICAL EXCLUSION ELIGIBILITY[3]	POTENTIALLY RELEVANT 1050.1F PARAGRAPH(S)[4]
Planning Activity Level 1			
AC1	Air Cargo Ramp #3 Apron Expansion	Project scale may preclude eligibility	5-6.4.h
C1	Airside Concessions Redevelopment[5]	Potentially Eligible	5-6.4.h
GA1	Customs and Border Protection General Aviation Facility	Potentially Eligible	5-6.4.h
T1	Future ADG V Taxiway – Parallel to Taxiway V	Potentially Eligible	5-6.4.e
T2	Concourse B – Phase 1 (6 gates)	Project scale may preclude eligibility	5-6.4.h
T3	Installation of 6 CPSSs at the Security Screening Checkpoint[5]	Potentially Eligible	5-6.4.h
T4	Holdroom Modifications – Concourses A and C[5]	Potentially Eligible	5-6.4.h
Planning Activity Level 2			
A1	Runway 14-32 Shoulders	Potentially Eligible	5-6.4.e
A2	Taxiway Fillet Modifications	Potentially Eligible	5-6.4.e
A3	Taxiway B Extension and Realignment	Potentially Eligible	5-6.4.e
A4	Taxiway G1 Reconstruction	Potentially Eligible	5-6.4.e
A5	Future ADG V Taxiway – Parallel to Taxiway N	Potentially Eligible	5-6.4.e
AC1	South Air Cargo Ramp #1 Apron and Facilities Expansion	Project scale may preclude eligibility	5-6.4.h
GT1	Parking Garage Expansion	Project scale may preclude eligibility	5-6.4.f / 5-6.4.h
T5	Security Screening Checkpoint Expansion to 10 CPSSs [5]	Potentially Eligible	5-6.4.h
Planning Activity Level 3			
A6	Future South Runway – Preliminary Planning[6]	N/A	N/A
A7	New Air Traffic Control Tower – Preliminary Planning	N/A	N/A
Ultimate Conditions[7]			
N/A	Future South Runway	Not eligible	N/A
N/A	Future Concourse B – Phase 2	Project scale may preclude eligibility	5-6.4.h
N/A	North Hardstand Development	Project scale may preclude eligibility	5-6.4.e
N/A	South Hardstand Development	Project scale may preclude eligibility	5-6.4.e

NOTES:
ADG – Airplane Design Group
ASL – Automated Screen Lane
1 The Project Number corresponds to the individual projects identified on Exhibit 6-1.
2 For environmental processing, certain projects listed separately in this table may be combined if they are connected and/or enabling in nature. This may affect CATEX eligibility.
3 Projects are eligible for a CATEX if they meet the requirements set forth in the cited paragraphs of FAA Order 1050.1F, and no extraordinary circumstances exist (as listed in Paragraph 5.2 of FAA Order 1050.1F). CATEX eligibility should be reassessed when individual projects or groups of projects are ready for environmental review, and should include coordination with the FAA to confirm eligibility.
4 The cited paragraphs in FAA Order 1050.1F are:
- 5-6.1.o Issuance of grants that do not imply a project commitment, such as airport planning grants, and grants to states participating in the state block grant program.
- 5-6.4.e Federal financial assistance, licensing, or Airport Layout Plan (ALP) approval for the following actions, provided the action would not result in significant erosion or sedimentation, and will not result in a significant noise increase over noise sensitive areas or result in significant impacts on air quality: construction, repair, reconstruction, resurfacing, extending, strengthening, or widening of a taxiway, apron, loading ramp, or runway safety area (RSA), including an RSA using Engineered Material Arresting System (EMAS); or reconstruction, resurfacing, extending, strengthening, or widening of an existing runway. This CATEX includes marking, grooving, fillets, and jet blast facilities associated with any of the above facilities.
- 5-6.4.f Federal financial assistance, licensing, Airport Layout Plan (ALP) approval, or FAA construction or limited expansion of accessory on-site structures, including storage buildings, garages, hangars, t-hangars, small parking areas, signs, fences, and other essentially similar minor development items.
- 5-6.4.h Federal financial assistance, licensing, or ALP approval for construction or expansion of facilities—such as terminal passenger handling and parking facilities or cargo buildings, or facilities for non-aeronautical uses at existing airports and commercial launch sites—that do not substantially expand those facilities.

5 Projects located within the existing or planned Main Terminal and concourse buildings are not shown on Exhibit 6-1.
6 Planning projects are not shown on Exhibit 6-1.
7 Ultimate Conditions are projects anticipated to occur beyond the Master Planning Update planning horizon and, if a location has been identified, they are shown on Exhibit 7-2. Project need, timing, scale, and location are subject to change.
SOURCE: Ricondo & Associates, Inc., October 2019 (based on U.S. Department of Transportation, Federal Aviation Administration Order 1050.1F: *Environmental Impacts: Policies and Procedures*, July 16, 2015).

6.2 ENVIRONMENTAL CONSIDERATIONS

Known environmental issues relevant to development at JAX are summarized in Section 2.17. Based on the known environmental issues and the anticipated potential effects of the Master Plan projects, the following environmental issues were identified as relevant to the future review of projects pursuant to NEPA, including:

- air quality (and climate);
- biological resources;
- US Department of Transportation, Section 4(f) resources;
- hazardous materials;
- noise and noise compatible land uses; and
- water resources (wetlands, floodplains, surface water, and groundwater).

The majority of Master Plan projects for PALs 1-3 are depicted on **Exhibit 6-1**, along with environmental resources (such as wetlands and floodplains) located on and in the vicinity of Airport property, as defined in Section 2.17. **Exhibit 6-2** depicts the Ultimate Conditions projects, including those for which a long-term need has been identified, but project development is not expected to occur within the MPU planning horizon.

Table 6-2 lists the Master Plan projects and identifies the environmental resource categories for which project implementation may affect natural resources, which may require further analysis during future environmental review. This section also discusses the evaluation of relevant environmental resource categories for each Master Plan project. The environmental resource effects identified in Table 6-2 are preliminary, and are provided here only as a preliminary indication of issues that may require detailed analyses in a future NEPA review. Further, the potential resource effects identified in Table 6-2 are not intended to affirmatively state that there *would* be an adverse effect, but instead only identify areas that would require evaluation during the NEPA process. In addition, additional resources may be identified during the scoping process that will require additional NEPA analysis. All Master Plan projects would be subject to some level of review in compliance with NEPA prior to implementation.

6.2.1 AIR QUALITY AND CLIMATE

Duval County, Florida is classified as in attainment with the National Ambient Air Quality Standards (NAAQS) set by the US Environmental Protection Agency.

Under NEPA, projects that would result in temporary emissions from construction activities, as well as long-term changes in operational emissions (e.g., operation of new buildings or other changes affecting aircraft and vehicle emissions) would be subject to a review for conformity with the NAAQS, as identified in Table 6-2. The Ultimate Conditions include a new runway that would change airfield taxiing distances for aircraft, as well as aircraft flight patterns in the vicinity of the Airport, and would increase the capacity of the Airport. Therefore, a review for conformity with the NAAQS would be required to assess the impact of these changes to aircraft operations under Ultimate Conditions, as well as the impact of temporary emissions associated with construction activity for these projects.

Although a significance threshold has not been established for the evaluation of climate change effects, greenhouse gas emissions associated with construction and subsequent operational changes can be estimated using criteria pollutant emissions analyses, and should be disclosed in the NEPA documentation.

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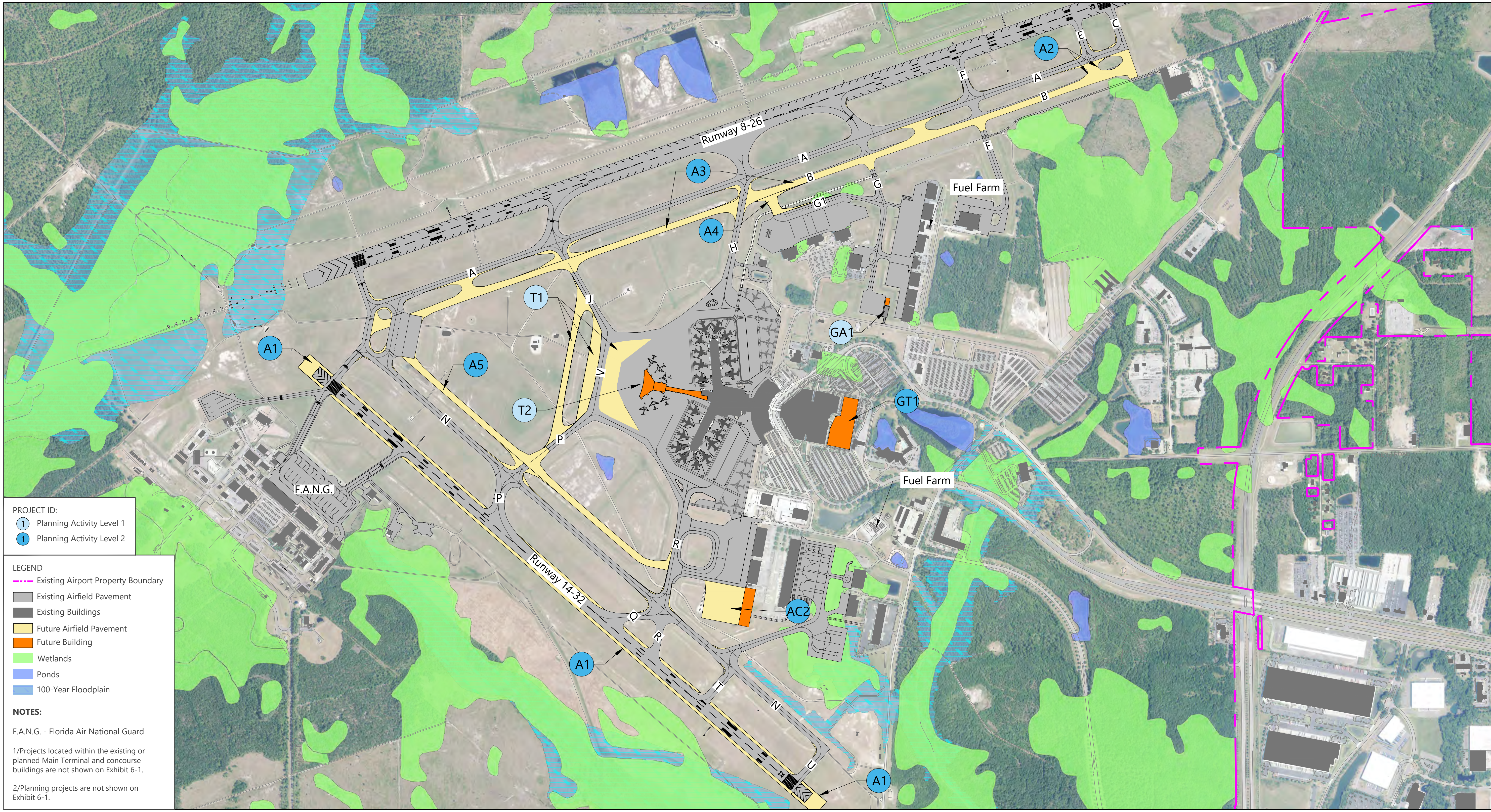

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 1,200 ft.

EXHIBIT 6-1

ENVIRONMENTAL CONSIDERATIONS FOR THE PREFERRED AIRPORT DEVELOPMENT PLAN - PALS 1-3

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\7.1 - Environmental Overview - Ricondo\CAD\Exhibit 6-1_JAX_Environmental Considerations for Implementation Plan.dwgLayout: 11x17 Plotted: Mar 6, 2020, 04:33PM

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SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 1,600 ft.

EXHIBIT 6-2

ENVIRONMENTAL CONSIDERATIONS FOR ULTIMATE CONDITIONS

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\7.1 - Environmental Overview - Ricondo\CAD\Exhibit 6-2_JAX_Environmental Considerations for Ultimate Conditions.dwgLayout: 11x17 Plotted: Mar 6, 2020, 04:36PM

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TABLE 6-2 (1 OF 2) POTENTIAL ENVIRONMENTAL EFFECTS ASSOCIATED WITH MASTER PLAN PROJECTS

PROJECT NUMBER	PROJECT NAME	ENVIRONMENTAL RESOURCES PRESENT [1]			CATEGORIES FOR WHICH CONSTRUCTION/ACTIVITY CHANGES MAY REQUIRE ASSESSMENT [1]	
		BIOLOGICAL RESOURCES	HAZARDOUS MATERIALS	WATER RESOURCES	AIR QUALITY AND CLIMATE	NOISE [2]
Planning Activity Level 1						
AC1	Air Cargo Ramp #3 Apron Expansion	**Yes**	**Yes**	**Yes**	**Likely**	**Likely**
C1	Airside Concessions Redevelopment	No	No	No	Not Likely	Not Likely
GA1	Customs and Border Protection General Aviation Facility	**Yes**	**Yes**	**Yes**	**Likely**	Not Likely
T1	Future ADG V Taxiway – Parallel to Taxiway V	**Yes**	No	**Yes**	**Likely**	Not Likely
T2	Concourse B – Phase 1 (6 gates)	No	**Yes**	No	**Likely**	**Likely**
T3	Installation of 6 CPSSs at the Security Screening Checkpoint	No	No	No	Not Likely	Not Likely
T4	Holdroom Modifications – Concourses A and C	No	No	No	Not Likely	Not Likely
Planning Activity Level 2						
A1	Runway 14-32 Shoulders	**Yes**	No	**Yes**	**Likely**	Not Likely
A2	Taxiway Fillet Modifications	**Yes**	No	**Yes**	**Likely**	Not Likely
A3	Taxiway B Extension and Realignment	**Yes**	No	**Yes**	**Likely**	**Likely**
A4	Taxiway G1 Reconstruction	**Yes**	No	**Yes**	**Likely**	**Likely**
A5	Future ADG V Taxiway – Parallel to Taxiway N	**Yes**	No	**Yes**	**Likely**	**Likely**
GT1	Parking Garage Expansion	No	No	No	**Likely**	Not Likely
T5	Security Screening Checkpoint Expansion to 10 CPSSs	No	No	No	Not Likely	Not Likely

TABLE 6-2 (2 OF 2) POTENTIAL ENVIRONMENTAL EFFECTS ASSOCIATED WITH MASTER PLAN PROJECTS

PROJECT NUMBER	PROJECT NAME	ENVIRONMENTAL RESOURCE PRESENT [1] BIOLOGICAL RESOURCES	ENVIRONMENTAL RESOURCE PRESENT [1] HAZARDOUS MATERIALS	ENVIRONMENTAL RESOURCE PRESENT [1] WATER RESOURCES	CATEGORIES FOR WHICH CONSTRUCTION/ACTIVITY CHANGES MAY REQUIRE ASSESSMENT [1] AIR QUALITY AND CLIMATE	CATEGORIES FOR WHICH CONSTRUCTION/ACTIVITY CHANGES MAY REQUIRE ASSESSMENT [1] NOISE [2]
Planning Activity Level 3						
A6	Future South Runway – Preliminary Planning [3]	N/A	N/A	N/A	N/A	N/A
A7	New Air traffic Control Tower – Preliminary Planning	N/A	N/A	N/A	N/A	N/A
Ultimate Conditions						
N/A	Future South Runway	**Yes**	No	**Yes**	**Likely**	**Likely**
N/A	Future Concourse B – Phase 2	No	**Yes**	No	**Likely**	**Likely**
N/A	North Hardstand Development	**Yes**	**Yes**	**Yes**	**Likely**	**Likely**
N/A	South Hardstand Development	**Yes**	**Yes**	**Yes**	**Likely**	**Likely**

NOTES:
"Yes" indicates project may affect the environmental resource based on proposed project footprint and known existing environmental conditions.
"No" indicates project is not anticipated to affect the environmental resource based on project footprint and known existing environmental conditions.
"Likely" indicates an assessment of potential impacts may be needed based on project definition.
"Not Likely" indicates an assessment of potential impacts is not likely to be needed based on project definition.
"Unknown" indicates the potential effects are unknown based on project information available in the Master Plan Update.
ADG – Airplane Design Group
ASL – Automated Screen Lane
1 Identification of potential environmental issues reflects a qualitative, planning-level review of available environmental conditions; additional review and analysis may be needed for NEPA processing.
2 The noise category includes consideration of potential changes in aircraft noise and effects on noise compatible land uses (see Section 6.2.6) and Section 4(f) resources (see Section 6.2.3).
3 Preliminary planning projects would not be expected to result in environmental effects.
4 The location of the proposed Air Traffic Control Tower has not been identified, so the presence of biological resources, hazardous materials, and water resources within the project footprint could not be determined.
SOURCE: Ricondo & Associates, Inc., October 2019.

6.2.2 BIOLOGICAL RESOURCES

Habitats supporting several endangered and threatened species may occur at or near the Airport, as described in Section 2.17. These areas, however, were not surveyed as part of the MPU to determine the presence of listed species. Therefore, potential effects on endangered and threatened species should be considered in future NEPA reviews for all projects that have the potential to disturb undeveloped areas, including maintained areas on the airfield, as identified in the "Biological Resources" column on Table 6-2.

6.2.3 DEPARTMENT OF TRANSPORTATION, SECTION 4(F) RESOURCES

Section 4(f) of the US Department of Transportation Act of 1966 specifies that transportation projects cannot take land from public parks and recreation land, historic sites, or wildlife refuges without first determining that no feasible and prudent alternative exists. A direct physical use of a Section 4(f) property constitutes a taking. Additionally, a taking may occur through constructive use of the property when, by means of noise, air pollution, water pollution, or other impacts, the impacts are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired.

Although no Section 4(f) resources are located on Airport property, several potential Section 4(f) resources are located within 2 miles of the Airport. These include San Mateo Neighborhood Park, Eartha H. Napoleon Park, Garden City Park, Ocean Way Dog Park, and the Seaton Creek Historic Preserve, per the Florida Department of Environmental Protection. The Master Plan projects would not directly affect these Section 4(f) resources. Master Plan projects that have the potential to change aircraft noise exposure in the vicinity of the Airport should include consideration of changes in noise exposure at nearby Section 4(f) resources as indicated in the "Noise" column in Table 6-2.

6.2.4 HAZARDOUS MATERIALS

The primary types of hazardous materials at JAX include fuels and lubricants that are stored at two On-Airport FBO fuel farms and maintenance facilities. No superfund sites are located within the vicinity of the Airport.

As Master Plan projects are implemented, the NEPA documentation should identify and evaluate the proximity of any projects to known contamination sites, including those tracked by the Florida Department of Environmental Protection. NEPA documentation for Master Plan projects located on or within proximity to a contamination site should include a discussion of the site (including its location, owner/operator, and the type and extent of contamination, as applicable); the distance and orientation of the contamination site relative to the project location; and the regulatory status of the contamination site (including a description of any cleanup activities). Further environmental documentation should identify all applicable federal, state, and local laws or regulations governing the procedures for addressing unexpected contaminated soils encountered during construction.

In Table 6-2, a potential hazardous materials effect was identified for a project if operations with project implementation would involve the use, transport, or storage of hazardous materials (such as fueling operations).

6.2.5 WATER RESOURCES

Water resources in the vicinity of the Airport are shown on Exhibits 6-1 and 6-2 (Wetlands, Ponds, and 100-Year Floodplains). For the projects listed in Table 6-2, a potential water resources effect was identified if a project meets one or both of the following conditions:

- The footprint of the project would increase impervious surface area (requiring identification of stormwater management strategies).

- The footprint of the project would overlap with, or be adjacent to, a floodplain, wetland, or other surface water.

Several Master Plan projects, including the taxiway and apron improvements, would increase impervious surface area on the Airport. Future NEPA documentation will need to identify and document future stormwater management strategies to demonstrate the minimization of effects on water quality.

Two projects—the Master Plan project AC1 (South Air Cargo Development) and the Ultimate Conditions Future South Runway—would affect areas designated as 100-year floodplains. If no practicable alternative to siting a project in a floodplain exists, a floodplain encroachment would occur. A significant floodplain encroachment, however, is not necessarily considered a significant environmental impact under NEPA. The FAA may approve a project involving a floodplain encroachment upon finding that no practicable alternatives are available, and that the project will include measures to minimize harm. The NEPA documentation should explain any alternatives that were analyzed; provide justification for locating the project in the floodplain as the only practicable alternative; and identify applicable mitigation measures, if appropriate, as part of the project in order to minimize potential adverse effects to the natural and beneficial floodplain values.

The footprints of Air Cargo Development projects (AC1) and the Ultimate Conditions projects for Air Cargo Development (AC2), General Aviation Development (GA2) as well as the Future South Runway are located within, or in proximity to, areas identified as wetlands. Wetland delineations and direct wetland impacts must be evaluated and reviewed with the US Army Corps of Engineers, and NEPA documentation must describe efforts to avoid and minimize wetland impacts. Furthermore, indirect effects to wetlands must be addressed by demonstrating appropriate stormwater management controls to minimize any effects on wetland water quality.

Although not directly shown in Table 6-2, any projects that include ground-disturbing activities during construction may need to disclose potential effects on groundwater resources.

6.2.6 NOISE AND NOISE COMPATIBLE LAND USE

The Master Plan projects are not intended to induce growth in aircraft activity, change the runway layout, or change aircraft traffic routes; therefore, no significant changes with respect to aircraft operations and noise exposure are anticipated. The potential need to address noise and noise compatible land use was identified in Table 6-2 for a Master Plan project if the project has the potential to affect runway use, such as by the introduction of a new aircraft parking location on the airfield (e.g., North Air Cargo Development near the Runway 26 end, Project AC2). All projects may not require a noise analysis; depending on the anticipated project effects, a qualitative discussion of why the project is not anticipated to change runway use may be sufficient.

The Ultimate Conditions includes the new Future South Runway, a change to the runway layout. NEPA review of this project would include the preparation of noise exposure contours to access changes in noise exposure resulting from use of the new runway.

6.2.7 OTHER ENVIRONMENTAL CONSIDERATIONS

Other environmental resource categories identified in FAA Order 1050.1F are not addressed in this section. Specifically, farmlands and wild and scenic rivers are not present on or within the vicinity of Airport property. Historical, archaeological, architectural, and cultural resources are not known to be present on or within the vicinity of Airport property (though an evaluation of the potential for effects on archaeological resources may be required for any projects with a ground disturbing component). However, for any project that would affect or be implemented near buildings 45 years or older, an assessment should be conducted to determine if they meet state or national criteria for listing as a historic resource. Other resource categories, including solid waste and pollution prevention;

land use; visual resources; natural resources and energy supply; and socioeconomics, environmental justice, and children's health and safety are not discussed in detail because Master Plan projects are not expected to involve extraordinary circumstances associated with these categories or affect these resources, given the practices JAA would undertake to comply with local, state, and federal regulations and guidance on these matters.

6.3 ENVIRONMENTAL PROCESSING STRATEGY

The ALP depicts planned development projects, identified during the master planning process, that are reasonably foreseeable over the planning horizon. The FAA's environmental approval of planned facilities depicted on an ALP can be either conditional or unconditional. Conditional approval applies to projects that require further environmental review before being undertaken; whereas unconditional approval is granted when NEPA compliance has been achieved for all projects depicted on the ALP. The ALP submitted to the FAA containing the Master Plan projects is subject to conditional approval. Individual implementation projects, or groups of projects, will then be subject to NEPA analysis to obtain unconditional approval of the portion(s) of the ALP depicting those projects.

When analyzing the environmental review associated with projects under the Master Plan, the dependencies among projects must be considered. Regulations from the Council on Environmental Quality require that connected projects be considered in the same environmental review document (e.g., EA). Per 40 CFR Section 1508.25, "Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements. (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously. (iii) Are interdependent parts of a larger action and depend on the larger action for their justification." When proceeding with environmental review and approval of projects that have the potential to be connected to other projects, independent utility must be demonstrated if those potentially connected projects are not considered.

Coordination with the FAA and other stakeholders (e.g., agencies with jurisdiction over affected resources) should occur well in advance of the need for environmental approval, to determine how NEPA compliance can be achieved, including identifying any protocols and analyses required to support a compliance determination. Environmental processing of projects can take three or more years for an EIS and a year or more for an EA. Projects eligible for CATEX can be processed more quickly (i.e., three to six months). Projects requiring permits from other agencies often require additional time after NEPA processing to obtain the necessary permits; the environmental processing timeline should include this permit processing time.

As the anticipated timing for Master Plan projects is further evaluated and refined, the environmental factors identified in this section, as well as other emerging environmental issues, should be reflected in the NEPA processing strategy. Ongoing collaboration with the FAA regarding updates and refinements to future project assumptions, such as timing and anticipated impacts, will be critical to maintaining and refining a NEPA processing strategy and associated timeline.

6.4 SUSTAINABILITY INITIATIVES

JAA is committed to reducing its environmental footprint and operating JAX more efficiently. JAA prioritizes sustainability initiatives that achieve triple bottom line benefits—environmental and social responsibility initiatives that are financially sustainable. This subsection outlines several opportunities for enhancing JAX's sustainability as JAA begins the Master Plan projects.

Five focus areas were defined to guide the selection of sustainability initiatives for the MPU:

- **Energy Use**. Increase the use of sustainable energy sources through efficiency and conservation efforts and by expanding access to renewable and alternative energy sources.
- **Water Use**. Reduce potable water consumption.
- **Waste Management**. Minimize waste generation through reduction, reuse, and recycling.
- **Resilient Design**. Use design strategies that support recovery from disasters and other disruptions and consider the impacts of climate change.
- **Community Communication, Outreach, and Partnering**. Use communications strategies, community events, and partnerships to develop and strengthen the Airport's connections with the community, to increase awareness, and mobilize action on sustainability and climate change.

This section presents baseline conditions for each focus area. The waste management baseline was defined to align with FAA's guidance on airport recycling, reuse, and waste reduction plans, including discussion of operations, performance, recycling feasibility, and opportunities, per the US Department of Transportation. Baselines for other sustainability focus areas are limited to discussion of JAA's sustainability achievements to date. Recommended sustainability initiatives to enhance JAX's sustainability follow the baseline discussions.

6.4.1 ENERGY USE BASELINE

JAA has implemented several initiatives to increase use of renewable energy sources and to reduce overall energy consumption, including the following:

- Conversions to energy efficient lighting.
- Installation of six electrical vehicle charging stations at the daily surface lot, courtesy waiting lot, valet lot and hourly garage.
- Installation of a solar array at the JAX Terminal on the top level of the parking garage.

6.4.2 WATER USE BASELINE

JAA has implemented several initiatives to reduce potable water use:

- Conversions to low-flow fixtures during facility renovations.
- Adherence to the City of Jacksonville landscaping requirements to minimize irrigation water use.
- Use of detention pond water (reclaimed water) for irrigation to reduce potable water usage

6.4.3 WASTE MANAGEMENT BASELINE

6.4.3.1 WASTE MANAGEMENT OPERATIONS

Waste managed by JAA is generated in three general areas: terminal and JAA administrative areas, maintenance buildings, and the airfield. These categories include the following components:

- Waste collected in the terminal and JAA administrative areas includes municipal solid waste (MSW), which generally consists of everyday items such as aluminum, plastic bottles and containers, packaging, bags, paper products, and cardboard. Compostable waste (such as food waste) and deplaned waste from domestic flights are also considered MSW waste.
- Deplaned waste from international flights is managed separately in accordance with applicable laws and regulations.

- Waste collected in JAA maintenance areas includes MSW as well as items associated with maintenance activities, such as used tires and fluids.
- Waste collected on the airfield primarily includes foreign object debris and green waste (e.g., grass clippings).

Sortation of trash and recyclables begins at the point of disposal (i.e., bins in the terminal, administration, and maintenance areas, and dumpsters on the airfield). **Exhibit 6-3** shows a typical recycling container in the public area of the JAX terminal. JAA manages the transport of waste from points of disposal to compactors and dumpsters in the terminal and other areas of the Airport, while tenants and airlines operating in the terminal transport waste from their leased areas, and from domestic arriving aircraft, to JAA compactors and dumpsters. Waste generated elsewhere on Airport property is managed by tenants and may also be transported to JAA compactors and dumpsters.

EXHIBIT 6-3 RECYCLING CONTAINER IN PUBLIC AREA OF TERMINAL

SOURCE: Jacksonville Aviation Authority, 2019.

JAA collects waste daily from trash and recyclables containers, which are lined with clear bags. Filled bags are transported to compactors or dumpsters in the following locations:

DUMPSTER LOCATIONS

- JAX Fire Station
- JAX Administration Building
- JAX Administration Parking Lot
- JAX Maintenance Facility
- South Loading Dock
- FAA Sector Building

COMPACTOR LOCATIONS

- Concourse A
- Concourse B
- Concourse C
- North Baggage Area
- South Loading Dock

In addition to as-needed pick-ups, some compactors, as well as all dumpsters, are hauled on a scheduled basis (i.e., weekly). Recyclables sorted at the point of disposal (such as the recycling container shown in Exhibit 6-3) are collected in separate dumpsters at the JAX Maintenance Facility, the South Loading Dock, and at Concourses A and C. JAA is installing cameras to ensure compactors are used correctly to improve recycling. MSW not sorted at the point of disposal is transported to a facility as determined by Advanced Disposal for sortation to remove recyclables from the waste stream prior to disposal at an area landfill.

JAA's current initiatives to minimize non-MSW include the following:

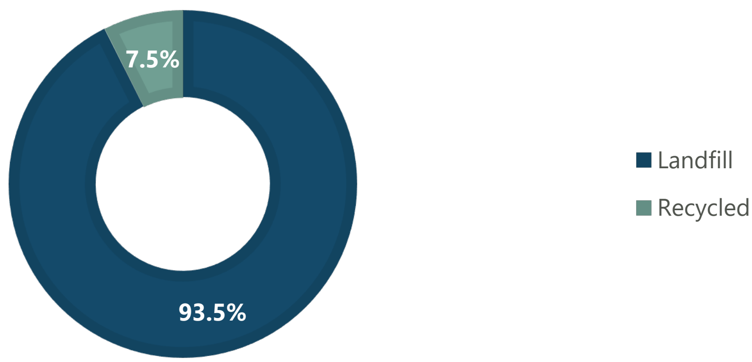
- Storing used tires, oils, and lubricants generated within maintenance areas.
- Disposing of fluorescent lamps, electronic waste, and toner cartridges in compliance with applicable environmental laws and regulations.
- Providing space to collect scrap metal generated by JAA and tenants (JAA retains the revenue associated with scrap metal recycling).
- Prioritizing the reuse of wood and composite pallets; JAA plans to identify recycling opportunities for pallets in the future.
- Replanting landscaping waste in a designated area for future reuse.
- Requiring that independent contractors manage waste generated during construction and demolition activities on a project-by-project basis.

6.4.3.2 WASTE MANAGEMENT CONTRACT AND RECYCLING PROGRAM PERFORMANCE

The Jacksonville Airport Authority has a contract with Advanced Disposal to collect JAX's MSW and recyclables. Advanced Disposal's responsibilities include collecting waste from JAA's compactors and dumpsters (both as-needed and scheduled collections), sorting and processing recyclables, and disposing trash at an area landfill. Under the conditions of the current contract, JAA paid less per ton for landfilled waste than for disposal of recyclables in Fiscal Year 2019.

During the 2019 fiscal year (October 2018 to September 2019), approximately 1,728 tons of solid waste were collected in JAA compactors and dumpsters. Of the total waste collected, approximately 7.5 percent (129 tons) was recycled, as shown in **Exhibit 6-4**.

EXHIBIT 6-4 JAA RECYCLING RATE (FISCAL YEAR 2019)



SOURCE: Speight, Robert, Jacksonville Aviation Authority, e-mail to Lisa Hughes, Lisa Reznar, David Plakorus, and David Dunkley, "RE: JAX Sustainability and Waste Stream Discussion," September 11, 2019 (attachment: AdvDpisposal FY2019.xlsx, October 2018–September 2019).

6.4.3.3 RECYCLING FEASIBILITY

JAA provides infrastructure to support recycling throughout the terminal and in the administrative and maintenance areas. Although the economics of the recyclables market does not suggest increasing recycling rates is currently financially feasible, an overall focus on waste remains a priority. As Airport activity grows, waste generation and associated disposal costs (landfill fees and recycling) will likely increase, underscoring the importance of JAA's continued focus on waste management and disposal.

To improve recycling programs, the federal government and State of Florida provide guidance, goals, and resources, as described below:

- **Federal Guidance.** The FAA maintains several resources on its website to aid airport operators with improving waste management practices.[1] Additionally, the US Environmental Protection Agency published guidance to support the development and implementation of airport recycling programs.[2]
- **State Guidance.** In 2008 the Florida Legislature established a statewide weight-based recycling goal of 75 percent diversion of waste from landfills by 2020, through the Energy, Climate Change and Economic Security Act of 2008. The Act directed the Florida Department of Environmental Protection to establish reporting protocols, and required counties to report on their performance annually. As of 2018, Duval County reported a county-wide recycling rate of 56 percent, per the Florida Department of Environmental Protection.

  Additionally, Florida Statute Section 403.7065 requires any state agency or agency of a political subdivision of the state that is using state funds, or any person contracting with any such agency with respect to work

[1] U.S. Department of Transportation, Federal Aviation Administration, *Airport Recycling*, https://www.faa.gov/airports/environmental/airport_recycling/ (accessed October 24, 2019).

[2] U.S. Environmental Protection Agency, *Developing and Implementing an Airport Recycling Program*, https://archive.epa.gov/wastes/conserve/tools/rogo/web/pdf/airport-recycling-guide.pdf (accessed October 24, 2019).

performed under contract, to procure products or materials with recycled content when the Department of Management Services determines that those products or materials are available.

6.4.3.4 OPPORTUNITIES

The JAX recycling program has several potential strategies/opportunities for improving waste program performance. These include:

- Review recycling signage at the points of disposal (public-facing) and back-of-house collection compactors and dumpsters for opportunities to improve awareness of recyclable materials and maximize proper sortation.
- Review locations of recycling and trash containers (the point of collection receptacles); colocate containers to provide equally accessible options for sorting MSW at the point of disposal.
- Review locations of recycling and trash compactors and dumpsters; colocated compactors and dumpsters provide equally-accessible options for sorting MSW at the point of storage.
- Develop procurement language regarding waste minimization and recycled content and require internal departments or tenants to recycle or to purchase items with recycled content/reduced packaging.
- Conduct routine training on recycling best practices for staff and tenants.

6.4.4 RESILIENT DESIGN BASELINE

Resilient design involves designing the built environment to reduce impacts on natural resources and to maximize the Airport's resiliency to the effects of climate change, including weather events and rising sea levels. Current JAA resiliency design priorities (e.g., elevating critical infrastructure to protect from flooding) have been incorporated into infrastructure programs.

6.4.5 COMMUNITY EDUCATION, OUTREACH, AND PARTNERING BASELINE

JAA's existing community outreach efforts include the following:

- Engaging the Airport's customers and employees in sustainability goals and encouraging vendors to participate.
- Working with municipalities to prevent incompatible land uses and zoning.
- Entering into partnerships with community groups and local businesses to mitigate adverse effects from development projects.
- Providing public information in a simple, clear manner.
- Collaborating with municipal and other public agencies on sustainable practices and coordinating efforts to provide solutions and alternatives.

Further, JAA is seeking opportunities to arrange for space in public buildings for sustainability displays and awareness training (e.g., kiosks in the terminal or displays in administration buildings).

6.4.6 RECOMMENDED SUSTAINABILITY INITIATIVES

Based on a review of baseline conditions, a series of sustainability initiatives were reviewed with, and selected by, JAA staff to advance the sustainable performance of JAX as the Master Plan projects are developed. The initiatives are presented in **Table 6-3** by focus area.

TABLE 6-3 MASTER PLAN UPDATE SUSTAINABILITY INITIATIVES

FOCUS AREA	INITIATIVE
Energy Use	Continue implementation of efficiency projects, such as HVAC improvements and installation of energy-efficient lighting.
	Explore JEA rebate incentives that support energy efficient upgrades at JAA facilities.
	Identify and implement, where feasible, opportunities to increase use of renewable energy sources (e.g., rooftop solar installations on new buildings).
	Identify and implement, where feasible, opportunities to increase reliance on lower-emission energy sources (e.g., installation of EV charging stations).
	Consider installation of energy submeters in new development to provide additional data on energy use by functional activity and tenant.
	Develop consistent messaging to communicate energy efficiency achievements and goals.
Water Use	Continue converting to low-flow fixtures and maintaining/updating standards for new construction and renovation projects.
	Consider installation of water submeters in new development to provide additional data on water use by functional activity and tenant.
	Explore and implement landscaping best practices (e.g., Florida-Friendly Landscaping practices) for new development sites to reduce need for irrigation and increase reclaimed water use for irrigation.
	Maintain and periodically update water conservation practices defined in Airport maintenance procedures.
Waste Management	Consider providing adequate space in new buildings to accommodate waste sortation and storage best practices.
	Encourage construction contractors to develop construction waste management plans.
	Identify opportunities to conduct periodic training on recycling procedures for Airport staff and tenants.
	Improve signage to enhance recycling program participation.
	Encourage concessionaires to donate unused items (e.g., food donation program that distributes food that is prepared but not sold/consumed).
Resilient Design	Encourage construction contractors to develop construction waste management plans.
	Identify opportunities to conduct periodic training on recycling procedures for Airport staff and tenants.
	Improve signage to enhance recycling program participation.
Community Education, Outreach, and Partnering	Encourage concessionaires to donate unused items (e.g., food donation program that distributes food that is prepared but not sold/consumed).
	Explore opportunities to incorporate sustainability messages in the built environment (e.g., identify sustainable building features with signage and kiosks).
	Build/strengthen partnerships with tenants and local organizations to jointly pursue sustainability strategies at JAX (e.g., JEA and energy efficiency opportunities, concessionaires, and local food donation programs).

SOURCE: Ricondo & Associates, October 2019, based on feedback from Jacksonville Airport Authority, Master Plan Coordination Meeting #4, October 22, 2019.

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7. IMPLEMENTATION PLAN

The Implementation Plan establishes a logical development sequence and preliminary schedule for the recommended improvements identified in the Master Plan Update, based on the characteristics and rates of growth forecast through the planning horizon. The Airport requirements identified in the previous chapters, which are addressed through distinct projects with budgeted costs and durations, form the basis of the Implementation Plan. This chapter addresses project development sequencing, while the financial analysis of the Implementation Plan is provided in Chapter 8.

The timing of project implementation is based on forecast demand. Because actual growth may deviate from the forecast, the Implementation Plan includes an overview of factors that could trigger a development action. This approach enables JAA to assess actual demand and provides the flexibility to respond effectively. With regular monitoring, data analysis, and an understanding of the impacts of various trends, JAA can respond strategically to meet tenant and user needs by developing facilities in a timely manner.

This section addresses the following:

- **Factors Affecting Implementation and Project Development**. These include general criteria for decision-making regarding facility development, and specific implementation triggers.
- **Implementation Plan**. The Plan includes project development at each PAL and illustrates the logical progression of those projects, from existing conditions to the 20-year development proposed for the Airport.
- **Annual Activity Monitoring.** Key data items regarding the characteristics of the Airport's growth will serve as the basis for the annual update of the Capital Improvement Program (CIP) for JAX.

7.1 FACTORS AFFECTING PROJECT IMPLEMENTATION AND DEVELOPMENT

Project implementation should be phased so development corresponds with the forecast demand. Preferably, projects should be implemented with sufficient time to accommodate increased demand, without being built prematurely (and resulting in underutilized facilities). Correctly timing the implementation of these projects requires a clear understanding of the triggers that prompt development, as well as ongoing data monitoring and analysis to identify when specific projects should commence. It is anticipated that Airport development projects recommended as part of the Master Plan Update will be constructed as demand materializes, but JAA should also monitor the need to replace or modernize older facilities as needed.

7.1.1 VOLUME AND CHARACTERISTICS OF ACTIVITY GROWTH

The volume and character of Airport activity will dictate when development should occur throughout the planning horizon. Because the Airport's actual growth may not match the forecast, the volume and characteristics of the Airport's activity should be monitored closely.

Factors that could influence the volume and characteristics of activity growth at the Airport include, among others, changes in aircraft fleet mix, increased service by various airlines, and changes in GA activity.

Currently, the commercial fleet mix serving the Airport consists primarily of ADG III aircraft, with the Boeing 737-800 being a representative aircraft type. It is forecast through the planning horizon that additional aircraft types will be introduced into the commercial fleet, including the Airbus A321 NEO and Boeing 737 MAX variants (both of which are ADG III aircraft as well).

The Implementation Plan is based on the aviation activity forecasts presented in Chapter 3 and the demand/capacity analysis discussed in Chapter 4, which describes how the above-mentioned factors affect aviation activity. Changes in the commercial fleet mix should be monitored to determine whether they correspond to the fleet mix projections. If the commercial fleet mix changes significantly from what was forecast, elements of the Implementation Plan may need to be re-evaluated.

As the Airport continues to grow, the Implementation Plan should be periodically reviewed relative to actual trends. Specifically, higher than expected growth of operations by aircraft with high capacity seating configurations could greatly increase JAX passenger volumes. Also, a change in GA activity at JAX could impact hourly runway capacity because of the greater required separation between large commercial aircraft and GA aircraft.

7.1.2 RELOCATION AND REPLACEMENT OF AGING FACILITIES

Expansion of terminal and airfield facilities to meet forecast demand could affect existing Airport tenants and other Airport facilities. The replacement of aging facilities and the need to minimize disruption to existing tenant activities will be considerations affecting project implementation decisions. Therefore, the planning, design, financing, and construction of facilities requiring replacement must be considered alongside any expansion efforts that affect existing facilities.

7.1.3 GENERAL CRITERIA FOR IMPLEMENTATION

The primary criteria used in the development of the Implementation Plan include:

- Initiate advanced project planning and design so that improvements can be in place when needed. For all projects, any necessary environmental analyses and preliminary design should occur before design and construction, because these steps may take several years before the improvement can be in place and operational.
- Minimize operational impacts on the airfield, terminal, and ground access routes. This includes minimizing runway and taxiway closures to limit airfield capacity reductions; minimizing pilot and passenger inconvenience and confusion; and maintaining access to the roadways and parking facilities.
- Maintain a logical sequence of development by building individual projects toward the Ultimate ALP.
- Ensure JAA goals and objectives are being met during development and fulfillment of the Implementation Plan.

7.1.4 IMPLEMENTATION INDICATORS

Certain activity level indicators that should trigger development have been identified as part of this process. These indicators, or triggers, are intended to signal an impending need for additional/expanded facilities, based on existing demand/capacity relationships. Once a trigger is reached, in-depth analyses should be performed to confirm the validity of the triggers and the facility concepts.

7.1.4.1 AIRFIELD INDICATORS

As previously discussed in Chapter 4, initial planning for additional airfield capacity should begin when demand exceeds 60 percent of the ASV. By initiating planning at that point, the new or expanded facilities could be expected to become operational as demand nears 100 percent of the ASV.

7.1.4.2 TERMINAL/GATE INDICATORS

The timing of terminal/gate expansion or development is generally based on airline demand for additional facilities, the need to replace aging facilities, and the need to enhance the passenger level of service. The following were identified as potential triggers for terminal gate development at JAX:

- aircraft turns per gate equal seven or more
- enplaned passengers exceed 200,000 per gate
- demand for additional gates based on forecast airline activity or peaking patterns

7.1.4.3 GENERAL AVIATION INDICATORS

Two main types of GA tenants operate facilities at JAX: corporate tenants and FBOs (the majority of smaller GA traffic operates from other JAA airports). The development of new or improved GA facilities may at times be driven by tenant initiatives rather than by airport operators. However, activity indicators may provide insight into overall GA demand. Having a multiple-airport system, JAA has the flexibility to offer development options at another airport (e.g., Jacksonville Executive at Craig Airport). Overall demand for GA facilities and services at the Airport is indicated by the based aircraft fleet and the annual number of GA operations. An increase in the based aircraft fleet by tenant (corporate or FBO) can signal a need for hangar, terminal, and/or apron expansion.

7.1.4.4 PARKING/GROUND TRANSPORTATION INDICATORS

Walker Consultants prepared an Airport Parking Study (**Appendix B**) to address landside access, ground transportation needs, parking expansion at the same time the Master Plan Update was occurring. This Parking Study should be referenced to identify potential parking/ground transportation development indicators.

7.1.4.5 OTHER FACILITY INDICATORS

In addition to the above-mentioned facilities, JAA has established plans for air cargo expansion and is pursuing the development of the CBP GAF. The demand indicators for the CBP GAF include increased or decreased demand for international travel by GA aircraft operating at the Airport. Analysis described in Chapter 4 of this Master Plan Update confirmed that the international GA demand at JAX warrants development of the CBP GAF. Air cargo development indicators could include increases in total freight tonnage or the number of cargo aircraft operations.

7.2 IMPLEMENTATION PLAN BY PLANNING ACTIVITY LEVEL

PALs are based on demand levels that will determine the need for specific development projects. **Table 7-1** presents the total annual aircraft operations and enplaned passengers that correspond with PALs 1, 2, and 3. Although the demand levels will dictate when development should occur at the Airport rather than a particular date or timeframe, Table 7-1 provides the corresponding year by which each PAL is forecast to be reached.

TABLE 7-1 PLANNING ACTIVITY LEVELS

PAL	YEAR (ESTIMATED)	AIRCRAFT OPERATIONS	ENPLANED PASSENGERS
1	2025	119,700	3,991,500
2	2032	134,400	4,563,100
3	2037	146,100	5,060,600

SOURCE: Ricondo & Associates, Inc. Aviation Activity Forecasts, March 2019.

Exhibit 7-1 presents an estimated schedule illustrating the recommended implementation of each Master Plan Update project listed in PALs 1, 2, and 3.

7.2.1 PROJECTS TO BE COMPLETED BY PAL 1 (2019 TO 2025)

CBP General Aviation Facility

- Design and construction of the Customs and Border Protection General Aviation Facility.

Air Cargo Expansion

- South Air Cargo Development (apron expansion to Ramp #3).

Terminal Expansion

- Future ADG V Bypass Taxiway Parallel to Taxiway V.
- Pavement Infill between Taxiway V and Terminal Apron area.
- Concourse B - Phase 1 (six additional gates).
- Installation of Six Checkpoint Property Screening Systems (CPSS) in the existing SSCP footprint.
- Holdroom Modifications in Concourses A and C (to increase seating capacity).
- Airside Concessions Redevelopment (to provide additional airside concessions).

Exhibit 7-2 illustrates the projects to be completed by PAL 1.

7.2.2 PROJECTS TO BE COMPLETED BY PAL 2 (2026 TO 2032)

Airfield Compliance

- Runway 14-32 Shoulders (for FAA compliance) and blast pad expansion.
- Taxiway Fillet Modifications (to comply with the FAA TDG standards for cockpit over centerline taxi operations).

Airfield Expansion

- Taxiway B Extension and Realignment – the taxiway will be extended from Taxiway H to Taxiway L and the existing portion of the taxiway will be realigned from Taxiway H to Taxiway C. These improvements will complete the second full length taxiway parallel to Runway 8-26 and will provide the required separation between Taxiways A and B.
- Taxiway G1 Reconstruction (to accommodate TDG 5 aircraft).
- Future ADG V Taxiway – Parallel to Taxiway N.

Air Cargo Expansion

- South Air Cargo Development (additional multi-tenant cargo building and apron expansion to Ramp #1).

Ground Transportation Facility Expansion

- Parking Garage Expansion east of the existing Daily Parking Garage (while this project was not identified in the Master Plan Update analysis, JAA has indicated this project will be implemented during the PAL 2 timeframe.)

Terminal Expansion

- SSCP Expansion entails widening of the SSCP to accommodate 10 CPSSs or to the latest passenger screening technology available.

Exhibit 7-3 illustrates the projects to be completed by PAL 2.

EXHIBIT 7-1 PROPOSED IMPLEMENTATION PLAN SCHEDULE

CIP No.	Project	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CIP No.	**PAL 1 (2019-2025)[1]**																			
	General Aviation Facility Expansion																			
GA1	Customs and Border Protection General Aviation Facility																			
	Terminal Expansion/Improvements																			
T1	Concourse B - Phase 1 (6 additional gates)																			
T2	New ADG V Taxiway - Parallel to Taxiway V and Infill Pavement																			
T3	Installation of 6 CPSSs in the SSCP																			
T4	Holdroom Modifications - Concourse A & C																			
	Concessions Expansion																			
C1	Airside Concessions Redevelopment																			
	Air Cargo Expansion																			
AC1	Air Cargo Ramp #3 Apron Expansion																			
CIP No.	**PAL 2 (2026-2032)**																			
	Airfield Compliance																			
A1	Runway 14-32 Shoulders and Blast Pad Expansion																			
A2	Taxiway Fillet Modifications																			
	Airfield Expansion																			
A3	Taxiway B Extension and Realignment																			
A4	Taxiway G1 Reconstruction																			
A5	New ADG V Taxiway - Parallel to Taxiway N																			
	Air Cargo Expansion																			
AC2	Air Cargo Ramp #1 Apron and Facilities Expansion																			
	Ground Transportation Facility Expansion																			
GT1	Parking Garage Expansion																			
	Terminal Expansion/Improvements																			
T5	Security Screening Checkpoint Expansion																			
CIP No.	**PAL 3 (2033-2037)**																			
	Airfield Expansion																			
A6	Future South Runway - Preliminary Planning																			
A7	New Air Traffic Control Tower – Preliminary Planning																			
CIP No.	**Ultimate Conditions[2]**																			
U1	Future South Runway																			
U2	Concourse B - Phase 2 (7 additional gates)																			
U3	North Hardstand Development																			
U4	South Hardstand Development																			

LEGEND:

Design Phase

Construction Phase

Preliminary Planning Phase

NOTES:

1 Aviation forecasts were developed for the 2018 - 2037 timeframe, however, timing of the Implementation Plan begins in 2019.

2 The demand driving the construction of these projects falls outside of the planning horizon for this Master Plan Update.

SOURCE: Ricondo & Associates, Inc., December 2019.

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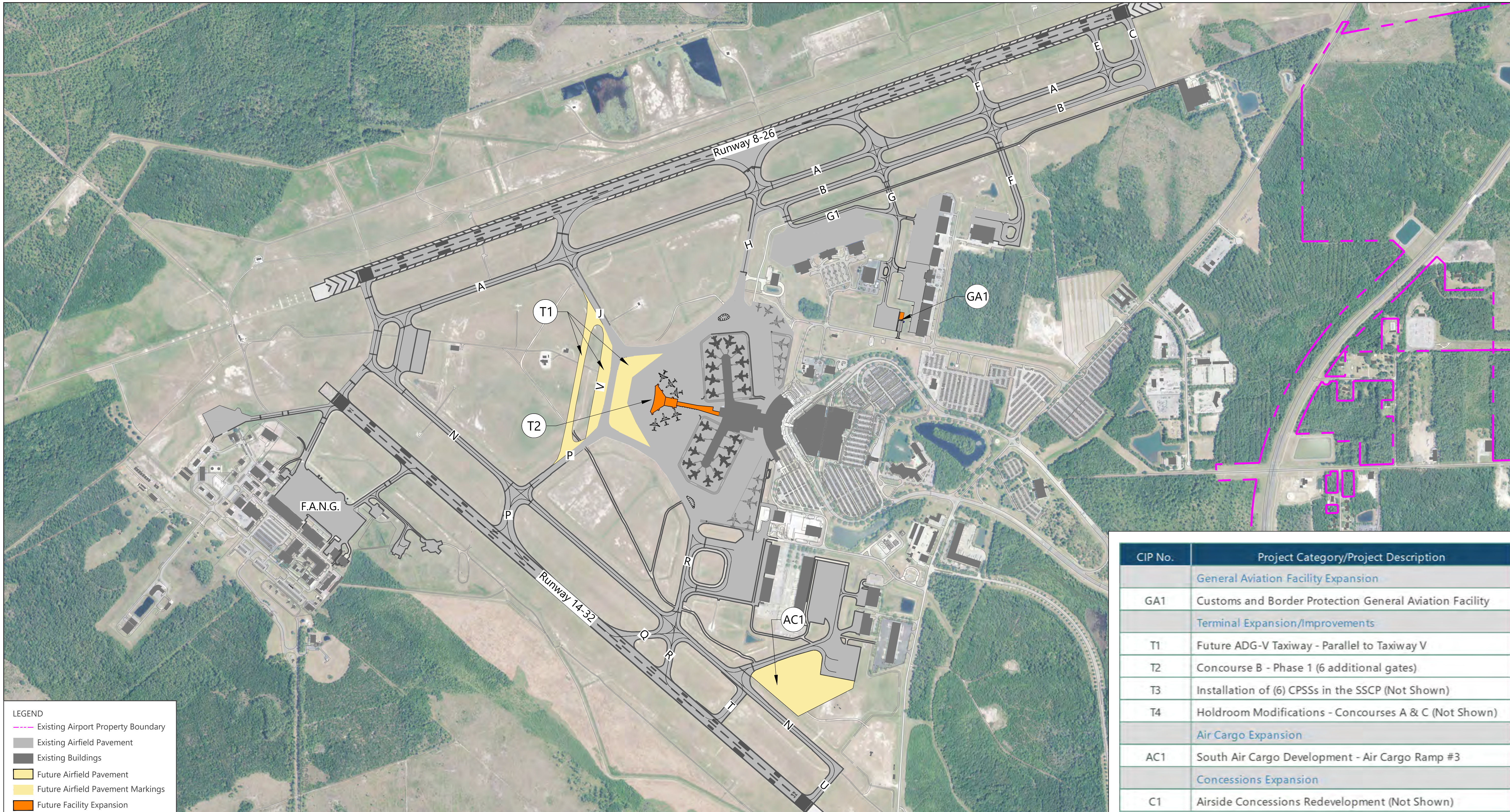

CIP No.	Project Category/Project Description
	General Aviation Facility Expansion
GA1	Customs and Border Protection General Aviation Facility
	Terminal Expansion/Improvements
T1	Future ADG-V Taxiway - Parallel to Taxiway V
T2	Concourse B - Phase 1 (6 additional gates)
T3	Installation of (6) CPSSs in the SSCP (Not Shown)
T4	Holdroom Modifications - Concourses A & C (Not Shown)
	Air Cargo Expansion
AC1	South Air Cargo Development - Air Cargo Ramp #3
	Concessions Expansion
C1	Airside Concessions Redevelopment (Not Shown)

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH 0 1,200 ft.

EXHIBIT 7-2

JAX IMPLEMENTATION PLAN
PLANNING ACTIVITY LEVEL 1

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\8.1 - Implementation Plan - Ricondo\CAD\Exhibit 7-2_JAX_MPU2019_Implentation Plan_PAL1.dwgLayout: PAL1 Plotted: Feb 21, 2020, 11:52AM

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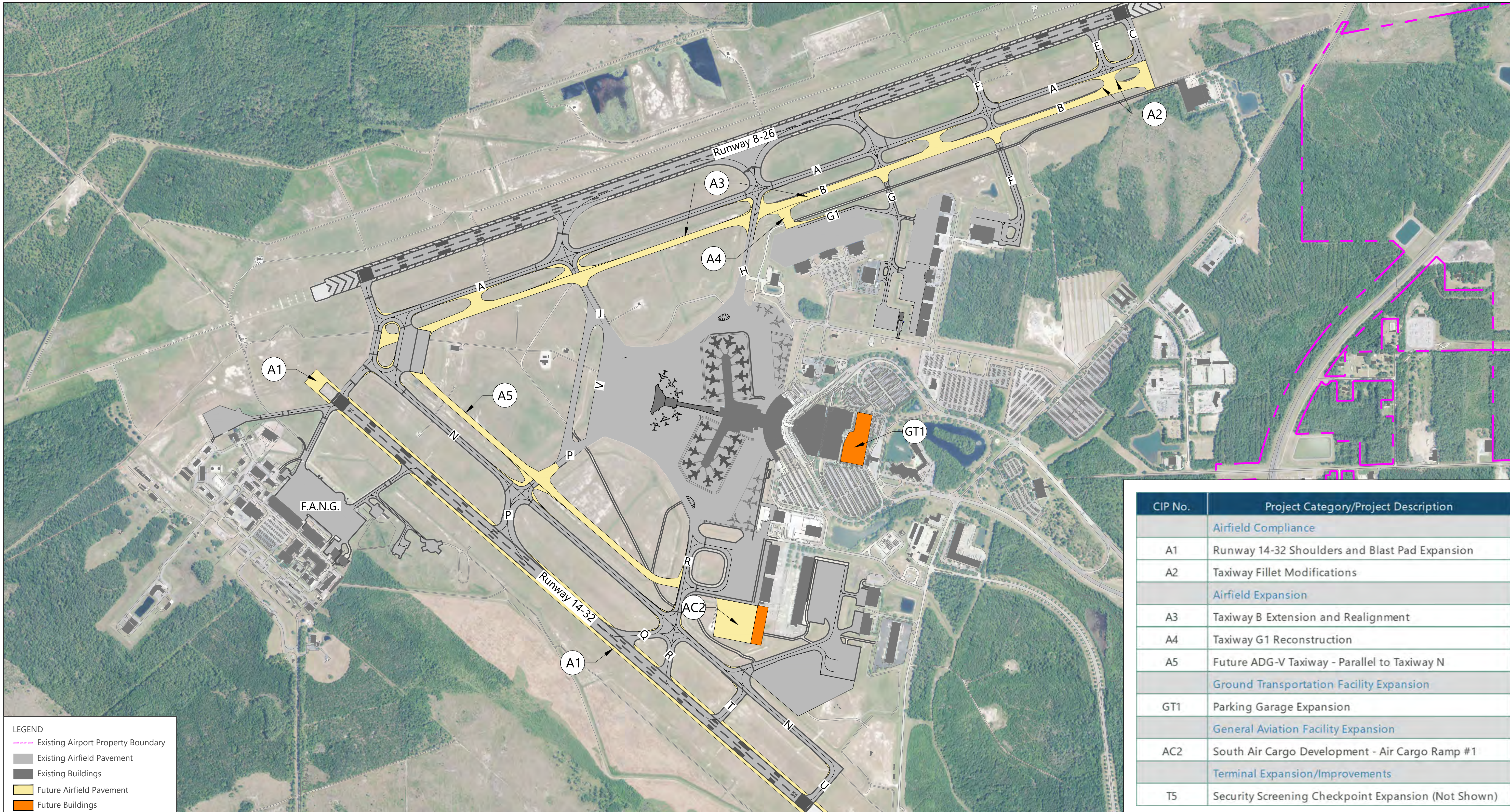

CIP No.	Project Category/Project Description
	Airfield Compliance
A1	Runway 14-32 Shoulders and Blast Pad Expansion
A2	Taxiway Fillet Modifications
	Airfield Expansion
A3	Taxiway B Extension and Realignment
A4	Taxiway G1 Reconstruction
A5	Future ADG-V Taxiway - Parallel to Taxiway N
	Ground Transportation Facility Expansion
GT1	Parking Garage Expansion
	General Aviation Facility Expansion
AC2	South Air Cargo Development - Air Cargo Ramp #1
	Terminal Expansion/Improvements
T5	Security Screening Checkpoint Expansion (Not Shown)

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

EXHIBIT 7-3

JAX IMPLEMENTATION PLAN
PLANNING ACTIVITY LEVEL 2

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\8.1 - Implementation Plan - Ricondo\CAD\Exhibit 7-3_JAX_MPU2019_Implentation Plan_PAL2.dwgLayout: PAL2 Plotted: Feb 21, 2020, 11:54AM

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7.2.3 PROJECTS TO BE COMPLETED BY PAL 3 (2033 – 2037)

Airfield Expansion

- Future South Runway – Preliminary planning.
- New ATCT – Preliminary planning (operationally required once future South Runway is constructed).

Development beyond PAL 2 may need to be reevaluated in the future based on passenger, air cargo, and general aviation (GA) traffic continues to grow. There is no development projected to occur during PAL 3, therefore an exhibit for this time frame is not depicted in this chapter.

7.2.4 FUTURE CARGO AND GENERAL AVIATION PROJECTS TO BE COMPLETED BASED ON GROWING DEMAND

- North Air Cargo Development – Preliminary planning
- General Aviation Facility Expansion – Preliminary planning

Air Cargo Expansion

- North Air Cargo Development – Preliminary planning. Ricondo was tasked with preparing air cargo development options and working with JAA to select the preferred alternative as reflected in this chapter. However, the air cargo forecasts did not indicate the need for additional air cargo development. Additional air cargo development would occur if driven by demand. It is for this reason the Airport Layout Plan Update indicates an area on Airport property reserved for air cargo development but does not reflect the air cargo development option contained in this chapter.

General Aviation Facility Expansion

- General Aviation Development – Phase 1 and 2 (to include ten total additional hangars and apron area). Ricondo was tasked with preparing GA development options and working with JAA to select the preferred alternative as reflected in this chapter. However, the GA forecasts did not indicate the need for additional GA development. Additional GA development would occur if driven by demand. It is for this reason the Airport Layout Plan Update indicates an area on Airport property reserved for GA development but does not reflect the GA development option contained in this chapter.

7.2.5 PROJECTS TO BE COMPLETED BEYOND PAL 3 (ULTIMATE CONDITIONS)

- Future South Runway.
- New ATCT.
- Concourse B – Phase 2 (up to seven additional aircraft gates).
- North Hardstand Apron Development.
- South Hardstand Apron Development.

Exhibit 7-4 provides an overview of the projects to be completed as part of the ultimate airport development once demand at the Airport requires the additional infrastructure.

Appendix D includes a CIP Project Summary sheet for each project identified for implementation. The CIP sheets include an exhibit of the project, project description, justification and ROM cost estimates. **Appendix E** provides the ROM cost estimate detail, as developed by Jacobs, for all projects analyzed in this Master Plan Update, including those not selected for development.

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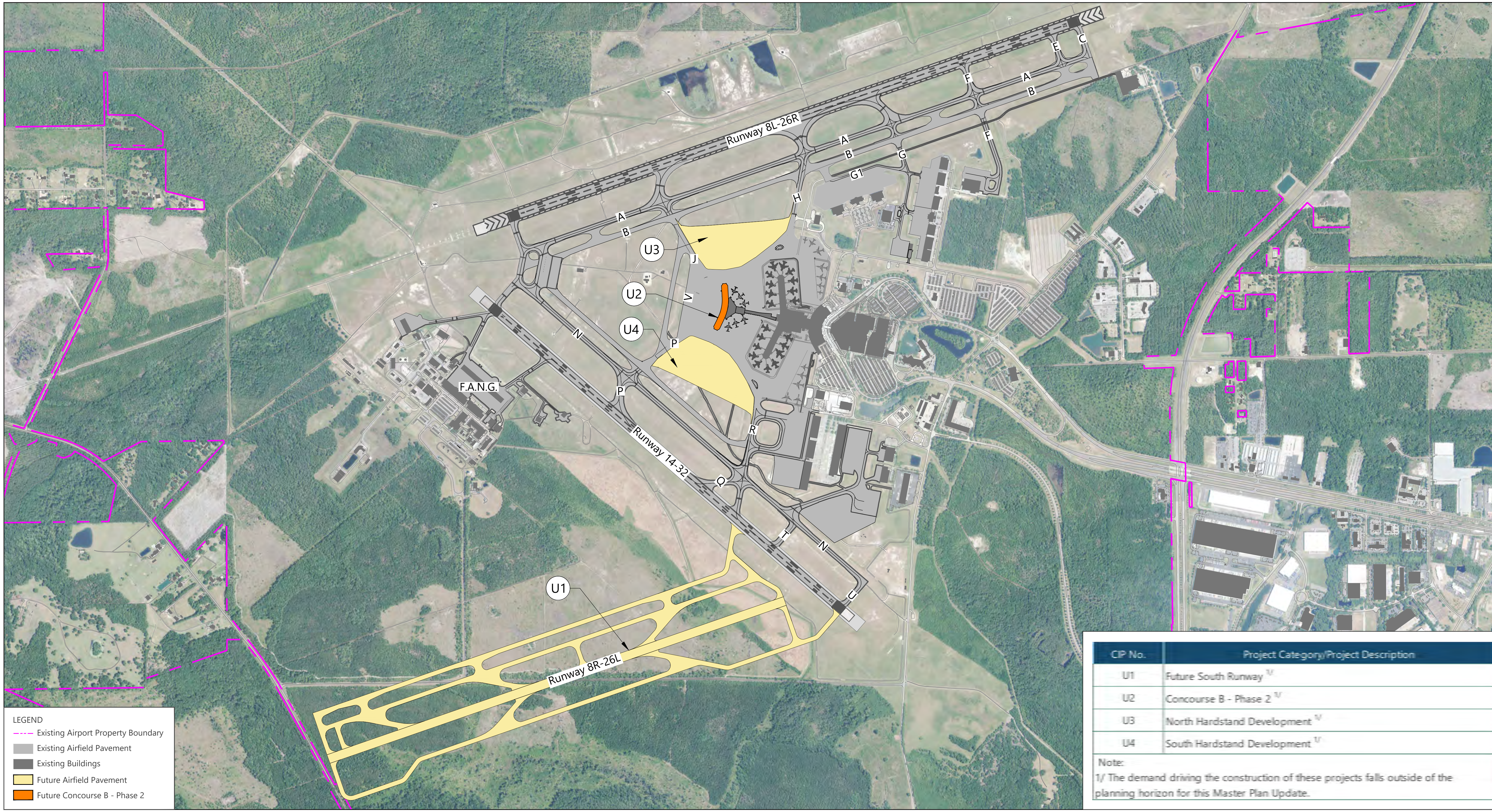

CIP No.	Project Category/Project Description
U1	Future South Runway 1/
U2	Concourse B - Phase 2 1/
U3	North Hardstand Development 1/
U4	South Hardstand Development 1/

Note:
1/ The demand driving the construction of these projects falls outside of the planning horizon for this Master Plan Update.

SOURCE: Martinez Geospatial, September 2019 (aerial photography); Jacksonville Aviation Authority, November 2018 (airfield data).

NORTH
0 1,600 ft.

EXHIBIT 7-4

JAX IMPLEMENTATION PLAN
ULTIMATE CONDITIONS

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\8.1 - Implementation Plan - Ricondo\CAD\JAX_MPU2019_Implentation Plan_Ultimate.dwgLayout: Ultimate Plotted: Feb 21, 2020, 12:02PM

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7.3 ANNUAL ACTIVITY MONITORING

JAA currently monitors passenger, aircraft operations, and cargo data to quantify growth. To ensure that JAA is fully appraised of activity trends at the Airport, Ricondo recommends monitoring additional activity data as well. This will assist JAA in determining whether the schedule for future project implementation should be adjusted. Data that could be useful to JAA for these purposes include the following:

- aircraft operations (total, cargo, air carrier, air taxi, military, and GA)
- annual average delay per aircraft
- commercial aircraft fleet mix
- hourly distribution of activity on the Peak Month Average Day
- peak hour passenger flow (at SSCPs, within the terminal, at baggage claim, and at the curbfront)
- enplaned passengers per gate – (overall, by carrier, and by Concourse)
- number of departing seats per gate (overall, by carrier, and by concourse)
- cargo tonnage (enplaned/deplaned, domestic/international)
- number of based aircraft
- tenant improvements (new hangars, ramp, fuel storage, and maintenance facilities)

As data is collected and analyzed, they should be compared to the aviation activity forecasts. This comparison will assist JAA in determining the level/degree of planning, design, or other implementation action necessary for conditions present at a given time. Analyzing facility use data and comparing the data to the established PALs can provide JAA early indications of the need for implementation. By reviewing activity levels along with implementation triggers, JAA will be prepared to implement projects as demand materializes. **Table 7-2** describes the planning factors for the various activity categories, the associated triggers and what, if any, action is recommended.

In addition to Airport activity statistics, the JAA should monitor the status of any other capital improvement or general maintenance projects that are not included in the Master Plan Update. These projects could impact the costs or timing of development/implementation of the Master Plan Update projects. Therefore, before initiating another capital improvement or maintenance project, JAA should complete analysis to minimize those potential impacts.

The projects will be implemented over three PALs to align Airport development with the aviation activity forecasts. Detailed planning, design, and construction information is also important in the implementation process to minimize impacts to existing Airport facilities and infrastructure. To implement projects effectively, factors that prompt development and the various characteristics of Airport growth should be understood.

If actual demand varies from the forecast, the Master Plan Update should be revised to reflect the discrepancies. Because these potential differences could impact the implementation sequencing or timing of projects, the Implementation Plan should be reviewed annually and compared to actual activity levels before specific projects are initiated.

TABLE 7-2 PLANNING FACTORS

ACTIVITY DATA	INDICATES	ACTIVITY TRIGGERS	ACTION RECOMMENDED
Aircraft Operations (total, air carrier, cargo, military, and GA/air taxi)	Traffic segments in which growth is occurring	Increase/decrease in existing traffic segment or new traffic segment	Monitor for long term trends and compare with operations forecasts to understand when additional infrastructure may be needed.
Annual Average Delay per Aircraft	Airfield capacity	Demand exceeds 60 percent of ASV	Monitor for increase in delays as an indication that additional airfield capacity may be required.
Commercial Aircraft Fleet Mix	Type of aircraft utilizing the airfield and terminal facilities	Increase/decrease in size of aircraft fleet mix	Monitor to determine if fleet is increasing and the nature of the increase to determine if facilities are appropriately sized.
Hourly Distribution of Activity in Peak Month Average Day	Peaking factor, impacts annual service volume	Increase/decrease in peak activity levels	Monitor for long term trends. Assess changes in seasonal distribution of activity that may indicate expansion is needed.
Observed Peak Hour Passenger Flows (at security checkpoints, within the terminal, at baggage claim, and on the curbfront)	Utilization of specific functional areas of the terminal	Increase/decrease in peak hour passenger volumes and throughput	Monitor the demand for each functional area. May indicate the need for additional area for the specific function.
Enplaned Passengers per Gate (overall, by carrier, and by concourse)	Passenger demand at terminal gates	Increase/decrease in percentage of holdroom occupancy	Monitor for indication of overall demand at gates.
Number of Departing Seats per Gate (overall, by carrier, and by concourse)	Seating availability in holdrooms	Increase/decrease in percentage of holdroom occupancy	Monitor for long term utilization trends that may indicate the need for additional seating and/or holdroom capacity.
Cargo Tonnage (enplaned/deplaned)	Amount of enplaned and deplaned cargo	Increase/decrease in air cargo tonnage and/or aircraft operations	Monitor for growth in cargo volume. An increase in cargo volume may indicate the need for additional facilities.
Number of Based Aircraft (number of GA, itinerant, and based operations)	General Aviation and corporate activity levels	Increase/decrease in the number of based aircraft	Monitor to assess activity trends. Additional facilities may be required if the amount of based aircraft increases.
Tenant Improvements (new hangars, ramp, fuel storage, and maintenance facilities)	Utilization of tenant facilities	Increase/decrease in airport tenants and/or aging facilities	Monitor tenant activity/improvements with respect to Master Plan Update recommendations to ensure tenant improvements are aligned with JAA's long-term plans.

SOURCE: Ricondo and Associates, Inc., July 2019.

8. FINANCIAL ANALYSIS

Note: This analysis was performed prior to the outbreak of novel coronavirus (COVID-19) in the United States, which severely reduced air travel in the United States for several weeks during the spring of 2020 and in no way incorporates any short- or long-term impacts of COVID-19 on aviation activity and finances at the Airport.

This chapter presents a potential funding plan for implementing the required improvements and facilities at the Airport from fiscal year 2020 through 2037, as set forth in the Master Plan Update.

The final implementation schedule for the various projects will be influenced by numerous factors, including need, funding availability, and JAA's priorities. Therefore, the actual timing of certain projects may not correspond precisely to the schedule described in this chapter, and the schedule and resulting financial analyses are for illustrative purposes only, to demonstrate the financial feasibility of the projects discussed. The actual funding strategies for individual projects will be determined when each project is implemented.

The funding plan and financial analysis presented in this chapter is based on master planning assumptions and reflects the affordability of projects at the master planning level. It is assumed that JAA will continue to monitor this financial plan and phase the improvements to achieve its financial goals, which include setting reasonable airline rates and charges.

The Master Plan Update's financial analysis included the following steps:

- Review the Airport's financial structure and obtain relevant financial information.
- Compile a list of proposed Capital Improvement Program (CIP) projects, including estimated construction costs and construction start and end dates for each project.
- Identify potential funding sources, and analyze the availability of funding from those sources, as applicable.
- Calculate debt service for projects funded—partially or fully—with bank note proceeds.
- Calculate amortization for Airport-funded projects.
- Develop projections of operating and maintenance (O&M) expenses and non-airline revenues.
- Calculate Airline rates and charges, cost per enplaned passenger (CPE), and debt service coverage to assess the impact of projects on these key financial metrics.

8.1 AIRPORT FINANCIAL STRUCTURE

JAA is an independent agency that owns and operates the Jacksonville Airport System, including the Airport. A seven-member Board of Directors governs JAA and appoints a Chief Executive Officer to implement policy. The Airport's fiscal year ends September 30.

The current Airline Use and Lease Agreement (Airline Agreement) between JAA and airlines serving the Airport (Signatory Airlines) terminates September 30, 2027. The Airline Agreement includes a residual rate-making methodology for the airfield and the terminal cost centers. For this analysis, it is assumed that the current Airline Agreement will be effective until the termination date, and the subsequent agreement(s) will not vary materially from the current Airline Agreement.

In 2020, the airlines providing scheduled service to the Airport are Allegiant Air, American Airlines, Delta Air Lines, Frontier Airlines, JetBlue Airways, Southwest Airlines, Spirit Airlines, and United Airlines.

JAA's expenses and revenues are categorized into cost centers, based on areas or functional activities of the Airport. The cost centers are used for the accounting for revenues, O&M expenses, and debt service, and are categorized as either direct or indirect.

Direct Cost Centers have both revenue and expenditures. They include the following:

- **Terminal** includes all debt service, all direct and indirect O&M expenses, capital expenditures, and operating revenues for the airline terminal facilities at the Airport.
- **Airfield** includes all debt service, all direct and indirect O&M expenses, capital expenditures, and operating revenues for the Airport's landing area and ramp area.
- **Parking** includes all debt service, all direct and indirect O&M expenses, and operating revenues for parking facilities.
- **Aviation** includes all debt service, direct and indirect O&M expenses, and operating revenues for air cargo, GA, flight kitchen, and military functions.
- **Non-Aviation** includes all debt service, direct and indirect O&M expenses, and operating revenues for areas of the Airport used for non-aviation purposes that provide support functions (e.g., rental car maintenance areas, miscellaneous ground areas, and facilities leased by Airport tenants).
- **Cecil Airport** includes all debt service, all direct and indirect O&M expenses, capital expenditures, and operating revenues for all activities and facilities at Cecil Airport.
- **Jacksonville Executive at Craig Airport (JAXEX)** includes all debt service, direct and indirect O&M expenses, capital expenditures, and operating revenues for all activities and facilities at JAXEX.
- **Herlong Recreational Airport** includes all debt service, direct and indirect O&M expenses, capital expenditures, and operating revenues for all activities and facilities at Herlong Recreational Airport.
- **Cecil Spaceport** includes all debt service, all direct and indirect O&M expenses, and operating revenues for all activities and facilities at Cecil Spaceport.

Indirect Cost Centers only have expenditures. They include the following:

- **Administration** includes all direct O&M expenses for all administration activities and facilities, including JAA administrative services provided for the Airport System (e.g. accounting, finance, data processing). Administration O&M expenses are allocated to the Direct Cost Centers based on the relative share of the total O&M expenses attributable to all Direct Cost Centers.
- **Public Safety** includes all direct O&M expenses for police activities and facilities. Public Safety O&M expenses are allocated to the Direct Cost Centers to the extent possible, based on the actual man-hours attributable to each Direct Cost Center, as well as on any other O&M expenses that can be directly charged to a specific Cost Center.
- **Aircraft Rescue and Fire Fighting** includes all direct O&M expenses for crash, fire, and rescue activities and facilities. ARFF O&M expenses are allocated to Direct Cost Centers to the extent possible, based on the actual man-hours attributable to each Direct Cost Center, as well as on any other O&M expenses that can be directly charged to a specific Cost Center.
- **Maintenance** includes all direct O&M expenses for maintenance activities and facilities of the Airport System. Maintenance O&M expenses are allocated to Direct Cost Centers to the extent possible, based on the actual man-hours attributable to each Direct Cost Center, as well as on any other O&M expenses that can be directly charged to a specific Cost Center.

8.2 CAPITAL IMPROVEMENT PROGRAM – PROJECTS AND FUNDING PLAN

The CIP provides a comprehensive list of projects identified as part of the master planning process (Master Plan Projects), as well as other planned projects at the Airport (Non-Master Plan Projects). The Master Plan Projects and Non-Master Plan Projects address recommended improvements throughout the planning horizon, and each project is scheduled within one of three planning phases: 2020 through 2025 (short-term improvements, to be implemented by PAL 1); 2026 through 2032 (intermediate-term improvements, to be implemented by PAL 2), and 2033 through 2037 (long-term improvements, to be implemented by PAL 3). The actual timing of these projects may depend on the growth and demand at the Airport.

Project costs were adjusted for inflation and include costs related to construction, engineering, construction management/administration, and other contingencies. Estimated costs were based on current (2020) amounts, then escalated by a rate of 3.0 percent per year. The project costs should be considered preliminary, and are subject to increases in the actual planning, environmental documentation, and/or design needs.

8.2.1 PROJECTS

Table 8-1 presents the estimated costs of the Master Plan Projects and Non-Master Plan Projects expected to be implemented through 2037. The total estimated cost of these projects, in escalated dollars, is approximately $781.3 million.

Because the Master Plan Update is conceptual, the implementation of certain Master Plan Projects and Non-Master Plan Projects may require further refinement (e.g., advanced planning and programming, engineering, and architectural analyses) before they start. As noted above, these costs are subject to further refinement and should be viewed as preliminary; they reflect a master plan level of detail subject to refinement in subsequent implementation phases.

8.2.1.1 MASTER PLAN PROJECTS

As shown in Table 8-1, the estimated total cost of Master Plan Projects is approximately $434.3 million. These costs are associated with various projects related to landside, taxiway, runway, terminal, general aviation, and air cargo facilities. For an explanation of Master Plan Projects and the phasing of each, refer to Chapter 7 and Appendix D.

8.2.1.2 NON-MASTER PLAN PROJECTS

As shown in Table 8-1, the estimated total cost of Non-Master Plan Projects is approximately $347.0 million. The projects in 2020 through 2023 have been identified by JAA. Although JAA has not identified specific Non-Master Plan Projects to occur after 2023, it is reasonable to assume that JAA will need to continue implementing necessary projects at the Airport that were not identified in the Master Plan, and therefore, estimates of total projects and funding sources by cost center for Non-Master Plan Projects have been estimated for 2024 through 2037.

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TABLE 8-1 (1 OF 2) CIP ESTIMATED COSTS AND ANNUAL EXPENDITURES

(Fiscal Year Ending September 30)

				PAL1						PAL2							PAL3				
PROJECT ID	PROJECT DESCRIPTION	COST CENTER	TOTAL COSTS [1]	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Master Plan Projects																					
1	Customs and Border Protection General Aviation Facility	Aviation	$4,567,500	$2,250,000	$2,317,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Concourse B Replacement	Terminal	$204,385,475	$0	$100,682,500	$103,702,975	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Concourse B Ramp Rehabilitation	Airfield	$26,658,975	$0	$13,132,500	$13,526,475	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Future ADG-V Taxiway - Parallel to Taxiway V	Airfield	$12,180,000	$6,000,000	$6,180,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Parking Garage Expansion	Parking	$95,552,006	$0	$0	$0	$0	$0	$30,913,975	$31,841,395	$32,796,636	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Runway 14-32 Shoulders and Blast Pad Expansion	Airfield	$10,589,969	$0	$0	$0	$0	$0	$5,216,733	$5,373,235	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Taxiway Fillet Modifications	Airfield	$4,120,674	$0	$0	$0	$0	$0	$0	$2,029,889	$2,090,786	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Taxiway B Extension and Realignment	Airfield	$44,223,153	$0	$0	$0	$0	$0	$0	$0	$14,307,533	$14,736,759	$15,178,861	$0	$0	$0	$0	$0	$0	$0	$0
10	Taxiway G1 Reconstruction	Airfield	$1,088,537	$0	$0	$0	$0	$0	$0	$0	$536,225	$552,312	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	New ADG-V Taxiway - Parallel to Taxiway N	Airfield	$23,659,817	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,654,669	$7,884,309	$8,120,839	$0	$0	$0	$0	$0	$0
14	Security Screening Checkpoint Expansion	Terminal	$7,229,598	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,561,378	$3,668,220	$0	$0	$0	$0	$0	$0
	Total Master Plan Projects		**$434,255,704**	**$8,250,000**	**$122,312,500**	**$117,229,450**	**$0**	**$0**	**$36,130,709**	**$39,244,519**	**$49,731,180**	**$15,289,070**	**$22,833,531**	**$11,445,688**	**$11,789,058**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Non-Master Plan Projects																					
21	Questica Upgrade	Administration	$25,750	$0	$25,750	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22	GIS Improvements	Administration	$257,500	$0	$257,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
23	PA System Upgrade or Replacement	Terminal	$257,500	$0	$257,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24	EASE hardware replacement	Terminal	$103,000	$0	$103,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
25	IT Infrastructure Refresh (2021)	Administration	$350,200	$0	$350,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
26	Courtyard Column Light Replacement	Maintenance	$169,950	$0	$169,950	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
27	Field Maintenance Bulldozer Replacement	Maintenance	$319,300	$0	$319,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
28	Elgin Runway Sweeper	Maintenance	$257,500	$0	$257,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
29	Generator # 4 Replacement (Parking Plaza)	Parking	$113,300	$0	$113,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
30	ARFF Vehicle Replacement (Crash 18)	ARFF	$978,500	$0	$978,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Terminal	$1,254,540	$0	$618,000	$636,540	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
32	Economy 1 Signage Update	Parking	$154,500	$0	$154,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
33	Economy 2 Signage Update	Parking	$128,750	$0	$128,750	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
34	Roadway and Garage Light Pole Ph 2	Maintenance	$195,700	$0	$195,700	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
35	Slope Mower	Maintenance	$226,600	$0	$226,600	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
36	CAT 330 Excavator Track Hoe with Cutting Head	Maintenance	$283,250	$0	$283,250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
37	JAX Canopy and Steel Support Replacement and Refurbishment	Terminal	$3,708,000	$0	$3,708,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
38	Administrative Building AC Replacement	Administration	$494,400	$0	$494,400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
39	Garage Structure Rehab (Ph 3 of 4)	Parking	$2,060,000	$0	$2,060,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
40	Design & Construct Wildlife Fence	Airfield	$206,000	$0	$206,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
41	Bypass for A & C Concourse Terrazzo Installation	Terminal	$386,250	$0	$386,250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
43	Airside/Landside Bathroom Rehabilitation Phase 2	Terminal	$507,500	$250,000	$257,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
45	Admin Building Bathroom Rehabilitation	Administration	$206,000	$0	$206,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
46	JAX Roof Rehabilitation	Terminal	$4,068,500	$0	$4,068,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
50	Flex Warehouse Roof Refurbishment	Maintenance	$257,500	$0	$257,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
51	FEDEX Roof Replacement	Maintenance	$412,000	$0	$412,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
52	ARFF Station Roof Replacement	ARFF	$1,030,000	$0	$1,030,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
54	Garage Structure Rehabilitation (Ph 4 of 4)	Parking	$2,121,800	$0	$0	$2,121,800	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
55	Replace Loading Dock Freight Elevators (2 Units)	Terminal	$412,000	$0	$412,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
56	Common Use Terminal Equipment Acquisition and Installation	Terminal	$1,030,000	$0	$1,030,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
57	Departures Curbside Kiosk Replacement	Terminal	$175,049	$0	$0	$175,049	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
58	Escalator 3 & 4 Ticketing Replacement	Terminal	$1,236,000	$0	$1,236,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
59	Replace Airfield Large Dump-truck	Maintenance	$238,703	$0	$0	$238,703	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
61	Airfield Wetland Mitigation	Airfield	$9,143,124	$0	$0	$0	$2,185,454	$2,251,018	$2,318,548	$2,388,105	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
62	Replace Ticketing Escalators 1 & 2	Terminal	$1,200,000	$1,200,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Terminal	$1,330,941	$0	$0	$0	$655,636	$675,305	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
64	PC Units (16)	Terminal	$1,359,085	$0	$669,500	$689,585	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
70	South Air Cargo Ramp Concrete Restoration	Airfield	$2,843,130	$919,839	$947,434	$975,857	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Airfield	$412,678	$133,514	$137,519	$141,645	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
73	Terminal Ramp Concrete Restoration	Airfield	$6,125,626	$1,464,190	$1,508,116	$1,553,359	$1,599,960	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
74	Terminal Ramp Concrete Restoration	Airfield	$367,336	$87,803	$90,437	$93,150	$95,945	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
75	Taxiway H Concrete Restoration	Airfield	$2,820,441	$531,243	$547,180	$563,596	$580,504	$597,919	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
76	Terminal Ramp Concrete Restoration	Airfield	$481,917	$90,771	$93,494	$96,299	$99,188	$102,164	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
77	Terminal Ramp Concrete Restoration	Airfield	$1,347,704	$253,846	$261,462	$269,305	$277,385	$285,706	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Airfield	$432,514	$0	$0	$0	$81,466	$83,910	$86,427	$89,020	$91,691	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
79	Taxiway C Concrete Restoration	Airfield	$641,840	$0	$0	$0	$120,893	$124,520	$128,256	$132,103	$136,067	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
80	Terminal Ramp Concrete Restoration	Airfield	$347,244	$0	$0	$0	$65,405	$67,367	$69,388	$71,470	$73,614	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
81	Taxiway A (between F and C) Concrete Restoration	Airfield	$3,841,797	$0	$0	$0	$0	$723,620	$745,329	$767,688	$790,719	$814,441	$0	$0	$0	$0	$0	$0	$0	$0	$0
89	Employee Parking Relocation (Economy 3)	Parking	$7,000,000	$7,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
91	Cargo Apron Expansion	Airfield	$2,610,000	$2,610,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
92	Surface Lot Rehabilitation Phase I	Parking	$2,000,000	$2,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

TABLE 8-1 (2 OF 2) CIP ESTIMATED COSTS AND ANNUAL EXPENDITURES

(Fiscal Year Ending September 30)

				PAL1						PAL2							PAL3				
PROJECT ID	PROJECT DESCRIPTION	COST CENTER	TOTAL COSTS [1]	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
94	Twy H&R Rehabilitation	Airfield	$1,000,000	$1,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
95	Bag Claim Ceiling Rehabilitation	Terminal	$1,030,000	$0	$1,030,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
96	Parking Canopies	Parking	$500,000	$500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
97	Landside Air Handler Replacement	Terminal	$515,000	$0	$515,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
98	Air Cargo 4 Access Road Rehab	Aviation	$400,000	$400,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
99	Elevator Replacement (ADO, 1 hour garage, 2 ticketing)	Terminal	$618,000	$0	$618,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
100	IT Infrastructure Upgrade	Terminal	$250,000	$250,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
101	FIDS Upgrade	Terminal	$200,000	$200,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
102	Airport Drainage Rehabilitation	Airfield	$756,000	$756,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
103	Rocket Motor Test Facility	Spaceport	$1,000,000	$1,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
104	Design and Construct Wildlife Fence	Jax Ex at Craig Airport	$1,500,000	$1,500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
105	Communication Fiber and Cameras	Jax Ex at Craig Airport	$500,000	$500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
106	Southside Access Road	Jax Ex at Craig Airport	$736,974	$736,974	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
107	Airfield Ramp Security Lighting (East/West FBO)	Herlong Recreational Airport	$250,000	$250,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
82	Future CIP - 2024 - 2028	Airfield	$38,900,369	$0	$0	$0	$0	$7,327,062	$7,546,874	$7,773,280	$8,006,479	$8,246,673	$0	$0	$0	$0	$0	$0	$0	$0	$0
83	Future CIP - 2024 - 2028	Terminal	$22,169,028	$0	$0	$0	$0	$4,175,638	$4,300,907	$4,429,934	$4,562,832	$4,699,717	$0	$0	$0	$0	$0	$0	$0	$0	$0
134	Future CIP - 2024 - 2028	Administration	$2,031,663	$0	$0	$0	$0	$382,673	$394,153	$405,978	$418,157	$430,702	$0	$0	$0	$0	$0	$0	$0	$0	$0
135	Future CIP - 2024 - 2028	Parking	$5,975,479	$0	$0	$0	$0	$1,125,509	$1,159,274	$1,194,052	$1,229,874	$1,266,770	$0	$0	$0	$0	$0	$0	$0	$0	$0
136	Future CIP - 2024 - 2028	Cecil Airport	$2,987,740	$0	$0	$0	$0	$562,754	$579,637	$597,026	$614,937	$633,385	$0	$0	$0	$0	$0	$0	$0	$0	$0
137	Future CIP - 2024 - 2028	Jax Ex at Craig Airport	$1,195,096	$0	$0	$0	$0	$225,102	$231,855	$238,810	$245,975	$253,354	$0	$0	$0	$0	$0	$0	$0	$0	$0
138	Future CIP - 2024 - 2028	Herlong Recreational Airport	$358,529	$0	$0	$0	$0	$67,531	$69,556	$71,643	$73,792	$76,006	$0	$0	$0	$0	$0	$0	$0	$0	$0
139	Future CIP - 2024 - 2028	Spaceport	$298,774	$0	$0	$0	$0	$56,275	$57,964	$59,703	$61,494	$63,339	$0	$0	$0	$0	$0	$0	$0	$0	$0
140	Future CIP - 2024 - 2028	ARFF	$1,852,399	$0	$0	$0	$0	$348,908	$359,375	$370,156	$381,261	$392,699	$0	$0	$0	$0	$0	$0	$0	$0	$0
141	Future CIP - 2024 - 2028	Maintenance	$6,573,027	$0	$0	$0	$0	$1,238,060	$1,275,201	$1,313,458	$1,352,861	$1,393,447	$0	$0	$0	$0	$0	$0	$0	$0	$0
142	Future CIP - 2024 - 2028	Public Safety	$597,548	$0	$0	$0	$0	$112,551	$115,927	$119,405	$122,987	$126,677	$0	$0	$0	$0	$0	$0	$0	$0	$0
143	Future CIP - 2024 - 2028	Aviation	$597,548	$0	$0	$0	$0	$112,551	$115,927	$119,405	$122,987	$126,677	$0	$0	$0	$0	$0	$0	$0	$0	$0
144	Future CIP - 2024 - 2028	Non-aviation	$298,774	$0	$0	$0	$0	$56,275	$57,964	$59,703	$61,494	$63,339	$0	$0	$0	$0	$0	$0	$0	$0	$0
84	Future CIP - 2029 - 2033	Airfield	$45,096,189	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,494,073	$8,748,896	$9,011,362	$9,281,703	$9,560,154	$0	$0	$0	$0
85	Future CIP - 2029 - 2033	Terminal	$25,699,979	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,840,709	$4,985,930	$5,135,508	$5,289,573	$5,448,260	$0	$0	$0	$0
145	Future CIP - 2029 - 2033	Administration	$2,355,254	$0	$0	$0	$0	$0	$0	$0	$0	$0	$443,623	$456,932	$470,640	$484,759	$499,301	$0	$0	$0	$0
146	Future CIP - 2029 - 2033	Parking	$6,927,218	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,304,773	$1,343,916	$1,384,234	$1,425,761	$1,468,534	$0	$0	$0	$0
147	Future CIP - 2029 - 2033	Cecil Airport	$3,463,609	$0	$0	$0	$0	$0	$0	$0	$0	$0	$652,387	$671,958	$692,117	$712,880	$734,267	$0	$0	$0	$0
148	Future CIP - 2029 - 2033	Jax Ex at Craig Airport	$1,385,444	$0	$0	$0	$0	$0	$0	$0	$0	$0	$260,955	$268,783	$276,847	$285,152	$293,707	$0	$0	$0	$0
149	Future CIP - 2029 - 2033	Herlong Recreational Airport	$415,633	$0	$0	$0	$0	$0	$0	$0	$0	$0	$78,286	$80,635	$83,054	$85,546	$88,112	$0	$0	$0	$0
150	Future CIP - 2029 - 2033	Spaceport	$346,361	$0	$0	$0	$0	$0	$0	$0	$0	$0	$65,239	$67,196	$69,212	$71,288	$73,427	$0	$0	$0	$0
151	Future CIP - 2029 - 2033	ARFF	$2,147,438	$0	$0	$0	$0	$0	$0	$0	$0	$0	$404,480	$416,614	$429,112	$441,986	$455,245	$0	$0	$0	$0
152	Future CIP - 2029 - 2033	Maintenance	$7,619,940	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,435,251	$1,478,308	$1,522,657	$1,568,337	$1,615,387	$0	$0	$0	$0
153	Future CIP - 2029 - 2033	Public Safety	$692,722	$0	$0	$0	$0	$0	$0	$0	$0	$0	$130,477	$134,392	$138,423	$142,576	$146,853	$0	$0	$0	$0
154	Future CIP - 2029 - 2033	Aviation	$692,722	$0	$0	$0	$0	$0	$0	$0	$0	$0	$130,477	$134,392	$138,423	$142,576	$146,853	$0	$0	$0	$0
155	Future CIP - 2029 - 2033	Non-aviation	$346,361	$0	$0	$0	$0	$0	$0	$0	$0	$0	$65,239	$67,196	$69,212	$71,288	$73,427	$0	$0	$0	$0
86	Future CIP - 2034 - 2037	Airfield	$41,196,004	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$9,846,959	$10,142,368	$10,446,639	$10,760,038
87	Future CIP - 2034 - 2037	Terminal	$23,477,293	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,611,708	$5,780,059	$5,953,461	$6,132,065
156	Future CIP - 2034 - 2037	Administration	$2,151,558	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$514,281	$529,709	$545,600	$561,968
157	Future CIP - 2034 - 2037	Parking	$6,328,111	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,512,590	$1,557,967	$1,604,706	$1,652,848
158	Future CIP - 2034 - 2037	Cecil Airport	$3,164,056	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$756,295	$778,984	$802,353	$826,424
159	Future CIP - 2034 - 2037	Jax Ex at Craig Airport	$1,265,622	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$302,518	$311,593	$320,941	$330,570
160	Future CIP - 2034 - 2037	Herlong Recreational Airport	$379,687	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$90,755	$93,478	$96,282	$99,171
161	Future CIP - 2034 - 2037	Spaceport	$316,406	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75,629	$77,898	$80,235	$82,642
162	Future CIP - 2034 - 2037	ARFF	$1,961,714	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$468,903	$482,970	$497,459	$512,383
163	Future CIP - 2034 - 2037	Maintenance	$6,960,922	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,663,849	$1,713,764	$1,765,177	$1,818,132
164	Future CIP - 2034 - 2037	Public Safety	$632,811	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$151,259	$155,797	$160,471	$165,285
165	Future CIP - 2034 - 2037	Aviation	$632,811	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$151,259	$155,797	$160,471	$165,285
166	Future CIP - 2034 - 2037	Non-aviation	$316,406	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$75,629	$77,898	$80,235	$82,642
	Total Non-Master Plan Projects		**$346,995,133**	**$23,634,180**	**$26,621,593**	**$7,554,888**	**$5,761,836**	**$20,702,417**	**$19,612,563**	**$20,200,940**	**$18,347,221**	**$18,587,225**	**$18,305,968**	**$18,855,147**	**$19,420,801**	**$20,003,425**	**$20,603,528**	**$21,221,634**	**$21,858,283**	**$22,514,031**	**$23,189,452**
	Total CIP		**$781,250,837**	**$31,884,180**	**$148,934,093**	**$124,784,338**	**$5,761,836**	**$20,702,417**	**$55,743,272**	**$59,445,459**	**$68,078,400**	**$33,876,295**	**$41,139,498**	**$30,300,835**	**$31,209,860**	**$20,003,425**	**$20,603,528**	**$21,221,634**	**$21,858,283**	**$22,514,031**	**$23,189,452**

NOTES:

1 Costs developed using 2020 U.S. dollars and have been escalated at 3 percent annually for inflation.

Even spending across construction years assumed for multi-year projects without cost profiles available.

Future CIP costs for FY 2024 - 2037 projected by Ricondo based on average annual cost for FY 2020 - 2023 non-master plan capital projects provided by Airport with adjustments. Average annual CIP is also distributed to cost center proportionate to FY 2020 - 2023 capital projects cost centers.

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

8.2.2 CAPITAL IMPROVEMENT PROGRAM FUNDING PLAN

Airport development projects often require a combination of public and private funding sources. Most airports similar in size to JAX have funded capital projects with a variety of funding sources and strategies. This analysis assumes that the Master Plan Projects and Non-Master Plan Projects will ultimately be funded by a combination of sources, including federal Airport Improvement Program (AIP) grants, state grants, Passenger Facility Charge (PFC) revenues, Airport funds, and bank note proceeds. This funding plan does not represent the final plan of finance for these projects, because additional actions will be necessary before some of these funding sources for specific projects can be accessed and/or utilized. **Table 8-2** presents the estimated funding sources for the Master Plan Projects and Non-Master Plan Projects. **Table F-1** in **Appendix F** presents the annual costs for the projects grouped by funding source.

8.2.2.1 FEDERAL AIP GRANTS

The Airport and Airway Improvement Act of 1982 authorized federal AIP funding from the Airport and Airway Trust Fund for nationwide airport development, airport planning, and noise compatibility planning and programs. The Airport and Airway Trust Fund is funded by taxes on airfares, air freight, and aviation fuel.

The FAA Reauthorization Act of 2018 authorized funding from the Airport and Airways Trust Fund for AIP grants-in-aid in the total amount of $3.35 billion per year for FFY 2019 through FFY 2023. This analysis assumes that the AIP will continue to be funded throughout the planning horizon at a level of at least $3.35 billion per year.

The FAA distributes AIP grants to airport operators as either entitlement grants or discretionary grants. Entitlement grants are distributed based on the number of enplaned passengers the airport serves annually. Discretionary grants are distributed for individual projects based on funding availability and the priority of projects at airports nationwide. Both entitlement and discretionary grants may be used to fund eligible land acquisition, noise mitigation, airfield improvements, airport roadways, and safety and security systems and equipment. Generally, projects are only eligible for AIP grant funding if they do not generate revenue.

Eligibility for AIP grants is assumed to be 75 percent of total project costs for eligible projects at medium-hub airports like JAX. The availability of entitlement grants for the Airport in any given year is based on a formula set forth in the FAA AIP Handbook.[1] Entitlement grants for the Airport were projected based on the following AIP formula, incorporating enplaned passenger forecasts for the Airport that were developed for the Master Plan Update, as set forth below:

- $15.60 for each of the first 50,000 enplaned passengers
- $10.40 for each of the next 50,000 enplaned passengers
- $5.20 for each of the next 400,000 enplaned passengers
- $1.30 for each of the next 500,000 enplaned passengers
- $1.00 for each enplaned passenger beyond 1.0 million enplaned passengers

The AIP entitlement calculation for a given year is based on the number of enplaned passengers two years prior. For example, 2020 entitlement grants would be based on 2018 enplaned passenger totals. **Table 8-3** shows the annual AIP entitlement grants available to fund Master Plan Projects and Non-Master Plan Projects at the Airport through 2037 based on enplaned passenger forecasts for the planning period.

[1] Federal Aviation Administration, Order 5100.38D, *Airport Improvement Program Handbook*, September 30, 2014.

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TABLE 8-2 (1 OF 2) CIP FUNDING SOURCES

(Fiscal Year Ending September 30)

PROJECT ID	PROJECT DESCRIPTION	COST CENTER	TOTAL COSTS [1]	AIP - ENTITLEMENT	AIP - DISCRETIONARY	FDOT AND SPACE FLORIDA	PFC PAYGO	PFC BACKED BANK NOTES	AIRPORT FUNDS	BANK NOTES
Master Plan Projects										
1	Customs and Border Protection General Aviation Facility	Aviation	$4,567,500	$0	$0	$0	$0	$0	$4,567,500	$0
4	Concourse B Replacement	Terminal	$204,385,475	$0	$0	$14,322,665	$0	$132,850,559	$0	$57,212,251
5	Concourse B Ramp Rehabilitation	Airfield	$26,658,975	$0	$19,994,231	$0	$0	$6,664,744	$0	$0
6	Future ADG-V Taxiway - Parallel to Taxiway V	Airfield	$12,180,000	$3,045,000	$6,090,000	$0	$3,045,000	$0	$0	$0
2	Parking Garage Expansion	Parking	$95,552,006	$0	$0	$0	$0	$0	$0	$95,552,006
7	Runway 14-32 Shoulders and Blast Pad Expansion	Airfield	$10,589,969	$0	$0	$5,294,984	$0	$0	$5,294,984	$0
8	Taxiway Fillet Modifications	Airfield	$4,120,674	$0	$0	$2,060,337	$0	$0	$2,060,337	$0
9	Taxiway B Extension and Realignment	Airfield	$44,223,153	$0	$0	$8,743,259	$7,602,834	$0	$27,877,059	$0
10	Taxiway G1 Reconstruction	Airfield	$1,088,537	$816,403	$0	$0	$0	$0	$272,134	$0
11	New ADG-V Taxiway - Parallel to Taxiway N	Airfield	$23,659,817	$6,183,816	$0	$0	$6,049,385	$0	$11,426,616	$0
14	Security Screening Checkpoint Expansion	Terminal	$7,229,598	$0	$0	$3,614,799	$0	$0	$3,614,799	$0
	Total Master Plan Projects		**$434,255,704**	**$10,045,219**	**$26,084,231**	**$34,036,045**	**$16,697,219**	**$139,515,303**	**$55,113,430**	**$152,764,258**
Non-Master Plan Projects										
21	Questica Upgrade	Administration	$25,750	$0	$0	$0	$0	$0	$25,750	$0
22	GIS Improvements	Administration	$257,500	$0	$0	$0	$0	$0	$257,500	$0
23	PA System Upgrade or Replacement	Terminal	$257,500	$0	$0	$0	$193,125	$0	$64,375	$0
24	EASE hardware replacement	Terminal	$103,000	$0	$0	$0	$77,250	$0	$25,750	$0
25	IT Infrastructure Refresh (2021)	Administration	$350,200	$0	$0	$0	$0	$0	$350,200	$0
26	Courtyard Column Light Replacement	Maintenance	$169,950	$0	$0	$0	$127,463	$0	$42,488	$0
27	Field Maintenance Bulldozer Replacement	Maintenance	$319,300	$0	$0	$0	$0	$0	$319,300	$0
28	Elgin Runway Sweeper	Maintenance	$257,500	$0	$0	$0	$0	$0	$257,500	$0
29	Generator # 4 Replacement (Parking Plaza)	Parking	$113,300	$0	$0	$0	$0	$0	$113,300	$0
30	ARFF Vehicle Replacement (Crash 18)	ARFF	$978,500	$0	$0	$0	$978,500	$0	$0	$0
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Terminal	$1,254,540	$0	$0	$0	$940,905	$0	$313,635	$0
32	Economy 1 Signage Update	Parking	$154,500	$0	$0	$0	$0	$0	$154,500	$0
33	Economy 2 Signage Update	Parking	$128,750	$0	$0	$0	$0	$0	$128,750	$0
34	Roadway and Garage Light Pole Ph 2	Maintenance	$195,700	$0	$0	$0	$0	$0	$195,700	$0
35	Slope Mower	Maintenance	$226,600	$0	$0	$0	$0	$0	$226,600	$0
36	CAT 330 Excavator Track Hoe with Cutting Head	Maintenance	$283,250	$0	$0	$0	$0	$0	$283,250	$0
37	JAX Canopy and Steel Support Replacement and Refurbishment	Terminal	$3,708,000	$0	$0	$0	$2,781,000	$0	$927,000	$0
38	Administrative Building AC Replacement	Administration	$494,400	$0	$0	$0	$0	$0	$494,400	$0
39	Garage Structure Rehab (Ph 3 of 4)	Parking	$2,060,000	$0	$0	$0	$0	$0	$2,060,000	$0
40	Design & Construct Wildlife Fence	Airfield	$206,000	$0	$0	$0	$0	$0	$206,000	$0
41	Bypass for A & C Concourse Terrazzo Installation	Terminal	$386,250	$0	$0	$0	$0	$0	$386,250	$0
43	Airside/Landside Bathroom Rehabilitation Phase 2	Terminal	$507,500	$0	$0	$0	$380,625	$0	$126,875	$0
45	Admin Building Bathroom Rehabilitation	Administration	$206,000	$0	$0	$0	$0	$0	$206,000	$0
46	JAX Roof Rehabilitation	Terminal	$4,068,500	$0	$0	$0	$3,051,375	$0	$1,017,125	$0
50	Flex Warehouse Roof Refurbishment	Maintenance	$257,500	$0	$0	$0	$0	$0	$257,500	$0
51	FEDEX Roof Replacement	Maintenance	$412,000	$0	$0	$0	$0	$0	$412,000	$0
52	ARFF Station Roof Replacement	ARFF	$1,030,000	$0	$0	$0	$1,030,000	$0	$0	$0
54	Garage Structure Rehabilitation (Ph 4 of 4)	Parking	$2,121,800	$0	$0	$0	$0	$0	$2,121,800	$0
55	Replace Loading Dock Freight Elevators (2 Units)	Terminal	$412,000	$0	$0	$0	$309,000	$0	$103,000	$0
56	Common Use Terminal Equipment Acquisition and Installation	Terminal	$1,030,000	$0	$0	$0	$772,500	$0	$257,500	$0
57	Departures Curbside Kiosk Replacement	Terminal	$175,049	$0	$0	$0	$0	$0	$175,049	$0
58	Escalator 3 & 4 Ticketing Replacement	Terminal	$1,236,000	$0	$0	$0	$927,000	$0	$309,000	$0
59	Replace Airfield Large Dump-truck	Maintenance	$238,703	$0	$0	$0	$0	$0	$238,703	$0
61	Airfield Wetland Mitigation	Airfield	$9,143,124	$6,857,343	$0	$0	$2,285,781	$0	$0	$0
62	Replace Ticketing Escalators 1 & 2	Terminal	$1,200,000	$0	$0	$0	$900,000	$0	$300,000	$0
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Terminal	$1,330,941	$0	$0	$0	$998,206	$0	$332,735	$0
64	PC Units (16)	Terminal	$1,359,085	$0	$0	$0	$1,019,314	$0	$339,771	$0
70	South Air Cargo Ramp Concrete Restoration	Airfield	$2,843,130	$0	$0	$0	$0	$0	$2,843,130	$0
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Airfield	$412,678	$309,508	$0	$0	$0	$0	$103,169	$0
73	Terminal Ramp Concrete Restoration	Airfield	$6,125,626	$0	$0	$0	$0	$0	$6,125,626	$0
74	Terminal Ramp Concrete Restoration	Airfield	$367,336	$202,035	$0	$0	$0	$0	$165,301	$0
75	Taxiway H Concrete Restoration	Airfield	$2,820,441	$0	$0	$0	$0	$0	$2,820,441	$0
76	Terminal Ramp Concrete Restoration	Airfield	$481,917	$361,437	$0	$0	$0	$0	$120,479	$0
77	Terminal Ramp Concrete Restoration	Airfield	$1,347,704	$0	$0	$0	$0	$0	$1,347,704	$0
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Airfield	$432,514	$324,386	$0	$0	$0	$0	$108,129	$0
79	Taxiway C Concrete Restoration	Airfield	$641,840	$481,380	$0	$0	$0	$0	$160,460	$0
80	Terminal Ramp Concrete Restoration	Airfield	$347,244	$260,433	$0	$0	$0	$0	$86,811	$0
81	Taxiway A (between F and C) Concrete Restoration	Airfield	$3,841,797	$0	$2,881,348	$0	$0	$0	$960,449	$0
89	Employee Parking Relocation (Economy 3)	Parking	$7,000,000	$0	$0	$0	$0	$0	$7,000,000	$0

TABLE 8-2 (2 OF 2) CIP FUNDING SOURCES

(Fiscal Year Ending September 30)

PROJECT ID	PROJECT DESCRIPTION	COST CENTER	TOTAL COSTS [1]	AIP - ENTITLEMENT	AIP - DISCRETIONARY	FDOT AND SPACE FLORIDA	PFC PAYGO	PFC BACKED BANK NOTES	AIRPORT FUNDS	BANK NOTES
91	Cargo Apron Expansion	Airfield	$2,610,000	$0	$0	$0	$0	$0	$2,610,000	$0
92	Surface Lot Rehabilitation Phase I	Parking	$2,000,000	$0	$0	$0	$0	$0	$2,000,000	$0
94	Twy H&R Rehabilitation	Airfield	$1,000,000	$0	$0	$0	$0	$0	$1,000,000	$0
95	Bag Claim Ceiling Rehabilitation	Terminal	$1,030,000	$0	$0	$0	$772,500	$0	$257,500	$0
96	Parking Canopies	Parking	$500,000	$0	$0	$0	$0	$0	$500,000	$0
97	Landside Air Handler Replacement	Terminal	$515,000	$0	$0	$0	$386,250	$0	$128,750	$0
98	Air Cargo 4 Access Road Rehab	Aviation	$400,000	$0	$0	$0	$0	$0	$400,000	$0
99	Elevator Replacement (ADO, 1 hour garage, 2 ticketing)	Terminal	$618,000	$0	$0	$0	$463,500	$0	$154,500	$0
100	IT Infrastructure Upgrade	Terminal	$250,000	$0	$0	$0	$0	$0	$250,000	$0
101	FIDS Upgrade	Terminal	$200,000	$0	$0	$0	$0	$0	$200,000	$0
102	Airport Drainage Rehabilitation	Airfield	$756,000	$0	$0	$0	$0	$0	$756,000	$0
103	Rocket Motor Test Facility	Spaceport	$1,000,000	$0	$0	$500,000	$0	$0	$500,000	$0
104	Design and Construct Wildlife Fence	Jax Ex at Craig Airport	$1,500,000	$0	$0	$0	$0	$0	$1,500,000	$0
105	Communication Fiber and Cameras	Jax Ex at Craig Airport	$500,000	$0	$0	$0	$0	$0	$500,000	$0
106	Southside Access Road	Jax Ex at Craig Airport	$736,974	$0	$0	$0	$0	$0	$736,974	$0
107	Airfield Ramp Security Lighting (East/West FBO)	Herlong Recreational Airport	$250,000	$0	$0	$0	$0	$0	$250,000	$0
82	Future CIP - 2024 - 2028	Airfield	$38,900,369	$0	$14,341,150	$0	$4,780,383	$0	$19,778,836	$0
83	Future CIP - 2024 - 2028	Terminal	$22,169,028	$0	$0	$0	$0	$0	$22,169,028	$0
134	Future CIP - 2024 - 2028	Administration	$2,031,663	$0	$0	$0	$0	$0	$2,031,663	$0
135	Future CIP - 2024 - 2028	Parking	$5,975,479	$0	$0	$0	$0	$0	$5,975,479	$0
136	Future CIP - 2024 - 2028	Cecil Airport	$2,987,740	$0	$0	$0	$0	$0	$2,987,740	$0
137	Future CIP - 2024 - 2028	Jax Ex at Craig Airport	$1,195,096	$0	$0	$0	$0	$0	$1,195,096	$0
138	Future CIP - 2024 - 2028	Herlong Recreational Airport	$358,529	$0	$0	$0	$0	$0	$358,529	$0
139	Future CIP - 2024 - 2028	Spaceport	$298,774	$0	$0	$0	$0	$0	$298,774	$0
140	Future CIP - 2024 - 2028	ARFF	$1,852,399	$0	$0	$0	$0	$0	$1,852,399	$0
141	Future CIP - 2024 - 2028	Maintenance	$6,573,027	$0	$0	$0	$0	$0	$6,573,027	$0
142	Future CIP - 2024 - 2028	Public Safety	$597,548	$0	$0	$0	$0	$0	$597,548	$0
143	Future CIP - 2024 - 2028	Aviation	$597,548	$0	$0	$0	$0	$0	$597,548	$0
144	Future CIP - 2024 - 2028	Non-aviation	$298,774	$0	$0	$0	$0	$0	$298,774	$0
84	Future CIP - 2029 - 2033	Airfield	$45,096,189	$2,770,887	$18,010,767	$5,637,024	$9,698,105	$0	$8,979,406	$0
85	Future CIP - 2029 - 2033	Terminal	$25,699,979	$0	$0	$0	$761,994	$0	$24,937,985	$0
145	Future CIP - 2029 - 2033	Administration	$2,355,254	$0	$0	$0	$0	$0	$2,355,254	$0
146	Future CIP - 2029 - 2033	Parking	$6,927,218	$0	$0	$0	$0	$0	$6,927,218	$0
147	Future CIP - 2029 - 2033	Cecil Airport	$3,463,609	$0	$0	$0	$1,731,805	$0	$1,731,805	$0
148	Future CIP - 2029 - 2033	Jax Ex at Craig Airport	$1,385,444	$0	$0	$0	$692,722	$0	$692,722	$0
149	Future CIP - 2029 - 2033	Herlong Recreational Airport	$415,633	$0	$0	$0	$207,817	$0	$207,817	$0
150	Future CIP - 2029 - 2033	Spaceport	$346,361	$0	$0	$0	$0	$0	$346,361	$0
151	Future CIP - 2029 - 2033	ARFF	$2,147,438	$0	$0	$0	$0	$0	$2,147,438	$0
152	Future CIP - 2029 - 2033	Maintenance	$7,619,940	$0	$0	$0	$0	$0	$7,619,940	$0
153	Future CIP - 2029 - 2033	Public Safety	$692,722	$0	$0	$0	$0	$0	$692,722	$0
154	Future CIP - 2029 - 2033	Aviation	$692,722	$0	$0	$0	$0	$0	$692,722	$0
155	Future CIP - 2029 - 2033	Non-aviation	$346,361	$0	$0	$0	$0	$0	$346,361	$0
86	Future CIP - 2034 - 2037	Airfield	$41,196,004	$10,283,181	$15,820,278	$5,149,500	$9,943,045	$0	$0	$0
87	Future CIP - 2034 - 2037	Terminal	$23,477,293	$0	$0	$11,738,646	$11,738,646	$0	$0	$0
156	Future CIP - 2034 - 2037	Administration	$2,151,558	$0	$0	$0	$0	$0	$2,151,558	$0
157	Future CIP - 2034 - 2037	Parking	$6,328,111	$0	$0	$0	$0	$0	$6,328,111	$0
158	Future CIP - 2034 - 2037	Cecil Airport	$3,164,056	$0	$0	$0	$2,373,042	$0	$791,014	$0
159	Future CIP - 2034 - 2037	Jax Ex at Craig Airport	$1,265,622	$0	$0	$0	$949,217	$0	$316,406	$0
160	Future CIP - 2034 - 2037	Herlong Recreational Airport	$379,687	$0	$0	$0	$284,765	$0	$94,922	$0
161	Future CIP - 2034 - 2037	Spaceport	$316,406	$0	$0	$0	$237,304	$0	$79,101	$0
162	Future CIP - 2034 - 2037	ARFF	$1,961,714	$0	$0	$0	$1,471,286	$0	$490,429	$0
163	Future CIP - 2034 - 2037	Maintenance	$6,960,922	$0	$0	$0	$0	$0	$6,960,922	$0
164	Future CIP - 2034 - 2037	Public Safety	$632,811	$0	$0	$0	$0	$0	$632,811	$0
165	Future CIP - 2034 - 2037	Aviation	$632,811	$0	$0	$0	$474,608	$0	$158,203	$0
166	Future CIP - 2034 - 2037	Non-aviation	$316,406	$0	$0	$0	$0	$0	$316,406	$0
	Total Non-Master Plan Projects		**$346,995,133**	**$21,850,590**	**$51,053,542**	**$23,025,170**	**$63,739,032**	**$0**	**$187,326,798**	**$0**
	Total CIP		**$781,250,837**	**$31,895,809**	**$77,137,774**	**$57,061,216**	**$80,436,251**	**$139,515,303**	**$242,440,228**	**$152,764,258**

NOTE:

1 Costs developed using 2020 U.S. dollars and have been escalated at 3 percent annually for inflation.

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

TABLE 8-3 PROJECTED AIP ENTITLEMENT GRANTS

(Fiscal Year Ending September 30)

	FORECAST ENPLANED PASSENGERS		TOTAL AIP	
FISCAL YEAR	FISCAL YEAR	ENPLANED PASSENGERS	ENTITLEMENT GRANTS	ADJUSTED
2020	2018	3,232,548	$6,262,548	$1,565,637
2021	2019	3,338,443	$6,368,443	$1,592,111
2022	2020	3,401,040	$6,431,040	$1,607,760
2023	2021	3,732,468	$6,762,468	$1,690,617
2024	2022	3,789,133	$6,819,133	$1,704,783
2025	2023	3,854,121	$6,884,121	$1,721,030
2026	2024	3,921,713	$6,951,713	$1,737,928
2027	2025	3,991,520	$7,021,520	$1,755,380
2028	2026	4,061,428	$7,091,428	$1,772,857
2029	2027	4,131,629	$7,161,629	$1,790,407
2030	2028	4,209,246	$7,239,246	$1,809,812
2031	2029	4,294,646	$7,324,646	$1,831,162
2032	2030	4,379,786	$7,409,786	$1,852,447
2033	2031	4,470,180	$7,500,180	$1,875,045
2034	2032	4,563,060	$7,593,060	$1,898,265
2035	2033	4,659,895	$7,689,895	$1,922,474
2036	2034	4,761,234	$7,791,234	$1,947,809
2037	2035	4,857,980	$7,887,980	$1,971,995
Total AIP Entitlement Grants (CY 2020 – CY 2037)			$128,190,070	$32,047,517

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

As shown in Table 8-3, approximately $32.0 million in AIP entitlement grants are projected to be available for eligible Master Plan Projects and Non-Master Plan Projects through 2037. Based on project eligibility, Table 8-2 shows the estimated allocation of these projected available funds to Master Plan Projects and Non-Master Plan Projects, which is approximately $31.9 million through 2037.

In addition to AIP entitlement grants, discretionary grants (annual and multiyear commitments through an FAA Letter of Intent [LOI]) are distributed by each FAA region based on availability and project priorities. Single year discretionary grants are generally made immediately available to fund project costs, while multi-year LOI grants are distributed to an airport sponsor over several years at defined annual funding levels. As shown in Table 8-2, approximately $77.1 million of AIP discretionary funds were assumed to be available for eligible Master Plan Projects and Non-Master Plan Projects. If discretionary grants are not secured for these projects, it is assumed JAA would be required to identify alternative funding sources or postpone the projects until funding can be secured.

8.2.2.2 STATE GRANTS

Grant funds may also be available from the Florida Department of Transportation (FDOT) and Space Florida, the aerospace economic development agency of the State of Florida. FDOT's Aviation Grant Program provides financial assistance to Florida airports in the areas of safety, security, preservation, capacity improvement, land acquisition, planning and economic development. FDOT may provide up to 50 percent of the local share of commercial service airport project costs when federal funding is available, and up to 50 percent of project costs when no federal funding is available. FDOT grants worth approximately $56.6 million are expected to be available to fund Master Plan Projects and Non-Master Plan Projects over the planning horizon. Space Florida is expected to fund one CIP Project, a $500,000 rocket motor test facility at Cecil Spaceport, but is not anticipated to fund any additional Master Plan Projects or Non-Master Plan Projects.

8.2.2.3 PASSENGER FACILITY CHARGE REVENUES

Since 1991, US airports have been authorized to collect PFCs under 14 CFR 158, *Passenger Facility Charges* to fund eligible airport projects. The PFC program is administered by the FAA. Since April 1, 2001, US Airport operators may charge a PFC of up to $4.50 per qualified enplaned passenger. This is the PFC currently charged at the Airport, less the $0.11 airline collection fee. While the maximum PFC rate may be increased in the future, this analysis assumed that the current ($4.50) PFC being assessed at JAX will remain unchanged through the planning horizon.

Airport operators may use PFC revenues on a pay-as-you-go (PAYGO) basis or can leverage PFC revenue to pay debt service on bonds or other debt that was used to fund PFC-eligible projects. Because airport sponsors may use PFC revenues for the local matching share of AIP grants, PFCs can help sponsors implement AIP-financed projects sooner than they could do otherwise. Although the FAA is required to approve the collection of a PFC and the use of PFC revenues, the PFC program allows PFC revenues to be collected locally (through the airlines operating at the airport), which provides airport sponsors with more flexibility compared to AIP funding. PFCs may be used for any AIP-eligible project; although, PFC project eligibility is generally broader than AIP eligibility.

The FAA has approved PFC applications (and subsequent amendments) for the Airport, allowing the Authority to impose and use approximately $363.5 million of PFC revenues to fund completed and future Airport improvements. As of December 31, 2019, JAA has collected approximately $246.6 million of the authorized amount. For purposes of this financial analysis, it was assumed that JAA will continue to apply for, collect, and use PFCs at a level of $4.50 per qualified enplaned passenger through the planning horizon. Outstanding PFC authority is approximately $38.6 million[2] for projects included in existing PFC applications. All remaining PFC revenues are available for funding Master Plan and Non-Master Plan Projects.

Table 8-4 shows the projected PFC revenues based on the Airport's forecast enplaned passengers. Future Master Plan Projects and Non-Master Plan Projects worth approximately $80.4 million were assumed to be funded on a PAYGO basis, in addition to the $4.8 million of PAYGO project funding for existing capital improvement projects that the FAA previously approved for PFC PAYGO funding. Additionally, a total of approximately $139.5 million of future Master Plan Projects were assumed to be funded using bank notes backed by PFCs. As shown in Table 8-4, the PFC balance is adequate to fund existing and future projects through PAYGO and PFC-backed debt through 2037.

[2] There was $116,853,087 of remaining authority on existing PFC applications, per the FAA System of Airport Reporting (SOAR) quarterly report as of 12/31/2019. The $38.6 million estimate for outstanding PFC authority takes into account planned amendments to existing applications.

TABLE 8-4 PROJECTED PFC REVENUES

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
PFC Revenues																		
Enplaned Passengers [A]	3,401,040	3,732,468	3,789,133	3,854,121	3,921,713	3,991,520	4,061,428	4,131,629	4,209,246	4,294,646	4,379,786	4,470,180	4,563,060	4,659,895	4,761,234	4,857,980	4,956,004	5,060,613
Percent PFC Eligible Enplanements [B]	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%	93%
PFC Eligible Enplanements [A x B = C]	3,147,924	3,454,687	3,507,134	3,567,286	3,629,847	3,694,459	3,759,164	3,824,141	3,895,981	3,975,026	4,053,829	4,137,496	4,223,463	4,313,092	4,406,889	4,496,435	4,587,163	4,683,987
PFC Administrative Fee	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11	$0.11
PFC Amount Remitted Per Enplaned Passenger [D]	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39	$4.39
Total PFC Fee Per Enplaned Passenger	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50	$4.50
Total PFC Collections [C x D]	$13,819,387	$15,166,074	$15,396,320	$15,660,384	$15,935,030	$16,218,675	$16,502,731	$16,787,978	$17,103,358	$17,450,362	$17,796,310	$18,163,606	$18,541,004	$18,934,472	$19,346,241	$19,739,348	$20,137,647	$20,562,703
Investment Earnings	$-	$-	$ -	$ -	$ -	$-	$ -	$ -	$-	$ -	$ -	$-	$-	$ -	$ -	$-	$-	$ -
Total PFC Revenues	$ 13,819,387	$ 15,166,074	$15,396,320	$ 15,660,384	$ 15,935,030	$ 16,218,675	$ 16,502,731	$16,787,978	$ 17,103,358	$17,450,362	$17,796,310	$ 18,163,606	$ 18,541,004	$18,934,472	$ 19,346,241	$ 19,739,348	$ 20,137,647	$20,562,703
PFC Cash Flow																		
Beginning Balance	$4,828,825	$4,149,588	$707,281	$8,629,444	$7,407,174	$5,513,999	$4,353,365	$5,302,257	$4,829,189	$4,564,407	$1,158,740	$548,626	$164,252	$2,152,065	$4,468,408	$3,424,049	$2,567,446	$1,899,383
Deposit: PFC Revenue Collected	$13,819,387	$15,166,074	$15,396,320	$15,660,384	$15,935,030	$16,218,675	$16,502,731	$16,787,978	$17,103,358	$17,450,362	$17,796,310	$18,163,606	$18,541,004	$18,934,472	$19,346,241	$19,739,348	$20,137,647	$20,562,703
Deposit: PFC Interest Income (0.8%)	$38,631	$33,197	$5,658	$69,036	$59,257	$44,112	$34,827	$42,418	$38,634	$36,515	$9,270	$4,389	$1,314	$17,217	$35,747	$27,392	$20,540	$15,195
Less: Existing PAYGO 1	($4,769,581)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Less: PFC Applied to Existing Debt Service - Series 2016 Note	($4,057,415)	($2,058,489)	($2,058,930)	($2,053,783)	($2,058,004)	($2,056,548)	($176,581)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Less: PFC Applied to Existing Debt Service - Series 2012 Note	($3,122,759)	($2,009,876)	($1,983,493)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Less: PFC Applied to Existing Debt Service - Series 2022 Note2	$0	$0	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	($2,442,797)	$0
Less: Future PAYGO (Master Plan Projects)	($1,500,000)	($1,545,000)	$0	$0	$0	$0	$0	($2,459,748)	($2,533,540)	($4,566,706)	($2,015,875)	($2,076,351)	$0	$0	$0	$0	$0	$0
Less: Future PAYGO (Non-Master Plan Projects)	($1,087,500)	($13,028,213)	($994,594)	($1,038,091)	($1,969,640)	($1,507,056)	($1,552,268)	($983,899)	($1,013,416)	($2,466,021)	($2,540,002)	($2,616,202)	($2,694,688)	($2,775,529)	($6,566,530)	($6,763,526)	($6,966,432)	($7,175,425)
Less: PFC Applied to Debt Service (Master Plan Projects)	$0	$0	$0	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)	($11,417,020)
Ending Balance	$4,149,588	$707,281	$8,629,444	$7,407,174	$5,513,999	$4,353,365	$5,302,257	$4,829,189	$4,564,407	$1,158,740	$548,626	$164,252	$2,152,065	$4,468,408	$3,424,049	$2,567,446	$1,899,383	$3,884,837

NOTE:
1 Remaining authority of $116,853,087 on existing PFC applications per the SOAR quarterly report as of 12/31/2019. Legal charge expiration date is estimated to be 3/1/2026 based on FAA approval of PFC No. 16-11-C-01-JAX. Existing PAYGO takes into account planned amendments to existing applications.
2 PFC-backed Series 2022 Note issued to refinance PFC-backed Series 2012 Note balloon payment in 2022.
SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Federal Aviation Administration Passenger Facility Charges Reporting System, February 2020 (PFC authority); Ricondo & Associates, Inc., March 2020 (projections).

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8.2.2.4 AIRPORT FUNDS

All remaining revenues after paying O&M expenses, outstanding debt service, and transfers to other accounts, as applicable, will be available to fund the CIP. For this analysis, revenues remaining in the Revenue Fund are identified as Airport funds and are treated as available cash.

As shown in Table 8-2, Master Plan Projects and Non-Master Plan Projects totaling approximately $242.4 million were assumed to be funded by Airport funds through the planning horizon. These funds would be primarily to be used to pay remaining costs of projects after maximizing the use of AIP grants, FDOT grants, and PFC revenues.

All capital projects paid with Airport funds are amortized over the useful life of the project and included in the airline rate base, as applicable.[3] **Table 8-5** presents projected amortization charges by cost center for historical capital projects, Master Plan Projects, and Non-Master Plan Projects. Amortization is a function of project cost, the expected useful life of the project, and the rate of amortization (2.56 percent for this analysis). The useful life for the Non-Master Plan Projects was set at either 5, 10, 15, or 20 years, depending upon the type of project (e.g., facility, equipment, vehicle). Master Plan Projects were assumed to have a useful life of between 10 and 50 years, which were assigned by the consultants providing the Master Plan Projects cost estimates. Other than Master Plan Projects, specific future Non-Master Plan Projects have not been identified from 2024 through 2037, however, it is reasonable to assume JAA will undertake certain projects in those years. Therefore, amortization for future Non-Master Plan Projects from 2024 through 2037 was calculated and allocated to cost centers based primarily on a 5-year historical average annual cost of Non-Master Plan Projects.

8.2.2.5 BANK NOTE PROCEEDS

This financial analysis assumes that certain Master Plan Projects will be funded with bank note proceeds. As shown in Table 8-2, bank notes are assumed to fund approximately $152.8 million of Master Plan Projects. **Table 8-6** presents projected future debt service for bank notes by cost center through 2037, as well as the Airport's existing debt service.[4]

This analysis assumed three future bank notes will be issued to fund certain Master Plan Projects; one note will be repaid from PFC revenues, and the other two will be repaid from Airport revenues. The estimated annual debt service for these three bank notes was based on the following assumptions: an interest rate of 3 percent, capitalized interest of two years, a one-year debt service reserve requirement, and a note term of either 17 or 21 years, depending on the note. The resulting projected annual total debt service would be approximately $12.2 million in 2020 and approximately $26.7 million in 2037.

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[3] Amortization charges are the annual amount to recover capital expenditures paid using Airport funds. Amortization charges are calculated based on the expected useful life of the project, and they will include a reasonable rate of return.

[4] The Airport's existing debt service currently includes a $26.0 million balloon payment. This analysis assumed that this obligation will be refinanced in 2022, on an assumed interest rate of 3 percent, no capitalized interest, a one-year debt service reserve requirement, and a 15-year term.

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TABLE 8-5 (1 OF 2) PROJECTED AMORTIZATION CHARGES BY COST CENTER

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Existing Projects Amortization Charges by Cost Center[1]																		
Administration	$1,022,547	$928,802	$623,480	$566,342	$139,963	$135,528	$68,838	$53,549	$8,721	$0	$0	$0	$0	$0	$0	$0	$0	$0
Parking	$1,266,748	$1,855,628	$1,223,489	$1,179,839	$1,179,839	$1,179,839	$1,158,620	$1,089,523	$1,089,823	$1,088,402	$1,017,538	$1,017,538	$1,017,538	$1,017,538	$1,017,538	$1,017,538	$949,241	$879,018
Cecil Airport	$3,831,180	$3,784,244	$3,779,032	$3,748,475	$3,720,698	$3,633,278	$3,540,935	$3,458,276	$3,249,170	$2,409,801	$2,104,208	$1,986,293	$1,803,904	$1,554,186	$930,466	$600,834	$565,018	$460,447
Jax Ex at Craig Airport	$771,427	$920,718	$888,849	$868,402	$863,961	$742,429	$725,561	$680,104	$573,160	$570,783	$568,738	$524,762	$521,050	$521,050	$521,050	$508,854	$216,855	$210,388
Herlong Recreational Airport	$443,823	$471,432	$466,236	$414,740	$390,436	$345,751	$311,692	$298,561	$276,196	$235,435	$195,439	$191,709	$150,997	$146,371	$146,371	$145,570	$139,976	$137,154
Spaceport	$0	$57,395	$57,395	$57,395	$57,395	$57,395	$57,395	$57,395	$57,395	$57,395	$0	$0	$0	$0	$0	$0	$0	$0
ARFF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Maintenance	$20,873	$20,873	$20,873	$20,873	$20,753	$20,753	$20,753	$20,753	$20,753	$20,753	$20,753	$20,753	$20,753	$20,753	$20,753	$20,753	$20,753	$0
Public Safety	$59,425	$59,363	$48,410	$39,302	$7,399	$7,399	$7,399	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airport Ops	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airfield	$653,593	$703,433	$629,038	$511,698	$510,419	$416,774	$393,182	$393,729	$393,812	$319,855	$172,518	$172,414	$172,414	$157,373	$157,373	$154,893	$135,844	$133,140
Terminal	$1,851,324	$2,525,382	$2,503,124	$2,497,187	$2,364,251	$2,201,734	$2,159,634	$2,035,847	$1,960,468	$1,922,424	$1,164,332	$1,065,914	$867,513	$671,245	$496,492	$496,396	$474,083	$474,455
Aviation	$647,533	$620,267	$540,590	$253,577	$153,998	$102,582	$68,557	$68,557	$68,557	$68,557	$68,557	$68,557	$68,557	$21,543	$21,543	$19,547	$33,631	$33,631
Non-aviation	$1,160,906	$1,137,356	$1,134,772	$1,139,209	$1,134,690	$1,134,690	$1,112,661	$1,012,450	$563,814	$399,735	$314,700	$307,981	$301,860	$281,057	$281,064	$281,064	$19,408	$19,408
Total Existing Projects Amortization Charges	**$11,729,379**	**$13,084,894**	**$11,915,288**	**$11,297,039**	**$10,543,803**	**$9,978,154**	**$9,625,227**	**$9,168,744**	**$8,261,871**	**$7,093,140**	**$5,626,783**	**$5,355,922**	**$4,924,585**	**$4,391,116**	**$3,592,650**	**$3,245,448**	**$2,554,810**	**$2,347,640**
Master Plan Projects Amortization Charges by Cost Center[1]																		
Administration	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Parking	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cecil Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Jax Ex at Craig Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Herlong Recreational Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Spaceport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ARFF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Public Safety	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airport Ops	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airfield	$0	$0	$0	$0	$0	$0	$430,494	$543,475	$558,397	$2,087,070	$2,087,070	$2,713,662	$2,713,662	$2,713,662	$2,713,662	$2,713,662	$2,713,662	$2,713,662
Terminal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$414,946	$414,946	$414,946	$414,946	$414,946	$414,946	$414,946
Aviation	$0	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950	$163,950
Non-aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Master Plan Projects Amortization Charges	**$0**	**$163,950**	**$163,950**	**$163,950**	**$163,950**	**$163,950**	**$594,444**	**$707,425**	**$722,348**	**$2,251,020**	**$2,251,020**	**$3,292,558**	**$3,292,558**	**$3,292,558**	**$3,292,558**	**$3,292,558**	**$3,292,558**	**$3,292,558**

TABLE 8-5 (2 OF 2) PROJECTED AMORTIZATION CHARGES BY COST CENTER

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Non-Master Plan Projects Amortization Charges by Cost Center[1,2]																		
Administration	$0	$217,101	$217,101	$217,101	$217,101	$217,101	$80,399	$80,399	$313,616	$313,616	$313,616	$233,216	$233,216	$503,578	$503,578	$503,578	$503,578	$750,557
Parking	$0	$921,628	$1,058,896	$1,058,896	$1,058,896	$1,058,896	$1,058,896	$1,058,896	$1,744,825	$1,744,825	$1,687,430	$1,405,441	$1,405,441	$2,200,621	$2,200,621	$2,200,621	$2,200,621	$2,927,030
Cecil Airport	$0	$0	$0	$0	$0	$0	$0	$0	$342,965	$342,965	$342,965	$342,965	$342,965	$541,760	$541,760	$541,760	$541,760	$632,561
Jax Ex at Craig Airport	$0	$325,211	$277,533	$277,533	$277,533	$169,631	$169,631	$169,631	$306,817	$306,817	$306,817	$306,817	$306,817	$386,335	$386,335	$264,382	$264,382	$300,702
Herlong Recreational Airport	$0	$57,395	$28,698	$28,698	$28,698	$28,698	$28,698	$28,698	$69,853	$69,853	$41,156	$41,156	$41,156	$65,011	$65,011	$65,011	$65,011	$75,907
Spaceport	$0	$57,395	$57,395	$57,395	$57,395	$57,395	$57,395	$57,395	$91,692	$91,692	$34,296	$34,296	$34,296	$74,056	$74,056	$74,056	$74,056	$83,136
ARFF	$0	$0	$0	$0	$0	$0	$0	$0	$212,638	$212,638	$212,638	$212,638	$212,638	$459,144	$459,144	$459,144	$459,144	$515,441
Maintenance	$0	$208,292	$235,692	$235,692	$235,692	$235,692	$235,692	$235,692	$990,215	$990,215	$990,215	$808,578	$781,177	$1,655,875	$1,655,875	$1,655,875	$1,655,875	$2,454,925
Public Safety	$0	$0	$0	$0	$0	$0	$0	$0	$68,593	$68,593	$68,593	$68,593	$68,593	$148,111	$148,111	$148,111	$148,111	$220,752
Airport Ops	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airfield	$0	$299,201	$489,808	$896,792	$1,174,239	$1,174,239	$1,174,239	$1,197,231	$2,538,933	$2,538,933	$2,538,933	$2,538,933	$2,538,933	$3,119,845	$3,119,845	$3,119,845	$3,103,096	$3,103,096
Terminal	$0	$603,830	$664,492	$664,492	$702,687	$605,575	$591,682	$591,682	$3,136,482	$3,136,482	$3,102,045	$2,678,094	$2,582,995	$5,445,645	$5,407,450	$5,407,450	$5,407,450	$5,407,450
Aviation	$0	$25,877	$25,877	$25,877	$25,877	$25,877	$25,877	$25,877	$94,470	$94,470	$94,470	$94,470	$94,470	$173,989	$173,989	$173,989	$173,989	$192,149
Non-aviation	$0	$0	$0	$0	$0	$0	$0	$0	$34,296	$34,296	$34,296	$34,296	$34,296	$74,056	$74,056	$74,056	$74,056	$74,056
Total Non-Master Plan Projects Amortization Charges	**$0**	**$2,715,931**	**$3,055,493**	**$3,462,476**	**$3,778,119**	**$3,573,104**	**$3,422,510**	**$3,445,502**	**$9,945,397**	**$9,945,397**	**$9,767,471**	**$8,799,493**	**$8,676,994**	**$14,848,025**	**$14,809,830**	**$14,687,877**	**$14,671,129**	**$16,737,762**
Total Capital Improvement Program Amortization Charges by Cost Center[1]																		
Administration	$1,022,547	$1,145,903	$840,581	$783,443	$357,064	$352,629	$149,237	$133,948	$322,337	$313,616	$313,616	$233,216	$233,216	$503,578	$503,578	$503,578	$503,578	$750,557
Parking	$1,266,748	$2,777,256	$2,282,384	$2,238,735	$2,238,735	$2,238,735	$2,217,516	$2,148,419	$2,834,649	$2,833,228	$2,704,968	$2,422,978	$2,422,978	$3,218,159	$3,218,159	$3,218,159	$3,149,863	$3,806,048
Cecil Airport	$3,831,180	$3,784,244	$3,779,032	$3,748,475	$3,720,698	$3,633,278	$3,540,935	$3,458,276	$3,592,135	$2,752,766	$2,447,173	$2,329,258	$2,146,869	$2,095,946	$1,472,226	$1,142,594	$1,106,778	$1,093,008
Jax Ex at Craig Airport	$771,427	$1,245,929	$1,166,382	$1,145,935	$1,141,495	$912,060	$895,192	$849,734	$879,977	$877,600	$875,555	$831,579	$827,867	$907,385	$907,385	$773,236	$481,237	$511,091
Herlong Recreational Airport	$443,823	$528,828	$494,934	$443,438	$419,134	$374,449	$340,389	$327,259	$346,050	$305,288	$236,595	$232,865	$192,152	$211,383	$211,383	$210,581	$204,988	$213,061
Spaceport	$0	$114,791	$114,791	$114,791	$114,791	$114,791	$114,791	$114,791	$149,087	$149,087	$34,296	$34,296	$34,296	$74,056	$74,056	$74,056	$74,056	$83,136
ARFF	$0	$0	$0	$0	$0	$0	$0	$0	$212,638	$212,638	$212,638	$212,638	$212,638	$459,144	$459,144	$459,144	$459,144	$515,441
Maintenance	$20,873	$229,164	$256,565	$256,565	$256,446	$256,446	$256,446	$256,446	$1,010,968	$1,010,968	$1,010,968	$829,331	$801,930	$1,676,629	$1,676,629	$1,676,629	$1,676,629	$2,454,925
Public Safety	$59,425	$59,363	$48,410	$39,302	$7,399	$7,399	$7,399	$0	$68,593	$68,593	$68,593	$68,593	$68,593	$148,111	$148,111	$148,111	$148,111	$220,752
Airport Ops	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airfield	$653,593	$1,002,634	$1,118,847	$1,408,490	$1,684,658	$1,591,013	$1,997,914	$2,134,435	$3,491,143	$4,945,857	$4,798,521	$5,425,009	$5,425,009	$5,990,880	$5,990,880	$5,988,400	$5,952,603	$5,949,898
Terminal	$1,851,324	$3,129,212	$3,167,616	$3,161,679	$3,066,938	$2,807,309	$2,751,316	$2,627,530	$5,096,950	$5,058,906	$4,266,376	$4,158,954	$3,865,454	$6,531,836	$6,318,888	$6,318,792	$6,296,478	$6,296,850
Aviation	$647,533	$810,095	$730,418	$443,405	$343,826	$292,410	$258,385	$258,385	$326,978	$326,978	$326,978	$326,978	$326,978	$359,482	$359,482	$357,486	$371,570	$389,730
Non-aviation	$1,160,906	$1,137,356	$1,134,772	$1,139,209	$1,134,690	$1,134,690	$1,112,661	$1,012,450	$598,110	$434,031	$348,997	$342,278	$336,156	$355,113	$355,119	$355,119	$93,464	$93,464
Total Capital Improvement Program Amortization Charges	**$11,729,379**	**$15,964,775**	**$15,134,731**	**$14,923,466**	**$14,485,872**	**$13,715,208**	**$13,642,181**	**$13,321,672**	**$18,929,615**	**$19,289,557**	**$17,645,274**	**$17,447,973**	**$16,894,137**	**$22,531,700**	**$21,695,038**	**$21,225,884**	**$20,518,497**	**$22,377,960**

NOTES:

1 Projects shown to be amortized are funded with local funds.

2 Approximately $110,000 of amortization in 2020 for Non-Master Plan Projects has been shifted to 2021 to maintain consistency with 2020 budget.

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

TABLE 8-6 PROJECTED DEBT SERVICE

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Existing Notes																		
2016 Note (PFC Backed Portion)	$4,057,415	$2,058,489	$2,058,930	$2,053,783	$2,058,004	$2,056,548	$176,581	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2016 Note (JAA Cash)	$1,715,360	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Series 2012 Note (100% PFC backed)[1]	$3,122,759	$2,009,876	$1,983,493	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Series 2008 Note (100% Parking)	$3,317,075	$3,316,624	$3,317,846	$3,315,657	$3,314,971	$3,315,616	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Existing Debt Service	**$12,212,609**	**$7,384,989**	**$7,360,269**	**$5,369,440**	**$5,372,975**	**$5,372,164**	**$176,581**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Future Non-PFC Supported Debt Service																		
Series 2021 Note	$0	$0	$0	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077
Series 2025 Note	$0	$0	$0	$0	$0	$0	$0	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314
Total Future Non-PFC Supported Debt Service	**$0**	**$0**	**$0**	**$5,729,077**	**$5,729,077**	**$5,729,077**	**$5,729,077**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**
Future PFC Supported Debt Service																		
Series 2021 Note (100% PFC backed)	$0	$0	$0	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020	$11,417,020
Series 2022 Note (100% PFC backed)[2]	$0	$0	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$2,442,797	$0
Total Future PFC Supported Debt Service	**$0**	**$0**	**$2,442,797**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$11,417,020**
Total Future Debt Service	**$0**	**$0**	**$2,442,797**	**$19,588,894**	**$19,588,894**	**$19,588,894**	**$19,588,894**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$26,714,411**
Total Existing and Future Debt Service	**$12,212,609**	**$7,384,989**	**$9,803,066**	**$24,958,334**	**$24,961,869**	**$24,961,058**	**$19,765,475**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$26,714,411**
Debt Service After Allocation to Cost Centers																		
Non-PFC Supported Debt Service by Cost Center																		
Parking	$3,317,075	$3,316,624	$3,317,846	$3,315,657	$3,314,971	$3,315,616	$0	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314
Cecil Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Jax Ex at Craig Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Herlong Recreational Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airfield	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Terminal	$1,715,360	$0	$0	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077
Aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Non-PFC Supported Debt Service	**$5,032,435**	**$3,316,624**	**$3,317,846**	**$9,044,734**	**$9,044,048**	**$9,044,693**	**$5,729,077**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**	**$15,297,391**
PFC Supported Debt Service by Cost Center																		
Parking	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cecil Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Jax Ex at Craig Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Herlong Recreational Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airfield	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Terminal	$7,180,174	$4,068,365	$6,485,220	$15,913,600	$15,917,821	$15,916,365	$14,036,398	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$11,417,020
Aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total PFC Supported Debt Service	**$7,180,174**	**$4,068,365**	**$6,485,220**	**$15,913,600**	**$15,917,821**	**$15,916,365**	**$14,036,398**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$13,859,817**	**$11,417,020**
Total Debt Service by Cost Center																		
Parking	$3,317,075	$3,316,624	$3,317,846	$3,315,657	$3,314,971	$3,315,616	$0	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314	$9,568,314
Cecil Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Jax Ex at Craig Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Herlong Recreational Airport	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Airfield	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Terminal	$8,895,534	$4,068,365	$6,485,220	$21,642,677	$21,646,898	$21,645,442	$19,765,475	$19,588,894	$19,588,894	$19,588,894	$19,588,894	$19,588,894	$19,588,894	$19,588,894	$19,588,894	$19,588,894	$19,588,894	$17,146,097
Aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Debt Service	**$12,212,609**	**$7,384,989**	**$9,803,066**	**$24,958,334**	**$24,961,869**	**$24,961,058**	**$19,765,475**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$29,157,208**	**$26,714,411**

NOTE:

1 Does not include balloon payment in 2023; see Footnote 2 for details.

2 Existing debt service (Series 2012 Note) currently includes a $26.0 million balloon payment. This analysis assumed that this obligation will be refinanced in 2022.

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

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8.3 OPERATING AND MAINTENANCE EXPENSES

The Airport's O&M expenses include employee salaries and benefits; contractual, materials, and supplies; repairs and maintenance; promotion, advertising, and dues; registration and travel; insurance; cost of goods; utilities, taxes, and government fees; and contingency. For purposes of calculating airline rates and charges, O&M expenses are categorized by cost center.

Future O&M expense projections were based on historical/budget data, the effects of inflation, and the forecast growth in aircraft operations and enplaned passengers at the Airport. The analysis also considered the impact of specific Master Plan projects on future O&M expenses. As shown in **Table 8-7**, the Airport's total O&M expenses are projected to increase from approximately $68.5 million in 2020 to approximately $155.5 million in 2037, reflecting a CAGR of 4.9 percent.

8.4 AIRPORT REVENUES – NON-AIRLINE AND AIRLINE

8.4.1 NON-AIRLINE REVENUES

Non-airline revenues include all revenue sources other than airline rentals, fees, and charges for operating at the Airport. Projections of future non-airline revenues were based on a review of historical/budget data, the effects of inflation, and the forecast growth in aircraft operations and enplaned passengers at the Airport. As with the analysis for O&M revenue, the analysis also considered the impact of specific Master Plan projects on future non-airline expenses.

Projections for all non-airline revenue categories were based on budgeted 2020 financial data. **Table 8-8** presents projected non-airline revenues for the Airport. Total non-airline revenues are projected to increase from approximately $71.1 million in 2020 to approximately $135.3 million in 2037, reflecting a CAGR of 3.9 percent.

8.4.2 AIRLINE REVENUES

Airline revenues comprise airline rentals, fees, and charges for operating at the Airport. This subsection summarizes the calculation of airline rates and charges for terminal rentals and landing fees, as calculated by JAA in conformance with the Airline Agreement for the airlines serving the Airport.

8.4.2.1 TERMINAL RENTAL RATES

The terminal rental rate calculation combines those O&M expenses that are specific to terminal cost centers and allocated indirect O&M expenses; credit for federal (K-9) operating contributions;[5] O&M reserve requirements; debt service; debt service coverage; amortization of capital expenditures; and nonamortized capital expenditures, and from this subtotal subtracts: terminal concession revenues and other terminal revenues, to arrive at the terminal net requirement. The terminal net requirement is divided by the total amount of square footage[6] leased to airlines in the terminal to calculate the average terminal rental rate. Differentiated rates for Type 1 (conditioned) and Type 2 (unconditioned) space are derived from this average terminal rental rate.

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[5] JAA receives TSA K-9 program funds based on expenses related to training, caring for, and working with the explosive detection dogs.

[6] Additional space assumptions for the Concourse B Replacement project are included in the analysis. Airline space in Concourse B is assumed to be proportional to airline space in the existing terminal. Beginning in 2023, 50 percent of airline space in Concourse B is assumed to be rented.

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TABLE 8-7 PROJECTED OPERATING AND MAINTENANCE EXPENSES

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Total O&M Expenses by Line Item																		
Salaries and Employee Benefits	$31,370,460	$32,938,983	$34,585,932	$36,315,229	$38,130,990	$40,037,540	$42,039,417	$44,141,388	$46,348,457	$48,665,880	$51,099,174	$53,654,132	$56,336,839	$59,153,681	$62,111,365	$65,216,933	$68,477,780	$71,901,669
Contractual, Materials & Supplies	$20,583,455	$21,612,628	$22,693,259	$24,434,868	$25,656,611	$26,939,441	$28,286,414	$29,700,734	$31,416,684	$32,987,518	$34,636,894	$36,368,739	$38,187,176	$40,096,535	$42,101,361	$44,206,429	$46,416,751	$48,737,589
Repairs & Maintenance	$5,527,925	$5,804,321	$6,094,537	$6,714,307	$7,050,023	$7,402,524	$7,772,650	$8,161,283	$8,572,513	$9,001,138	$9,451,195	$9,923,755	$10,419,943	$10,940,940	$11,487,987	$12,062,386	$12,665,506	$13,298,781
Promotion, Advertising and Dues	$952,877	$981,463	$1,010,907	$1,041,234	$1,072,471	$1,104,646	$1,137,785	$1,171,919	$1,207,145	$1,243,359	$1,280,660	$1,319,079	$1,358,652	$1,399,411	$1,441,394	$1,484,635	$1,529,175	$1,575,050
Registrations & Travel	$583,816	$601,330	$619,370	$637,952	$657,090	$676,803	$697,107	$718,020	$739,683	$761,873	$784,729	$808,271	$832,519	$857,495	$883,220	$909,716	$937,008	$965,118
Insurance Expense	$1,519,450	$1,595,423	$1,675,194	$1,758,953	$1,846,901	$1,939,246	$2,036,208	$2,138,019	$2,244,920	$2,357,166	$2,475,024	$2,598,775	$2,728,714	$2,865,150	$3,008,407	$3,158,827	$3,316,769	$3,482,607
Cost of Goods	$613,000	$631,390	$650,332	$669,842	$689,937	$710,635	$731,954	$753,913	$776,530	$799,826	$823,821	$848,535	$873,991	$900,211	$927,218	$955,034	$983,685	$1,013,196
Utilities, Taxes & Gov't Fees	$4,846,199	$5,088,509	$5,342,934	$6,060,452	$6,363,475	$6,681,649	$7,015,731	$7,366,518	$7,734,844	$8,121,586	$8,527,665	$8,954,048	$9,401,751	$9,871,838	$10,365,430	$10,883,702	$11,427,887	$11,999,281
Contingency	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000
Total	**$68,497,182**	**$71,754,047**	**$75,172,466**	**$80,132,837**	**$83,967,498**	**$87,992,483**	**$92,217,266**	**$96,651,792**	**$101,540,774**	**$106,438,346**	**$111,579,162**	**$116,975,336**	**$122,639,585**	**$128,585,261**	**$134,826,382**	**$141,377,664**	**$148,254,559**	**$155,473,290**
Total O&M Expenses by Cost Center																		
Administration[1]	$20,878,724	$21,772,853	$22,710,943	$23,695,172	$24,727,823	$25,811,293	$26,948,099	$28,140,882	$29,392,416	$30,705,611	$32,083,523	$33,529,360	$35,046,488	$36,638,443	$38,308,934	$40,061,857	$41,901,301	$43,831,557
Parking	$3,329,325	$3,495,747	$3,670,489	$3,853,966	$4,046,616	$4,248,897	$4,461,291	$4,684,303	$5,152,733	$5,410,310	$5,680,764	$5,964,738	$6,262,910	$6,575,988	$6,904,718	$7,249,883	$7,612,303	$7,992,843
Cecil Airport	$3,108,973	$3,262,549	$3,423,747	$3,592,947	$3,770,548	$3,956,968	$4,152,645	$4,358,041	$4,573,639	$4,799,949	$5,037,502	$5,286,860	$5,548,611	$5,823,371	$6,111,789	$6,414,546	$6,732,355	$7,065,967
Jax Ex at Craig Airport	$851,328	$893,819	$938,433	$985,275	$1,034,457	$1,086,095	$1,140,313	$1,197,239	$1,257,009	$1,319,765	$1,385,655	$1,454,837	$1,527,475	$1,603,742	$1,683,819	$1,767,896	$1,856,174	$1,948,862
Herlong Recreational Airport	$1,554,962	$1,624,040	$1,696,312	$1,771,930	$1,851,052	$1,933,847	$2,020,488	$2,111,160	$2,206,055	$2,305,375	$2,409,331	$2,518,146	$2,632,052	$2,751,293	$2,876,126	$3,006,818	$3,143,651	$3,286,921
Spaceport	$409,814	$428,853	$448,800	$469,699	$491,598	$514,543	$538,587	$563,783	$590,186	$617,856	$646,854	$677,246	$709,098	$742,483	$777,475	$814,152	$852,598	$892,897
ARFF	$4,886,108	$5,130,413	$5,386,934	$5,656,281	$5,939,095	$6,236,050	$6,547,852	$6,875,245	$7,219,007	$7,579,957	$7,958,955	$8,356,903	$8,774,748	$9,213,485	$9,674,160	$10,157,868	$10,665,761	$11,199,049
Maintenance	$19,820,333	$20,807,092	$21,843,062	$23,963,030	$25,156,529	$26,409,564	$27,725,106	$29,106,278	$30,556,355	$32,078,780	$33,677,164	$35,355,300	$37,117,172	$38,966,960	$40,909,056	$42,948,069	$45,088,840	$47,336,449
Public Safety	$6,949,669	$7,296,690	$7,661,049	$8,138,270	$8,544,679	$8,971,393	$9,419,427	$9,889,846	$10,383,770	$10,902,373	$11,446,889	$12,018,613	$12,618,904	$13,249,190	$13,910,971	$14,605,821	$15,335,392	$16,101,420
Airfield	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Terminal	$6,707,946	$7,041,991	$7,392,697	$8,006,266	$8,405,101	$8,823,834	$9,263,458	$9,725,016	$10,209,603	$10,718,370	$11,252,524	$11,813,332	$12,402,127	$13,020,305	$13,669,334	$14,350,755	$15,066,185	$15,817,324
Aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Non-aviation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$68,497,182**	**$71,754,047**	**$75,172,466**	**$80,132,837**	**$83,967,498**	**$87,992,483**	**$92,217,266**	**$96,651,792**	**$101,540,774**	**$106,438,346**	**$111,579,162**	**$116,975,336**	**$122,639,585**	**$128,585,261**	**$134,826,382**	**$141,377,664**	**$148,254,559**	**$155,473,290**

NOTE:

1 Includes $2.5 million contingency in each year.

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

TABLE 8-8 PROJECTED NON-AIRLINE REVENUES

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Concessions	$19,408,714	$21,484,105	$22,154,614	$23,632,984	$24,423,499	$25,248,271	$26,094,751	$26,965,153	$27,902,299	$28,911,055	$29,944,978	$31,038,674	$32,177,155	$33,371,289	$34,626,608	$35,885,157	$37,185,917	$38,566,334
Fees & Charges	$4,993,936	$5,287,358	$5,443,001	$5,607,902	$5,774,883	$5,951,853	$6,133,042	$6,319,803	$6,515,824	$6,721,616	$6,933,018	$7,152,715	$7,380,604	$7,617,131	$7,862,906	$8,112,170	$8,368,933	$8,637,022
Space & Facility Rentals	$19,893,017	$20,444,001	$21,092,892	$22,080,092	$22,760,370	$23,479,278	$24,231,572	$25,008,726	$25,965,532	$26,810,736	$27,645,657	$28,545,912	$29,478,153	$30,624,776	$31,635,264	$32,690,515	$33,783,384	$34,936,255
Sale of Utilities	$1,579,148	$1,626,522	$1,675,318	$1,725,578	$1,777,345	$1,830,665	$1,885,585	$1,942,153	$2,000,417	$2,060,430	$2,122,243	$2,185,910	$2,251,487	$2,319,032	$2,388,603	$2,460,261	$2,534,069	$2,610,091
Parking	$25,058,791	$27,870,610	$28,711,777	$29,634,727	$30,598,767	$31,602,181	$32,629,485	$33,682,723	$36,618,467	$37,910,195	$39,229,946	$40,627,505	$42,080,479	$43,604,050	$45,205,647	$46,801,702	$48,447,500	$50,196,104
Other Miscellaneous Operating Revenue	$213,532	$219,938	$226,536	$233,332	$240,332	$247,542	$254,968	$262,617	$270,496	$278,611	$286,969	$295,578	$304,446	$313,579	$322,986	$332,676	$342,656	$352,936
Total Non-Airline Revenues	**$71,147,138**	**$76,932,534**	**$79,304,137**	**$82,914,614**	**$85,575,197**	**$88,359,790**	**$91,229,404**	**$94,181,175**	**$99,273,036**	**$102,692,642**	**$106,162,811**	**$109,846,294**	**$113,672,323**	**$117,849,857**	**$122,042,014**	**$126,282,481**	**$130,662,459**	**$135,298,743**

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

Table 8-9 presents projected terminal rental rates and revenue at the Airport through 2037. As shown, the terminal rental rate for Signatory Airlines is projected to increase from $177.37 per square foot in 2020 to $387.81 per square foot in 2037. Total terminal rental revenues are projected to increase from approximately $13.0 million in 2020 to approximately $51.8 million in 2037, reflecting a CAGR of 8.4 percent.

8.4.2.2 LANDING FEE RATE

The landing fee rate calculation combines airfield cost center–specific O&M expenses and allocated indirect O&M expenses; credit for federal (K-9) operating contributions; O&M reserve requirements; debt service; debt service coverage; amortization of capital expenditures; and nonamortized capital expenditures, and from this subtotal subtracts: fuel flowage fees, landing fees from FBOs; non-GA ground rentals; fuel sales; garbage service; RON fees; aircraft parking fees (air cargo); and miscellaneous operating revenue allocated to the airfield, to arrive at the airfield net requirement. The airfield net requirement is divided by total landed weight to determine the landing fee rate.

Table 8-10 presents projected landing fee rates for Signatory Airlines and associated revenues at the Airport through 2037. As shown, the landing fee rate is projected to increase from $3.45 per 1,000-pounds landed weight in 2020 to $6.37 per 1,000-pounds landed weight in 2037. Total landing fee revenues from Signatory Airlines are projected to increase from approximately $13.6 million in 2020 to approximately $37.4 million in 2037, reflecting a CAGR of 6.1 percent.

8.5 APPLICATION OF REVENUES

Because the Airport has no outstanding bonds and is therefore not bound by any bond ordinance, the use of Airport revenue is restricted only by the terms of the Airline Agreement (and any applicable laws). Airport revenues are currently deposited into the Revenue Fund and then applied to specific accounts, primarily including the following funds:

- **Debt Service Fund.** To pay debt service on any bonds, notes, or debt instruments that may be issued by JAA to fund Airport capital improvements.
- **Debt Service Reserve Fund.** To fund or restore the debt service fund established in support of any bonds, notes, or debt instruments.[7]
- **Operating and Maintenance Reserve Fund.** To maintain a reserve account equal to one month of O&M expenses.
- **Airline Transfer Fund.** To cover the required $11.3 million transfer to Signatory Airlines at the end of each fiscal year, as required by the Airline Agreement.

Table 8-11 presents the application of revenues, including withdrawals from the Revenue Fund to pay capital project costs. After incorporating all the above assumptions, the projected Revenue Fund balance will remain positive and the Debt Service, Debt Service Reserve, O&M Reserve, and Airline Transfer Funds will be funded at the required levels throughout the planning horizon.

[7] A debt service reserve fund has been assumed to be funded with one year of debt service when the two bank notes are issued in 2020; no debt service reserve fund is required for existing debt.

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TABLE 8-9 PROJECTED TERMINAL RENTAL RATES AND REVENUES

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Terminal O&M Expense																		
Direct Expenses	$6,707,946	$7,041,991	$7,392,697	$8,006,266	$8,405,101	$8,823,834	$9,263,458	$9,725,016	$10,209,603	$10,718,370	$11,252,524	$11,813,332	$12,402,127	$13,020,305	$13,669,334	$14,350,755	$15,066,185	$15,817,324
Indirect Expenses	$25,359,011	$26,628,049	$27,949,958	$30,232,286	$31,733,457	$33,309,282	$34,963,481	$36,699,959	$38,479,744	$40,391,163	$42,397,684	$44,504,049	$46,715,233	$49,036,465	$51,473,230	$54,031,289	$56,716,691	$59,535,786
Credit for Operating Contributions	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)	($142,780)
O&M Expenses	**$31,924,177**	**$33,527,259**	**$35,199,876**	**$38,095,772**	**$39,995,779**	**$41,990,336**	**$44,084,159**	**$46,282,195**	**$48,546,567**	**$50,966,753**	**$53,507,428**	**$56,174,601**	**$58,974,580**	**$61,913,989**	**$64,999,783**	**$68,239,264**	**$71,640,096**	**$75,210,330**
O&M Reserve Requirement	$635,976	$133,590	$139,385	$241,325	$158,334	$166,213	$174,485	$183,170	$188,698	$201,682	$211,723	$222,264	$233,332	$244,951	$257,149	$269,957	$283,403	$297,519
Bank Debt Service (formerly Rev Bond)	$1,715,360	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Future Debt Service	$0	$0	$0	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077	$5,729,077
Debt Service Coverage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Amortization of Past and Future Capital Expenditures	$2,043,458	$3,438,127	$3,427,008	$3,408,168	$3,204,284	$2,939,431	$2,837,226	$2,706,854	$5,572,213	$5,518,292	$4,693,511	$4,505,988	$4,192,098	$7,453,990	$7,250,454	$7,274,046	$7,286,336	$7,643,116
Nonamortized Capital Expenditures	$190,853	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235	$90,235
Total Requirement	**$36,509,824**	**$37,189,212**	**$38,856,503**	**$47,564,577**	**$49,177,708**	**$50,915,292**	**$52,915,182**	**$54,991,531**	**$60,126,789**	**$62,506,040**	**$64,231,975**	**$66,722,166**	**$69,219,322**	**$75,432,242**	**$78,326,699**	**$81,602,579**	**$85,029,147**	**$88,970,278**
Less: Terminal Concession Revenues	($6,064,840)	($6,710,006)	($6,934,714)	($7,873,110)	($8,154,410)	($8,448,256)	($8,751,201)	($9,063,934)	($9,400,449)	($9,762,436)	($10,135,085)	($10,529,803)	($10,941,859)	($11,374,947)	($11,831,045)	($12,291,779)	($12,769,878)	($13,277,594)
Less: Other Terminal Revenues	($4,844,667)	($4,962,275)	($5,123,007)	($5,657,455)	($5,819,632)	($5,999,069)	($6,193,674)	($6,394,252)	($6,754,282)	($6,982,246)	($7,179,133)	($7,419,291)	($7,667,035)	($8,105,385)	($8,382,916)	($8,679,923)	($8,988,046)	($9,328,466)
Total Terminal Revenues	**($10,909,507)**	**($11,672,281)**	**($12,057,721)**	**($13,530,566)**	**($13,974,042)**	**($14,447,325)**	**($14,944,874)**	**($15,458,186)**	**($16,154,731)**	**($16,744,682)**	**($17,314,218)**	**($17,949,095)**	**($18,608,894)**	**($19,480,333)**	**($20,213,961)**	**($20,971,701)**	**($21,757,924)**	**($22,606,060)**
Net Requirement	**$25,600,318**	**$25,516,931**	**$26,798,782**	**$34,034,011**	**$35,203,666**	**$36,467,968**	**$37,970,308**	**$39,533,345**	**$43,972,059**	**$45,761,358**	**$46,917,757**	**$48,773,071**	**$50,610,428**	**$55,951,910**	**$58,112,738**	**$60,630,878**	**$63,271,222**	**$66,364,217**
Airline Leased Square Feet	144,335	144,335	144,335	171,124	171,124	171,124	171,124	171,124	171,124	171,124	171,124	171,124	171,124	171,124	171,124	171,124	171,124	171,124
Average Terminal Rental Rate	$177.37	$176.79	$185.67	$198.88	$205.72	$213.11	$221.89	$231.02	$256.96	$267.42	$274.17	$285.02	$295.75	$326.97	$339.59	$354.31	$369.74	$387.81
Signatory Airline Leased Terminal Space	137,171	137,171	137,171	162,630	162,630	162,630	162,630	162,630	162,630	162,630	162,630	162,630	162,630	162,630	162,630	162,630	162,630	162,630
Sig A/L Average Terminal Rental Rate	$177.37	$176.79	$185.67	$198.88	$205.72	$213.11	$221.89	$231.02	$256.96	$267.42	$274.17	$285.02	$295.75	$326.97	$339.59	$354.31	$369.74	$387.81
Signatory Airline Share of Net Requirement	$24,329,639	$24,250,391	$25,468,618	$32,344,724	$33,456,323	$34,657,871	$36,085,642	$37,571,098	$41,789,495	$43,489,982	$44,588,982	$46,352,207	$48,098,367	$53,174,723	$55,228,298	$57,621,449	$60,130,740	$63,070,213
Less: Airline Transfers	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)
Less: Discretionary Transfers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Signatory Rental Revenue Less Airline Transfer	**$13,049,639**	**$12,970,391**	**$14,188,618**	**$21,064,724**	**$22,176,323**	**$23,377,871**	**$24,805,642**	**$26,291,098**	**$30,509,495**	**$32,209,982**	**$33,308,982**	**$35,072,207**	**$36,818,367**	**$41,894,723**	**$43,948,298**	**$46,341,449**	**$48,850,740**	**$51,790,213**

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

TABLE 8-10 PROJECTED LANDING FEES

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
O&M Expenses																		
Direct Expenses	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Indirect Expenses	$16,586,568	$17,415,256	$18,279,870	$19,397,121	$20,360,362	$21,371,520	$22,432,984	$23,547,261	$24,695,138	$25,921,993	$27,209,908	$28,561,927	$29,981,246	$31,471,220	$33,035,375	$34,677,408	$36,401,205	$38,210,843
Credit for Operating Contributions	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)	($72,600)
O&M Expenses	**$16,513,968**	**$17,342,655**	**$18,207,270**	**$19,324,521**	**$20,287,762**	**$21,298,920**	**$22,360,384**	**$23,474,661**	**$24,622,538**	**$25,849,393**	**$27,137,308**	**$28,489,327**	**$29,908,645**	**$31,398,620**	**$32,962,775**	**$34,604,808**	**$36,328,605**	**$38,138,243**
O&M Reserve Requirement	$183,071	$69,057	$72,051	$93,104	$80,270	$84,263	$88,455	$92,856	$95,656	$102,238	$107,326	$112,668	$118,277	$124,165	$130,346	$136,836	$143,650	$150,803
Debt Service Coverage	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Amortization of Past and Future Capital Expenditures	$721,424	$1,101,614	$1,210,467	$1,518,297	$1,760,101	$1,665,892	$2,060,300	$2,198,873	$3,816,673	$5,394,978	$5,278,933	$5,877,687	$5,883,442	$6,836,663	$6,874,089	$6,893,707	$6,888,400	$7,221,985
Total Requirement	**$17,418,463**	**$18,513,327**	**$19,489,788**	**$20,935,923**	**$22,128,133**	**$23,049,075**	**$24,509,139**	**$25,766,391**	**$28,534,866**	**$31,346,609**	**$32,523,567**	**$34,479,682**	**$35,910,364**	**$38,359,448**	**$39,967,210**	**$41,635,352**	**$43,360,655**	**$45,511,031**
Less: Other Airfield Revenues																		
Fuel Flowage Fees	($239,600)	($272,701)	($280,619)	($289,444)	($297,446)	($306,986)	($316,503)	($326,493)	($337,152)	($348,601)	($360,448)	($372,713)	($385,515)	($398,933)	($413,028)	($427,031)	($441,452)	($456,773)
Landing Fees - FBO	($558,415)	($635,560)	($654,014)	($674,581)	($693,231)	($715,467)	($737,646)	($760,930)	($785,771)	($812,454)	($840,066)	($868,650)	($898,486)	($929,758)	($962,610)	($995,245)	($1,028,854)	($1,064,561)
Non - GA Ground Rentals	($1,500)	($1,545)	($1,591)	($1,639)	($1,688)	($1,739)	($1,791)	($1,845)	($1,900)	($1,957)	($2,016)	($2,076)	($2,139)	($2,203)	($2,269)	($2,337)	($2,407)	($2,479)
Fuel Sales	($215,000)	($221,450)	($228,094)	($234,936)	($241,984)	($249,244)	($256,721)	($264,423)	($272,356)	($280,526)	($288,942)	($297,610)	($306,539)	($315,735)	($325,207)	($334,963)	($345,012)	($355,362)
Garbage Service	($121,578)	($125,225)	($128,982)	($132,852)	($136,837)	($140,942)	($145,170)	($149,526)	($154,011)	($158,632)	($163,391)	($168,292)	($173,341)	($178,541)	($183,898)	($189,415)	($195,097)	($200,950)
RON's	($725,000)	($737,646)	($753,003)	($770,530)	($786,229)	($806,373)	($826,848)	($847,678)	($870,645)	($895,396)	($920,203)	($946,484)	($975,311)	($1,005,475)	($1,037,116)	($1,068,290)	($1,100,274)	($1,134,258)
Aircraft Parking Fees- Air Cargo	($276,000)	($280,814)	($286,661)	($293,333)	($299,309)	($306,978)	($314,772)	($322,702)	($331,445)	($340,868)	($350,312)	($360,317)	($371,291)	($382,774)	($394,819)	($406,687)	($418,863)	($431,800)
Miscellaneous	($83,178)	($85,673)	($88,244)	($90,891)	($93,618)	($96,426)	($99,319)	($102,298)	($105,367)	($108,528)	($111,784)	($115,138)	($118,592)	($122,150)	($125,814)	($129,589)	($133,476)	($137,481)
	($2,220,271)	($2,360,615)	($2,421,208)	($2,488,206)	($2,550,343)	($2,624,156)	($2,698,771)	($2,775,895)	($2,858,648)	($2,946,962)	($3,037,161)	($3,131,281)	($3,231,212)	($3,335,567)	($3,444,760)	($3,553,556)	($3,665,434)	($3,783,664)
Net Requirement	**$15,198,192**	**$16,152,712**	**$17,068,580**	**$18,447,716**	**$19,577,791**	**$20,424,920**	**$21,810,369**	**$22,990,496**	**$25,676,219**	**$28,399,647**	**$29,486,406**	**$31,348,401**	**$32,679,152**	**$35,023,881**	**$36,522,450**	**$38,081,796**	**$39,695,220**	**$41,727,367**
Less: Nonsignatory Landing Fees	($1,559,000)	($1,656,692)	($1,750,628)	($1,892,078)	($2,007,983)	($2,094,869)	($2,236,966)	($2,358,005)	($2,633,465)	($2,912,791)	($3,024,254)	($3,215,228)	($3,351,716)	($3,592,201)	($3,745,901)	($3,905,834)	($4,071,314)	($4,279,740)
Less: Nonsignatory Cargo Landing Fees	($18,939)	($20,126)	($21,267)	($22,986)	($24,394)	($25,449)	($27,176)	($28,646)	($31,992)	($35,386)	($36,740)	($39,060)	($40,718)	($43,640)	($45,507)	($47,450)	($49,460)	($51,992)
Adjusted Net Requirement	**$13,620,253**	**$14,475,893**	**$15,296,685**	**$16,532,653**	**$17,545,414**	**$18,304,602**	**$19,546,227**	**$20,603,845**	**$23,010,762**	**$25,451,470**	**$26,425,413**	**$28,094,113**	**$29,286,718**	**$31,388,040**	**$32,731,042**	**$34,128,512**	**$35,574,446**	**$37,395,635**
Signatory/Cargo Landed Weight	3,945,615	4,431,518	4,493,721	4,567,630	4,625,396	4,704,372	4,779,640	4,858,817	4,944,556	5,038,293	5,133,946	5,231,628	5,332,845	5,438,463	5,549,047	5,653,942	5,760,063	5,873,571
Landing Fee Rate	$3.45	$3.27	$3.40	$3.62	$3.79	$3.89	$4.09	$4.24	$4.65	$5.05	$5.15	$5.37	$5.49	$5.77	$5.90	$6.04	$6.18	$6.37
Signatory Airline & Cargo Revenues[1]	$13,622,273	$14,475,893	$15,296,685	$16,532,653	$17,545,414	$18,304,602	$19,546,227	$20,603,845	$23,010,762	$25,451,470	$26,425,413	$28,094,113	$29,286,718	$31,388,040	$32,731,042	$34,128,512	$35,574,446	$37,395,635
Less: Transfers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Less: Discretionary Transfers	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Adjusted Airfield Requirement	**$13,622,273**	**$14,475,893**	**$15,296,685**	**$16,532,653**	**$17,545,414**	**$18,304,602**	**$19,546,227**	**$20,603,845**	**$23,010,762**	**$25,451,470**	**$26,425,413**	**$28,094,113**	**$29,286,718**	**$31,388,040**	**$32,731,042**	**$34,128,512**	**$35,574,446**	**$37,395,635**
Adjusted Signatory Landing Fee Rate	**$3.45**	**$3.27**	**$3.40**	**$3.62**	**$3.79**	**$3.89**	**$4.09**	**$4.24**	**$4.65**	**$5.05**	**$5.15**	**$5.37**	**$5.49**	**$5.77**	**$5.90**	**$6.04**	**$6.18**	**$6.37**
Signatory/Cargo Landed Weight	3,945,615	4,431,518	4,493,721	4,567,630	4,625,396	4,704,372	4,779,640	4,858,817	4,944,556	5,038,293	5,133,946	5,231,628	5,332,845	5,438,463	5,549,047	5,653,942	5,760,063	5,873,571
Signatory/Cargo Revenues	$13,622,273	$14,475,893	$15,296,685	$16,532,653	$17,545,414	$18,304,602	$19,546,227	$20,603,845	$23,010,762	$25,451,470	$26,425,413	$28,094,113	$29,286,718	$31,388,040	$32,731,042	$34,128,512	$35,574,446	$37,395,635

1 Discrepancy between this line item and the Adjusted New Requirement in FY 2020 only is due to FY 2020 budget irregularity; amount is immaterial.

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

TABLE 8-11 APPLICATION OF REVENUES

(Fiscal Year Ending September 30)

	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Revenue Fund																		
Beginning Balance	$56,269,092	$58,140,891	$67,487,275	$87,050,725	$132,251,517	$154,104,555	$174,844,770	$198,862,712	$207,583,357	$223,810,407	$242,200,693	$268,435,291	$296,055,472	$330,300,688	$369,816,334	$418,657,106	$468,980,400	$520,765,037
Deposit: Total Revenues[1]	$112,966,050	$119,623,511	$124,128,069	$135,992,069	$140,892,917	$145,725,131	$151,406,240	$157,022,124	$169,014,757	$176,854,885	$182,509,460	$189,815,843	$196,717,125	$208,312,821	$216,055,256	$224,246,276	$232,746,958	$242,352,331
Transfer: O&M	($68,497,182)	($71,754,047)	($75,172,466)	($80,132,837)	($83,967,498)	($87,992,483)	($92,217,266)	($96,651,792)	($101,540,774)	($106,438,346)	($111,579,162)	($116,975,336)	($122,639,585)	($128,585,261)	($134,826,382)	($141,377,664)	($148,254,559)	($155,473,290)
Transfer: O&M Reserve Fund	($542,159)	($271,405)	($284,868)	($413,364)	($319,555)	($335,415)	($352,065)	($369,544)	($407,415)	($408,131)	($428,401)	($449,681)	($472,021)	($495,473)	($520,093)	($545,940)	($573,075)	($601,561)
Transfer: Debt Service Fund	($5,032,435)	($3,316,624)	($3,317,846)	($9,044,734)	($9,044,048)	($9,044,693)	($5,729,077)	($15,297,391)	($15,297,391)	($15,297,391)	($15,297,391)	($15,297,391)	($15,297,391)	($15,297,391)	($15,297,391)	($15,297,391)	($15,297,391)	($15,297,391)
Transfer: Airline Transfer Fund	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)
Expend: FDOT Projects	$0	($7,055,500)	($7,267,165)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Reimburse: FDOT Funds	$0	$0	$0	$13,748,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Expend: Capital Expenses to be Amortized	($24,080,175)	($15,687,879)	($6,330,603)	($2,756,671)	($13,517,107)	($15,420,655)	($16,898,219)	($23,791,081)	($23,350,455)	($24,129,062)	($16,778,236)	($17,281,583)	($11,871,242)	($12,227,379)	($4,378,947)	($4,510,316)	($4,645,625)	($4,784,994)
Expend: Nonamortized Capital Expenses	($1,662,300)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)	($911,671)
Ending Balance	$58,140,891	$67,487,275	$87,050,725	$132,251,517	$154,104,555	$174,844,770	$198,862,712	$207,583,357	$223,810,407	$242,200,693	$268,435,291	$296,055,472	$330,300,688	$369,816,334	$418,657,106	$468,980,400	$520,765,037	$574,768,462
O&M Reserve Fund																		
Beginning Balance	$5,165,939	$5,708,099	$5,979,504	$6,264,372	$6,677,736	$6,997,292	$7,332,707	$7,684,772	$8,054,316	$8,461,731	$8,869,862	$9,298,263	$9,747,945	$10,219,965	$10,715,438	$11,235,532	$11,781,472	$12,354,547
Deposit: Transfer from Revenue Fund	$542,159	$271,405	$284,868	$413,364	$319,555	$335,415	$352,065	$369,544	$407,415	$408,131	$428,401	$449,681	$472,021	$495,473	$520,093	$545,940	$573,075	$601,561
Expend: O&M Expenses Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	$5,708,099	$5,979,504	$6,264,372	$6,677,736	$6,997,292	$7,332,707	$7,684,772	$8,054,316	$8,461,731	$8,869,862	$9,298,263	$9,747,945	$10,219,965	$10,715,438	$11,235,532	$11,781,472	$12,354,547	$12,956,108
Debt Service Fund																		
Beginning Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Deposit: Transfer from Revenue Fund	$5,032,435	$3,316,624	$3,317,846	$9,044,734	$9,044,048	$9,044,693	$5,729,077	$15,297,391	$15,297,391	$15,297,391	$15,297,391	$15,297,391	$15,297,391	$15,297,391	$15,297,391	$15,297,391	$15,297,391	$15,297,391
Deposit: PFCs for Debt Service	$7,180,174	$4,068,365	$6,485,220	$15,913,600	$15,917,821	$15,916,365	$14,036,398	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$13,859,817	$11,417,020
Expend: Total Capital Charges	($12,212,609)	($7,384,989)	($9,803,066)	($24,958,334)	($24,961,869)	($24,961,058)	($19,765,475)	($29,157,208)	($29,157,208)	($29,157,208)	($29,157,208)	($29,157,208)	($29,157,208)	($29,157,208)	($29,157,208)	($29,157,208)	($29,157,208)	($26,714,411)
Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Debt Service Reserve Fund																		
Beginning Balance	$0	$0	$17,146,097	$19,588,894	$19,588,894	$19,588,894	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208
Deposit: Future Debt	$0	$17,146,097	$2,442,797	$0	$0	$9,568,314	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending Balance	$0	$17,146,097	$19,588,894	$19,588,894	$19,588,894	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208	$29,157,208
Airline Transfer Fund																		
Beginning Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Deposit: Transfer from Revenue Fund	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000	$11,280,000
Expend: Payment to Airlines	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)	($11,280,000)
Ending Balance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

NOTE:
1 Includes interest income.
SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

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8.6 CONCLUSION

The financial analysis presented in this chapter indicates the implementation of the CIP is financially feasible based on the projections of airline rates and charges, JAA fund balances and debt service coverage resulting from the assumptions incorporated within this analysis. JAA has access to various funding sources, which include a mix of FAA and FDOT funding, PFC revenues, Airport funds, and bank note proceeds. Based on forecast passenger activity at the Airport and projected Airport revenues and expenses, it appears JAA has adequate resources to meet the funding requirements to implement the CIP through 2037. **Table 8-12** summarizes the Airport's airline rentals, fees, and charges, as well as the projected CPE and debt service coverage. The airline rates and overall airline CPE are projected to remain reasonable over the planning horizon. Airline CPE is projected to increase from $7.79 in 2020 to $17.81 in 2037, reflecting a CAGR of 5.0 percent. Revenues available to pay projected debt service associated with future bank notes issued to fund portions of the Master Plan Projects are projected to meet or exceed an assumed minimum requirement of 1.25 times debt service in each year of the planning horizon following issuance of the debt. Debt service coverage ratios range from a high of 5.51 times in 2021 to a low of 2.16 times in 2027.

As implementation of the CIP progresses, JAA should continually assess the financial feasibility of each project. Future considerations regarding CIP funding include the following:

- **Enplaned passenger/traffic growth.** The funding plan is based on the aviation activity forecasts developed for the Airport (see Chapter 3). Actual annual enplaned passengers and aircraft operations will likely vary from the forecasts to some degree. Significant deviations in actual figures from the forecast growth may affect revenues and expenses, as well as AIP grant and PFC revenue levels.
- **Availability of AIP funding.** This funding plan assumes that the FAA will continue to authorize and appropriate AIP grants for eligible projects. Because the level of authorized and appropriated AIP grant funding may vary from year to year, alternative funding sources may be required if grants cannot be obtained for certain eligible projects. The Authority should maximize use of available AIP grants, including potential discretionary grants, which would reduce the need for PFC revenues and/or Airport cash funding for certain projects, making these funds available to use on other projects.
- **Potential increase in maximum PFC.** This funding plan assumes that the Airport's current $4.50 PFC will not change throughout the planning horizon. Airport industry groups have sought to increase the maximum PFC level from the current $4.50 per eligible enplaned passenger. Although the 2018 FAA Reauthorization passed in Congress in 2018 did not change the maximum PFC level, future reauthorization legislation could address this issue. If the maximum PFC level increases at some point, JAA may seek authorization from the FAA to increase the PFC at the Airport.

TABLE 8-12 SUMMARY KEY FINANCIAL METRICS

(Fiscal Year Ending September 30)

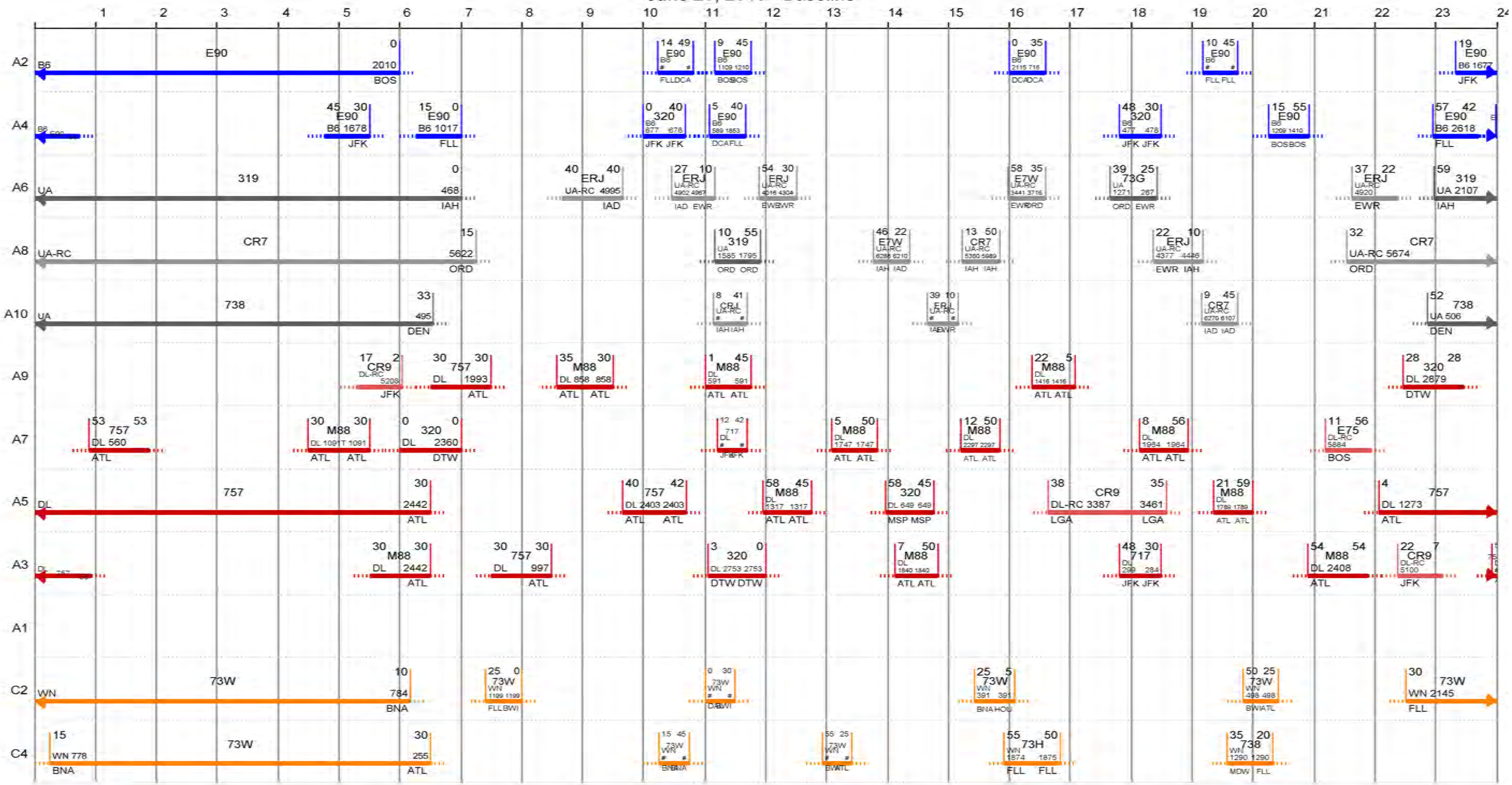
	BUDGET	PROJECTED																
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Landing Fee	$3.45	$3.27	$3.40	$3.62	$3.79	$3.89	$4.09	$4.24	$4.65	$5.05	$5.15	$5.37	$5.49	$5.77	$5.90	$6.04	$6.18	$6.37
Average Terminal Rental Rate	$177.37	$176.79	$185.67	$198.88	$205.72	$213.11	$221.89	$231.02	$256.96	$267.42	$274.17	$285.02	$295.75	$326.97	$339.59	$354.31	$369.74	$387.81
Signatory Cost Per Enplanement	$7.79	$7.28	$7.72	$9.82	$10.19	$10.52	$10.99	$11.43	$12.83	$13.51	$13.73	$14.21	$14.58	$15.87	$16.26	$16.73	$17.21	$17.81
Debt Service Coverage	3.31	5.51	4.50	2.42	2.47	2.50	3.13	2.16	2.40	2.50	2.52	2.59	2.63	2.82	2.87	2.93	2.99	3.26

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

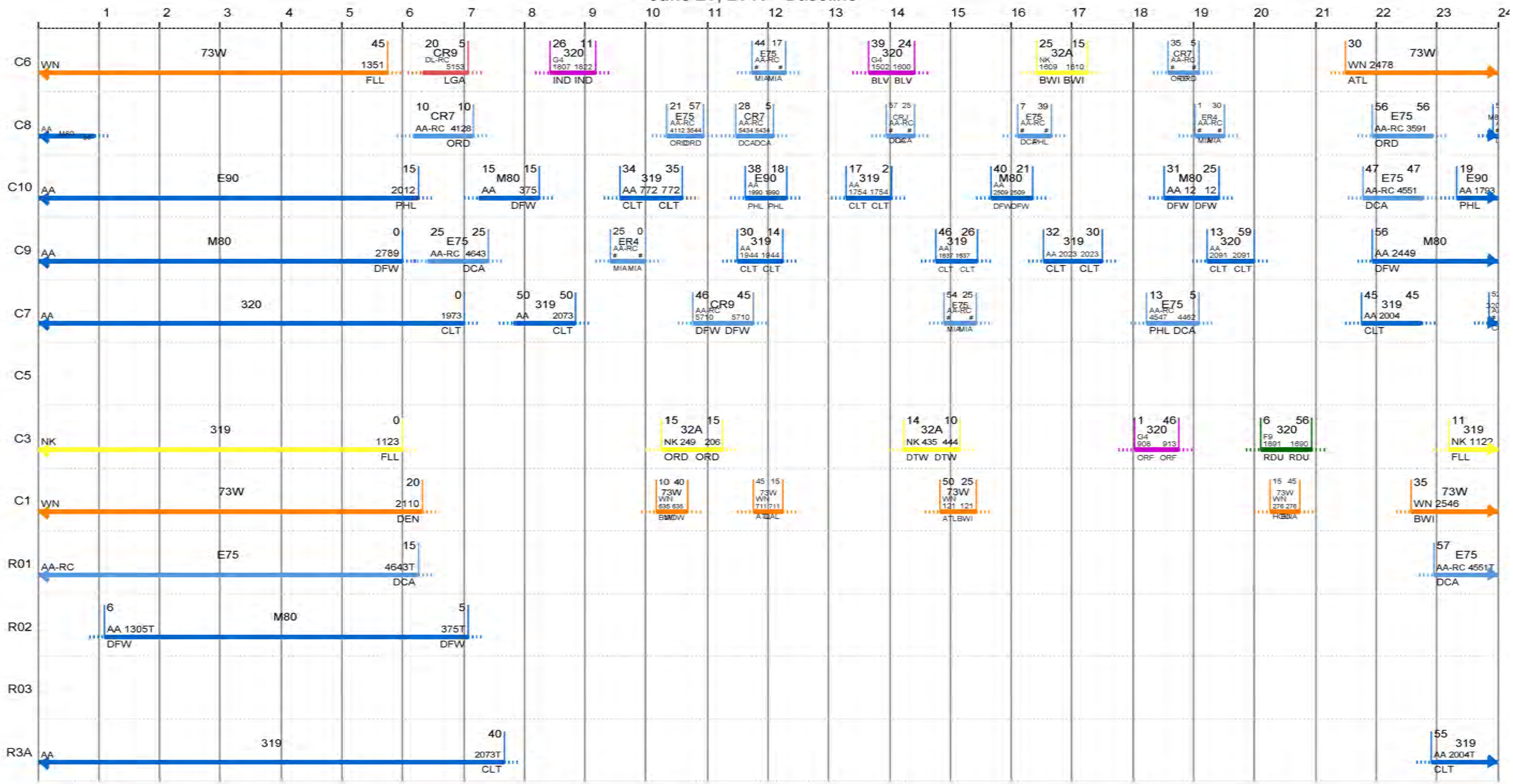
APPENDIX A

Ramp Charts

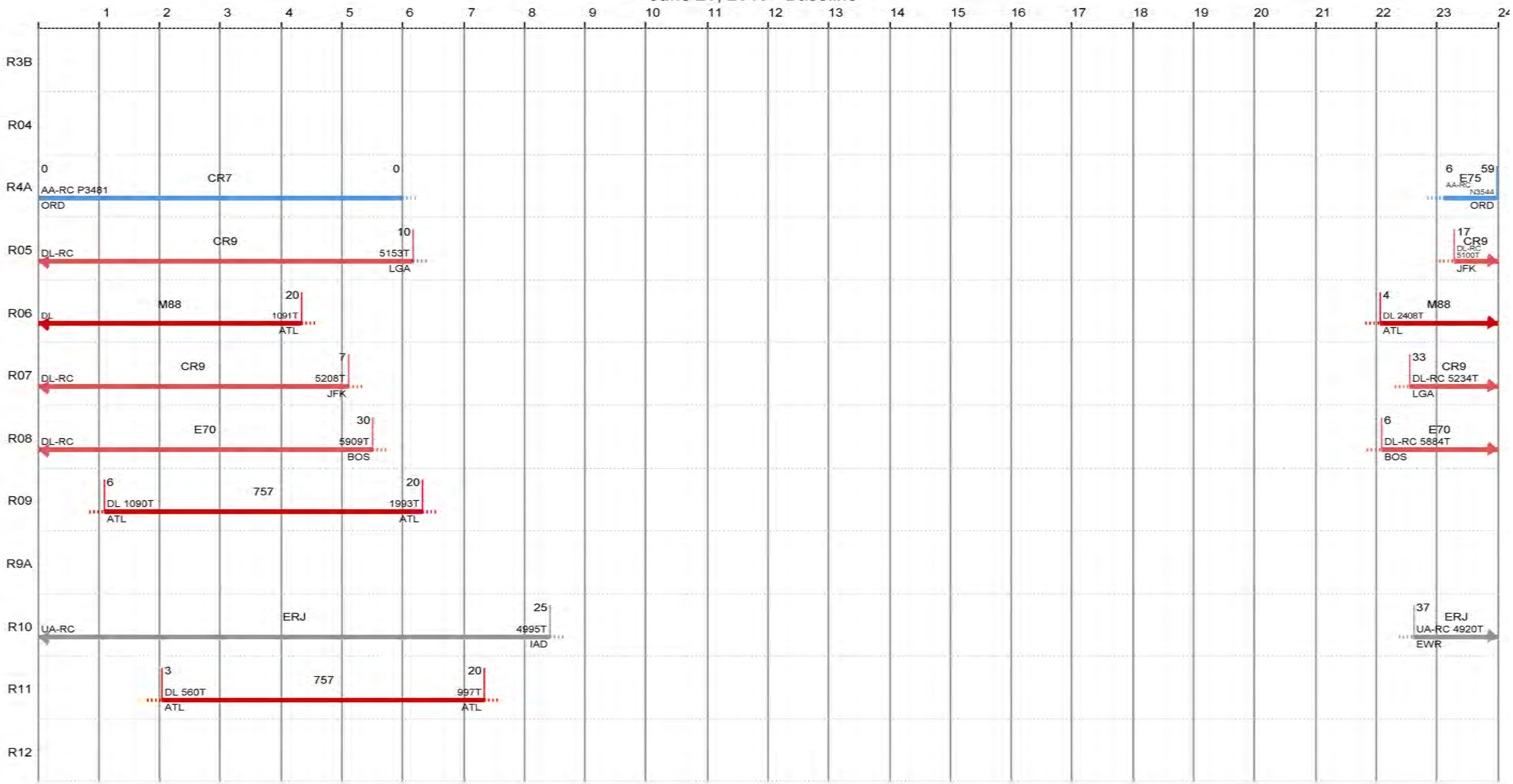
June 20, 2019 - Baseline



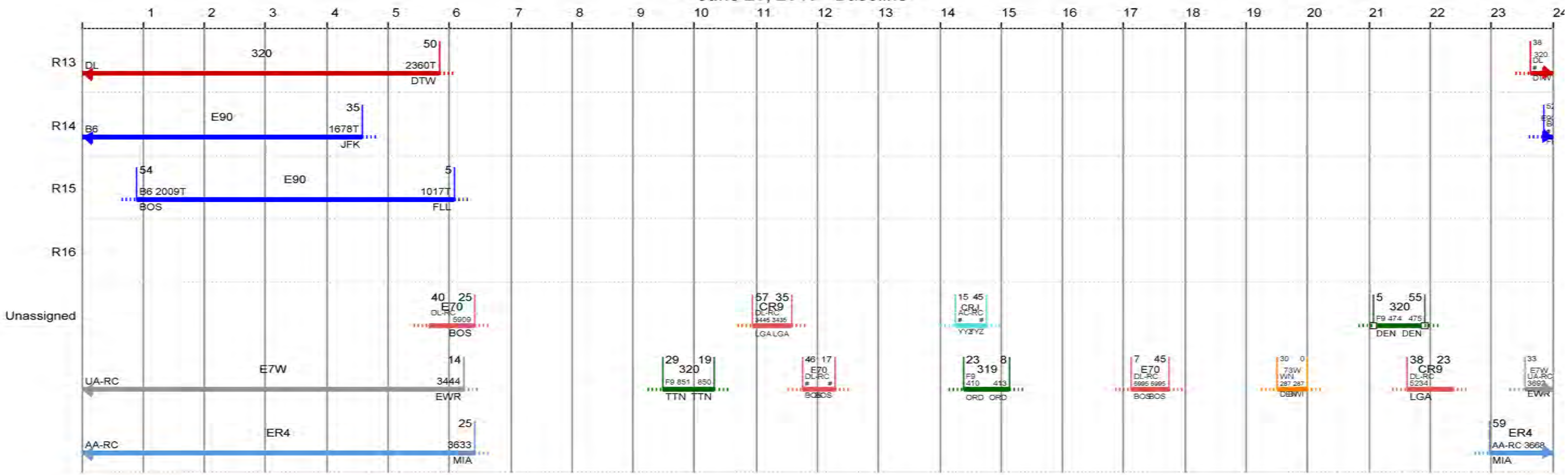
June 20, 2019 - Baseline



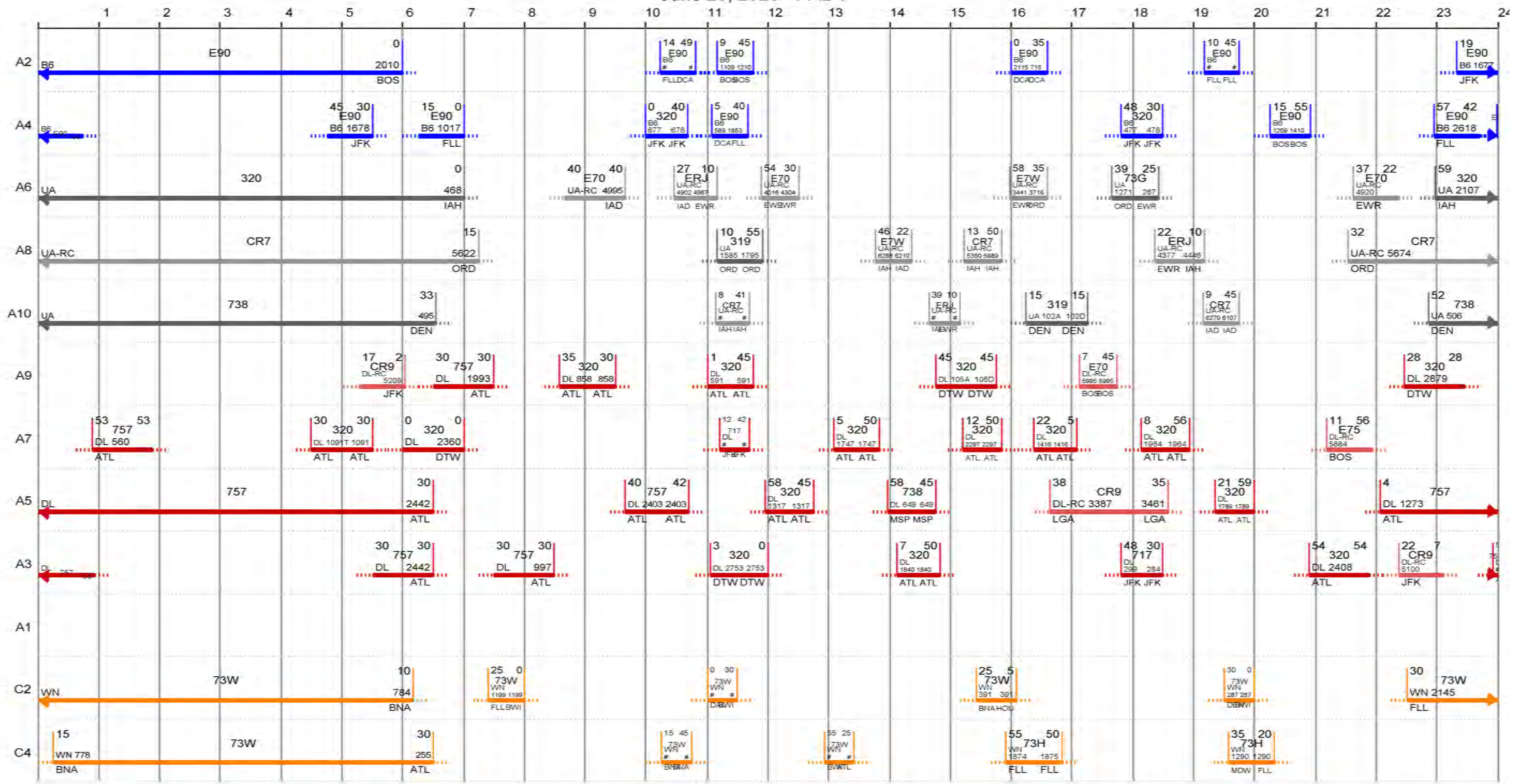
June 20, 2019 - Baseline



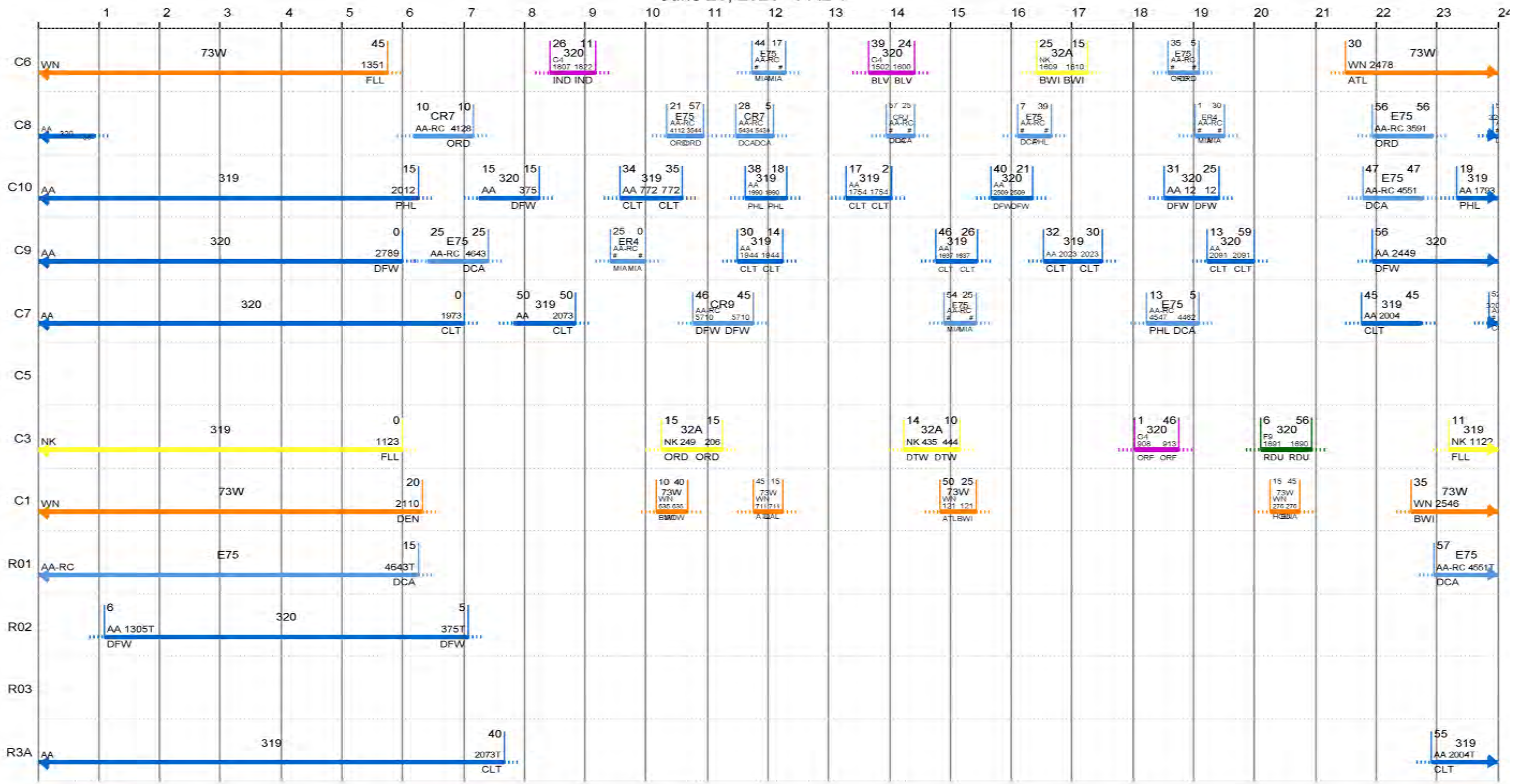
June 20, 2019 - Baseline



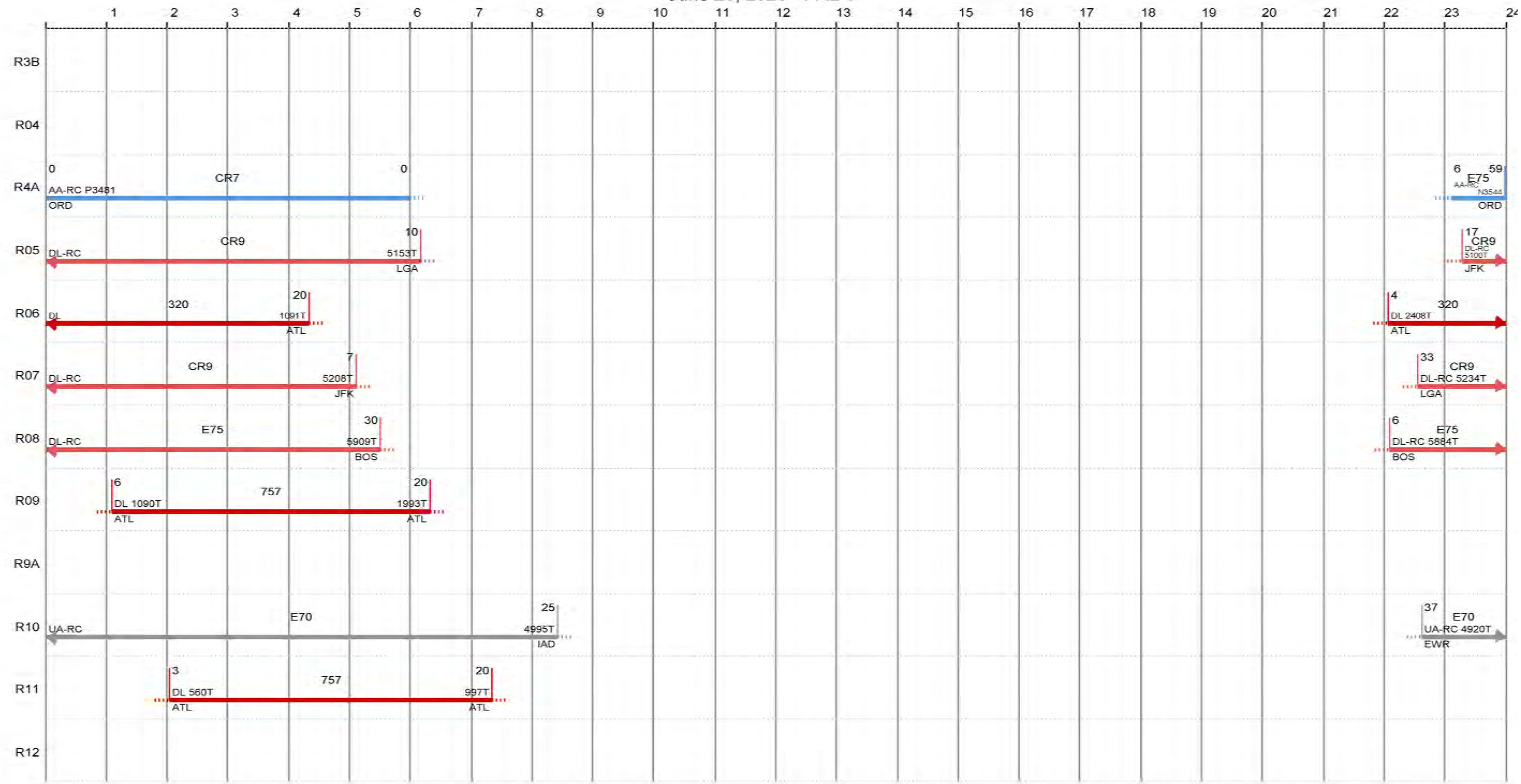
June 20, 2023 - PAL 1

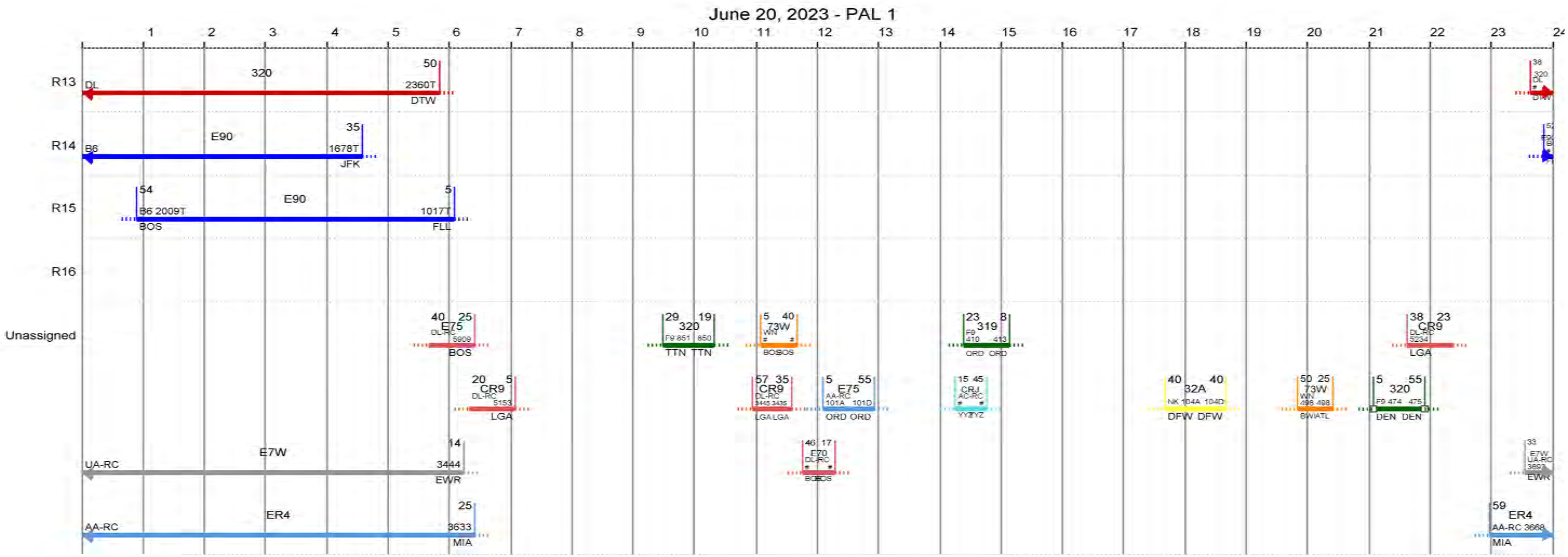


June 20, 2023 - PAL 1



June 20, 2023 - PAL 1




June 20, 2023 - PAL 1
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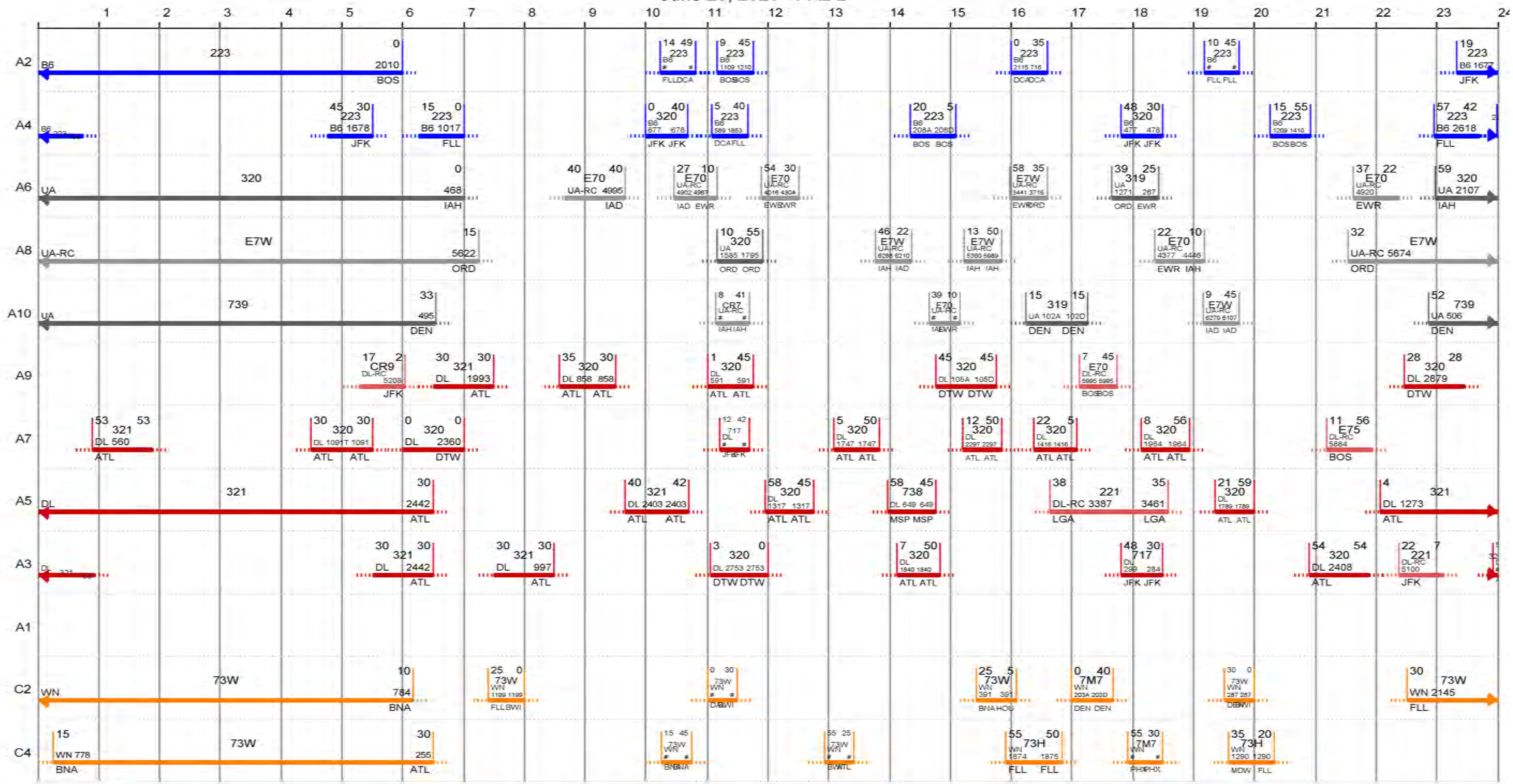
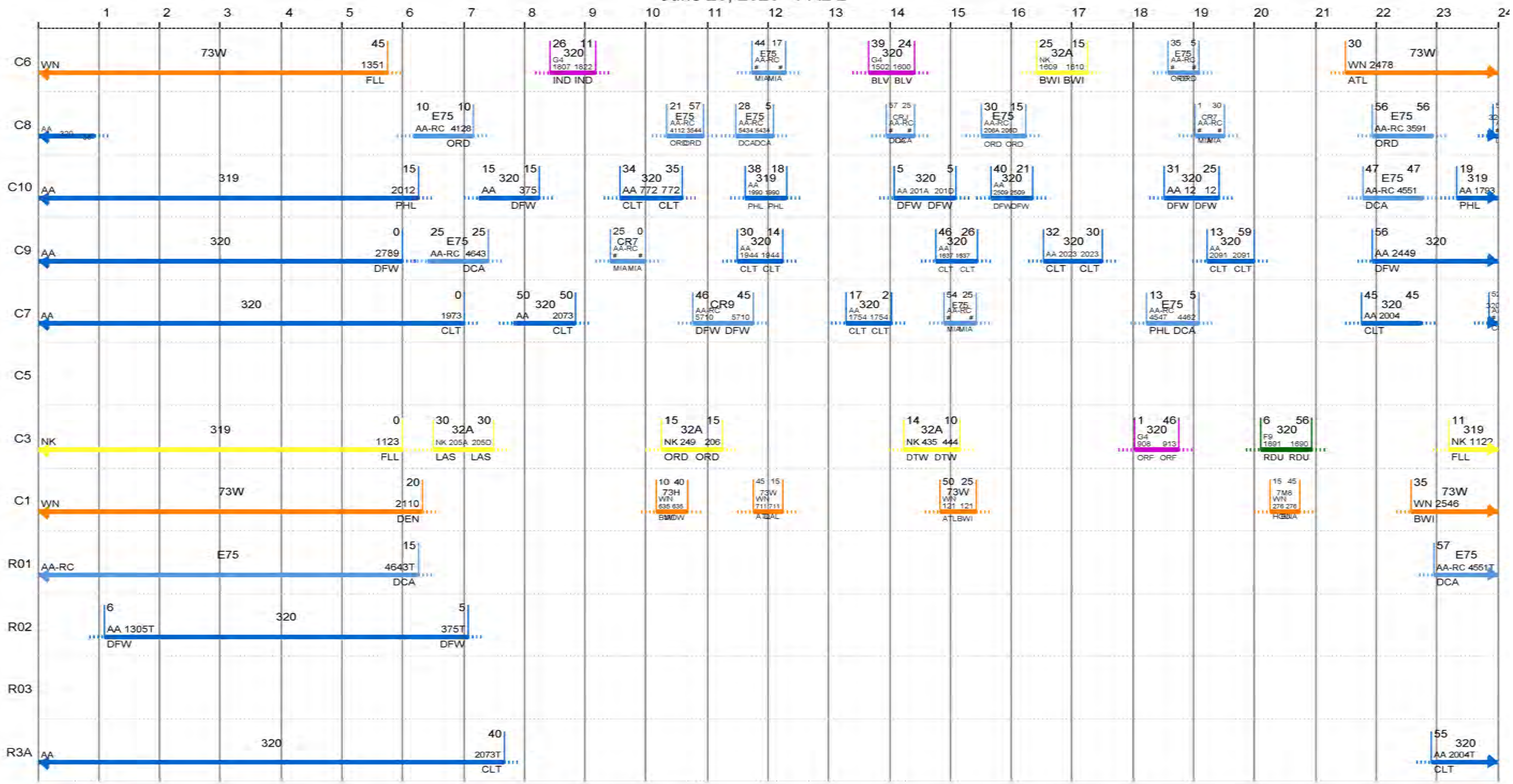
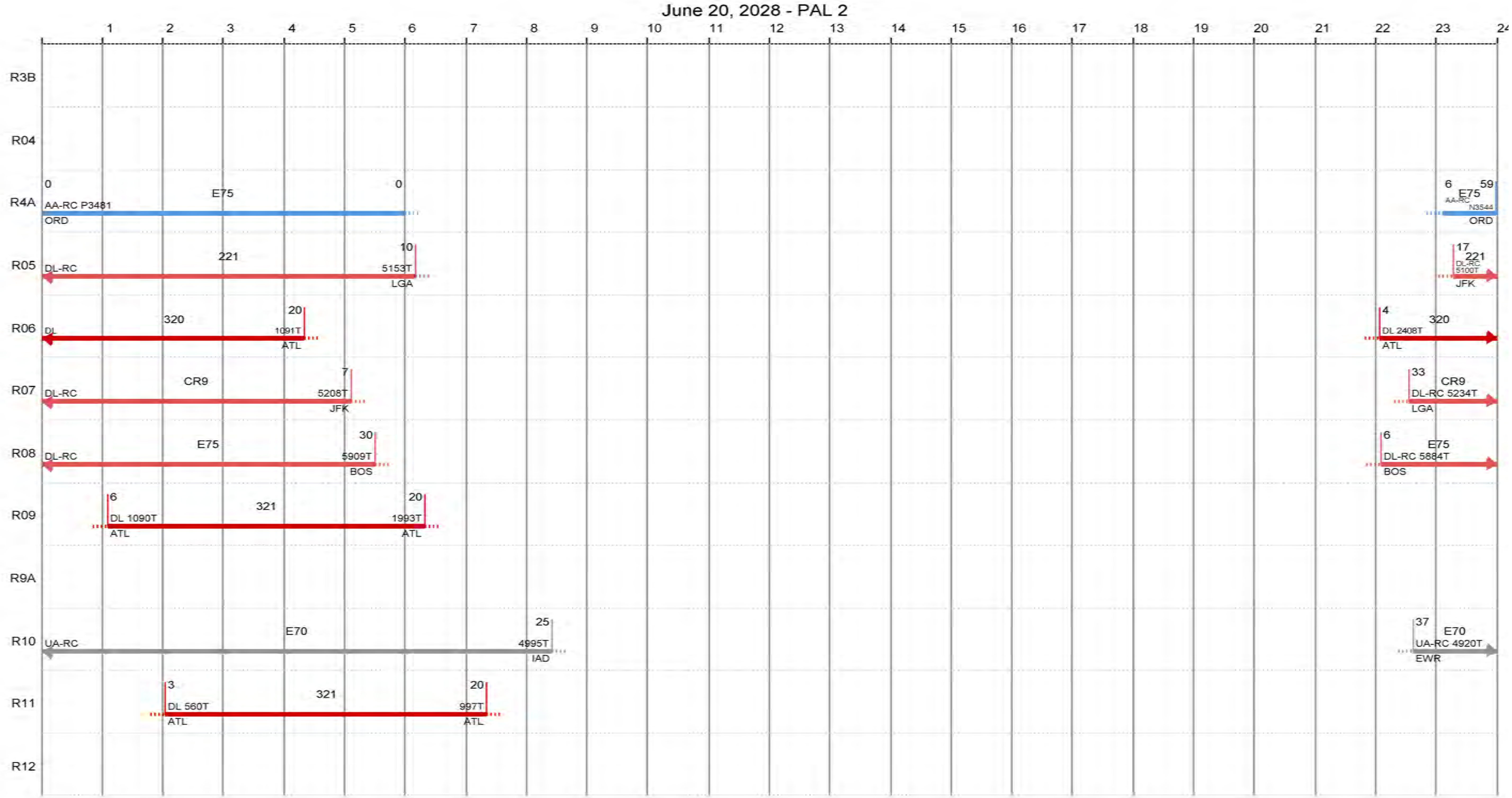
R13
R14
R15
R16
Unassigned
320
DL
50
2360T
DTW
E90
B6
35
1678T
JFK
54
B6 2009T
BOS
E90
5
1017T
FLL
E7W
UA-RC
14
3444
EWR
ER4
AA-RC
25
3633
MIA
59
ER4
AA-RC 3668
MIA

June 20, 2028 - PAL 2



June 20, 2028 - PAL 2




June 20, 2028 - PAL 2
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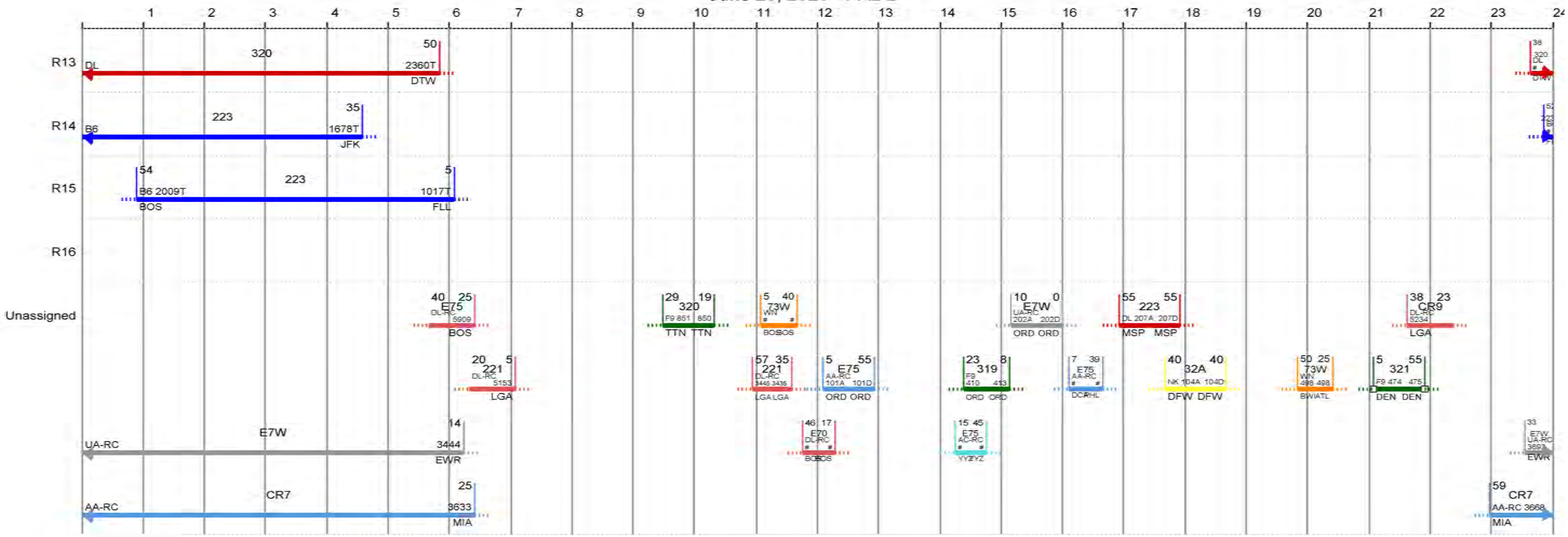
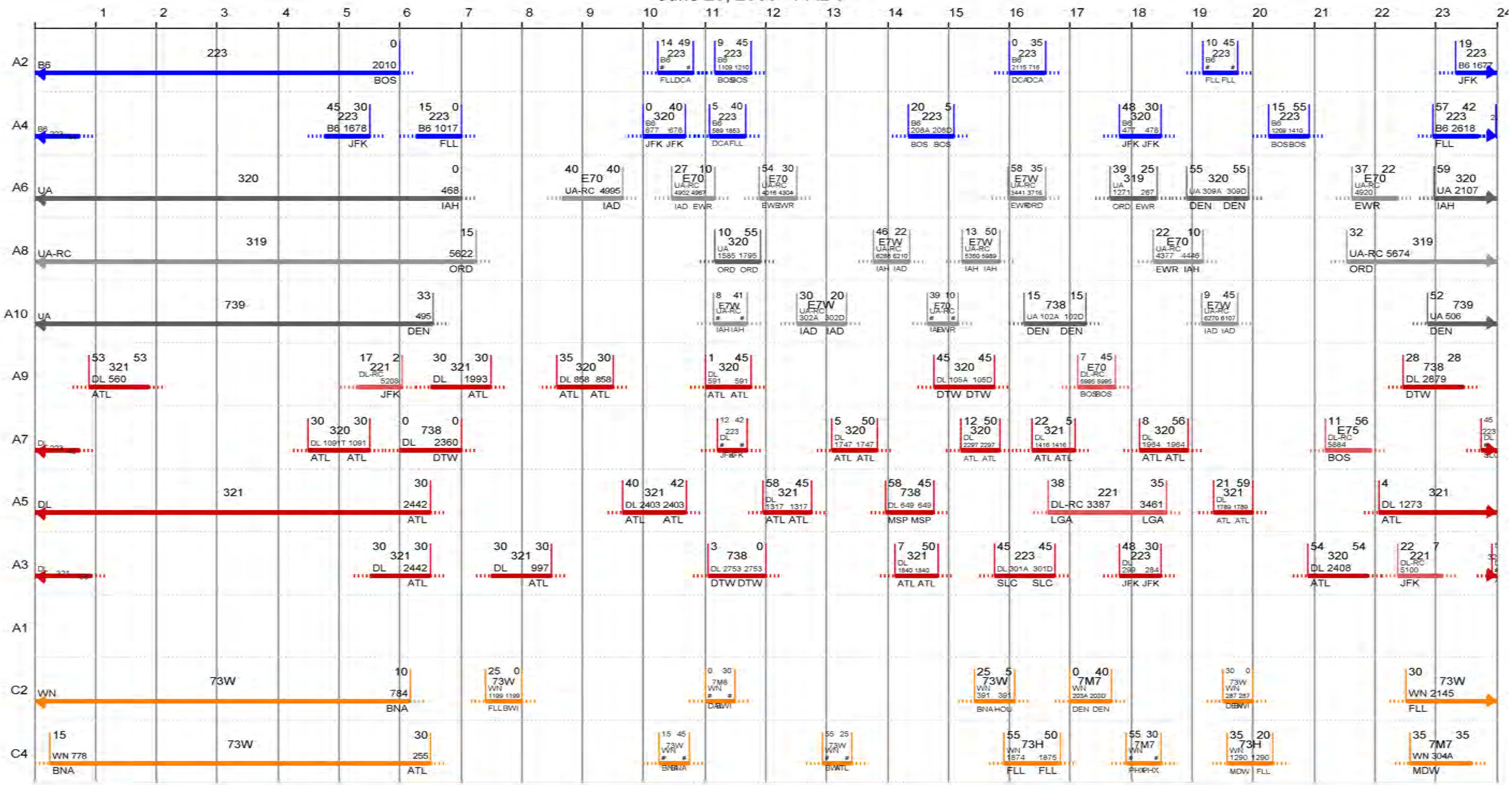
R3B
R04
R4A
0
AA-RC P3481
ORD
E75
0
6
59
E75
AA-RC
N3544
ORD
R05
DL-RC
221
10
5153T
LGA
17
221
DL-RC
5100T
JFK
R06
DL
320
20
1091T
ATL
4
DL 2408T
320
ATL
R07
DL-RC
CR9
7
5208T
JFK
33
CR9
DL-RC 5234T
LGA
R08
DL-RC
E75
30
5909T
BOS
6
E75
DL-RC 5884T
BOS
R09
6
DL 1090T
ATL
321
20
1993T
ATL
R9A
R10
UA-RC
E70
25
4995T
IAD
37
E70
UA-RC 4920T
EWR
R11
3
DL 560T
ATL
321
20
997T
ATL
R12

June 20, 2028 - PAL 2



June 20, 2038 - PAL 3



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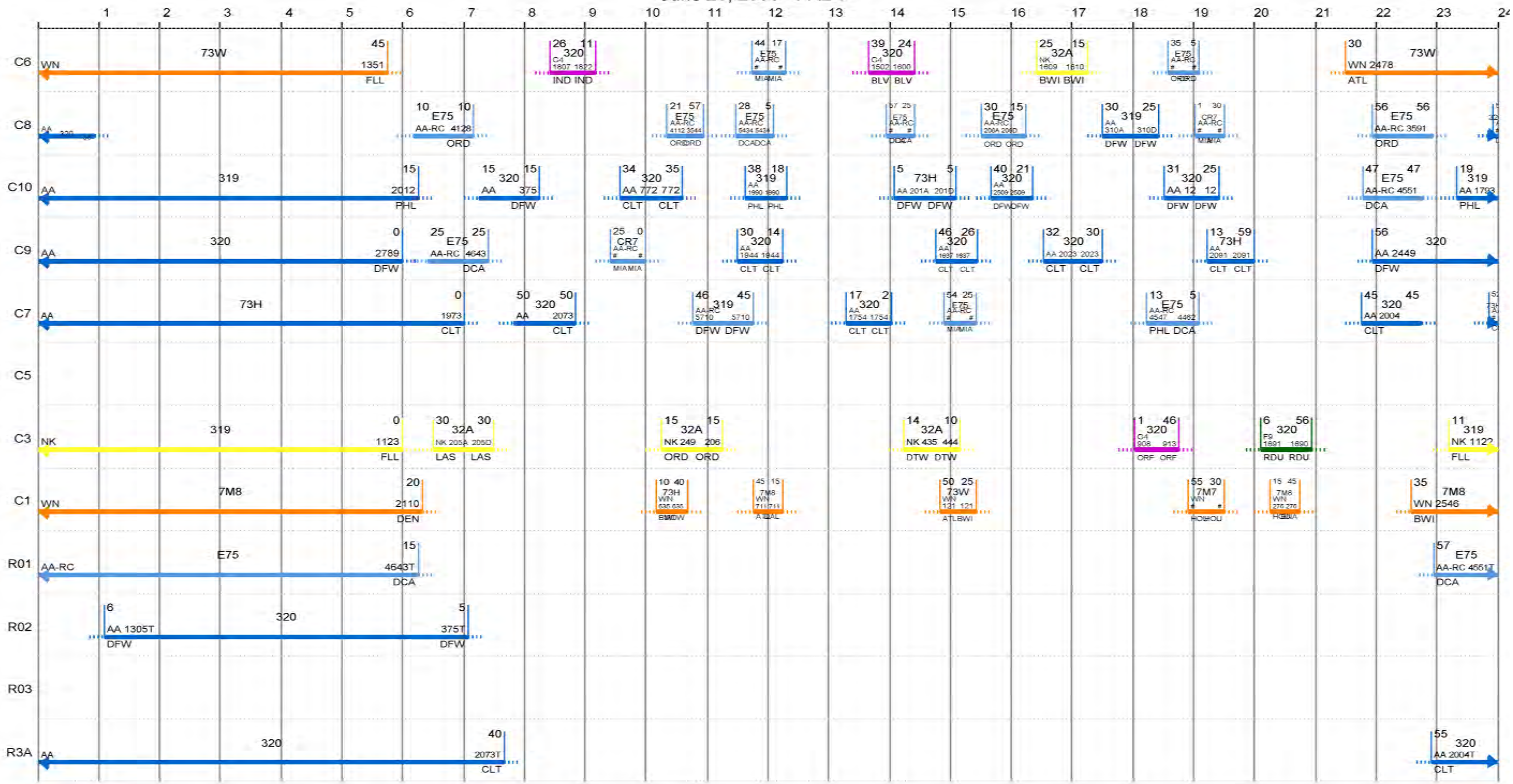
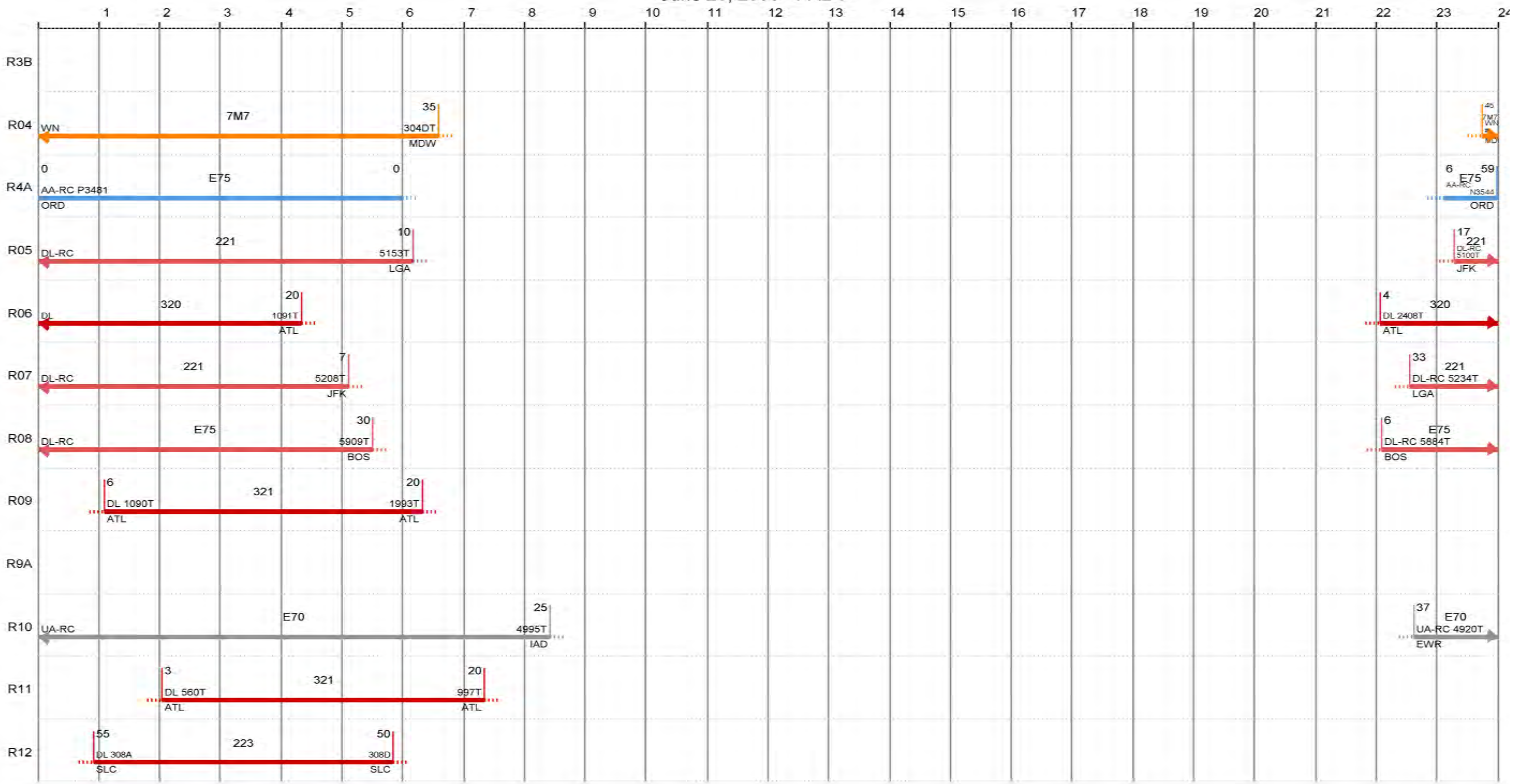
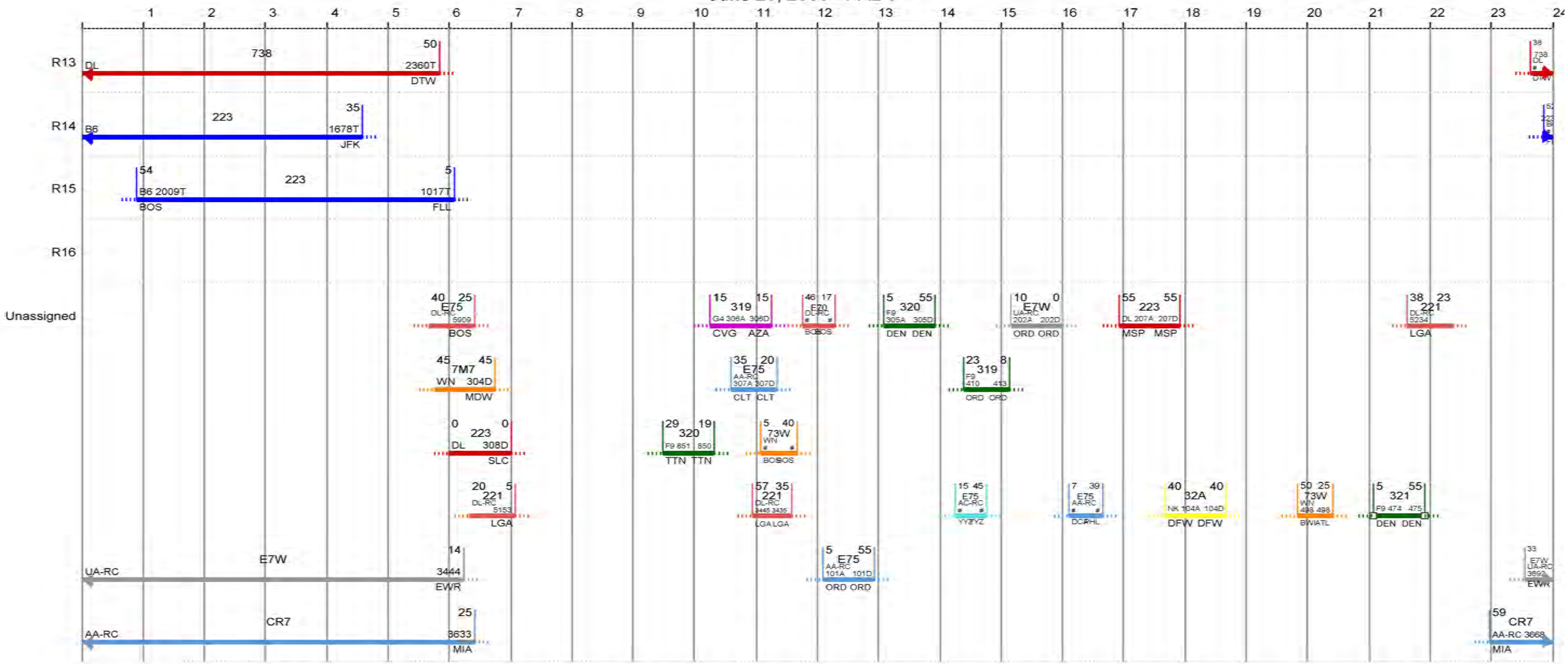


June 20, 2038 - PAL 3



June 20, 2038 - PAL 3



APPENDIX B

Jacksonville International Airport Parking Study – Phase II

WALKER
CONSULTANTS

April 24, 2019

Ms. Jaime Eaton
Jacksonville International Airport
2400 Yankee Clipper Drive
Jacksonville, Florida 32218

Re: Jacksonville International Airport
Final Report -Parking Study Phase II
JAA Project J2017-07, PO# 34936
Walker Project No. 15-2273-00

Dear Ms. Eaton:

Walker is pleased to submit the following Draft Report of the Phase II Parking Study for Jacksonville International Airport.

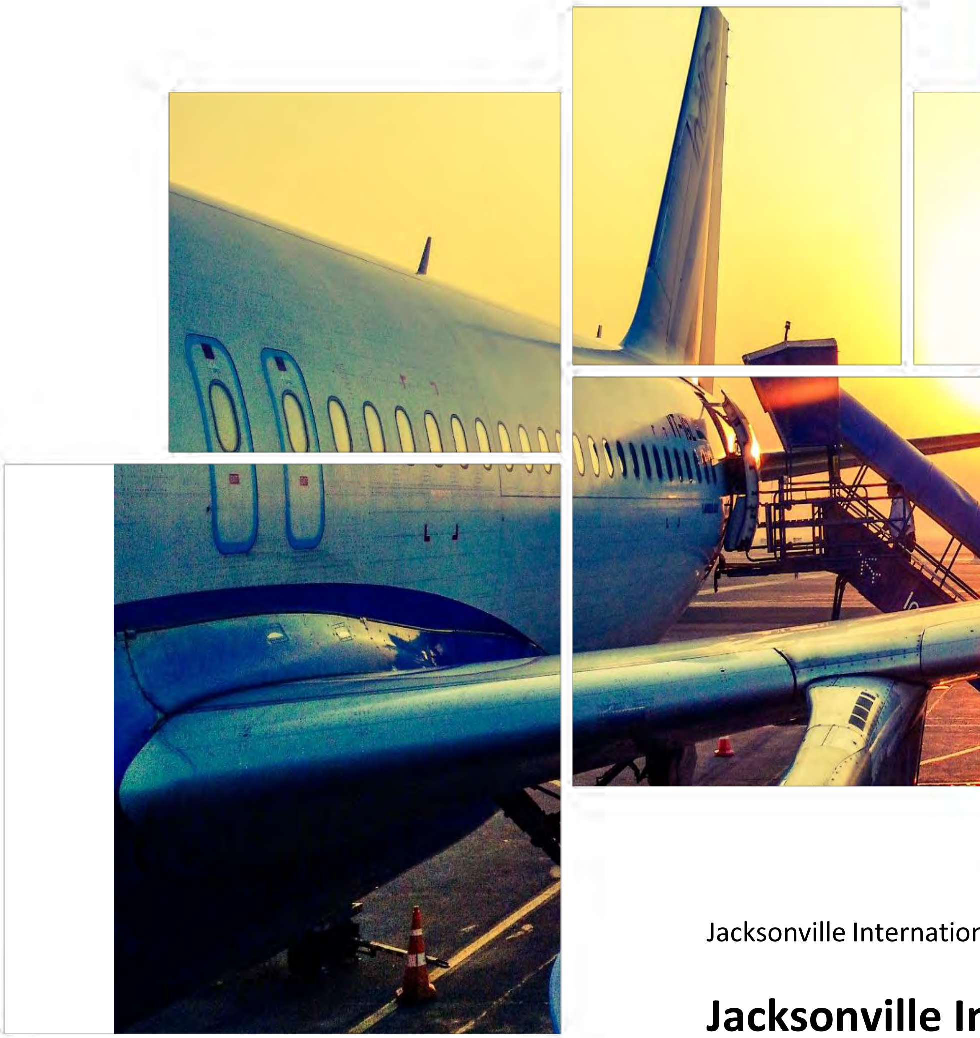
We appreciate the opportunity to be of service to you on this project. If you have any questions or comments, please do not hesitate to call.

Sincerely,

WALKER CONSULTANTS

Sue Thompson

Sue Thompson
Consultant



BUILDING ENVELOPE
CONSULTING
FORENSIC RESTORATION
PARKING DESIGN
PLANNING

Jacksonville International Airport Parking Study Phase II – Final Report

Jacksonville International Airport (JAX)

Jacksonville, Florida

April 24, 2019

Prepared for:

Jacksonville International Airport and Jacobs Engineering

WALKER CONSULTANTS

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EXECUTIVE SUMMARY

Jacksonville International Airport (JAX) engaged Walker Consultants (Walker) to perform a comprehensive parking study of the airport's existing parking system and provide recommendations for potential improvements. This parking study was completed in two phases.

The **Phase I Parking Study** was completed in April 2018 and included a review and analysis of the following:

- Parking supply and allocations.
- An assessment of current parking operations including valet and shuttle operations.
- A review of the Master Plan in relation to public, employee, and Air Cargo parking.
- Review of the current pickup areas for Transportation Network Companies (TNCs, such as Lyft and Uber) and the City Bus stop.
- High-level review of vehicle circulation challenges at the airport facilities.
- Recommendations to review and provide additional analysis for:
    - Current rental car location.
    - Financial analysis of recommended parking reallocations.
    - Analysis regarding adding new parking spaces to JAX's current parking supply.

This **Phase II Parking Study**, presented in the following report, provides additional analysis, recommendations and implementation strategies for the Phase I recommendations. Within the Phase II study we:

- Explore options and benefits of the relocation of JAX's rental car facility.
- Review, analyze, and plan for the parking supply and its possible reallocation.
- Analyze vehicular circulation.
- Analyze, on a program level, considerations for the addition of a new parking structure as well as the potential to add parking spaces to existing parking areas.
- Review TNC drop off and pick up area practices and benchmarking from other airports.
- Study financial considerations and possible effects of the parking space reallocation plan.

The goal of the Phase II Parking Study is to provide recommendations around enhancements and improvements to the current parking program at JAX that can be implemented both in the short and long term. The goal of the recommendations is to provide a successful parking program now and into the future as the projected growth in originating enplanements and the resulting employee needs are realized.

PHASE I REVIEW OF RECOMMENDATIONS

The following sections provide a review of the relevant findings and recommendations presented in the Phase I Parking Study that have informed and provided a foundation for the Phase II Parking Study.

REALLOCATE EMPLOYEE PARKING

Currently both customer and employee parking are provided in the core parking areas closest to the terminal, with the non-core parking areas allocated mainly for customer Economy parking (though 239± flight crew members also have access to Economy 1 via their access credentials). Employee parking is provided in the majority of the close-in parking facilities at JAX. It is generally a best practice at airports to retain the close-in core parking lots for customers and provide employee parking in a non-core parking lot. Many US airports retain close-in parking for their customers while providing satellite parking areas with 24/7 shuttle service for their employees.

To provide close-in parking that is perceived to be available, easy to locate, and convenient for the JAX customer base, the following was recommended:

- Move employee parking from the main core parking lots and Economy Lot 1, to the Economy 3 parking lot and run shuttle service specifically for employees from Economy 3 to the terminal.
- Economy 3 is currently not used except during peak holiday periods and could easily accommodate all employee parking.
- Turn recovered spaces back in to customer parking.

REALLOCATE SOUTH VENDOR LOT & RELOCATE VALET STAND

The South Vendor Lot is a mixed-use parking facility currently serving Vendors, Transportation Security Administration (TSA), Ambassadors, and JAX employees. Changing the use of this lot to a customer-based lot is warranted, specifically because it is in the core of the airport and provides the immediate access to the terminal crucial to good customer service.

The following changes were recommended to the South Vendor Lot:

- Move all current users out of the South Vendor Lot and make this the Valet Stand/Valet Staging Area Lot. This area would become the valet drop-off and pickup area and would be utilized for short-term staging of incoming and outgoing vehicles.
- Designate a Valet Parking Area in what is currently the Employee Lot where valet vehicles will be parked until customer pick up.
- Turn the existing Valet Parking Area, which is currently part of the Daily Surface Lot, back in to customer parking.
- Move Vendor parkers that need close terminal access to an area to-be-determined. Sign specific Vendor spaces for ease of use and enforcement.

RELOCATE VALET VEHICLE STORAGE

Walker recommended moving the Valet Parking Area adjacent to the Valet Stand to prevent valets from walking across four lanes of busy airport traffic to retrieve vehicles. Additionally, this would reduce travel via foot and valet vehicles to and from the Valet Parking Area, reducing customer vehicle retrieval times and potential liability issues. Walker recommended using part of the spaces currently utilized by employees for Valet Vehicle Storage.

INCREASE PREMIER PARKING PROGRAM MEMBERSHIP

Walker recommended increasing the Premier Parking Program which would allow more customers to sign up for the program and create a larger oversell than what is currently managed. New Premier Parking area was to-be-determined.

VEHICULAR CIRCULATION

Walker conducted a high-level review of concerns expressed by JAX regarding the current vehicular circulation patterns throughout the airport, including the roads, parking garages, and parking lots. Traffic challenges were observed at the intersection of Pecan Park Road and Yankee Clipper Drive. The majority of those challenges appeared to stem from the rental car employees driving between the ready return area in the Hourly Garage and the support facilities off of Pecan Park Road. We suggested that this challenge could likely be addressed or reduced by either moving the rental car support facilities or forcing the drivers to enter the support facility from a different location/street.

Walker also looked at the TNC pickup area located at the southernmost end of the Arrivals Roadway. The current TNC pick up area could be a source of traffic congestion and there is also limited opportunity for growth as TNC usage increases. Walker recommended movement of the TNC area.

To better understand the vehicular circulation needs at JAX, Walker also recommended an in-depth traffic analysis be performed by a traffic engineer to advise on best options to alleviate the vehicular circulation problems that JAX was experiencing.

MASTER PLAN REVIEW

Walker reviewed the Airport Master Plan in relation to public parking to provide recommendations regarding parking allocations and operations to increase the parking supply at JAX to support the projected growth of the airport.

The Master Plan suggested the construction of a new parking garage and used the following data to substantiate that recommendation:

ES-1: Public Parking Facility Requirements - By Product

	Total Passengers	Number of Public Parking Spaces				
		Hourly Garage	Daily Garage	Daily Surface	Economy Lots	Total Parking
Existing Capacity						
Actual		773	1,963	1,722	3,181	7,639
Operational		734	1,767	1,550	2,863	6,876
Demand						
PAL[1] 1 (Baseline)	6 MAP[2]	694	1,707	1,012	2,306	5,620
PAL 2	8 MAP	847	2,082	1,234	2,813	6,855
PAL 3	10 MAP	1,062	2,611	1,548	3,527	8,597

[1]PAL = Planning Activity Levels
[2]MAP = Million Annual Passengers

Source: *Jacksonville Airport Authority*, Public Transportation Data, July – August 2008 (baseline demand); *Ricondo & Associates, Inc.* (forecast demand), 2008

The Master Plan suggested the construction of the new parking garage immediately east of the existing Daily Garage. The addition of a net 1,000 space parking garage, per the Master Plan recommendation, would bring the amount of parking spaces in the terminal area to 5,804±, meeting the Master Plan projected demand for terminal area parking through Planning Activity Level (PAL 3) of 5,221 parking spaces.

Walker noted that the projected amount of parking spaces in the Master Plan appeared to be below the actual observed parking demand for the current level of originating enplanements at the airport. Due to this, it could be possible that a new parking garage may be needed when the airport reaches 8 Million Annual Passengers (MAP) as opposed to 10 MAP. However, the effect that TNC's may have on airport parking demand may impact the demand numbers; the long-term effects of TNC usage were unclear at the time.

The Master Plan also provided recommendations around Air Cargo Parking regarding actual parking spaces needed vs. actual parking spaces provided. The current Air Cargo Parking Areas consist of 61± parking spaces in Air Cargo 1 and 2 parking areas and 73± parking spaces in Air Cargo 2 parking area for a total of 134± parking spaces total for all of Air Cargo.

The Master Plan that Walker reviewed utilized a calculation for parking spaces needed utilizing a 3-space per 1000 square feet of warehouse space, projecting that 333± parking spaces were currently needed. Of those total spaces, 187± were needed for Air Cargo 1 and 2, and 146± spaces were needed for Air Cargo 3. Utilizing the calculation method from the Master Plan, there would be an overall deficit in parking spaces of 199± spaces total; a 126± space deficit in Air Cargo 1 and 2, and a 73± space deficit at Air Cargo 3.

There is no current standard in the parking industry for a ratio of air cargo employee parking spaces to gross floor area (GFA). The 3-space per 1000 sq. ft. ratio used in the Master Plan is typical of office tower and business environments but may be excessive when compared to the typical industrial environment of Air Cargo and what is currently utilized by other airports.

Based on a review of published parking rates for industrial and warehousing land uses and a comparison of rates currently utilized at other airports, a ratio of 1 parking space per 1000 sq. ft. of GFA is considered to be standard.

For JAX Air Cargo, there is 61,536 square feet of GFA in Air Cargo 1 and 2 combined, and 100,000 square feet of GFA in Air Cargo 3. This equates to a need for approximately 62± parking spaces at Air Cargo 1 and 2 and 100± parking spaces at Air Cargo 3.

Based on this methodology, the parking area for Air Cargo 1 and 2 is technically (1) ± parking space short (the supply being roughly sufficient) and the Air Cargo 3 area is (27) ± parking spaces short.

In an effort to improve the existing deficit in parking spaces, Walker recommended building parking on available land located south of the current facilities, between Air Cargo 2 and 3.

Walker also recommended that a Parking Garage Feasibility Study, review of current parking assets and potential additions and improvements to these assets, and a study of the potential relocation of the Rental Car Center (RAC) be conducted.

ADDITIONAL RECOMMENDATIONS

In addition to the above, Walker recommended JAX pursue the following in the next study phase:

- An in-depth financial and operational review of the components of moving employees to the current Economy Lot 3 as well as moving valet to the current South Vendor Lot.
- Explore the relocation of the current TNC area and commercial pre-arranged area.

PHASE II PARKING STUDY ANALYSIS AND RECOMMENDATIONS

A brief summary of each Section of this report is provided in the following and includes the data, information, and proposed recommendations presented. For further details and related figures and tables, please see the respective Section within the body of this report.

SECTION 1 – RENTAL CAR RELOCATION STUDY

Walker engaged Ricondo and Associates, Inc. (Ricondo), a respected company in the field of airport rental car studies, to study the potential for relocation of the rental car ready/return area (RRA) from the existing Hourly/Daily Garage to a future consolidated rental car facility at JAX.

Based on industry knowledge and best practices, field observations made during their site visit, data and information from JAX and the JAX rental car agencies, as well as surveys and meetings with rental car companies serving JAX, three options for moving the RRA from the Hourly Garage to a consolidated rental car facility were identified:

- **Option 1 – Ready/Return in Daily Surface Lot North of Parking Garage**
    - Relocates RRA to new four-level structure in Daily Surface Lot north of the existing Daily Garage.
    - Customer service counters would remain in the terminal.
- **Option 2 – Ready/Return South of Terminal**
    - Relocates RRA to new four-level facility south of the terminal in the location of the existing Employee Lot with employee parking either included or relocated.
    - Customer service counters would remain in terminal.
    - This option is not recommended by Walker Consultants due to recommended changes for public and employee parking (See Section 2).
- **Option 3A and 3B – Ready/Return North of Terminal**
    - RRA relocated from the Hourly Garage to new three-level facility north of the terminal, near the current ATCT (the control tower), which would be demolished.
    - Existing Premier Lot area included within the new facility.
    - Option 3A: Customer service counters relocated from their existing location in the terminal to a new customer service area within the new facility.
    - Option 3B: Customers processed at the existing counters in the terminal and then walk to the RRA facility to collect or return their vehicles.
    - These options assume the timing for demolition and relocation of the ATCT will align with JAX's schedule for relocation.

Based on a set of evaluation criteria completed by Ricondo, Option 1 scored the highest and is the recommended option, with Option 2 and Option 3A tied for second highest.

A high-level analysis was conducted to determine the financial feasibility of developing each option and the analysis included assumptions regarding construction schedule, potential project-eligible and enabling project costs, financing terms, and repayment assumptions.

The per square foot project costs for parking structure, at-grade surface parking and demolition of pavement were based on Ricondo's experience with past rental car planning efforts. Jacobs Engineering provided the costs for the customer service building, soft costs, design, and construction contingency. These estimates are intended to be rough order of magnitude costs and should be verified by a professional cost estimator. The assumed costs per feet for each component are:

- Parking structure - $70 per square foot
- At-Grade surface parking - $26 per square foot
- Customer service building - $250 per square foot
- Demolition of pavement - $0.50 per square foot
- Soft costs, design, and construction contingency of 35 percent was added to the total construction costs.

It is assumed that JAX would finance this project with revenue bonds using the proceeds from the collection of a Customer Facility Charge (CFC). The rate and projected revenue realized from a CFC largely determines a project's financial feasibility. The amount of CFC revenues required to meet the projected requirements for each facility option was estimated. While planning hour transactions for development of the facility requirements were projected using the Federal Aviation Administration (FAA) Terminal Area Forecast (TAF), a more conservative approach was used for projecting transactions for the CFC sizing analysis, based on historical eight-year average rental car transaction growth (2010 - 2017), or 1.65% per year. A table depicting the assumptions and results of the CFC sizing analysis can be found in Section 1.

The possible projected 2028 -2038 cost estimate range for the four options may range between $ 59.8 million and $81.4 million, which is projected to require a Customer Facility Charge (CFC) rate in the range of $ 1.80 and $3.40 per transaction day. The projected 2038 cost estimate for the recommended Option 1 is $72.0 million and with a projected CFC rate of $3.00 per transaction day.

Based on recent conversations with JAA, there is a potential interim solution that could be explored further before committing to one of the above options. The current Daily Garage could potentially be expanded with a footprint that would mirror the existing structure, providing the parking spaces/area needed for the rental car operations and providing for a longer horizon before a new RAC would be necessary. Additionally, this expansion could provide additional customer parking spaces. JAA may want to consider this option as part of their discussions.

SECTION 2 – PARKING REALLOCATION AND OPERATIONAL CHANGES

The following provides a summary of the primary parking reallocation and operational change recommendations. These recommendations include the following:

- **Moving Valet Stand/Staging from Departures Level to the South Vendor Lot and Moving Premier Parking to Customer Self-Park or Valet**
    - Move Valet Stand and Valet Staging from the Departure Roadway to the South Vendor Lot.

  - Move Vendors from the South Vendor lot. Vendor parking will include approximately 10± parking spaces in the Valet area for Vendor self-parking use, as determined by JAX. Further Vendor parking will be available in what is currently the Employee Lot (but will become Customer Self-Park), in approximately 10± reserved spaces closest to the terminal, and some Vendors will be able to use the Loading Dock (as determined by JAX). JAX could also consider some Vendor parking in the Hourly Garage and provide validations if they do not believe the proposed options will work.
  - Members of the Premier Parking program will be moved from the Pre-Arranged Lot to either Customer Self-Park or Valet Parking (as determined by JAX), which will continue to allow these customers a high level of service and allow for expansion of the current Premier Parking Program.
- **Moving Valet Vehicle Parking from Daily Surface Lot to Current Employee Lot**
  - Approximately half of what is now the current Employee Lot becomes Valet Vehicle Parking.
  - Approximately half of what is now the current Employee Lot becomes Customer Self-Parking.
  - Barriers separating the two areas will be moveable, in order to accommodate any current or future demand by either user group.
- **Moving Employee Parking to Economy 3**
  - Remove employee parking from the Employee Lot, Hourly Garage, Daily Garage, Daily Surface Lot, and Economy 1 Lot and consolidate all into what is now the Economy 3 Lot.
  - The new Employee Lot will be serviced by a new Employee Lot shuttle.
  - What is currently the Employee Parking Lot will be used by customers for Daily (or Hourly) parking, Valet parking, Vendor Parking, and possibly Premier Parking Program Parking.

Walker's recommended parking reallocations and operational strategies are designed to address both the current needs and the expected future growth of JAX. The schedule of changes is intended to be implemented as a whole, not in part, as each individual relocation is performed in conjunction with an assortment of other movements and each movement affects each of the other movements.

In Section 2, within the body of the report, a summary table of the moves, impacts, opportunities, challenges and dependencies of Walker's recommendations and the proposed order of implementation (of which some may be done concurrently) is provided. The key finding identified is that the Employee Parking Lot must be reallocated for these recommendations to be able to be implemented.

SECTION 3 – VEHICULAR CIRCULATION

This section provides a review of traffic impacts that could potentially occur as a result of the following recommended changes proposed in Sections 1 and 2 of this report and possible recommendations that may assist with these impacts.

RENTAL CAR CIRCULATION

Rental cars are currently returned by driving past the Daily Surface Lot, Daily Garage, and Hourly Garage and proceeding to the Rental Car Area. To get to the Quick Turn Around area (QTA), rental car staff drive vehicles out of the Hourly Garage onto Dixie Clipper Drive, use the turnaround at Yankee Clipper Drive, turn right onto Pecan Park Road and proceed past the Economy Lots to Rental Car Lane.

Walker recommends extending Rental Car Lane to Owens Road. To get to the QTA, rental car company employees would continue to drive the vehicles out of the Hourly/Daily Garage, onto Dixie Clipper Drive, and proceed to International Airport Boulevard, and turn right onto Owens Road. This would eliminate the need for employees to cross over to the right-turn lane on Pecan Park Road for merging onto Yankee Clipper Drive, reducing traffic at Yankee Clipper Drive and Pecan Park Road intersection.

CIRCULATION IMPACTS OF RENTAL CAR RELOCATION STUDY RECOMMENDATIONS

Currently, customers enter the Ready Return Area (RRA) by keeping to the left as they approach the terminal area and entering the RRA after the Hourly Garage entrance, without traversing the terminal area itself. Customers exit the RRA by exiting the Hourly Garage and merging onto Dixie Clipper Drive past the terminal area. Relocation of the RAC may have the following impacts, based on the option chosen:

- **Option 1 - Build New RAC in Daily Surface Lot Northeast of the Daily Garage**
  - Entry: Customers keep to the left and enter in a new access point of Yankee Clipper Drive before approaching terminal area.
  - Exit: Customers exit through Daily Surface Lot exit or through a new direct connection to Thomas Imeson Road and exit airport – both options would maintain existing circulation.
  - QTA Circulation: Vehicles traveling to/from RAC and QTA should enter/exit through an area separate from customers and away from the current parking toll plaza. The need for a separate entry/exit need should be specified in the design requirements for the new RAC. Vehicles could also access through a new direct connection to Thomas Imeson Road.

- **Option 2 - Build New RAC South of Terminal**
  - Entry: Customers traverse through terminal area to access new garage. Net impact for entering customers would be an increase in trips through the terminal area. Based on planning hour, this would represent an addition of 305± trips through the terminal area.
  - Exit: Customers exit new garage onto Dixie Clipper Drive south of terminal area with negligible traffic impact.
  - QTA Circulation: Vehicles traveling to the QTA from the new garage would use a similar trip direction as exists today. Vehicles traveling from QTA would traverse the terminal area to access the new garage, increasing trips through the terminal area.

- **Option 3 A and 3B - Relocating RAC North of Terminal**
  - Entry: Customers approach the terminal and turn right into the RRA without traversing terminal area. Net impact of change for entering customers would be negligible.
  - Exit: Customers exit RRA and proceed through Arrivals or Departures Level to exit, resulting in a net increase in trips in the terminal area.
  - QTA Circulation: Vehicles traveling to/from QTA would have their own entry/exit in the new garage. User would access via Barnstormer Road and Pecan Park Road to/from Rental Car

Lane, simplifying circulation and reducing vehicles at Yankee Clipper Drive and Pecan Park Road.

Option 3A and 3B provide the best circulation for QTA trips but increases trips through the terminal area from customers traversing the terminal after rental car pick up (359± vehicles during planning hour). Option 2 maintains existing the QTA route and increases trips through the terminal area. Option 1 is the only option that does not require rental car customers to traverse the terminal area with similar circulation to current conditions.

PROJECTED EMPLOYEE CIRCULATION TO/FROM ECONOMY LOT 3 (NEW EMPLOYEE LOT)

With the movement of employees to the New Employee Lot, employees with proximate access to US-295 will likely arrive/depart via US-295 to/from International Airport Boulevard, which would increase the number of vehicles proceeding through the stop sign on Pecan Park Road at Yankee Clipper Drive.

Conversely, employees from the south and east would no longer need to travel through the Dixie Clipper Drive/Pecan Park Road intersection, instead turning right onto Pecan Park Road to access what is now Economy Lot 3 but will become the new Employee Lot. Similarly, employees coming to/from the north would no longer need to pass through the airport, instead traveling on Main Street (State Route 17) or I-95 to Pecan Park Road.

Employees who currently drive into the airport to park at the Daily Surface Lot, Daily Garage, and Hourly Garage would instead turn right onto Pecan Park Road to access the new Employee Lot. Similar to other reallocation effects, this will decrease vehicles traveling into/around the airport area during employee ingress but result in more vehicles needing to cross Yankee Clipper Drive at the stop sign on Pecan Park Road during egress.

CIRCULATION IMPACTS OF EMPLOYEE SHUTTLES FROM ECONOMY LOT 3

The relocation of employees to Economy Lot 3 would require a shuttle bus to bring employees to the terminal area. The preferred stop is in the Pre-Arranged Lot which would limit circulation impacts as the shuttle would travel on Pecan Park Road and Barnstormer Road and result in no additional traffic at Yankee Clipper Drive/Pecan Park Road.

PROJECTED IMPACTS OF EMPLOYEE LOT CHANGE TO VALET, PREMIER, CUSTOMER PARKING

Relocating the Valet Stand and Valet Staging from Departures Level to the South Vendor Lot would likely decrease circulation maneuvers around the airport overall with a slight increase on the Arrivals Level. The Valet relocation should eliminate the need for valets to drive vehicles on airport roadways and reduce the number of vehicles circulating around the airport.

PREMIER PARKING RELOCATION

The relocation of the Premier Parking from the Pre-Arranged Lot to a portion of the former Employee Lot is projected to slightly increase vehicles traversing through the Arrivals Level and should have a positive impact on reducing egress congestion. Premier Parking Program member vehicles will exit the airport onto Dixie Clipper Drive, reducing volumes at the stop sign at Yankee Clipper Drive and Pecan Park Road.

NEW CUSTOMER SELF PARK AREA

Additional customer parking in the former Employee Lot is expected to slightly increase vehicles traversing through the Arrivals Level, which will be the only ingress access point. The rate structure could be set to discourage short term transient parking in this area, therefore reducing traffic congestion.

CIRCULATION IMPACTS OF PROPOSED TNC CHANGES

Moving TNC pickups from the Arrivals Level to the Pre-Arranged Lot is projected to reduce vehicles traveling to/from the terminal area and open curb space on the Arrivals Level. TNCs would access their new pickup area via Barnstormer Road and exit via Barnstormer Road to Pecan Park Road. Vehicles traveling north could turn left on Pecan Park Road to I-95, and those going east, west, and south would turn right on Pecan Park Road and merge onto Dixie Clipper Drive. This recommendation would result in more southbound movements at Yankee Clipper Drive and Pecan Park Road.

CIRCULATION IMPACTS OF COMMERCIAL LANE, ARRIVAL/DEPARTURE LANES, AND AIR CARGO RECOMMENDATIONS

The recommendations related to the Commercial Lane (CL), Arrival/Departure lanes and Air Cargo Area are not projected to significantly change the way vehicles circulate at JAX.

The addition of a second entry lane and second exit lane to the CL should improve ingress/egress efficiencies to/from the roadway and ease congestion but will not change travel patterns or routes to/from the CL.

Removing the handrails on the Arrivals Level will enhance access to the curb and decrease congestion, while not changing the way circulation occurs.

The addition of parking to the Air Cargo Area is intended to remedy an existing shortage, but again, will not in and of itself change circulation or increase trips.

INTERSECTION OPERATIONS

A review of the Yankee Clipper Drive/Pecan Parking Road intersection and the Dixie Clipper Drive/Pecan Park Road were conducted. Our findings include:

- **Yankee Clipper Drive/Pecan Park Road Intersection**
    - In general, the intersection operates at an acceptable service level, since most movements are free and experience no delay.
    - Southbound through movement at Pecan Park Road occasionally experiences delays over one-minute as vehicles wait for an acceptable gap in traffic, though the average delay is 18 seconds. Walker staff also observed that there were long intervals with no traffic on Yankee Clipper Drive that allowed southbound movements to progress and for queues on Pecan Park Road to clear.
    - While moving employees to Economy Lot 3 could result in longer queues for vehicles attempting to cross Yankee Clipper Drive on Pecan Park Road, the projected growth in originating enplanements at the airport, provided by JAX, result in the need to put Economy

Lot 3 into service in the very near future, whether it is as employee parking or passenger parking.

  - Peak hour signal warrants are not satisfied based on the data collected by Walker at this intersection, however, enplanement and employee growth in the future may result in the need for one. A signal warrant analysis should be periodically completed to determine if/when a signal is required.

- **Dixie Clipper Drive/Pecan Park Road Intersection**
  - Currently operates at an acceptable service level with free moments and minimal delay.
  - Peak hour signal warrants are not satisfied based on the data collected by Walker, however, the relocation of employee parking to Economy Lot 3 would likely result in an increase in westbound through movements and increase the potential need for a signal in the future. Signal warrant analysis should be performed periodically.

Additionally, options to reduce the need for a traffic signal were evaluated and are summarized below:

- **Circulation Options to Reduce Need for Traffic Signal**
  - Extend Rental Car Lane from its current boundary into a cul-de-sac north of Owens Road, to Owens Road, creating a new T-intersection.
  - Provide additional signage on I-95 and Pecan Park Road for passenger's travel to/from the north to exit I-95 at Pecan Park Road for the Economy Lots and utilize Pecan Park Road to I-95 when leaving the airport rather than traveling south to Dixie Clipper Drive. This should reduce traffic at the stop sign on Pecan Park Road to cross Yankee Clipper Drive.
  - If, in the future, the QTA vacates Rental Car Lane, the road may be improved with wayfinding signage to direct passengers to/from the Economy Lots via International Airport Boulevard and Owens Road, which would also help to reduce traffic at the stop sign on Pecan Park Road to cross Yankee Clipper Drive.

SECTION 4 – COMMERCIAL LANE, ARRIVALS/DEPARTURES, AIR CARGO AREAS

In Section 4, an overview of the existing conditions and proposed recommendations to improve circulation on the Commercial Lane, Arrival and Departure Lanes, and at the Air Cargo Area is provided. Information regarding other areas within JAX that were analyzed as part of the vehicular circulation review can be found in the Vehicular Circulation, Section 3, above.

COMMERCIAL LANE

The Commercial Lane (CL) entry and exit lanes experience frequent congestion with frustrations expressed often by Commercial Lane drivers. Customers also frequently get stuck at the gates, causing additional congestion. To alleviate this congestion, Walker recommends the following:

- **Create a Second Entry and Exit Lane for the CL:** In order to reduce delays and frustration, it is recommended to remove the landscaped area near the Hourly Garage near both the entry and the exit areas and to build a second entry and a second exit lane. It is assumed that JAX will verify any landscape/greenspace requirements or any other codes that may impact this type of work before proceeding.

- **Modify Current Escape Lane:** Currently, the "escape lane," provided from the Rental Car/Hourly Garage access entry lane only leads to the CL entrance gate – there is no access to the Arrivals Level Lane. Customers frequently use this escape lane and are then stuck at the barrier gate to the CL. The customer then must call on the intercom, explain their predicament, and have the attendant provide them entry into the CL. By this time, a backup has most likely occurred as commercial drivers try to access the CL. In order to prevent this from occurring, the configuration should be changed to allow a break in the barrier between the CL and Arrivals Level Lane, allowing customers to access the Arrivals Lane and adding signage in this area that includes stop and yield signs for both the customer trying to use the escape lane and other drivers that are approaching these escape lane areas, so they are aware to look for vehicles using the escape lane.

  JAX may also consider closing the escape lane off completely and adding signage that would lead customers through the Rental Car Level of the Hourly Garage, out on to Dixie Clipper Drive and then to the turnaround road back to the terminal. However, in Section 1, it was noted by the rental car companies that customers driving through their areas cause congestion issues on a daily basis, so this may not be a feasible option.

ARRIVALS AND DEPARTURES ROADWAYS

Congestion occurs on both the Arrivals and Departures Level roadways during peak hours. In order to alleviate some of the congestion, the following is recommended:

- **Investing in a Marketing Campaign**
  - To ensure drivers know they are allowed to park/stand along the roadway only when they are actively loading and unloading, direct standing vehicles to the free cell phone lot for waiting.
  - It should be communicated why this is being done (improved mobility and congestion issues), that an alternative is provided (cell phone lot), and that citations and/or towing may result from noncompliance.
- **Strategically Placing Signage on Terminal Roadways**
  - Implement signage stating, "Active Loading and Unloading Only" and have a towing and/or citation sign/procedure in place for violators.
  - Adding the phrase "Violators will be cited and towed" to signage would also make it clear to customers the consequences of not following these rules.
  - Provide signage informing and directing customers to the cell phone lot on the approach to, and on, the Arrival and Departure Levels.

ARRIVALS ROADWAY

In order to remedy the confusing pedestrian crossings on the Arrivals Level Roadway, Walker recommends the following:

- **Remove Handrails and Change Raised Concrete Area on Arrivals Level Roadway to a Regular Travel Lane to Prevent Confusion**
    - Once roadway is changed, Walker recommends removing the handrail near Door 2, which is currently affecting the ability for passengers to use this area for pickup.
    - Placing signage stating pedestrian crossing is only allowed at designated crosswalks
- **Repurpose the Ground Transportation Booth Near the Pre-Arranged Lot**
    - Move the TNC pickup area (discussed in Sections 2 & 5) into the Pre-Arranged lot, providing TNC's access to the Pre-Arranged lot via a hybrid system of a gate attendant and a ticket.
    - During the peak times, the attendant (who could be repurposed from the Ground Transportation Booth) would manage access and ensure that only TNCs and pre-arranged drivers enter the lot (these drivers would continue to use their access credentials).
    - During non-peak hours or when the attendant is unavailable, the ticket system would be used, and the Pre-Arranged drivers would continue to use their access credentials.
    - In the future, as PARCS technology improves, there will likely be an opportunity to integrate the TNC app with gate access, removing the need for an attendant.
- **Additional Recommendations**
    - Signalize crosswalks to control pedestrian crossing and reduce traffic backup.

DEPARTURES ROADWAY

As part of the overall location/area movements discussed in further detail in Section 1 and Section 2, Walker is recommending the following. We believe that these measures, among other reasons as described in their respective sections, will help with curbside congestion issues:

- Move the Valet Stand to the current South Vendor Lot.
- Signalize crosswalks to control when pedestrians cross.
    - This may improve the pedestrian experience and assist in controlling pedestrian movement vs. vehicular movement (will help control the one pedestrian/small group continual crossing at a time allowing for better, more controlled vehicular traffic).

AIR CARGO AREA

In order to assist with the parking issues occurring during shift changes, assure that all employee vehicles are parked in designated spaces (and not in spaces meant for Air Cargo loading and unloading, ADA, and/or in non-designated spaces), prepare for growth (leasing of all Air Cargo areas and expected growth within current Air Cargo businesses), Walker recommends the following:

- Further expand the new 80-100± space parking area to allow for the original estimate of 140-150± additional parking spaces, potentially adding 40 – 70± spaces to this lot (depending on final space count of the lot).
- Remove landscaping/greenspace from both entry areas of Air Cargo parking areas and turn into parking spaces.
- Remove landscaping island between Air Cargo 1 and 2 and Air Cargo 3. Move parking spaces over towards Air Cargo 1 and 2, move Fed Ex gate over, remove landscaping between Fed Ex gate area and Fed Ex office and create more parking spaces. Implementation of these recommendations may potentially add 28± parking spaces (changing current space count from 134± spaces to 162± spaces).

These recommendations assume JAX will verify minimum landscape requirements before considering implementation (may affect number of actual spaces gained).

If the above recommendations are followed, a total of 68± to 98± parking spaces could potentially be added to the Air Cargo parking areas.

JAX has noted that a new parking permit program will be put in place for all Air Cargo employees in the near future. Walker believes this will also improve the parking program by allowing tracking of permits and users and allow JAX the information needed to enforce program policies and procedures.

In reviewing impacts on traffic that may occur from these recommended changes that will add spaces at Air Cargo, Walker sees little, if any, impact. Currently, many of the vehicles in the Air Cargo areas are making their own parking spaces – meaning that the spaces we are recommending be added are for vehicles that are already parking, albeit in areas other than true employee vehicle parking spaces. Any spaces above those that will qualify as these "back fill" spaces, are expected to have minimal if any impact to current traffic circulation.

As part of this study, Walker also reviewed traffic and vehicular circulation in the Air Cargo areas to determine if there were any measures that could be taken to alleviate the challenges associated with passenger vehicles, Air Cargo trucks, vehicle traffic patterns, and congestion. In studying the layout of the dock areas in both Air Cargo 1 and 2 areas and Air Cargo 3 in relation to the current areas that are/could be used for employee parking, Walker is unable to determine another traffic pattern that may be instituted to not involve intermingling of passenger vehicles and Air Cargo dock vehicle traffic.

SECTION 5 – TRANSPORTATION NETWORK COMPANIES (TNC)

The TNC analysis contains a benchmarking review of how five other airports plan and manage TNCs (e.g. Uber, Lyft, and Wingz), reviews TNC operations at JAX, and provides options and recommendations for relocation of the TNC area, including conceptual design plans.

As part of the benchmarking review, we asked airport officials information on topics outside of the scope of work for this project, but related to TNCs, such as TNC fees, effect on parking, car rentals, and other transportation services, and auditing. We received anecdotal information on these topics and have provided it as part of our review for this study. A TNC fee or revenue analysis or an examination of the correlation between TNCs and parking at JAX or the other airports was not part of this study.

Detailed information regarding the benchmarking/case studies for five other airport TNC programs can be found in Section 5.

For relocation of the current TNC pick up area, Walker recommends:

- **Short Term - Relocating the TNC pick-up area to the Pre-Arranged Parking Lot at the north end of the terminal.**
  - When relocated, TNCs should enter/exit the pickup area via Barnstormer Road, which results in TNCs no longer intermingling with regular airport traffic.
  - Install ticket gate at lot entry with a 10-minute free parking window for TNCs to gain access.
  - Modifying lot so TNCs will not park or back out.
  - The repurposed Ground Transportation Booth attendant would be place at the gate to manage attendance and ensure that only TNCs and pre-arranged vehicles are entering the gate. Future PARCS equipment may allow for this position to be disbanded.
  - Remove parking spaces in the back section of the lot and restripe for coach buses, as these spaces are currently used by buses already.
- **Long Term - Relocate TNC pickup area to Hourly Garage Level 1**
  - If the rental car area is moved to the new RAC and/or if TNCs need more space, it is recommended that the TNC pickup area be moved to the Hourly Garage Level 1 (currently Rental Car).

SECTION 6 – FEASABILITY STUDY

This section provides an analysis of parking demand projections for the next 20 years, based on assumptions, and information around when additional parking supplies will need to be provided via a new structure or restriping. This study provides for a program-level analysis of adding a new parking structure. Items considered in this analysis are:

- Parking demand increases that would trigger the need for a parking structure.
- The impact of Walker's recommended parking reallocations as well as other parking reallocation activities (including RAC relocation and possible addition of spaces in Economy 1, Economy 2, and/or Daily Surface Lot parking) on the decision to add a new parking structure.
- The potential interim solution for the RAC, expanding the footprint of the Daily Garage to mirror the existing structure potentially providing more spaces for rental car operations and customers, is not currently modeled in these projections. If JAA does pursue this option, the increase in spaces should be considered and the model adjusted.

FUTURE PARKING DEMAND NEEDS

The following should be considered when considering future parking demand needs:

- A key planning decision that typically triggers the need for additional parking spaces to the existing supply, including the impacts of TNCs and current service life of existing structures, among others, is the criteria JAX intends to follow to decide how much they want to build "ahead" of the projected future demand, thus maintaining a high level of customer service at all times.

- On a typical busy day, an additional 723± vehicles could be parked in the system before it is likely to feel full to parkers. This capacity may allow JAX to implement a gradual, well-regulated plan for increasing its parking supply. However, most of this availability is located in Economy Lot 1 and Economy Lot 2. There appears to be an existing need for supplementary employee parking and valet capacity, and additionally, as the airport grows, the future growth of employee and valet parking is likely to increase demand.

PARKING DEMAND PROJECTIONS

Parking demand projected through 2038, based on data provided by JAX and FAA, projects a 4.0% annual growth in all airport activities over the next five years. The Terminal Area Forecast (TAF) suggests a long-term growth rate of 2.7% per year. Therefore, baseline parking demand projections assume all user group demand to increase by 4.0% per year for the next five years and 2.7% per year thereafter. The following assumptions are also used:

- Improving Economy Lot 3 for parking and designating it as the Employee Lot would provide 1,300± employee parking spaces in the short term and potentially 1,800± spaces in the long term as demand increases.
- Removing all employee parking from the Hourly Garage, Daily Garage, and Daily Surface Lot, and reconfiguring the Employee Lot and Vendor Lot for valet and customer parking would provide an additional 708± customer parking spaces over existing conditions.
- Future demand growth does not assume a reduction for TNC and AV impacts, as the long-term effects of these technologies have yet to be identified.
- Each table assumes a 20-year overall parking demand projection, which must be periodically re-analyzed by JAX for accuracy due to impacts such as TNC's, AV's, unforeseen changes to travel demand patterns, etc., which may affect parking demand.
- In each scenario, assumptions are that employee parking needs are met through 2038, as per the parking demand projections supplied by Walker.
- In each scenario, it is already assumed that JAX will implement all reallocation recommendations stated in Section 2 of this study.

Several different phasing plans are analyzed in this section. These four plans are meant to assist JAX in understanding the options in regard to when a new parking garage may be needed for customer parking, other items they should consider implementing before building a new garage, and what an implementation plan for each scenario may look like.

- **Phasing Plan 1 – Only Reallocation Recommendations in Section 2 Implemented, No RAC Relocation, No Surface Lot Restriping**
    - Assumes only reallocation recommendations are implemented.
    - Assumes a 1,000± space parking structure could be built by 2024 which would put JAX "just ahead" of projected demand.
    - An additional 1,000± structure (or addition to 2024) may be necessary between 2028 or 2029.
    - Allows flexibility and ability to monitor long-term trends (i.e. impacts of TNCs and autonomous vehicles).

- **Phasing Plan 2 – Reallocation Recommendations in Section 2 Implemented, Surface Lot Restriping Implemented, No RAC Relocation Implemented**
  - Daily Surface Lot, Economy Lot 1, and Economy Lot 2 are potential candidates for additional spaces via restriping or removing landscaping.
  - Up to 1,450± spaces could be gained at these lots.
  - Could push the need for a structure back by 5 years.
- **Phasing Plan 3 – Reallocation Recommendations in Section 2 Implemented, RAC Relocation to Daily Surface Lot, No Surface Lot Restriping Implemented**
  - 554± of the 729 spaces in the current ready/return area would go into customer parking supply
  - 554± spaces would be lost in the daily surface lot to the footprint of the RAC structure.
  - 175± of the 729 spaces in the current ready/return area would be utilized for TNC activity– the Pre-Arranged lot would revert to being Pre-Arranged only.
  - Relocation of the RAC would not change the amount of additional parking needed over the planning horizon.
  - The RAC would be relocated in between 2028 and 2038.
- **Phasing Plan 4 – Reallocation Recommendations in Section 2 Implemented, Surface Lot Restriping Implemented, and RAC Relocation Implemented**
  - Reduces the amount of additional structured parking needed to 2,000± spaces over the 20-year planning horizon.

In addition to the above considerations, if regular maintenance, capital improvements, and protection plans have been deferred, the service life of existing structures and lots may be negatively impacted. JAX should review their current parking facility's needs, including looking at anything that has been deferred and if these deferrals could impact service life.

SECTION 7 – FINANCIALS

OPINION OF PROBABLE COSTS

An opinion of probable cost was calculated for the recommended parking program at JAX. These estimates are preliminary in nature and not for third-party or bonding purposes (See Appendix D for Statement of Limiting Conditions).

- **Proposed Valet and Customer Self-Parking Lot Modifications**
  - Capital costs estimated to be ±$325,000.
  - Assumes demolition in some of the existing lot, repaving lot and entryways, restriping, addition of 2 emergency call boxes, new PARCS equipment, moving existing valet booth, signage, and mobile barriers.
  - Costs associated with review and construction of a drainage system are excluded.
  - 25% contingency encompassing construction overruns and design costs.
- **Proposed Economy 3 Lot Modifications**

- Recommended initial build-out: 1,300 parking spaces
  - Capital cost estimate: ±$5.8 million
  - Annual operating cost estimate: ± $24,000
- Full build-out: 1,800 parking spaces
  - Capital cost estimate: ±$8.0 million
  - Annual operating cost estimate: ±$24,000
- Capital costs inclusive of lighting, fixtures, landscaping, drainage, fencing, emergency call boxes, entry and exits, new PARCS equipment, and bus shelters.
- 25% contingency encompassing construction overruns and design costs.
- Operating costs inclusive of basic operating expenses, revenue controls, and security.
- Other considerations not included in capital cost estimate:
  - Purchasing shuttle real-time arrival trackers
  - Restroom facilities
  - CCTV cameras

- **Employee Shuttle Service**
  - Capital cost estimate for two new shuttles: ±$90,000 based on industry standard. Per JAX, their experience and local market supports the cost of two shuttles at approximately $140,000 (which may include shuttle options not taken in to Walker's projected possible estimates).
  - Operating cost inclusive of fuel, labor, maintenance, repair, and insurance: ±$901,550 based on an industry standard of $30/hour all in cost and the possible projected scheduled hours for shuttle drivers. Per JAX, their experience and local market supports lower costs. Walker understands that JAX will negotiate with their third-party vendor to determine actual costs.
- **Proposed Relocation of TNC Pickup to Pre-Arranged Lot**
  - Capital cost estimate: ±$65,000
  - Includes moving the existing pre-arranged booth to entry/exit plaza, restriping for new directional flow, demolition of curbs and island, PARCS equipment including entry and exit ticket machines, and supplies (i.e. tickets).
  - Estimated annual maintenance cost of PARCS equipment is approximately ±$7,500

PROJECTED POTENTIAL REVENUE OF ADDITIONAL PUBLIC SPACES

An analysis was also performed to determine the estimated potential revenue of adding additional spaces.

- We project that the updated parking allocation could potentially add 708± public parking spaces (as a result of former employee spaces becoming customer parking, valet parking, and reserved vendor parking and adding South Vendor Lot spaces to become valet) and 554± spaces from relocation of the rental car location (assuming 729± current rental car spaces and using 554± spaces for customer parking and 175± spaces for TNC and Premier Parking once RAC relocates), for a total of 1,262± added spaces potentially able to generate revenue. However, it should be noted that parking spaces do not generate revenue, but rather revenue is dependent on the number of customer vehicles that occupy the spaces and their length of stay. The projections of the annual number of vehicles parked, and their length of stay, will depend in part on the number of originating enplanements which will in turn depend upon airport parking alternatives that are available to the public and economic trends, which typically drive the number of enplanements. For this reason, the revenue projections presented here depend on the reasonableness and accuracy of the assumptions made. Changes in these assumptions will impact revenue projections.

- Not including rental car relocation, projected potential revenue of ±$2.3 million annually could be generated.
- With the rental car relocation, potential additional spaces could generate projected potential revenue of ±$4.6 annually.
- Revenue based on Fiscal Year (FY) 2017 enplanements and parking revenues.
- Increases or decreases to enplanements or parking activity may impact demand for parking and revenue generated.
- Gross revenue projected contained in this document and its appendices are preliminary in nature and not for third-party or bonding purposes. Please see Appendix D for full Statement of Limiting Conditions.

Walker also performed an analysis of historical parking revenues per enplanements and found an uptick of $0.57 per enplanement from 2012 through 2017 (does not include 2018 which is the first full year of TNC usage)

Introduction

INTRODUCTION

Jacksonville Airport (JAX) engaged Walker Consultants (Walker) to perform a comprehensive parking study of their existing parking system and to provide recommendations for potential improvements. This comprehensive study was conducted via two phases, Phase I was completed in April 2018 and details around this study are provided below. The Phase II Parking Study, which is encompassed in this report, includes further analysis of the recommendations from the Phase I report and provides recommendations on implementation of these proposed changes.

This introductory Section provides an overview of the Phase I report and its recommendations as well as the goals for the Phase II analysis.

PHASE I REPORT RECOMMENDATIONS REVIEW

The Phase I Parking Study included a review and analysis of the parking supply and allocations, an assessment of current parking operations including valet and shuttle operations, a review of the Master Plan in relation to public, employee, and air cargo parking, a review of the current TNC pick up area and City Bus stop, a high- level review of vehicle circulation challenges at the airport facilities, as well as recommendations to review the current rental car location, conduct a financial analysis of recommended parking reallocations, and conduct an analysis regarding the needs and trigger for adding new parking spaces to JAX's current parking supply.

The goal of the Phase I Parking Study was to identify opportunities to maximize revenue, increase operational efficiencies, and improve the customer experience. The study also included collection of data and the analysis of that data as related to the parking program.

A consolidated list of relevant recommendations included in the Phase I study were:

- **Reallocation of Employee Parking**
  - Move employees from the core parking areas nearest the terminal to a non-core lot (Economy 3 – used only during holiday periods) to open parking nearest the terminal for customers.
- **Reallocation of South Vendor Lot**
  - The valet set up is not ideal, as the staging area is not adequate therefore causing traffic congestion and valet closures due to lack of staging capacity. Additionally, parking and retrieval times are exorbitant, the current valet parking storage area is not adequately sized, and valets are crossing multiple traffic lanes to park and retrieve vehicles.
  - Move vendors out of South Vendor Lot and turn lot in to Valet Stand/Staging.
  - Make what is currently Employee Lot into customer parking and valet parking.
  - Provide vendor parking in lots close to the terminal including the new Customer Self-Park Lot, loading dock, and reserved spaces in the new Valet Staging Lot.
- **Relocation of Valet Storage Area**
  - Turn current valet parking in the Daily Surface Lot back in to customer parking.
  - Relocate valet parking to half of the current Employee Lot.

- **Increase Premier Parking Program Membership**
    - Allow more participants in current program, including those on the waitlist due to supply restrictions. Parking area TBD.
- **TNC Recommendations**
    - Provide alternative TNC pick-up location as the current area is not ideal as it is congested, provides limited growth potential and is shared with the City Bus stop.
    - Gather more information around TNC management and impacts at airports.
- **Master Plan Review Recommendations**
    - Complete a detailed Garage Feasibility Study.
    - Review current parking assets and potential additions/improvements to increase parking.
    - Conduct a study of the potential relocation of the current rental car operations.
    - Add parking to the Air Cargo Area.
- **Vehicular Circulation Recommendations**
    - JAX expressed concerns around the current vehicular patterns through the airport, including roadways, parking garages, and lots. Walker briefly reviewed several areas and provided the following recommendation to alleviate traffic:
        - Reallocate TNC pick up,
        - Reallocate Employee Parking to Economy 3; and,
        - Reallocate Valet Parking to South Vendor and current Employee Lot.
    - Recommended an overall in-depth traffic analysis be performed by a traffic engineer to advise on how best to address traffic circulation issues
- **Further Recommendations**
    - Conduct an in-depth financial and operational review of the components of moving employees to the current Economy Lot 3 as well as moving valet to the current South Vendor Lot.
    - Explore the relocation of the current TNC area and commercial pre-arranged area

Based on the above recommendations, JAX proceeded to the Phase II Parking Study.

PHASE II OVERVIEW

In June 2018, JAX engaged Walker to build on the Phase I Parking study to provide further analysis regarding the proposed recommendations and expand upon implementation strategies; this current study is known as the Phase II Parking Study. Walker's goal with this Phase II Parking Study is to provide recommendations that will assist JAX to make improvements that will not only be beneficial in the short and mid-term, but also provide solutions to prepare JAX for the anticipated growth projections of originating enplanements and employees.

The Phase II Parking Study, provides additional analysis, recommendations and implementation strategies for the Phase I recommendations and includes a rental car relocation study, a parking supply and reallocation review, analysis and plan, a vehicular circulation analysis, a program level analysis for the addition of a new parking structure as well as the potential to add parking spaces to current parking areas, a review of TNC drop off and pick up area practices and benchmarking from other airports, and a financial study around the parking space reallocation plan.

The Phase II analysis includes the following sections:

- Section I: Rental Car Reallocation Study
- Section 2: Parking Reallocation and Operational Changes
- Section 3: Vehicular Circulation
- Section 4: Commercial Lane, Arrival/ Departure Levels, Air Cargo Areas
- Section 5: Transportation Network Companies (TNC)
- Section 6: Additional Supply Analysis
- Section 7: Financial Analysis

Please refer to each report section for further details.

01 Rental Car Relocation Study

SECTION 1 - RENTAL CAR RELOCATION STUDY

As part of the Phase I Parking Study, Walker recommended that JAX explore and research the relocation of the rental car operation location during the next phase of the project. For the Phase II study, Walker engaged Ricondo and Associates, Inc. (Ricondo) to study the potential for relocation of the rental car ready/return area (RRA) from the existing Hourly/Daily Garage to a future consolidated rental car facility at JAX.

The work elements that make up this study include an inventory of existing facilities and future facility requirements analysis, rental car relocation options, evaluation of locations and recommendation, and a high-level financial feasibility analysis assuming the use by JAA of a rental car customer facility charge (CFC) as the funding mechanism.

INVENTORY OF EXISTING FACILITIES AND FUTURE FACILITY REQUIREMENTS ANALYSIS

The current rental car concessionaires at the Airport are: Enterprise Holdings, Inc. (EHI) (operating the Enterprise, Alamo, and National Brands); Avis Budget Group, Inc. (operating the Avis, Budget, and Payless brands), and the Hertz Corporation (operating the Hertz, Dollar, and Thrifty brands).

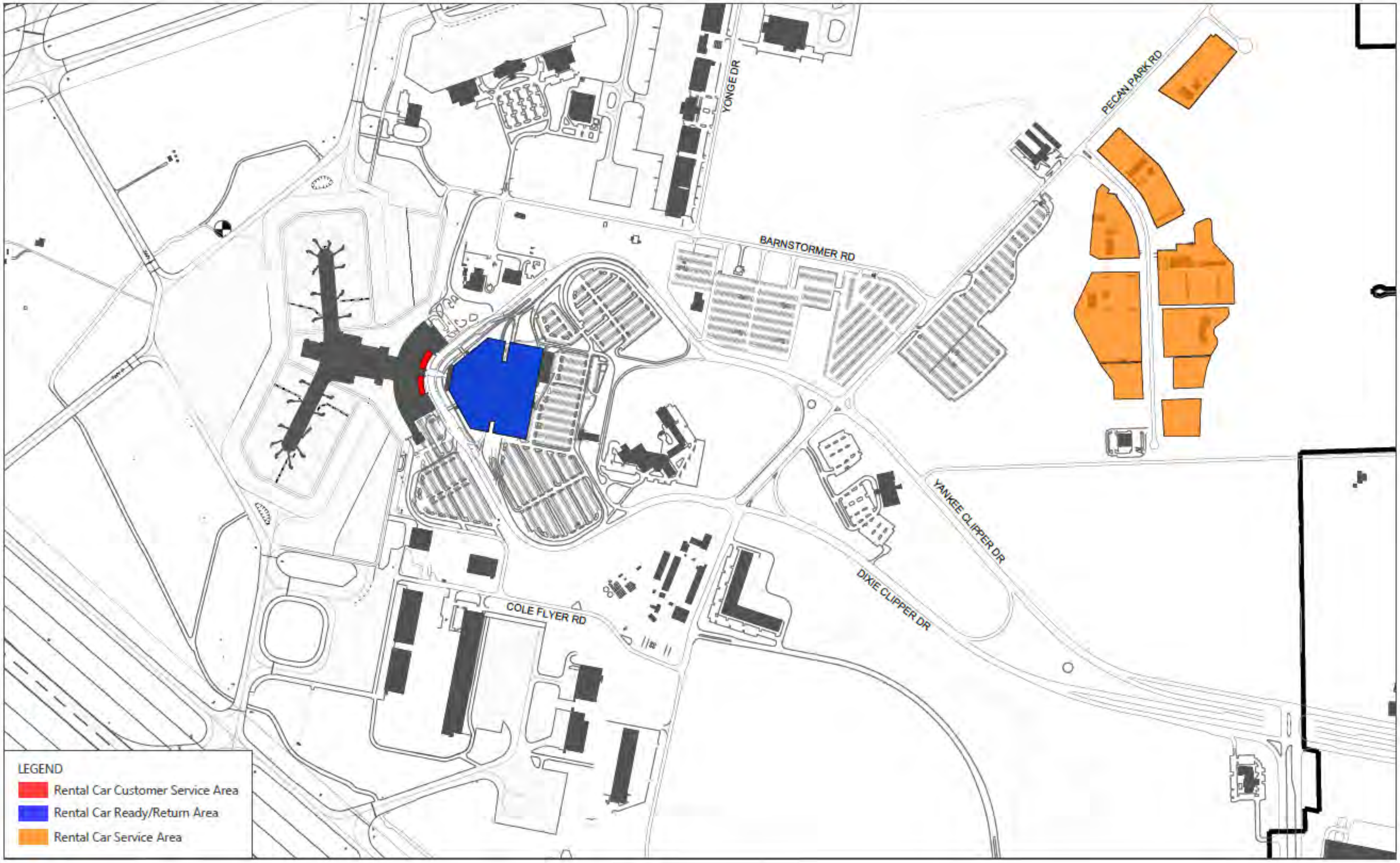
Ricondo conducted a site visit from September 12, 2018 through September 14, 2018 and met with the local rental car operations managers to discuss their existing operations, conduct an inventory of existing rental car facilities, and observe existing operations.

Below is a summary of what Ricondo staff observed and heard from the rental car companies during the site visit:

- Existing garage layout and operation is inefficient due to column spacing and single access/egress points
- Additional covered ready and return parking spaces are needed
- Transportation Network Companies (TNCs) such as Uber and Lyft, are not having a major effect on their business at JAX
- Relocation of ready/return operations to the area currently occupied by the FAA Air Traffic Control Tower (ATCT) and support buildings is favored
- New facility requirements should include:
    - Security so keys can be left in the vehicles
    - Separate entrances and exits for customer and shuttle drivers
    - A design that includes features to accommodate rental car operations (i.e., 15-foot ceilings, wi-fi, bright lights/painted white ceilings, better brand signage/wayfinding)
    - Excludes public parking

Figure 1 illustrates rental car customer service counters are on the first level of the terminal (Baggage Claim and Transportation). The rental car ready/return parking area is located directly across the terminal roadway on the ground floor of the Hourly Garage and contains approximately 729 ready and return parking spaces. Rental car service sites, which include administrative office space, fueling positions, wash bays, maintenance bays, vehicle stacking and staging spaces, and overflow vehicle storage, are located remote from the passenger terminal on 26 acres of land off Rental Car Lane and Pecan Park Road. These exclusive use sites are leased from JAA by the individual rental car companies. Table 1 provides a summary of existing rental car facilities.

Figure 1: Existing Conditions



Source: Jacksonville International Airport, ALP, *2008; Ricondo & Associates,* 2018

Table 1: Existing Facilities – By Position, Spaces, Square Feet

Component	
Customer Service Area	
Regular Customer Service Positions in Baggage Claim Area	30
Kiosk Positions in Baggage Claim Area	4
Preferred Customer Service Positions in Garage	8
Ready/Return Spaces in Garage	729
Remote Service Area	
Vehicle fueling positions (nozzles)	20
Car wash bays	4
Vehicle light maintenance bays	10
Administrative offices	2,500
Vehicle storage spaces	3,200
Stacking/staging spaces	950

Source: *Ricondo and Associates, Inc.*; *Jacksonville International Airport Rental Car Industry Questionnaire*, August 2018

FACILITY REQUIREMENTS METHODOLOGY

Facility requirements were developed for the three rental car “families” that operate nine brands on Airport property. Specific requirements for each of the following rental car facility components were developed:

- Customer Service Area
- Ready/Return Area
- Vehicle Storage Area

Rental car facility requirements were developed using JAX-specific facility utilization rates reflecting rental transactions during a planning hour. Ricondo developed and sent a questionnaire to all the on-airport rental car brands in August 2018 requesting hourly transaction information for 365 days (July 2017 to June 2018), as well as the size, configuration, and use of existing facilities. Two of the three on-Airport “brand families” returned completed questionnaires. Inventory information for the third company was collected during the site visit and its hourly transaction information was calculated using Airport provided monthly transaction information and the hourly transaction profile from the two companies that did respond to the questionnaire. Based upon the responses received, Ricondo identified a “planning hour” for rentals and returns processed during the 15th busiest hour of the 365-day period for each brand. Standard industry utilization factors were discussed with the rental car companies during the August site visit and used as the metric to define facility requirements.

Requirements for three future planning years were estimated based on growth in originating passengers according to the Federal Aviation Administration (FAA) 2017 Terminal Area Forecast (TAF). The three planning horizon years were 2023, 2028, and 2038. The TAF’s compounded annual growth rate (CAGR) from 2018 to 2038 is 2.7 percent. Data provided to Ricondo by JAA showed that rental car transactions grew 1.7 percent annually from 2011 to 2017. However, if the 2017 transaction decline of 4.6 percent is removed, rental car transactions grew at a CAGR of 2.7 percent from 2011 to 2016.

The following was also taken into consideration regarding use of the TAF's 2.7% growth rate:

- As noted earlier, the rental car companies do not believe TNCs have had an impact on their business. The thought being that the distance between the city centre (20-25 minutes) and beaches (40-45 minutes) encourages customers to rent a car as opposed to using TNCs. The rental car companies stated that at other airports, TNCs are having an impact on short-term rentals, but not long-term rentals. Rather than renting a car for one or two days, for one or two destinations, customers are choosing to take a TNC.
- Not including 2017, rental car companies have experienced relatively strong historic growth since 2011.
- The 2017 decline in transactions may have been due to Hurricane Irma, as there were significant drops in August and September 2017 transactions. Hurricane Irma formed in late August and dispelled in mid-September, impacting Florida between September 8-12.
- 2018 transactions seem to be tracking higher than 2017.

CUSTOMER SERVICE AREA

The number of customer service counter positions is the primary factor that determines the overall size requirement for the customer service area. The customer service counter requirements were estimated using the defined planning hour number of rental car transactions occurring at the customer counter.

During the planning hour 359 transactions were processed; however, some preferred customers bypass the counters and go directly to the vehicle, therefore, not all transactions were processed at customer service counters. Based on experience at similar airports comparable to the JAX market, and discussions with the rental car operators during the site visit regarding how counters are currently used as well as how operators plan to use them in the future, it was assumed (for planning purposes) that 33 percent of the transactions bypassed the counter and went directly their vehicle.

Furthermore, based on discussions during the site visit, it was assumed that a typical rental car counter transaction takes approximately 8.25 minutes (7.3 transactions per hour). With 33 percent of the 359 planning hour transactions, or 241 transactions, being processed at the regular customer service positions at 7.5 transactions per hour, and an assumed 30 percent surge factor, 43 regular customer service positions are needed today. Table 2 depicts the customer service counter facility requirements for existing demand (2018) and each planning horizon.

Table 2: Regular Customer Service Counter Facility Requirements

Component	2018	2023	2028	2038
Required Customer Service Positions	43	48	52	63
Existing Customer Service Positions	30	30	30	30
Customer Service Positions Surplus/(Deficiency)	(13)	(18)	(22)	(33)

Source: *Ricondo & Associates, Inc*., *Jacksonville International Airport Rental Car Industry Questionnaire*, August 2018

READY/RETURN AREA (RRA)

Vehicles are picked up and returned in the ready/return areas in the Hourly Garage. Ready vehicles are parked in a 90-degree configuration, like the configuration of a conventional public parking lot. Return vehicles are parked in a nose-to-tail configuration. The key utilization rate, or hours of available parking capacity, used to determine ready and return space requirements was the planning hour number of rentals (359) and returns (305) and the number of hours that the spaces would be required during the peak rental day.

Rental car companies prefer to maintain a sufficient supply of ready spaces and vehicles to accommodate the planned number of vehicles rented during the next hour's expected transactions. Companies also desire the availability of additional ready spaces in case unplanned operational challenges, such as delayed flights occur. With flight delays, affected customers are added to the next hour’s planned rentals, potentially creating a shortfall of available vehicles. To alleviate this potential shortfall and avoid customer delays, rental car companies prefer a buffer of ready vehicles to provide more than 1.0 hour of rental capacity.

As a result, the rental car companies typically prefer 2.0 to 3.0 hours of ready space capacity and 1.5 to 2.0 hours of return space capacity for new facilities. Based on these assumptions, an average of 2.0 hours for each ready transaction and 1.5 hours for each return were used to develop the facility requirements for ready and return vehicle parking spaces.

It is also worth noting that through observations of the existing facility and interviews with the rental car operators, existing facility congestion is created due to the limited number of entrances and exits to the Hourly Garage. On busy days, the rental car operators mentioned that the volume of vehicles entering and existing the Garage cause backups to their rental, return and shuttling operations. Furthermore, it was noted that frequently, public parkers inadvertently enter the rental car area causing additional congestion. The industry standard 2.0 hours for each ready transaction and 1.5 hours for each return capacity used in this analysis assumes that a future facility would eliminate these issues by either providing separate public parking ingress and egress routes and clear signage, or a facility exclusively for rental car use.

Table 3 depicts the RRA facility requirements over the planning horizon.

Table 3: Ready/Return Facility Requirements

Component	2018	2023	2028	2038
Ready Spaces Required	719	798	875	1,048
Return Spaces Required	457	508	557	666
Total Ready/Return Spaces Required	1,176	1,306	1,432	1,714
Existing Ready/Return Spaces	729	729	729	729
Ready/Return Spaces Surplus/(Deficiency)	(447)	(577)	(703)	(985)

Source: *Ricondo & Associates, Inc., Jacksonville International Airport Rental Car Industry Questionnaire*, August 2018

VEHICLE STORAGE AREA

Vehicle storage is currently accommodated at the rental car companies service sites off of Rental Car Lane. Vehicle storage requirements are based on the number of vehicle spaces needed to store rental vehicles that are not rented or occupying a ready/return space or a stacking/staging space (the queuing area before and after servicing of vehicles). The highest average accumulation of vehicles during the peak month of March is approximately 4,000 vehicles. Subtracting this from the 2018 ready/return vehicle requirement (1,176 spaces) and the number of stacking/staging spaces reported in the existing service sites (950 spaces), results in a total vehicle storage need of 1,874 spaces.

Table 4 summarizes the vehicle storage requirements over the planning horizon.

Table 4: Onsite Vehicle Storage Facility Requirements

Component	2018	2023	2028	2038
Vehicle Storage Requirement (spaces)	1,874	2,080	2,282	2,489
Existing Vehicle Storage (spaces)	3,200	3,200	3,200	3,200
Vehicle Storage Surplus/(Deficiency)	1,326	1,120	918	711

Source: *Ricondo & Associates, Inc., Jacksonville International Airport Rental Car Industry Questionnaire*, August 2018

RENTAL CAR REQUIREMENTS SUMMARY

A summary of the requirements for each of the rental car facility components described above is presented in Table 5. The table also includes the approximate square footage for each component as well as circulation allowances. Circulation allowances for the customer service area are for customers only, and the circulation allowances for the ready/return are for vehicles only. The allowances range from 25 to 30 percent, are based on industry averages, and can be adjusted as necessary during design. As shown, additional customer service area and ready/return space is needed today.

Table 5: Rental Car Facility Requirements Summary

	Existing			2018 Requirements			2023 Requirements			2028 Requirements			2038 Requirements		
	Quantity	SF	Total SF	Quantity	SF	Total SF	Quantity	SF	Total SF	Quantity	SF	Total SF	Quantity	SF	Total SF
Customer Service Area															
Regular Counter Positions	30	290	8,700	43	290	12,500	48	290	13,900	52	290	15,200	63	290	18,200
Circulation	30%		2,600	30%		3,800	30%		4,200	30%		4,600	30%		5,500
Subtotal Regular Counter Positions (SF) + 25% Circulation			11,300			16,300			18,100			19,800			23,700
Ready/Return/Storage Areas															
Ready Spaces	461	444	204,700	719	444	319,200	798	444	354,400	875	444	388,700	1,048	444	465,100
Return Spaces	268	211	56,500	457	211	96,500	508	211	107,100	557	211	117,500	666	211	140,600
Circulation	25%		51,200	25%		103,900	25%		115,400	25%		126,600	25%		151,400
Subtotal Ready/Return (SF) + 25% circulation	729		312,400	1,176		519,600	1,306		576,900	1,432		632,800	1,714		757,100
Vehicle Storage Spaces	3,200	189	604,800	1,874	189	354,100	2,080	189	393,200	2,282	189	431,200	2,489	189	470,500
Circulation	25%		151,200	25%		88,500	25%		98,300	25%		107,800	25%		117,600
Subtotal Storage Spaces (SF) + 25% Circulation			756,000			442,600			491,500			539,000			588,100

Source: *Ricondo & Associates, Inc., Jacksonville International Airport Rental Car Industry Questionnaire*, August 2018

RENTAL CAR RELOCATION OPTIONS

Three options for moving the rental car ready/return areas from the Hourly Garage to a proposed consolidated rental car facility were developed. The layouts for each option were developed using the facility requirements discussed in the previous section. When evaluating potential relocation options, the following evaluation criteria were considered: customer convenience, rental car operations, airport operations, implementation, and feasibility.

OPTION 1 - READY/RETURN IN DAILY SURFACE LOT NORTH OF PARKING GARAGE

Option 1, illustrated in **Figure 2**, relocates rental car ready/return parking to a new four-level structure in the Daily Surface Lot north of the existing Parking Garage. The existing customer service counters would remain in the terminal for this option.

Customers would enter the facility off Yankee Clipper Drive and exit out of a dedicated lane near the existing parking exit plaza and onto Dixie Clipper Drive. Service facilities and vehicle storage parking would remain at their existing locations off Rental Car Lane. Companies would shuttle vehicles between the new RRA area and their service areas via a dedicated exit lane out of the public parking exit plaza, Dixie Clipper Road, the terminal recirculation road, Yankee Clipper Drive, and Pecan Park Road.

A variation of Option 1 that could be further studied includes placing additional parking capacity on the east side of the existing Daily Garage, either as a standalone structure or expansion of the Daily Garage. This expansion would accommodate both rental car and public parking capacity. Should JAA consider this variation to Option 1, the following issues would need to be further studied: (1) vehicle access/egress – the rental car companies indicated during our site visit that the existing mix of public and rental car traffic at the entrance to the Garage creates a bottleneck during peak periods, (2) vehicle circulation – the rental car companies would likely be allocated on at least two levels of a potential expansion, which would require new vertical circulation for public parking and rental car operations, (3) engineering feasibility of expansion – Daily Garage vertical circulation is currently located in the rear of the garage and would possibly have to be relocated and expanded, and (4) allocation of space – future close-in public parking needs would need to be balanced with future rental car ready/return parking needs.

OPTION 2 – READY/RETURN SOUTH OF TERMINAL

Option 2, illustrated in Figure 4**3**, relocates rental car ready/return parking to a new four-level facility immediately south of the terminal in the location of the existing employee parking lot. Employee parking could be included or relocated to another location. The existing customer service counters would remain in the terminal. While the rental car industry prefers consolidated rental car facilities to contain a maximum of three levels to accommodate the three family brand companies, Option 2 requires a fourth level to accommodate the projected ready/return facility requirements.

Customers would enter and exit the facility past the terminal off Dixie Clipper Drive. Service facilities and vehicle storage parking would remain at their existing locations off Rental Car Lane. Companies would shuttle vehicles between the new ready/return area and their service areas via Dixie Clipper Road, the terminal recirculation road, Yankee Clipper, and Pecan Park Road.

It should be noted that this option is not recommended by Walker, as it impacts their current recommendations for future public and employee parking and does not remove the rental car shuttles from the terminal roadway path of travel.

OPTION 3A AND 3B – READY/RETURN NORTH OF TERMINAL

In Option 3A, illustrated in Figure 2, rental car RRA parking would be relocated from the Hourly/Daily Garage to a new three-level, facility immediately north of the terminal near the FAA air traffic control tower (ATCT), which would be demolished as part of this option. While a final decision has not been made by JAA, the Master Plan Update recommends leaving the ATCT in its current location. Figure 2 also indicates the number of spaces necessary to accommodate demand in each of the planning years. Depending on the number of spaces built, the number of levels could change, however, it is recommended that a three-level facility be considered to allow each of the three brand families to occupy its own level. This would allow each brand family to provide primary security for its entire floor. (Options 2 and 1 described above also have the flexibility to change the number of levels.)

The existing ground transportation parking area would be included within the new rental car ready/return facility. Customer service counters would be relocated from their existing location on the first level of the terminal to a new customer service area within the new facility.

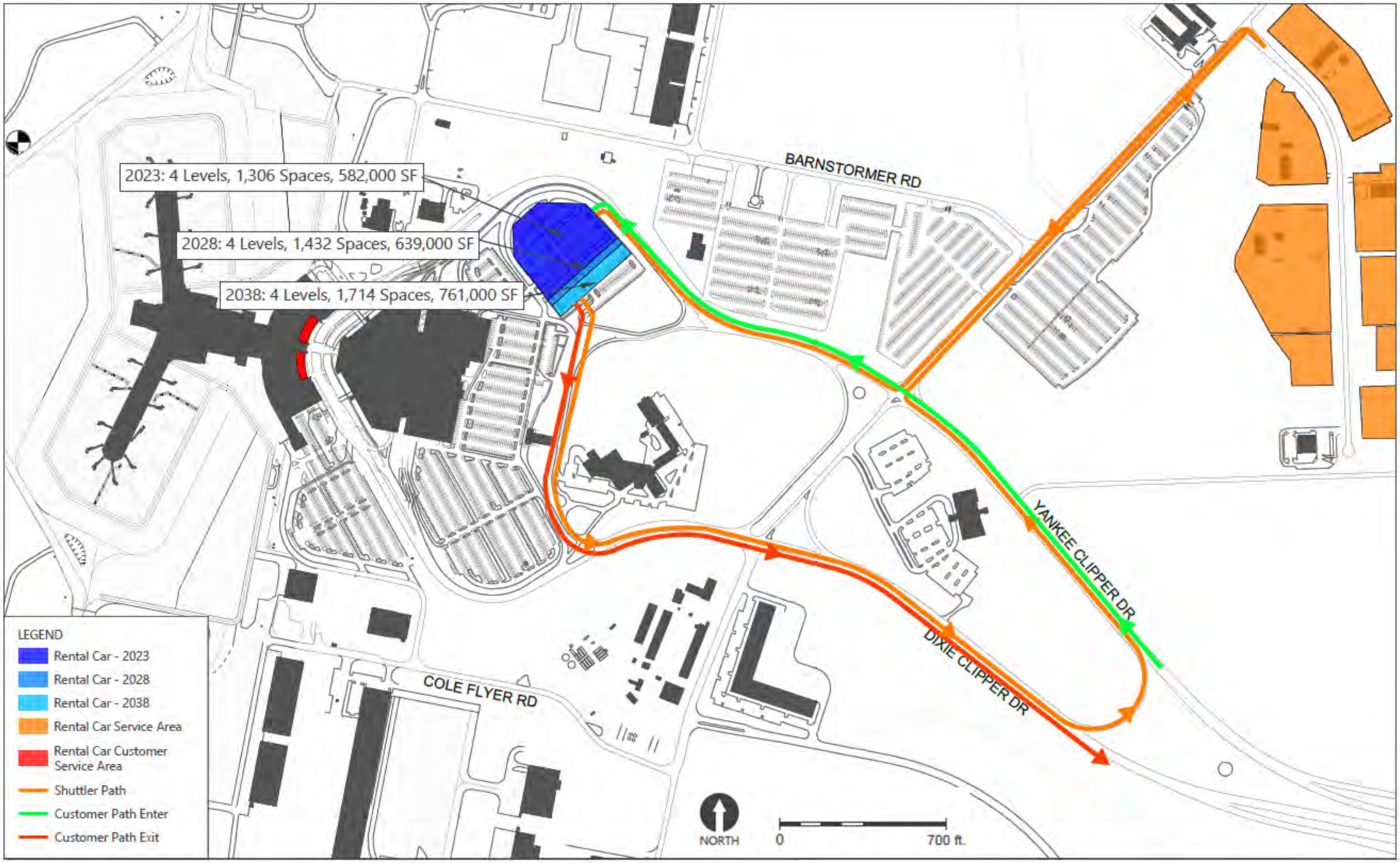
In Option 3B, illustrated on Figure 3, rental car ready/return parking would also be relocated from the Parking Garage to a new three-level facility immediately north of the terminal, but the customer service counters would remain in their existing location in the terminal. Customers would be processed at the existing counters and then walk to the new ready/return facility to collect (and return) their vehicles.

In both Options 3A and 3B, customers would enter and exit the new rental car facility off Yankee Clipper Drive. Service facilities and vehicle storage parking would remain at their existing locations on Rental Car Lane. Companies would shuttle vehicles between the new ready/return area and their service areas via Barnstormer Road and Pecan Park Road.

Implementation of Options 3A or 3B assumes that the timing for potential demolition and relocation of the ATCT aligns with JAA's schedule for relocation of the rental car facilities. Based on the results of the facility requirements analysis, additional customer service area and ready/return space is needed today. Should the planned timing for demolition of the tower not be within the timeframe for relocation of the rental car facilities, or the ATCT not be relocated at all, then both Options 3A and 3B would have to be removed from consideration.

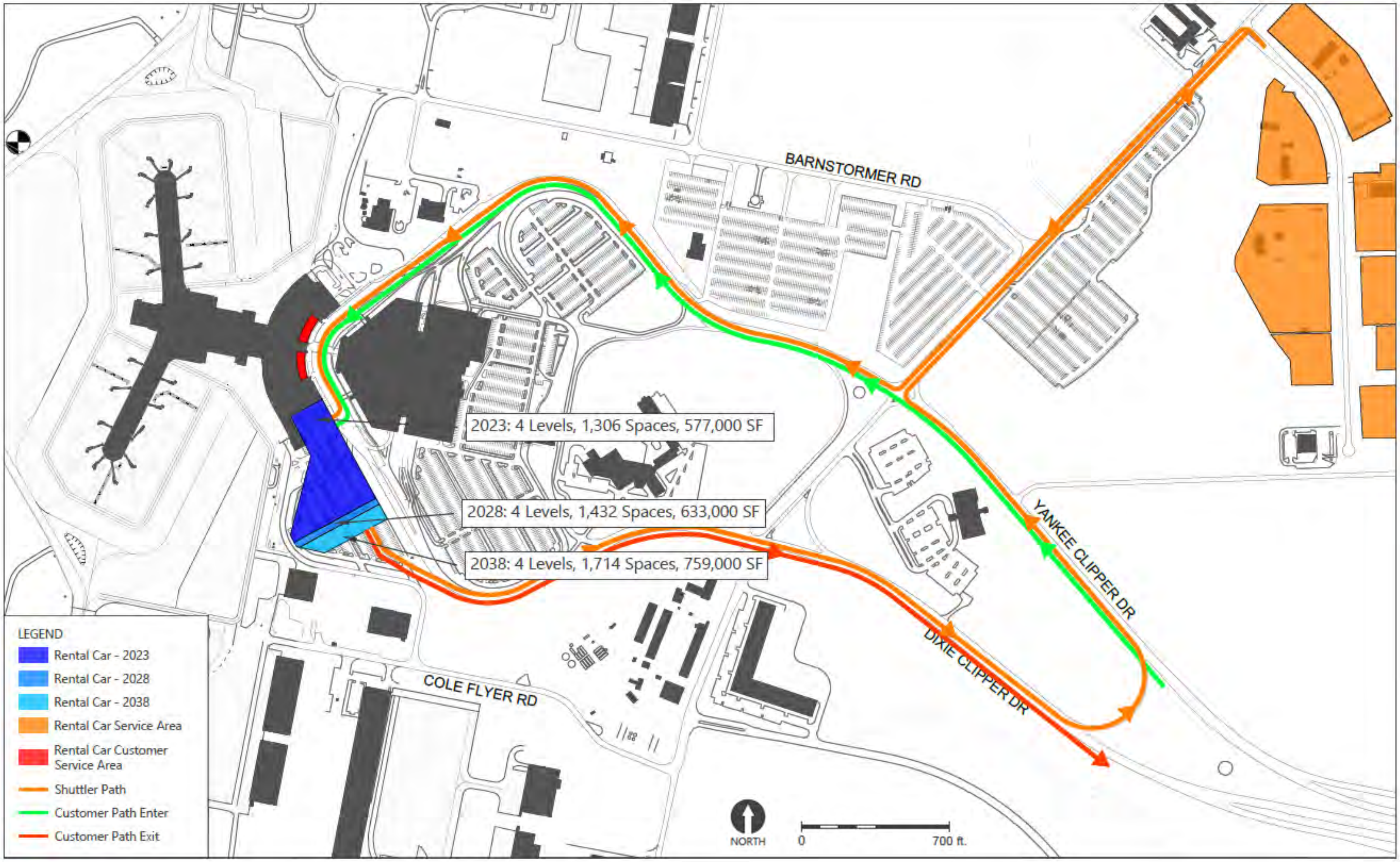
Based on recent conversations with JAA, there is a potential interim solution that could be explored further before committing to one of the above options. The current Daily Garage could potentially be expanded with a footprint that would mirror the existing structure, providing the parking spaces/area needed for the rental car operations and providing for a longer horizon before a new RAC would be necessary. Additionally, this expansion could provide additional customer parking spaces. JAA may want to consider this option as part of their discussions.

Figure 2: Option 1 – Ready/Return in Daily Surface Lot North of Parking Garage



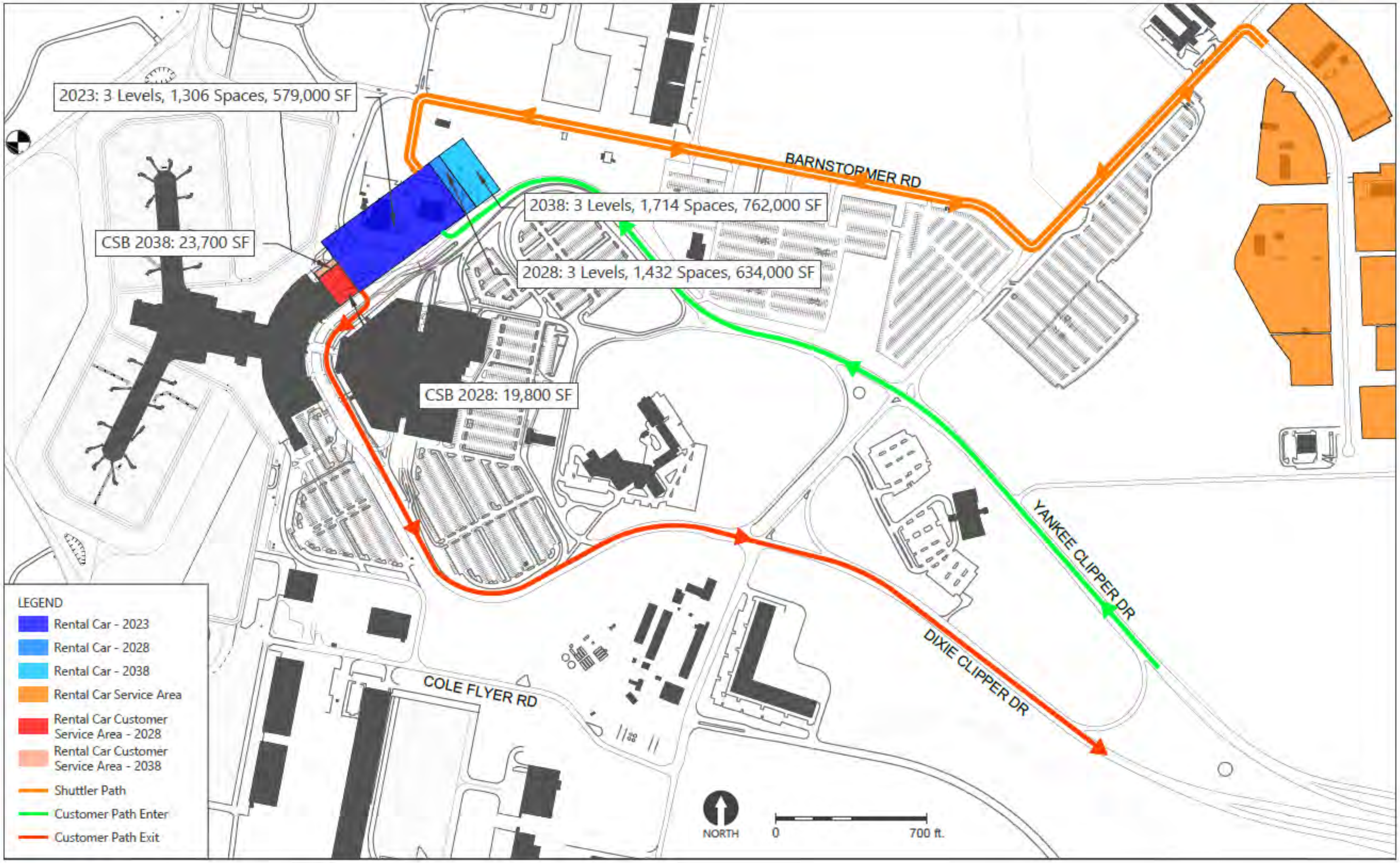
Source: *Jacksonville International Airport, ALP, 2008; Ricondo & Associates,* 2018

Figure 3: Option 2 – Ready/Return South of Terminal



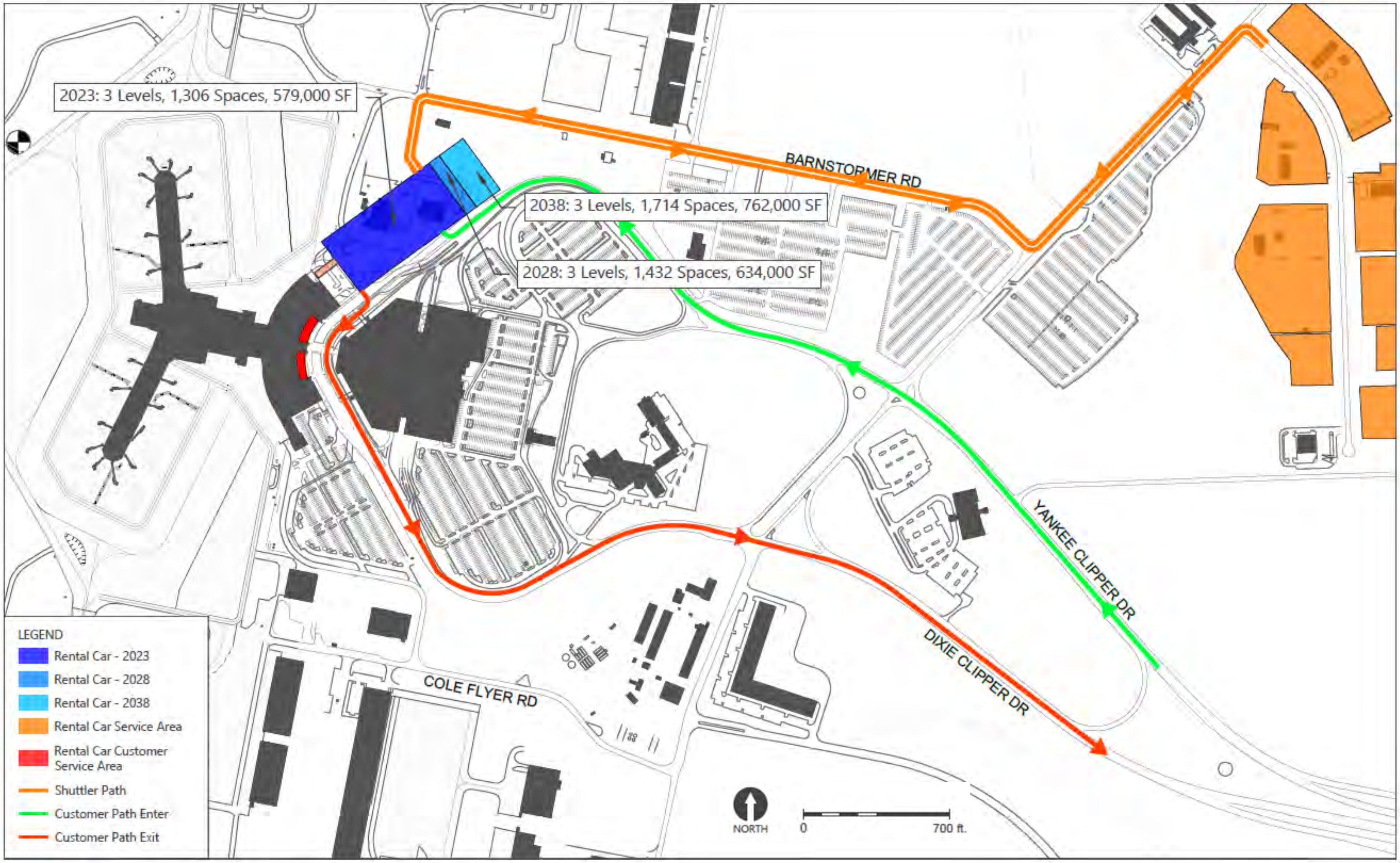
Source: *Jacksonville International Airport, ALP, 2008; Ricondo & Associates,* 2018

Figure 4: Option 3A – Ready/Return North of Terminal



Source: *Jacksonville International Airport, ALP, 2008; Ricondo & Associates*, 2018

Figure 5: Option 3B – Ready/Return in Daily Surface Lot North of Parking Garage



Source: *Jacksonville International Airport, ALP, 2008; Ricondo & Associates*, 2018

EVALUATION OF OPTIONS AND RECOMMENDATIONS

Evaluation criteria were selected based on the positive attributes and shortcomings of each rental car facility option considered. Criteria used to evaluate the sites included:

- Customer Convenience
- Rental Car Operations
- Airport Operations
- Implementation
- Feasibility

The evaluation matrix, presented in Table 6, provides the criteria, the metrics used to measure the criteria, and the weighting factor used to reflect the level of importance of each criterion in the evaluation. A weighting factor of 0.5 reflects that the criterion is not considered critical to the evaluation, while a weighting factor of 2 indicates that the criterion is very important in decision making.

Each option was assigned a score from 1 to 5 for each criterion. A rating of 1 indicates that the option is deficient; a rating of 2 or 3 indicates that the option is moderately beneficial; and a rating of 4 or 5 indicates that the option is strongly beneficial. Each score was multiplied by its weighting factor to generate a weighted score for each criterion. This methodology allows for comparison among the four options. The weighted scores were totaled to provide an overall comparison among the Options.

Table 6 (1 of 3): Rental Car Facility Evaluation Matrix

				OPTION 1		OPTION 2		OPTION 3A		OPTION 3B	
				READY/RETURN DAILY SURFACE LOT NORTH OF PARKING GARAGE		READY/RETURN SOUTH OF TERMINAL		READY/RETURN NORTH OF TERMINAL NEW CUSTOMER SERVICE AREA		READY/RETURN NORTH OF TERMINAL	
CRITERIA	DESCRIPTION	METRIC	WEIGHT FACTOR (1 -3)[1]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]
Customer Convenience											
Customer Circulation and Wayfinding (Walking)	Route that walking customers would take from the customer service area to the ready/return area	Subjective assessment based on functional layout review	2	3	6	3	6	5	10	4	8
Customer Wayfinding (Driving)	Route that returning customers would take to the facility from the immediately adjacent access roads	Subjective assessment based on functional layout review	2	3	6	3	6	3	6	3	6
Customer Service Area Location	Existing terminal locations or new area near ready/return	Proximity to ready/return area	1	3	3	3	3	5	5	4	4
Sub Total					15		15		21		18
Rental Car Operations											
Operational Configuration	Ability for each operator to maintain a contiguous/secure operation	Subjective assessment based on functional layout review	1	2	2	2	2	4	4	4	4
Shuttling Distance	Route that company shuttles would take between the new ready/return area and existing service sites	Subjective assessment based on functional layout review	2	3	6	3	6	4	8	4	8
Sub Total					8		8		12		12

Table 6 (2 of 3): Rental Car Facility Evaluation Matrix

				OPTION 1		OPTION 2		OPTION 3A		OPTION 3B	
				READY/RETURN DAILY SURFACE LOT NORTH OF PARKING GARAGE		READY/RETURN SOUTH OF TERMINAL		READY/RETURN NORTH OF TERMINAL NEW CUSTOMER SERVICE AREA		READY/RETURN NORTH OF TERMINAL	
CRITERIA	DESCRIPTION	METRIC	WEIGHT FACTOR (1 -3)[1]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]
Airport Operations Compatibility											
Land Use Compatibility	Highest and best use of land	Subjective assessment of each alternative	2	3	6	2	4	2	4	2	4
Surface Transportation Impacts On-Airport	On-Airport roadway congestion and interaction with other vehicle modes	Subjective assessment of on-airport roadway segments that will be subject to significant changes/impacts in levels of traffic.	3	3	9	3	9	3	9	3	9
Impact to Public Parking	Impact to existing public parking capacity	Severity of impact: high, medium, low, none	3	2	6	2	6	3	9	3	9
Impact to Existing Air Traffic Control Tower	Impact to existing air traffic control tower	Severity of impact: high, medium, low, none	3	5	15	5	15	2	6	2	6
Sub Total					36		34		28		28
Implementation											
Landside Operational Impacts of Implementation	Impacts to the operation of existing airport facilities during construction	Severity of impact: high, medium, low, none	2	3	6	3	6	2	4	2	4
Operational Impact During Construction	Impacts to the operation of existing car rental facilities during construction	Severity of impact: high, medium, low, none	2	3	6	3	6	3	6	3	6
Sub Total					12		12		10		10

Table 6 (3 of 3): Rental Car Facility Evaluation Matrix

				OPTION 1		OPTION 2		OPTION 3A		OPTION 3B	
				READY/RETURN DAILY SURFACE LOT NORTH OF PARKING GARAGE		READY/RETURN SOUTH OF TERMINAL		READY/RETURN NORTH OF TERMINAL NEW CUSTOMER SERVICE AREA		READY/RETURN NORTH OF TERMINAL	
CRITERIA	DESCRIPTION	METRIC	WEIGHT FACTOR (1 -3)[1]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]	RATING[2]	NET RATING[3]
Feasibility											
Project Cost Magnitude	Comparison of order of magnitude cost estimates	Planning level cost estimate	2	3	6	3	6	2	4	2	4
Phasing/Modularity	Ability of a Concept to be phased as demand warrants	Subjective assessment of each alternative	2	3	6	3	6	3	6	3	6
Expandability	Ability of a site to accommodate additions to its capacity or capabilities	Subjective assessment of each alternative	2	3	6	3	6	3	6	3	6
Sub Total					18		18		16		16
Total Weighted Score					**89**		**87**		**87**		**84**

NOTES:

1 Weighting Factor reflects the level of importance these criteria contribute to meeting overall goals and objectives importance. 1 reflects a Low level of Importance, 2 reflects a Neutral level of importance, and 3 indicates a High level of importance.

2 Rating defined as 1 - Poor, 2 - Marginal, 3 - Satisfactory, 4 - Good, 5 - Excellent

3 Net Rating - Rating multiplied by the weighting factor (1 - 3)

Source: *Ricondo & Associates, Inc*, August 2018

RENTAL CAR FACILITY RECOMMENDATION

Based on the evaluation of options, Option 1, ready/return in daily surface lot north of parking garage, received the highest overall score. Option 2, Ready/Return South of Terminal, and Option 3A, ready/return north of the terminal with new customer service building, tied for the second highest scores and could be considered should a new customer service building not be desired. Should JAA and FAA decide to ultimately relocate the ATCT, Option 3A should be considered as it provides the highest level of customer service and meets the rental car company's customer service area and ready/return space needs. In this option, rental car companies would also shuttle vehicles between the new ready/return area and their service areas via Barnstormer Road and Pecan Park Road, reducing vehicle traffic on Yankee and Dixie Clipper Driver (in comparison to the other options). Adding public rental car and public parking capacity to the east side of the Daily Garage could also be further studied as a variation to Option 1. Issues to be further studied include, vehicle access/egress, vehicle circulation, engineering feasibility of expansion, and allocation of space.

Based on the results of the facility requirements analysis, additional customer service area and ready/return space are needed today. Therefore, advanced planning, including business and financial planning, should begin as soon as possible.

FINANCIAL FEASIBILITY ANALYSIS

A high-level analysis was conducted to determine the financial feasibility of developing each Option. The analysis included assumptions regarding construction schedule, potential project-eligible and enabling project costs, financing terms, and repayment assumptions.

The per square foot project costs for parking structure, at-grade surface parking and demolition of pavement were based on Ricondo's experience with past rental car planning efforts. Jacobs Engineering provided the costs for the customer service building, soft costs, design, and construction contingency. These estimates are intended to be rough order of magnitude costs and should be verified by a professional cost estimator. The assumed costs per feet for each component are provided below:

- Parking structure - $70 per square foot
- At-Grade surface parking - $26 per square foot
- Customer service building - $250 per square foot
- Demolition of pavement - $0.50 per square foot
- Soft costs, design, and construction contingency of 35 percent was added to the total construction costs.

It is assumed that JAA would finance this project with revenue bonds using the proceeds from the collection of a Customer Facility Charge (CFC). The rate and projected revenue realized from a CFC largely determines a project's financial feasibility. The amount of CFC revenues required to meet the projected requirements for each facility option was estimated. While planning hour transactions for development of the facility requirements were projected using the FAA TAF, a more conservative approach was used for projecting transactions for the CFC sizing analysis, based on historical eight-year average rental car transaction growth (FY 2010 - FY 2017), or 1.65 percent per year. Table 7 and Table 8 depict the assumptions and results of the CFC sizing analysis.

Table 7: Key Assumptions

CFC and Project Implementation Schedule	
CFC Revenues:	
Current CFC Rate at the Airport	$0.00
Estimated Date of 1st CFC Rate Increase for Rental Car Companies	Beginning FY 2020
Estimated Date of 2nd CFC Rate Increase for Rental Car Companies	Beginning FY 2030
Rental Car Activity Projections	
Rental Car Transactions CAGR (2018-2040) [1]	1.65%
Average Length of Rental Car Transaction [2]	3.50
Financing Assumptions	
CFC Account Balance as of September 2018	$0
Bond Assumptions - Special Facilities Bonds: [3]	
Bond Term Amortization Period (years):	30
Interest Rate - Taxable	6.50%
Cost of Issuance	1.00%
Debt Service Coverage Requirement (times debt service)	1.5

NOTES:

1 Rental Car Transactions CAGR (2018-2040) based on historical 8-year average rental car transaction growth (FY 2010 - FY 2017), data provided by JAA.

2 Estimated Average Length of Rental Car Transaction based on industry standards.

3 This draft report is not and shall not be considered to be a recommendation or advice to the Jacksonville Aviation Authority ("Client") with respect to the issuance of municipal securities. Ricondo is not registered as a municipal advisor under Section 15B of the Securities Exchange Act of 1934. The assumptions included in this report have been provided by Client or Client's Municipal Advisor or underwriter, or, with Client's approval, have been derived from general, publicly available data approved by Client. Ricondo owes no fiduciary duty to Client. Client should discuss the information and analysis contained in this report with internal and external advisors and experts that Client deems appropriate before taking any action. Any opinions, assumptions, views, or information contained herein are not intended to be, and do not constitute, "advice" within the meaning of Section 15B of the Securities and Exchange Act of 1934.

Source: *Jacksonville Aviation Authority*, August 2019; *Ricondo & Associates, Inc*., October 2018.

The projected 2028 -2038 cost estimate range for the Options is between $59.8 million and $81.4 million, which is projected to require a CFC rate in the range of $1.80 and $3.40 per transaction day. The projected 2038 cost estimate for the recommended Option 1 is $72.0 million and with a projected CFC rate of $3.00 per transaction day.

Table 8: CFC Sizing - Structure Concept Comparison

Structure Concept	Estimated CFC Rate [1/]	Total Escalated Project cost	Estimated CFC PAYGO Available at Date of Issuance	Estimated Net Costs to Be Financed	Annual Debt Service Payment	Meets 1.5x Debt Service Coverage Requirement?
Option 1						
2028 Project Cost	$1.80	$60,641,325	$30,359,895	$30,281,430	$2,649,737	Yes
2038 Project Cost	$3.00	$71,981,325	$41,715,119	$30,266,206	$2,648,405	Yes
Option 2						
2028 Project Cost	$1.80	$59,890,725	$30,431,874	$29,458,851	$2,577,758	Yes
2038 Project Cost	$2.95	$71,986,725	$41,283,983	$30,702,742	$2,686,603	Yes
Option 3A						
2028 Project Cost	$2.00	$67,922,609	$33,802,877	$34,119,732	$2,985,603	Yes
2038 Project Cost	$3.40	$81,429,359	$46,861,932	$34,567,427	$3,024,777	Yes
Option 3B						
2028 Project Cost	$1.80	$61,221,884	$30,304,222	$30,917,662	$2,705,410	Yes
2038 Project Cost	$3.05	$73,412,384	$42,187,202	$31,225,182	$2,732,319	Yes

NOTES:

1 Estimated CFC rate assumes initial CFC implementation beginning FY 2020 and an additional CFC rate increase beginning FY 2030.

Source: *Jacksonville Aviation Authority, August 2018; Ricondo & Associates, Inc.*, October 2018

02 Parking Reallocation and Operational Changes

SECTION 2 – PARKING REALLOCATION AND OPERATIONAL CHANGES

This section provides an analysis of parking reallocation and operational challenges related to the relocation of employee parking and the valet operations. This analysis includes an overview of the proposed changes and their associated impacts. The section begins with a review of the proposed recommendations included in the Phase I Parking study related to these reallocations and operational changes and follows with the Phase II analysis and recommendations.

PHASE I RECOMMENDATIONS REVIEW

In the Phase I Parking Study, JAX engaged Walker to complete a parking study that developed recommendations to increase the level of service for parking products, services, and operations. The parking study was focused on several areas, including parking operations and parking planning, in an effort to increase operational efficiencies and improve the customer experience.

Parking is a key component to the JAX customer experience and is the first and last impression for many airport customers. When customers perceive the core airport parking areas are congested or the lots are full (even when they are not), it may create dissatisfaction and confusion. As a result, customers may seek other alternatives to parking at the airport including utilizing off-airport parking lots, TNCs, or other ride services. Airport parking may lose customers to competitive alternatives.

In Walker's Phase I Study, it was noted that weekday demand was high in the core parking facilities closest to the airport terminal (Hourly Garage, Daily Garage, Daily Surface Lot), with the Daily Garage and Daily Surface Lot reaching capacity on a regular basis. Whether the garage is only near capacity, or is at full capacity, it is safe to assume that customer perception is that there is a lack of parking spaces available in these core parking areas. As providing a good customer experience is key to the success of JAX's parking program, which includes, perhaps most importantly, assuring space is available for customers that want to park in the core parking areas at the terminal, it was imperative that Walker study each aspect of the Airport parking system. As part of the Phase I Parking Study, Walker reviewed parker allocations and operations (which included the valet operations) in an effort to ensure the core parking areas were being utilized in the most efficient and effective manner to help assure space availability for airport customers. Based on that work, recommendations were provided with regard to the allocation of the parking supply to the various users, as well as regarding operational improvements that were meant to increase the level of service and streamline operations within the parking program.

The Phase I Parking Study recommendations included:

REALLOCATE EMPLOYEE PARKING

Currently both customer and employee parking are provided in the core parking areas closest to the terminal, with the non-core parking areas allocated mainly for customer Economy parking (though 239± flight crew members do have access to Economy 1 via their access credentials). Employee parking is provided in the majority of the close-in parking facilities at JAX. For businesses in general, and airports especially, retaining the close-in core parking lots for customers and providing employee parking in a non-core lot is considered best practice. Many US airports (e.g. Seattle-Tacoma International Airport, Portland International Airport, Phoenix-Sky Harbor International Airport, and Fort Lauderdale/Hollywood Airport), retain close-in parking for their customers while providing satellite parking areas with 24/7 shuttle service for their employees.

To provide close-in parking that is perceived to be available, easy to locate, and convenient for the JAX customer base, the following was recommended:

- Move employee parking from the main core parking lots and Economy Lot 1, to the Economy 3 parking lot and run shuttle service specifically for the new Employee Parking Lot to the terminal.
- Economy 3 is currently not used except during peak holiday periods and could easily accommodate all employee parking.
- Turn recovered spaces back in to customer parking.

REALLOCATE SOUTH VENDOR LOT/RELOCATE VALET STAND

The South Vendor Lot is currently a mixed-use lot consisting of vendors, TSA, Ambassadors, and JAX. Changing the use of this lot to a customer-based lot is warranted, specifically because it is in the core of the airport and provides immediate access to the terminal.

We recommended the following changes to the South Vendor Lot:

- Move all users out of the South Vendor Lot and make this the Valet Stand/Valet Staging Area Lot. This area would become the valet drop-off and pickup area and would be utilized for short-term staging of incoming and outgoing vehicles.
- Designate a Valet Vehicle Parking Lot in what is currently the Employee Lot where valet vehicles will be parked until customer pick up.
- Turn the existing Valet Vehicle Parking Area, which is currently part of the Daily Surface Lot, back in to customer parking.
- Relocate vendor parkers that need close terminal access. The location of the relocated vendors will require further evaluation as part of the design phase of the reallocation of valet. Sign specific vendor spaces for ease of use and enforcement.

RELOCATE VALET VEHICLE STORAGE

Walker recommended moving the Valet Parking Area adjacent to the Valet Stand, so valets are not walking across four lanes of busy airport traffic to retrieve vehicles, as well as traversing long distances by foot and via valet vehicles to and from the Valet Parking Area adding to customer vehicle retrieval times and potential liability issues.

Walker recommended the following change:

- Utilize parking spaces in the lot currently utilized by employees for valet parking.

INCREASE PREMIER PARKING PROGRAM MEMBERSHIP

Walker recommended increasing the Premier Parking Program, allowing more customers to sign up for the program and creating a larger oversell than what is currently managed. This may require relocation of the Premier Parking area requiring further evaluation in a future design phase.

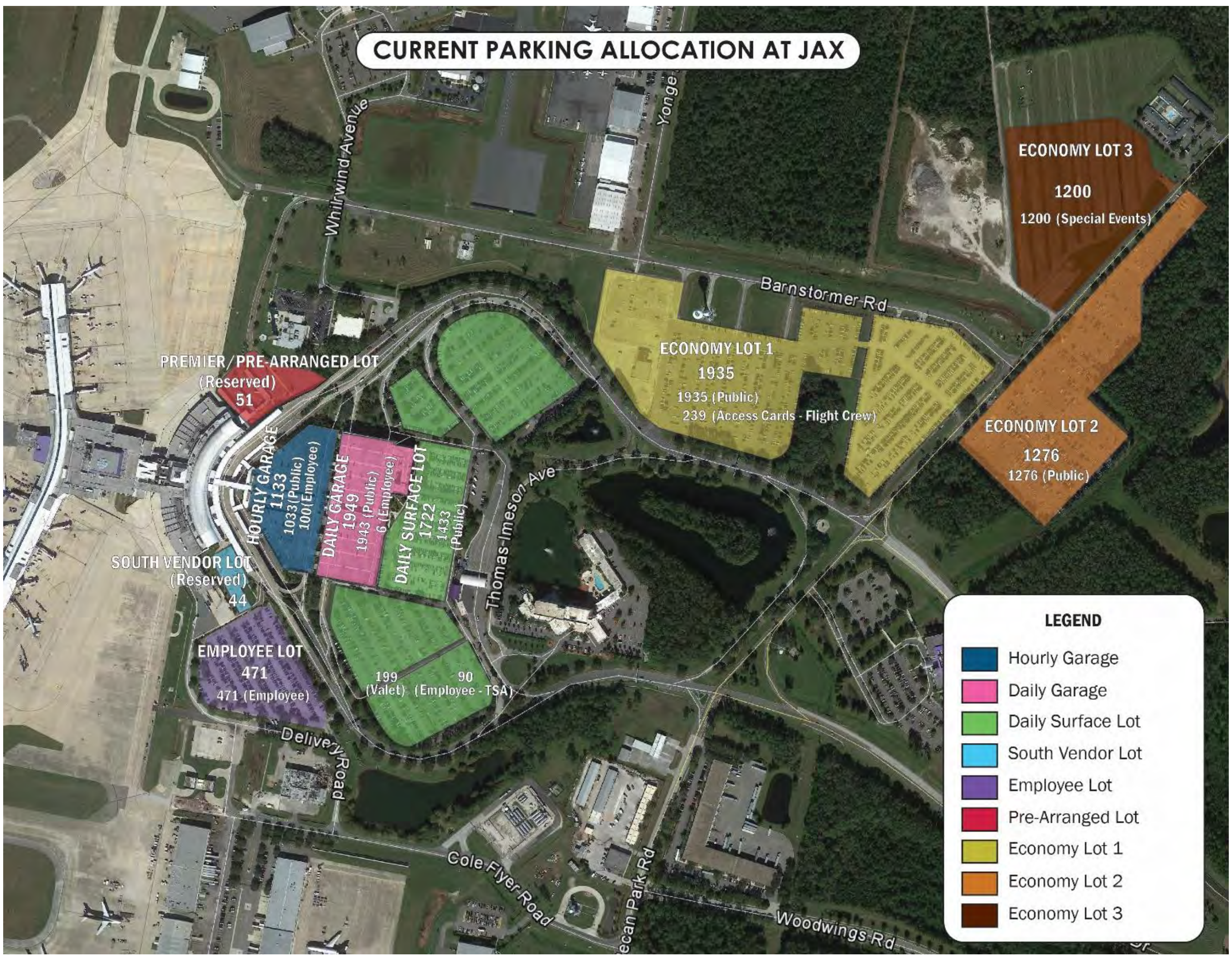
TNC AND CITY BUS STOP RECOMMENDATIONS

Walker looked at the TNC pick up area and the City Bus stop, both located at the southernmost end of the Arrivals Level Roadway. The current TNC pick-up area is already a source of traffic congestion and its shared usage with the City Bus is not ideal for either TNC drivers or bus drivers. There is also no room for growth as TNC usage increases. Walker recommended movement of both areas.

The Phase II Parking Study is meant to build on the Phase I Parking study and provide further analysis of the proposed recommendations and implementation strategies for the reallocation of parking and changes to operations based upon the findings and recommendations from that report and culled from our June 2018 site visit.

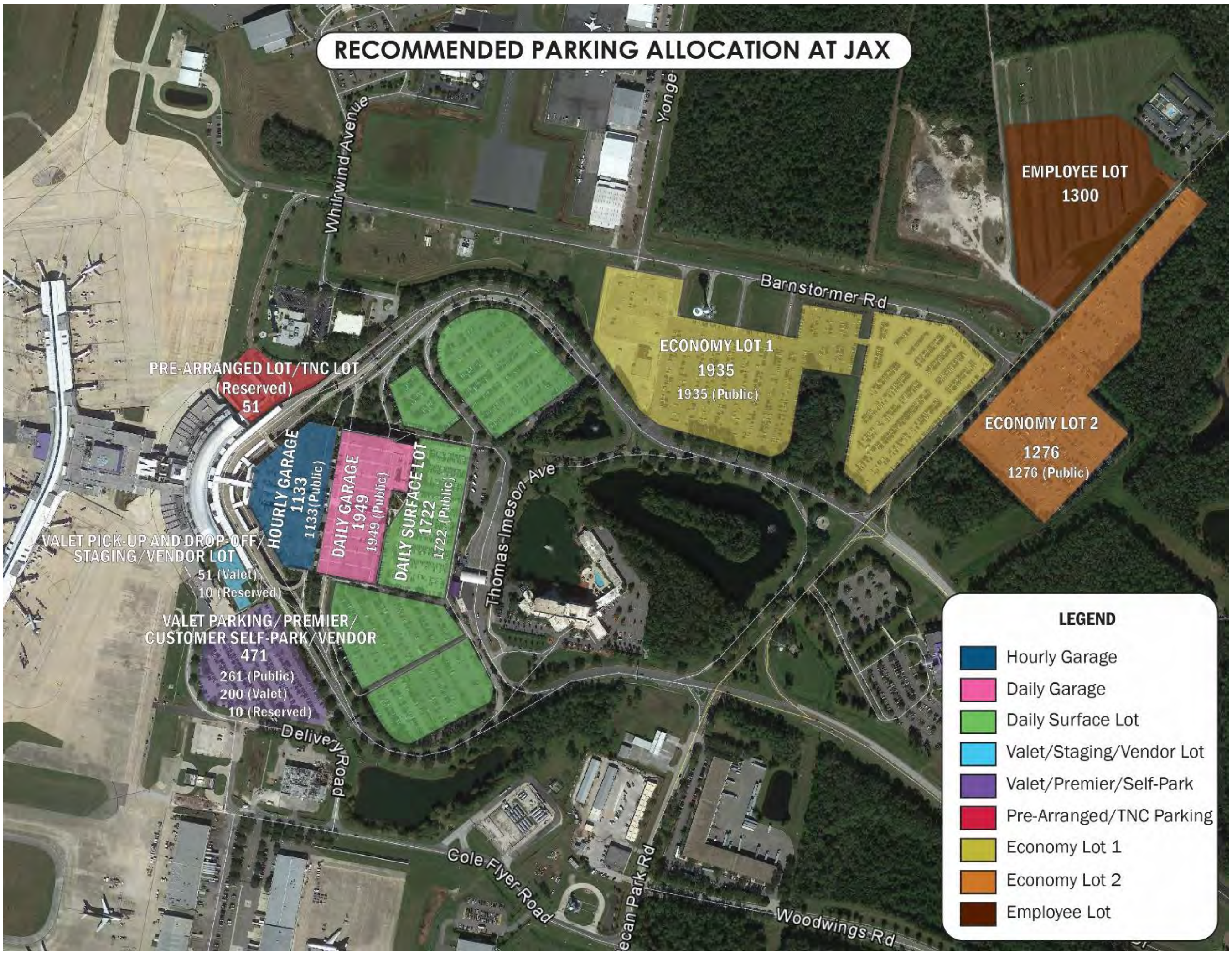
Figure 6 provides a visual of the current parking allocations at JAX, while Figure 7 provides the recommended parking allocations. Recommendations are covered in further detail throughout the following sections of this report:

Figure 6: Current Parking Allocation at JAX



Source: *Walker Consultants*, 2018

Figure 7: Recommended Parking Allocation at JAX



Source: *Walker Consultants*, 2018

PARKING REALLOCATION AND OPERATIONAL CHANGES – PHASE II

The following provides a summary of the primary reallocation and operational changes. Additional analysis on each recommendation is provided in the following sections. The proposed reallocation and operational recommendations include:

- **Moving Valet Stand/Staging from Departures Level to the South Vendor Lot and Moving Premier Parking to Customer Self-Park or Valet**
  - Move Valet Stand and Valet Staging from the Departure Level Roadway to the South Vendor Lot.
  - Move vendors from the South Vendor lot. Vendor parking will include approximately 10± parking spaces in the Valet Staging Area for vendor self-parking use, as determined by JAX. Further vendor parking will be available in what is currently the Employee Lot (but will become Customer Self-Park), in approximately 10± reserved spaces closest to the terminal, and some vendors will be able to use the loading dock (as determined by JAX). JAX could also consider some vendor parking in the Hourly Garage and provide validations if they do not believe the proposed options will work.
  - Members of the Premier Parking Program will be moved from the Pre-Arranged Lot to either Customer Self-Park or Valet Parking (as determined by JAX), which will continue to allow these customers a high level of service and allow for expansion of the current Premier Parking Program.
- **Moving Valet Vehicle Parking from Daily Surface Lot to Current Employee Lot**
  - Approximately half of what is now the current Employee Lot becomes Valet Parking.
  - Approximately half of what is now the current Employee Lot becomes Customer Self-Parking.
  - Barriers separating the two areas will be moveable, in order to accommodate any current or future demand by either user group.
- **Moving Employee Parking to Economy 3**
  - Remove employee parking from the Employee Lot, Hourly Garage, Daily Garage, Daily Surface Lot, and Economy 1 Lot and consolidate all into what is now the Economy 3 Lot.
  - The new Employee Lot will be serviced by a new Employee Lot shuttle.
  - What is currently the Employee Lot will be used by customers for Daily (or Hourly) parking, valet parking, vendor parking, and possibly Premier Parking.

Walker's recommended parking reallocations and operational strategies are designed to address both the current needs and the expected future growth of JAX. The schedule of changes is intended to be implemented as a whole, as each individual relocation is performed in conjunction with an assortment of other movements and each movement affects each of the other movements.

The following table provides a summary of the moves, impacts, opportunities, challenges and dependencies of Walker's recommendations and the proposed order of implementation (of which some may be done concurrently). The crux of the table is that the Employee Parking Lot must be reallocated for the recommendations to be able to be implemented.

Table 9 (1 of 4): Reallocation Impacts, Opportunities, Challenges, and Dependencies

Airport User Group/Area or Lot Affected	Relocated from the Following Current Lots/Areas	Relocated to the Following Current Lots/Areas	Opportunities	Possible Challenges	Proposed Relocation Dependencies
Employee Parking	Employee Lot Daily Surface Lot Daily Garage Hourly Garage	Economy Lot 3	• Increases parking capacity in core lots for customers - addressing current capacity issues that are causing regular closures – 650± more customer spaces would be available when all recommendations implemented • Plans for the future - additional capacity helps accommodate future originating enplanement and anticipated employee growth • Movement of employees from this lot is the catalyst for all other recommendations that are meant to improve the customer experience and streamline operations • Follows industry best practices in that the closest most convenient parking is reserved for customer use	• Employee dissatisfaction with movement • New employee shuttle service must be implemented • Requires capital improvements • All recommendations hinge on this move to open core lots for customers	Capital improvements in Economy Lot 3
Valet Parking Stand and Staging Area	Departure Level Roadway	South Vendor Lot	• Increases level of service – valet no longer would need to close due to lack of staging room. • Reduction in customer wait time on pick up and drop off with increased staging area • Reduces congestion on Departure Level Roadway • Eliminates additional vehicular movements/traffic throughout the airport by valet staff as Valet becomes self-contained • Possible reduction in claims with camera scanning valet vehicles at drop off and pick up • Valet vehicle storage lot is adjacent to the staging area, reducing length of travel and transportation times significantly which could reduce damage claims.	• Capital improvements are required • Vendor relocation necessary to either reserved spaces in Valet Staging and/or Customer Self-Park and/or Loading Dock. Also, would mix Vendors with Valet Staging Area, though would be in own reserved area. • Third-party operator (SP+) must agree to purchase and implement equipment as designed in Theory of Operation • May add Premier Parking Members either in Valet or Customer Self-Park – this could be an Opportunity (could increase program participants) or Possible Challenge (parking area farther away but still close to terminal).	• Relocation of Employee Parking • Relocation of South Vendor Lot Vendor Parking • Reconstruction of South Vendor Lot • Relocation of TNCs • Relocation of Premium Parking Program Parkers

Table 9 (2 of 4)): Reallocation Impacts, Opportunities, Challenges, and Dependencies

Airport User Group/Area or Lot Affected	Relocated from the Following Current Lots/Areas	Relocated to the Following Current Lots/Areas	Opportunities	Possible Challenges	Proposed Relocation Dependencies
Valet Parking Storage	Daily Surface Lot	Employee Lot	• Reduced congestion on Departure Level Roadway • Increases valet parking area from 199± to 221± actual spaces, not including aisle and stacked parking and valet staging parking. • Valet vehicle storage lot is adjacent to the staging area, reducing length of travel and transportation times significantly which could reduce damage claims. • Self-contained operation -eliminates additional vehicular movements throughout the airport as valets will no longer need to drive on the main thoroughfares • Increased level of service due to faster return times to customers • Mobile barriers allow for increased/decreased capacity based upon current and future needs • Controlled parking area with no public parking in lot • Reduce instance of valets crossing multiple lanes of active roadways on foot • Eliminates additional vehicular movements/traffic throughout the airport by valet staff as Valet becomes self-contained	• Capital improvements are required • Third-party operator (SP+) negotiations needed for change in operations and purchase and implementation of equipment as designed in Theory of Operation	• Relocation of Employee Parking • Reconstruction of South Vendor Lot (to keep Valet Operation a self-contained operation)

Table 9 (3 of 4): Reallocation Impacts, Opportunities, Challenges, and Dependencies

Airport User Group/Area or Lot Affected	Relocated from the Following Current Lots/Areas	Relocated to the Following Current Lots/Areas	Opportunities	Possible Challenges	Proposed Relocation Dependencies
TNC Pick Up	Arrival Level Roadway	Pre-Arranged Lot; Hourly Garage First Level could also be utilized once Rental Cars move from First Floor (Long Term Goal)	• Reduced congestion on Arrivals Level. • Eliminates additional vehicular movements/traffic throughout the airport by TNCs on arrival level and on roadways in and out of terminal • Controlled pick up zone, separated from the public pick up and drop off areas • Repurposed Ground Transportation Booth employee would be able to monitor and manage TNC for compliance with rules & regulations • Ability to manage TNCs and expand as usage continues to grow with projected future enplanement growth	• Dependent upon relocation of Premier Parking Program • Possible tension between TNC drivers and Pre-Arranged drivers • Capital improvements are required Until further technology is developed, TNCs must pull a ticket for a 10-minute grace period at lot entry, potentially slightly slowing their ingress/egress	• Relocation of Employee Parking • Relocation of Premier Parkers from Pre-Arranged Lot • Reconstruction of Pre-Arranged Lot (back area of lot)
Premier Parking Program	Pre-Arranged Lot	South Vendor Lot; Employee Lot	• Ability to grow the program with increased parking supply – there is currently a waiting list • Depending on JAX final decision, users may valet or self-park	• TNC relocation dependent on Premier Parking Program relocating • Capital improvements required • Users may have to walk slightly farther to terminal entry • Parking may no longer be covered	• Relocation of Employee Parking • Relocation of Vendor Parking

Table 9 (4 of 4): Reallocation Impacts, Opportunities, Challenges, and Dependencies

Airport User Group/Area or Lot Affected	Relocated from the Following Current Lots/Areas	Relocated to the Following Current Lots/Areas	Opportunities	Possible Challenges	Proposed Relocation Dependencies
Vendor Parking	South Vendor Lot	South Vendor Lot Reserved Spaces; Employee Lot	• Increased capacity for future vendor growth and usage	• Valet relocation dependent on Vendor Parking relocating • Vendors would need to park in either reserved spaces in Valet Staging and/or Customer Self-Park and/or Loading Dock which will be further from terminal entry, but still an acceptable distance. • Some Vendors would need to park in Valet area, though spaces would be away from the active part of the operation. • Would mix Vendors with Valet Staging Area, though would be in own reserved area. • Loading dock usage may be increased for larger deliveries formerly accepted through terminal pedestrian doorway • Capital improvements required	• Relocation of Employee Parking • Relocation of South Vendor Lot

Source: *Walker Consultants*, 2018

Table 10 provides a general summary of the current and recommended parking allocations.

Table 10: Current and Recommended Parking Allocation

Lot/Area Name	Current Parking Allocation	Movement of Parking Allocation	Proposed New Parking Allocation of Lot/Area
Employee Parking	Employee Parking	Employees Move to Economy 3	Valet Parking Customer Self-Park Premier Parking Vendor Parking
Hourly Garage	Public Parking Employee Parking	No Change Employees Move to Economy 3	Public Parking Only
Daily Garage	Public Parking Employee Parking	No Change Employees Move to Economy 3	Public Parking Only
Daily Surface Lot	Public Parking Employee Parking Valet Storage	No Change Employees Move to Economy 3 Valet Storage Moves to Employee Lot	Public Parking Only
Economy Lot 1	Public Parking Employee Parking	No Change Employees Move to Economy 3	Public Parking Only
Economy Lot 2	Public Parking	No Change	No Change
Pre-Arranged Parking	Pre-Arranged Parking Premier Program Parking	No Change Valet and/or Customer Self-Park	Pre-Arranged Parking TNC Pick Up
South Vendor Lot	Vendor Parking	Valet and/or Customer Self-Park and/or Loading Dock	Valet Pick Up and Drop Off Valet Staging Vendor Parking
Economy Lot 3	Public Parking (Holidays)	Absorbed within other lots	Employee Parking
Departures Level Roadway	Valet Stand Valet Staging	South Vendor Lot South Vendor Lot	Passenger drop off
Arrivals Level Roadway	TNC Pick Up	Pre-Arranged Lot	Public Roadway

Source: *Walker Consultants*, 2018

The following sections provide Walker's analysis, recommendations, and application tactics for the proposed recommendations.

EMPLOYEE LOT RELOCATION

Currently at JAX, both customer and employee parking are provided within the core parking areas closest to the terminal, with the non-core parking areas allocated mainly for Economy parking, with the exception of 239± flight crew badges assigned parking access in Economy 1.

While parking at core lots is convenient for employees, it does cause an inconvenience for customers when high parking occupancies make finding available customer parking spaces in these core lots difficult and/or impossible.

At JAX, the two most popular parking lots – the Daily Garage and the Daily Surface Lot– are reaching capacity on a regular basis. It should also be noted that since our site visit, the Hourly Garage is also experiencing periods of full capacity. When customers arrive at JAX only to find their chosen parking lot full, they may end up being late for or miss their flight. They will likely be frustrated and anxious, and ultimately may decide that the next time they need to go to the airport, they will find an alternative to parking at the airport.

To alleviate this potential customer dissatisfaction, it is considered best practice within a parking operation to ensure that customers are provided the core, and most desirable, parking spaces that are most convenient to access the business and to provide non-core parking areas for employees.

Table 11 shows the current parking space counts in each lot, delineates the employee parking spaces, the public parking spaces, valet parking spaces, and other reserved parking spaces, and provides information on lot users and the number of employees that have access credentials for each lot.

Table 11: Current Parking Supply, Allocation, Users, and Access Credentials

Lot	Total Spaces	Designated Spaces					Users	Distributed Access Cards
		Employee Spaces	Public Spaces	Valet	Reserved	Other		
Employee Lot	471	471	-	-	-	-	Employee	1,500
Hourly Garage	1,133	100	1,033	-	-	-	Employee, Public	316
Daily Garage	1,949	6	1,943	-	-	-	Public, Employee	6
Daily Surface Lot	1,722	90	1,433	199			TSA, Public, Valet	216
Economy Lot 1	1,935	-	1,935	-	-	-	Employee (flight crew), Public	239
Economy Lot 2	1,276	-	1,276	-	-	-	Public	-
Premier/Pre-Arranged Lot	51	-	-	-	51	-	Pre-arranged, Premier	-
South Vendor Lot	44	-	-	-	44	-	Vendors, Reserved JAA	-
Economy Lot 3	1,200	-	-	-	-	1,200	Holiday Overflow	-
Total	**9,781**	**667**	**7,620**	**199**	**95**	**1,200**		**2,277**

Source: *JAX*, 2018

Employees currently park in the Employee Lot as well as the Hourly Garage, Daily Garage, Daily Surface Lot, and Economy Lot 1. In total, the current employee parking program occupies 667± actual designated employee parking spaces, though there are 2,277 access credentials that are active and provide access to employee parking spaces.

Walker's Phase I Parking Study recommended that the current core employee parking be reallocated to customer parking and all current employee parkers be moved to what is currently Economy 3. Economy 3 is only used during holiday periods when parking demand is at its highest, therefore, the lot is only set up to meet very basic parking needs for a "special event" type situation such as holiday usage. Additionally, the relocation of employees into Economy Lot 3 will free up a significant amount of parking space between the Employee Lot, Daily Garage, and Hourly Garage, and Daily Surface Lot which can be reallocated to customer use– and all of which are impacted as a whole by Walker's other recommendations.

In order to achieve this, JAX will need to invest capital to turn Economy Lot 3 into a usable Employee Lot. We believe this investment will not only improve the customer's experience but will also set JAX up for the future employee growth that is expected. The proposed re-striping and repurposing of this lot would provide an estimated 1,300 – 1,800 parking spaces which would more than replace the current employee spaces throughout JAX.

We do not anticipate that JAX will need all 1,800± parking spaces for employee parking immediately but may need it for the future employee growth that is expected. In the meantime, JAX could:

- Build out only part of the lot now (1,300± spaces) and build remainder of lot in the future **(Recommended).**
- Build out the entire lot now (1,800± spaces) in anticipation of this growth. Until needed, JAX could split the lot and use part of the lot for other parkers (i.e. customer parking during peak holiday periods).

The option of moving employees and building out Economy 3, like any option, has opportunities and possible challenges, as detailed below:

Opportunities:

- By changing the use of this lot, all other recommendations can be implemented.
- At least 667± additional parking spaces total would become available for customer parking that was previously employee parking. These parking spaces are spread out over spaces within the Employee Lot, Daily Garage, Hourly Garage, and Daily Surface Lot.
- Assists with issue of Hourly Garage and Daily Garage being at or near capacity each week.
- Plans for future parking needs as the additional capacity will help accommodate future projected originating enplanements and employee growth.
- Economy Lot #3 is utilized more effectively and not sitting empty most days of the year.
- Follows industry best practice of reserving closest and most convenient parking for customers.
- Revenue may be generated by customers parking in higher-priced parking lots (Valet Parking and Customer Self-Park area which Walker recommends charging fees of around or above the Hourly Garage fees) and or actually parking (those not parking when lot is at or near capacity, those taking alternate means of transportation as they expect to not be able to find parking).

Possible Challenges:

- Employee dissatisfaction with parking further away and taking a shuttle instead of parking and walking a short distance to work.
- Shuttle service is necessary to transport the employees which increases expenses.
- Economy 3 requires capital improvements including reconstruction of the lot for full time use, PARCS equipment, etc.
- The proposed valet, vendor, TNC, and Premier Parking recommendations hinge on the relocation of employee parking from existing Employee Lot (and other lots) to Economy Lot 3.
- Increases traffic along Pecan Park and associated intersections.

PROPOSED NEW EMPLOYEE LOT CONSTRUCTION

The current Economy Lot 3 parking lot is not currently set up to accommodate the proposed transition plan. The lot must undergo several capital improvements to accommodate daily use by employees. In addition to paving and striping the lot, other capital improvements needed include:

- New/additional light poles and fixtures
- Landscaping
- Drainage system
- Fencing entire lot
- Emergency call boxes
- Bus shelters
- Creation of new entry (2 employee, 1 shuttle) and exit lanes (2 employee, 1 shuttle) - JAX has stated they may want to reduce this to one employee entry and one employee exit as a cost saving measure
- PARCS equipment

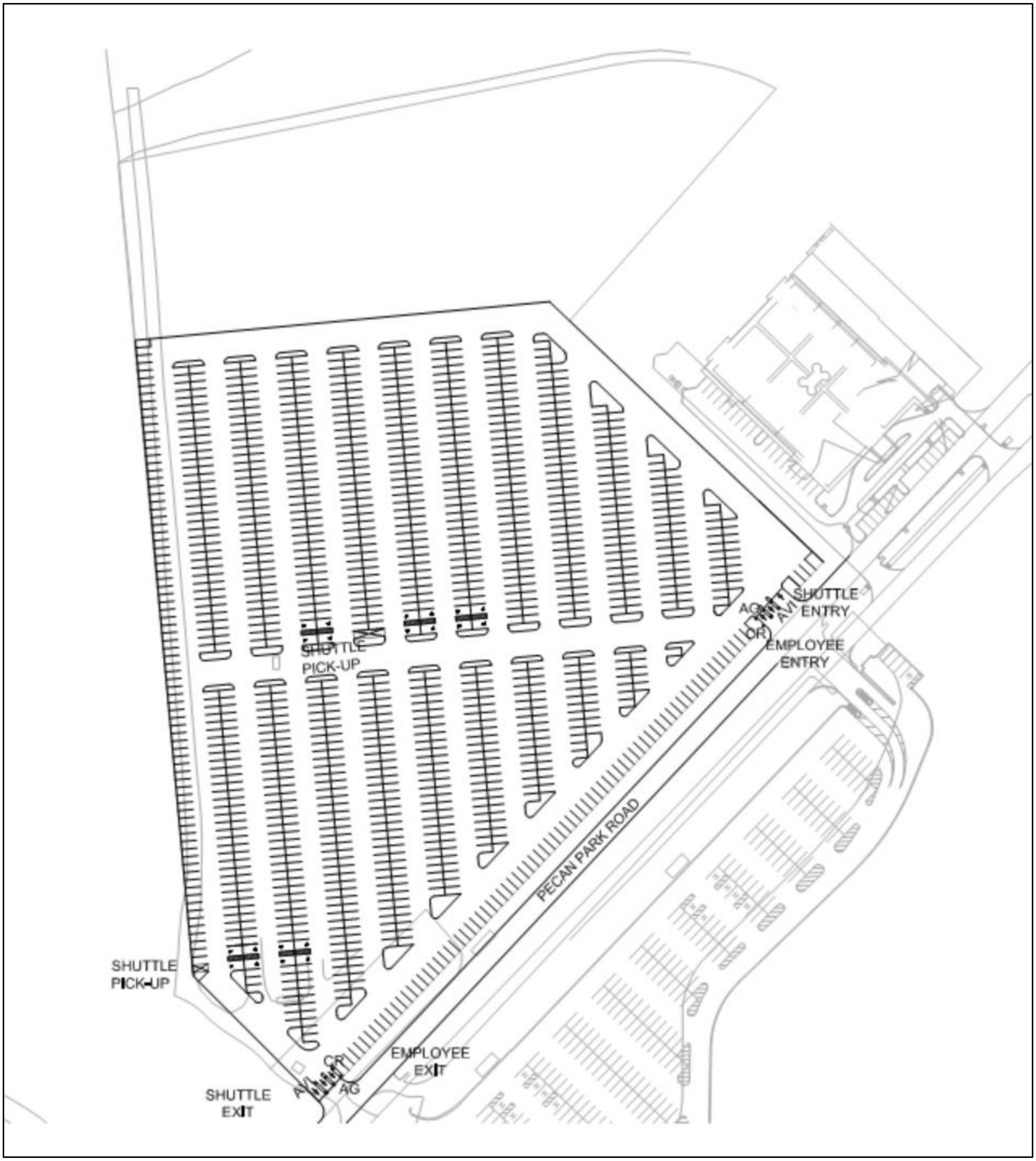
Other items for consideration:

- Monitors in shelters informing when next shuttle will arrive
- CCTV cameras
- Restroom facilities (if applicable by code)

Walker developed a preliminary striping and lot layout plan to ascertain the number of parking spaces that could be built, recommendations for a shuttle pickup route, and locations of entry/exit plazas. Figure 8 shows this preliminary plan.

The proposed new Employee Lot plan includes three entry lanes (2 employee, 1 shuttle) off of Pecan Park Road on the northwest side of the lot. Additionally, three exit lanes (2 employee, 1 shuttle) will be placed in the southwest corner of the lot, exiting onto Pecan Park Road. The Employee entry and exit lanes will be equipped with TIBA proximity card and ticket readers which will accommodate both the monthly employee parkers and the daily employee parkers (daily parkers can pay at exit with a credit card or use one of the POF machines that will be available in the terminal near the Valet Lot). The shuttle entry and exit lanes will be equipped with a proximity card as well. We recommend multiple entry and exit lanes to accommodate demand and avoid any service disruptions in the event a ticket machine is out of order. Figure 8 shows the proposed configuration of the new Employee Lot and can be viewed in Appendix A.

Figure 8: Proposed Employee Lot Plan



Source: *Walker Consultants,* 2018

NEW EMPLOYEE LOT THEORY OF OPERATION

Employee parking should be administered in a similar fashion as it is today at JAX. Employees will apply for parking via the Parking Department and pay accordingly. Parking will be provided via proximity card, allowing employees access only into the new Employee Lot.

The employee will use their access credentials at one of the two employee entry gates, enter the lot and park, then proceed to one of the shuttle stops. The Employee Lot shuttle will be only for employees (not Economy Lot customers) and will circulate the lot approximately every 15 minutes (00:00, 00:15, 00:30, and 00:45) during the following off-peak hours:

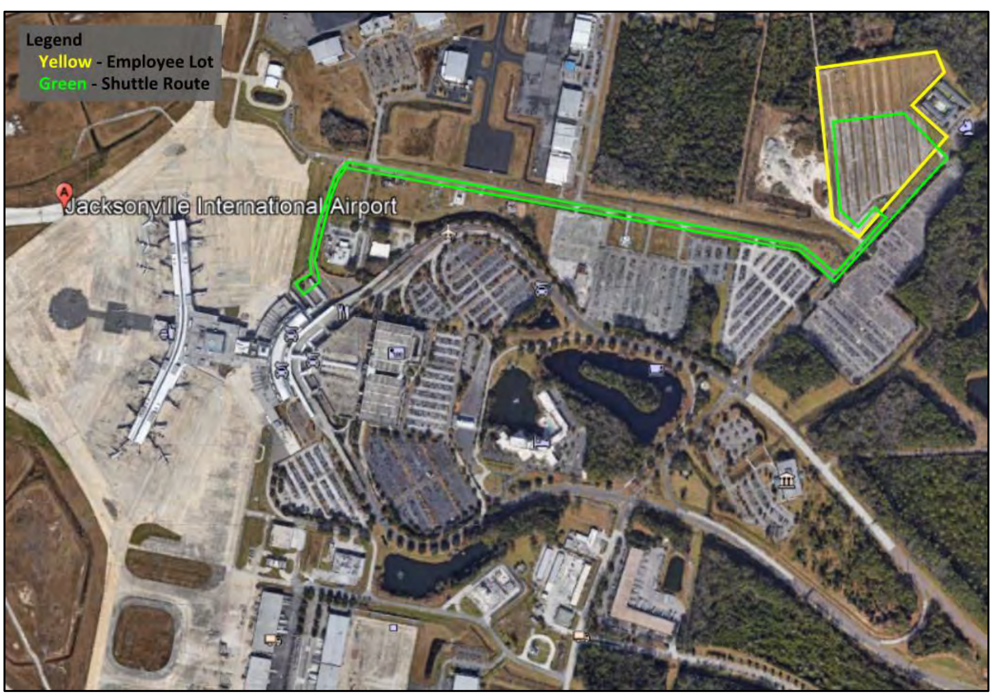
- 8:00 AM to 12:00 PM
- 8:00 PM to 4:00 AM

During peak times, two shuttles will circulate the lot every 8 minutes (00:00, 00:08, 00:16, 00:24, 00:32, 00:40, 00:48, and 00:56). The peak hours include the following:

- 4:00 AM to 7:59 AM
- 12:00 PM to 7:59 PM

The Employee Lot shuttle will enter the lot and proceed to the two shuttle stops, exiting at the southern tip of the lot. After exiting and turning right onto Pecan Park Road, the shuttle will take an immediate right onto Barnstormer Road, and drive into the current Pre-Arranged Lot. Employees will be picked up and dropped off in the designated area within the lot, with the shuttle proceeding out of the lot back on to Barnstormer Road, and finally taking a left onto Pecan Park Road and another left to enter into the Employee Lot. Figure 9 provides details of the proposed shuttle route.

Figure 9: Proposed Employee Shuttle Route



Source: Base Image via *Google Earth*, 2018; *Walker Consultants*, 2018

During evening hours (9:00 PM to 4:00 AM) the shuttle could be responsible for dropping employees off in the Employee Lot and, if asked, waiting for them to enter their vehicles. Due to the remote location of the lot, we recommend this service could be offered as to alleviate any employee concerns of parking in the lot.

The lot will be maintained by the Parking Department staff whom will handle trash removal and general lot cleaning, maintenance of the PARCS equipment, and other normal operating responsibilities and duties. We would recommend also having random monitoring of the lots – whether this is airport police, parking staff, or another type of third party provided service. Additionally, it would be recommended that JAX conduct periodic assessments of the lot to identify any concerns to be addressed including lights that are out, abandoned vehicles, overgrown landscaping, or reported suspicious activity.

Walker does understand that there may be a need for JAX to provide certain employees access to parking near the terminal. We recommend that this be done only when necessary and that a premium charge be implemented for this parking privilege, with the number of this type of employee permit being extremely limited. We would recommend that if alternate close-in employee parking is needed, JAX consider the following:

- Provide parking only in the Daily Surface Lot – not the Hourly Garage or Daily Garage – and do not reserve spaces.
- For VIP's that only park occasionally (for meetings or short stays), provide access to vendor spaces.

The following section details the key activities to achieve Walker's recommendation.

EMPLOYEE LOT SHUTTLE PROGRAM

JAX currently deploys eight passenger shuttles (3 – 13 passengers and 5 – 14 passengers) to circulate the Economy Lots, transporting passengers to and from the terminal. The new Employee Lot will also require shuttle service to and from the terminal. It is best practice to keep customer shuttle service and employee shuttle service separate based on the varying schedules and needs of the two different user groups as well as to keep the shuttle route headways at acceptable ranges.

As previously mentioned, the employee shuttle will run twenty-four hours a day, seven days a week. The shuttle schedule will vary based upon the peak employee schedules, with two shuttles running during peak hours every 8 minutes and one shuttle running during off-peak hours every 15 minutes. An example schedule is provided in Figure 10.

Figure 10: JAX Employee Shuttle and Headway

Shuttle Model Headway
Peak & Off-Peak Hours

Input Data:

Shuttle-Bus Capacity	14	Passengers
Route Length	2.1	Miles
Required Headway (Peak)	8	Minutes
Required Headway (Off-Peak)	15	Minutes
Peak Hour Ridership Factor (10% Standing)	1.1	PHRF
Shuttle-Bus Cost	$65	/Hour
Number of Days of Operation	365	/Year

Time From	Time To	R'dtrip Travel Time (Max.) Min.	Shuttle Bus Capacity Passengers	Round Trips/ hour/ Bus	Shuttle Buses R'qd. for 8 minute Headway	Actual Average Headway Min.	Hourly Ridership Capacity with 1.1 PHRF
12:00 AM	1:00 AM	15	14	4.0	1	15.0	62
1:00 AM	2:00 AM	15	14	4.0	1	15.0	62
2:00 AM	3:00 AM	15	14	4.0	1	15.0	62
3:00 AM	4:00 AM	15	14	4.0	1	15.0	62
4:00 AM	5:00 AM	15	14	4.0	2	7.5	123
5:00 AM	6:00 AM	15	14	4.0	2	7.5	123
6:00 AM	7:00 AM	15	14	4.0	2	7.5	123
7:00 AM	8:00 AM	15	14	4.0	2	7.5	123
8:00 AM	9:00 AM	15	14	4.0	2	7.5	123
9:00 AM	10:00 AM	15	14	4.0	1	15.0	62
10:00 AM	11:00 AM	15	14	4.0	1	15.0	62
11:00 AM	12:00 PM	15	14	4.0	1	15.0	62
12:00 PM	1:00 PM	15	14	4.0	2	7.5	123
1:00 PM	2:00 PM	15	14	4.0	2	7.5	123
2:00 PM	3:00 PM	15	14	4.0	2	7.5	123
3:00 PM	4:00 PM	15	14	4.0	2	7.5	123
4:00 PM	5:00 PM	15	14	4.0	2	7.5	123
5:00 PM	6:00 PM	15	14	4.0	2	7.5	123
6:00 PM	7:00 PM	15	14	4.0	2	7.5	123
7:00 PM	8:00 PM	15	14	4.0	2	7.5	123
8:00 PM	9:00 PM	15	14	4.0	2	7.5	123
9:00 PM	10:00 PM	15	14	4.0	1	15.0	62
10:00 PM	11:00 PM	15	14	4.0	1	15.0	62
11:00 PM	12:00 AM	15	14	4.0	1	15.0	62

Results:

Passenger Peak Hour		123	Passengers
Travel Time		8.0	Minutes
Average Vehicle Speed for Route		15.8	MPH
Stops/Dwell Time		7.0	Minutes
Total Route Travel Time		15.0	Minutes
Shuttle Buses Required for a	8 Min. Headway =	2	Veh
	15 Min. Headway =	1	Veh
Daily Cost		$2,470	
Annual Cost for	365 days of Operation	$901,550	

*Shuttle costs are an estimate and may vary dependent on the Airports actual costs.

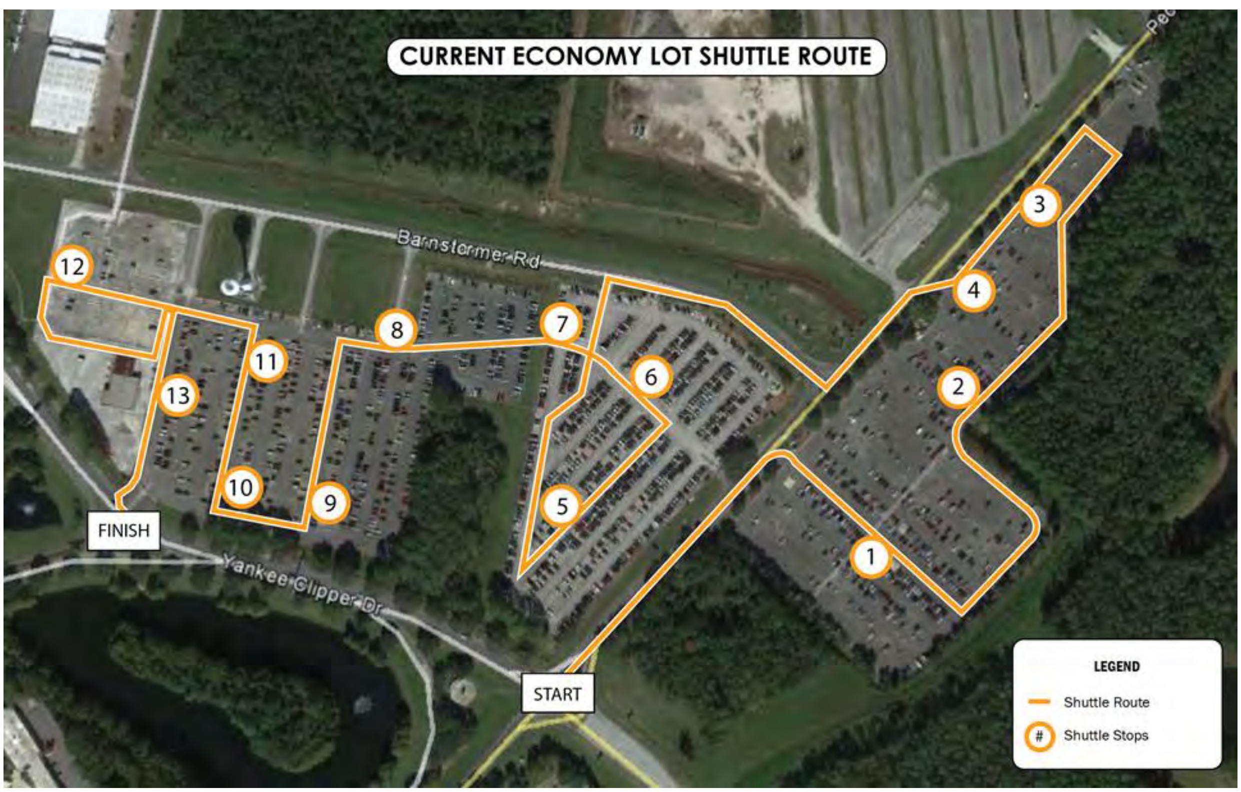
Source: *Walker Consultants*, 2018

To achieve the proposed shuttle schedule and demand of the employees, JAX will likely need to acquire one to two additional shuttles. The shuttles could be similar in size to the existing fleet, as the trip to and from the terminal is relatively short and employees are likely comfortable standing in the event shuttles become full during peak hours. The above analysis assumes JAX obtains 14 passenger shuttles and the current passenger shuttle size for employees. However, to increase capacity during the peak hour, Walker recommends JAX acquire larger shuttles with significant standing room, to accommodate even more employees.

JAX may have an opportunity to repurpose existing Economy Lot shuttles for Employee Lot use if the headway schedule for customer pick up is adjusted, although this is likely only an option during off-peak hours, days and seasons. Walker's Phase 1 report details an average length between shuttle pickups of 4 to 6 minutes. Adjusting the customer pickup headway to 10 to 14 minutes would decrease the number of shuttles needed in service at one time, therefore possibly allowing for some of the existing resources to be utilized for the employee parking program.

Additionally, consideration to closing the Annex gate in Economy Lot 1 may develop further shuttle efficiencies. In the following figure (Figure 11), stop 12 could be closed when the Annex gate is closed to reduce the total number of stops during periods when the Annex parking is not needed. Economy Lot 1 is equipped with a gate separating the main lot from the Annex, if the gate is closed vehicles will consolidate in one area of the lot ultimately reducing the number of stops and total trip time of the customer shuttles, which may allow for further resources to be applied to the Employee Lot shuttle program.

Figure 11: Current Passenger Shuttle Route



Source: *Walker Consultants,* 2018

Lastly, we recommend at least the Employee Lot shuttle shelters be equipped with monitors detailing the pickup schedule and timeliness of the shuttle, so employees may prepare appropriately to arrive on-time for their shift. Not included in our financial analysis, but something that may be of benefit to JAX, would be to also equip the Economy Lot shelters with these monitors so customer expectations can be set.

EMPLOYEE LOT COMMUNICATIONS PLAN

Implementing the relocation of employees to Economy Lot 3 will be a sensitive and, potentially, contentious topic amongst employees and contractors. Although the recommended lot is the best fit for employee parking, allowing for customer parking nearest to the terminal, the lot is more remote than the existing supply, therefore travel between the terminal and lot is likely to add additional time to the employee's commute.

In order to address concerns, Walker recommends executing a detailed communications plan. The following communications plan outlines the details of our recommended timeline:

- **6 months prior to "Go Live Date"** – Identify "Go Live Date" internally. Review contractor and vendor contracts to determine any conflicts and/or Union grievances that may occur, if any.
- **3-4 months prior** – Notify management of contactor and vendors of the move.
- **2 months prior** - In cooperation with contractors/department heads, release notification to all airport employees.
  - Notification to include new shuttle schedules, directions for accessing the lot and using the PARCS equipment, contact information for concerns/inquiries, and an "Open House" date for employees to hear more about the reason for the move and coordination.
  - Key communication should be to allow for customers to find parking and to set up JAX for future growth. Employees will have access to an employee only shuttle transporting them directly to and from the airport terminals for their shifts.
- **1 month prior** – JAX to release email reminders of "Go Live Date" and supporting materials including shuttle schedule. JAX to update employee website.
- **2 weeks prior** – Post reminder signage in all existing employee lots (flyers, A-frames). Parking staff to perform dry runs of future operations (shuttle routes, badging in/out, etc.).
- **1 week prior** – Circulate more reminder flyers and emails. Increase parking staff throughout existing employee parking lots to address questions. Begin to allow badge access into the new lot for employees to test – though no parking as no shuttle service will be in place.
- **Go live!** – Provide extra staff in all lots and have extra shuttles on hand to address scheduling concerns. Provide posted contact information for feedback on shuttle schedules.
- **1-week post "Go Live Date"** – Eliminate badge access to all other lots.
- **1-month post** – Schedule an optional meeting to check in with contractors and department heads for feedback on the move.
- **3 to 6 months post** - Review the shuttle schedule and volumes to adjust to needs of operation.

The communication plan is designed to allow for employees to have some feedback in the change, as it impacts their daily work routine. Designating an email for feedback and comments, as well as hosting an open house will allow for the group to have a voice and for JAX to improve the employee parking operation based on feedback.

EMPLOYEE LOT AND VENDOR LOT RELOCATION

There are two parking areas adjacent to, and on either side of, the terminal – the South Vendor Lot and the Pre-Arranged Lot. The South Vendor parking lot (44 spaces) is a mixed-use lot consisting of vendors, TSA, Ambassadors, and JAX employees. The Pre-Arranged Lot consists of approximately 50 parking spaces reserved for Premier Parking Program members and for pre-arranged vehicles (excluding TNCs).

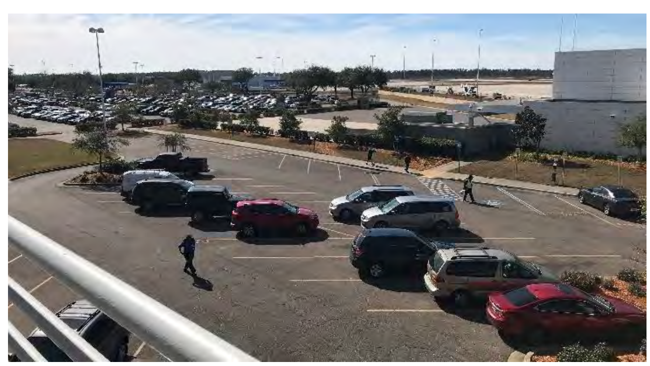
Premier Parking Lot

Premier Parking – Walker recommends moving the Premier Program parkers from the Pre-Arranged Lot to the either the new proposed Customer Self-Park lot (what is now Employee Lot) or to the new Valet Parking area, whichever JAX deems to be more appropriate for the Premier Program parkers. Both parking areas would still provide a high level of service to the Premier Program parkers and both options could allow for an increase in program participants (at the time of this report a Premier Parking Program waiting list exists). The existing Pre-Arranged Lot that the Premier Program parkers are currently using would continue to host pre-arranged vehicles and would also now be used for TNCs (refer to Section 5, TNCs, for further information).

The relocation of Premier Parkers:

- Allows for expansion of the Premier Parking Program – currently, the program is limited due to limited space and there is a waiting list. Moving to the new Valet Lot and/or Customer Self-Park area would allow for program expansion and possible increased revenue.
- Allows for the TNC pick up area to be relocated. Currently, the TNC pick up area is located on the southern end of the Arrivals Level Roadway where the new entry to the Valet Lot and Customer Self-park Lot will be located, and the cross-traffic and congestion cannot be absorbed into the already busy TNC pick up area.
- Some possible challenges of the relocation of the Premier parkers include:
    - Disengagement by the user if required to valet or parking a slightly further distance to the terminal access door
    - Required capital improvements

South Vendor Lot/Employee Lot/Daily Surface Valet Parking – The current location of the Valet Stand and Valet Parking Lot is not ideal, as discussed in Walker's Phase I report. The current valet parking program is located on the Departures Level, where the third-party operator (SP+) stages three lanes of parked vehicles – this is a limited staging area and when the staging area fills, the Valet Parking is closed. This area can also create congestion on the Departures Level Roadway. Additionally, the valet staff runs across four busy lanes of airport traffic to their Valet Parking Lot located in the Daily Surface Lot, potentially creating a serious conflict between valet staff and traffic. The remoteness of the Valet Lot also adds to retrieval times and potential liability issues.



South Vendor Parking Lot

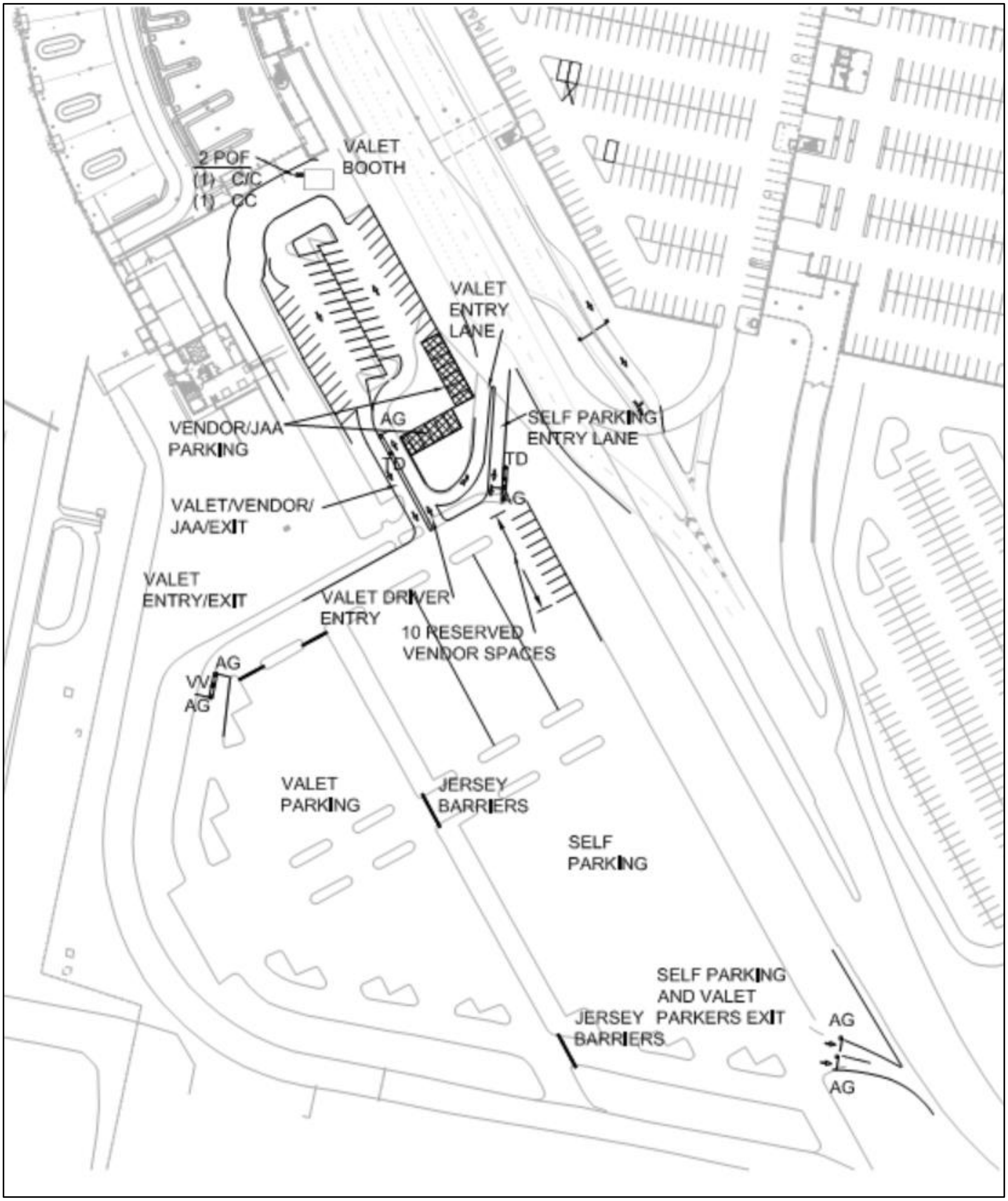
To address the previously identified issues, we recommend designating the current South Vendor Lot as the Valet Stand and Valet Staging area.

The relocation of the Valet Stand and Valet Staging Area to the South Vendor lot:

- Allows for a Valet Stand that is easy to find, with a Porte Cochere (the term used to refer to the valet podium where pick up and drop off occur) located at an attractive entry point to the terminal that provides front door service for customers.
- As we are recommending that the current Employee Lot be reallocated, this allows for turning half of the existing Employee Lot into a Valet Parking Lot and returning the current 199± space valet parking area in the Daily Surface Lot back in to customer parking.
- SP+ recently renegotiated a 3 to 5-year concession contract with JAX to operate the valet. Although JAX is not responsible for any revenue or expense associated with the valet operation, Walker recommends a discussion between JAX and SP+ to determine the current and future operating methodology. Walker's proposed valet operating plan, inclusive of PARCS equipment, is advantageous to SP+ as it would improve efficiency of the current operation and, we believe may increase usage and thereby revenue. Walker recommends JAX consider renegotiating and/or seeking alternative contract terms (e.g. management, revenue share) at the end of the SP+ existing contract. In the event SP+ purchased the proposed PARCS equipment recommended to operate the valet operation in the South Vendor Lot, JAX may buyout the remaining payments and acquire the equipment from SP+. Looking forward, regardless of which party owns and operates the valet operation, the operating methodology is expected to increase productivity and volume, improve customer service, and eliminate the handling of transactions by valet staff.
- Allows for the remaining half of the current Employee Lot to become Daily (and/or Hourly) Customer Self-Parking (we recommend a parking rate that is around or higher than the Hourly Garage in an effort to manage demand) and parking for the Premier Parking Program members. The Customer Self-Park lot would also contain approximately 10 reserved vendor parking spaces, nearest the terminal, for those vendors that can no longer use the South Vendor Lot.
- Currently, a variety of vendors utilize the South Vendor Lot including those delivering bags, those carrying tools and equipment, those delivering items such as packages, newspapers, or flowers, and those at the terminal for meetings (these are just a few examples). Some vendors with larger deliveries, such as bags or equipment, should be redirected to the loading dock for loading and unloading of their goods. Most other vendors should be directed to utilize the designated vendor spaces in the new Valet Staging Area or those in the Customer Self-Park Lot. JAX should provide access to lots based on the vendor and their needs. Walker recommends reviewing the current vendor list and providing access based on their actual needs on a case-by-case basis in an effort to:
    - Determine what actual parking needs are in relation to their business needs when parking at the terminal - providing the best parking fit for each vendor (is this the dock, the valet lot spaces, or the self-park spaces)
    - Review the current vendor list and reduce the number of vendors receiving these free parking privileges when possible

Figure 12 summarizes Walker's recommendations for the proposed Valet, Vendor, and Daily (or Hourly) Customer Parking:

Figure 12: Proposed Valet, Vendor and Customer Lot Plan



Source: *Walker Consultants*, 2018

Briefly, the operations described above will work as follows (more details are provided in the following sections):

- Customers seeking Valet Parking enter the Valet Area through an entry that will be located where the current motorcycle parking is located (from the Arrivals Level Roadway).
- The customer pulls up to the Valet Parking entry gate, receives a ticket, then pulls through the gate and pulls up to the Valet Stand near the entry to the terminal.
- Customer drops off their vehicle with the valet and enters the terminal through the glass doors at the entrance area to the terminal, riding the escalator to the security checkpoint.
- When customer returns, they take the escalator back down to the Valet Stand to retrieve their vehicle.
- The customer pays for their parking at a pay machine in the terminal, then hands their claim ticket to the valet.
- The valet retrieves the customer vehicle from the nearby Valet Parking Lot.
- The customer gets in their vehicle, uses their valet ticket to exit the Valet Staging Area, enter the Customer Self-Park area, then exits through the exit gates just off of Dixie Clipper Drive.

The proposed Valet Plan has the following opportunities and possible challenges:

Opportunities:

- Larger staging area, increasing the capacity of vehicle intake at one time. Valet would no longer need to close due to no staging room.
- Increased customer service due to reduced customer wait time for vehicle returns as valet vehicle parking area is closer.
- Valet Parking Lot is adjacent to the Valet Staging Area, reducing length of travel and transportation times significantly which could increase service and reduce damage claims.
- Valet Parking Lot would initially have a total of 200± actual parking spaces, plus room to stack vehicles in the aisles. This space count could be expanded or reduced based on needs as barriers separating Valet Parking Lot and Customer Self-Parking will be moveable. The additional Valet Staging Area spaces in what is now the South Vendor Lot adds 51± spaces to the total space count, an increase over the current ± 199 valet space allocation.
- Removal of the Valet Stand from Departures Level Roadway provides an easier flow of traffic in that already congested area.
- Valet Parking Lot will be adjacent to the Valet Stand therefore the valet employees will not be crossing over four lanes of traffic on foot.
- Eliminates additional vehicular movements/traffic throughout the airport by valet staff as valet operation becomes self-contained.
- TNC pick up area will need to relocate from the southern end of the Arrival Level Roadway to the Pre-Arranged Lot. This will assist with current congestion issues occurring in that area.
- Moving Premium Parking Program to Valet and/or Customer Self-Park allows for expansion of program. Currently, there is a waiting list.

Possible Challenges:

- Additional capital costs and expenses associated with lot modifications, PARCS equipment, etc., needed.
- Some vendors will need to park in reserved spaces in the Valet Staging Area and/or Customer Self-Park Lot and spaces are slightly further from terminal then currently (though change in distance is minimal and reasonable). Some vendors may need to utilize loading dock, which JAX has stated can be congested.
- Vendors and the public will park in the same lot. Many times, these user groups are not parked in the same lot.
- Should JAX choose to relocate Premier Parking, a loss of Premier Parking volume may occur as they may now have to park further away or use valet operation, which may not be desirable to some users.
- JAX and SP+ will need to agree to the operating methodology and subsequent equipment purchases/ownership of equipment.
- JAX should consider re-negotiating their contract with SP+ to realize increase in revenue due to expected increase in customers using valet (and possibly including moving Premier Parking Program members). Will also need to account for potential increase in expenses due to increased usage.
- TNC pickup area will need to relocate from the southern end of the Arrival Level Roadway to the Pre-Arranged Lot so there will not be congestions near the new Valet/Customer Self-Park entrances.

The following section details the key activities to achieve Walker’s recommendations:

VALET AND CUSTOMER SELF PARKING LOT THEORY OF OPERATION

Customers seeking Valet will drive through the Arrivals Level Roadway, entering Valet Parking via the driveway that is currently being used as motorcycle parking (see inset picture). The customer will proceed through the entry lane to a valet ticket entry device and take a three-part valet ticket. This new entry device will be equipped to be part of a new Valet Management System by AVPS Technologies, as this technology integrates with the existing TIBA equipment currently being installed by JAX. Cost, purchase, and ownership of the valet equipment will need to be discussed between JAX and SP Plus (these potential costs are included in our Financials Section). The valet entry lane would also have cameras that will scan the vehicle on entry to note any pre-existing damage which can help minimize JAX’s liability and claims exposure.

The customer will proceed to the Valet Stand located near the terminal glass doors and be greeted by the valet attendant. The valet attendant will assist the guest with unloading their baggage, take the customers three-part valet ticket and issue one part of the ticket back to the customer for claim check purposes. At this point, the customer will proceed to the terminal, taking the escalator up to the ticketing level and proceeding on their trip. The valet will fill out the vehicle information on the remaining parts of the valet ticket, then drive the vehicle out the Valet Staging Lot exit gate and park the vehicle in the Valet Parking Lot. The valet will be equipped with a badge to access the entry and exit gates for the Valet Parking Lot (accessible only to the valet staff) and also scan the valet ticket to log the vehicle in and out of the Valet Parking Lot. The valet will use the last part of the three-part ticket to attach to the customers’ keys which will be stored in a locked key box.

Once the customer returns and is ready to pick-up their vehicle, they will pay at the Pay On Foot (POF) machine located in the terminal. The machine will report Valet Lot Parking and all other parking revenue separately to differentiate between JAX and SP+ revenue (or at least between self-park and valet revenue). There will be a grace period built in to the system that allows for the customer to retrieve their vehicle from the valet and exit without charge (usually this is a 20-30-minute grace period). After making their payment, the customer will provide their claim check to the valet to retrieve their vehicle. The valet will go to the Valet Parking Lot and retrieve the vehicle by exiting through the Valet Staging Lot exit and entering the Valet Staging Lot through the valet entrance terminal and driving to the Valet Stand area where the customer is waiting. The customer will retrieve their vehicle from the valet and the valet will give them a receipt ticket that will allow them to exit the Valet Staging Lot exit as well as the Customer Self-Park exit plaza at no charge. The exit plaza is currently in place, but not in use, and would be modified to be the exit area for both valet and self-park customers.

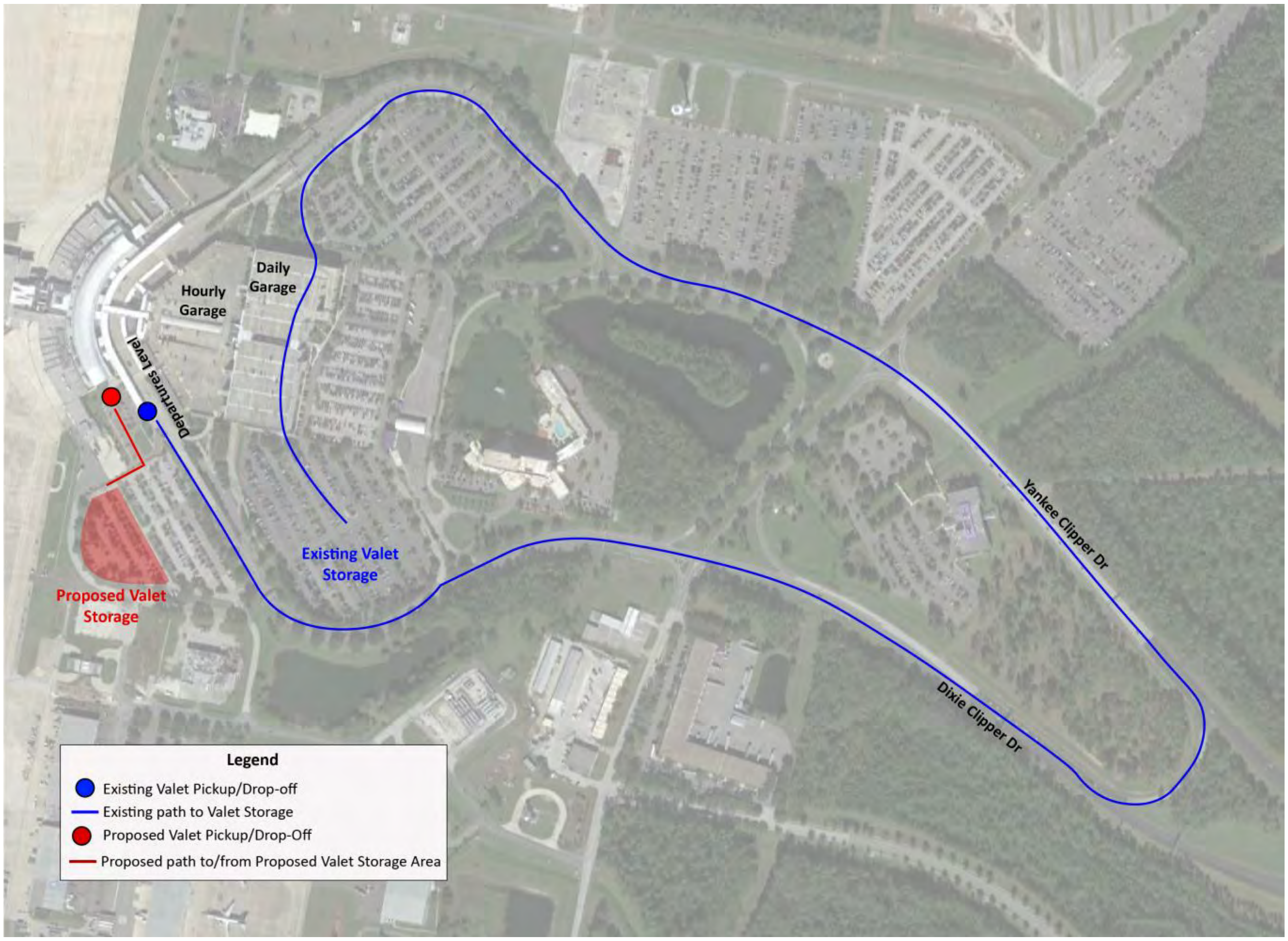
The Valet Parking Lot will have moveable jersey barriers separating the Valet Parking Lot and the Customer Self-Park Lot. In the event valet demand increases or decreases, JAX may relocate the jersey barriers to adjust space allocation accordingly between the two lots. Permanent barriers should not be put in to place until the Valet Parking Lot usage and Customer Self-Park Lot usage can be better determined, if at all.

For those that wish to use the Daily (and/or Hourly) Customer Self-Park lot, entry for the lot would be through an entry lane next to the valet entry lane, just off of the Arrivals Level Roadway. The self-parkers would stay left and enter through a regular TIBA ticket entry device, receive a ticket, and proceed to park in the Customer Self-Park Lot. Upon return to their vehicle, the self-parker may pay for their parking via the POF in the terminal or pay at the exit plaza located at the southern tip of the Customer Self-Park Lot.

Premier Parking Program parkers would be accommodated in either the Valet Staging Lot or the Customer Self-Park lot (as per decision by JAX). Additionally, the Valet Staging Lot would be equipped with approximately 10 spaces for use by vendors by using access credentials to enter through the valet entry and parking in reserved spaces in the lot (JAX would determine who received access to these spaces). The spaces would be located on the far east of the lot, out of the way of the valet operation.

Figure 13 shows graphically a comparison of the current driving path to the Valet Parking Lot and the proposed driving path to the Valet Parking Lot:

Figure 13: Valet Circulation – Current and Proposed



Source: Base Image via *Google Earth*, 2018; *Walker Consultants*, 2018

VALET AND CUSTOMER SELF-PARKING MODIFICATIONS

The proposed Valet Staging Lot will need modifications to meet Walker's recommendations. Upon entry, the landscaping and curbing to the right of the driveway must be removed and developed into parking spaces (however, JAX will need to verify minimum landscape requirements and any other requirements and codes before considering implementation). Additionally, demolition of the existing PARCS island and creation of three new PARCS islands must occur. Finally, a sidewalk wide enough for a golf cart must be developed from the southernmost point of the Customer Self-Park Lot leading to the terminal. In the event JAX decides there is a demand for shuttle service in the Customer Self-Park Lot, a golf cart could use that sidewalk to transport customers to and from their vehicles.

The proposed plan includes two entry lanes (one valet, one Customer Self-Park) off of the Arrivals Level Roadway driveway that would need to be installed. Additionally, one entry is needed for valets from the Valet Parking Lot into the Valet Staging Lot and one exit lane for valet drivers and customers exiting the Valet Staging Lot. For the Valet Parking Lot, one entry and one exit will be needed in the northwest corner of the lot to control access into the Valet Parking Lot. Cameras will also need to be installed at the entry lanes into the Valet Staging Lot. Finally, the existing exit plaza will remain in the same location as it is today but will need to be modified and PARCS equipment added.

The following capital improvements must be achieved to enact Walker's recommendations:

- Removal of landscaping and curbing
- Repaving of lot and entry areas (and possibly sidewalk area)
- Addition of entry and exit lanes/areas
- Addition of barriers in lot
- Re-striping of Valet Staging Lot and entry and exit areas
- Review of drainage system
- Addition of emergency call boxes in the Customer Self-Park Lot
- Addition of PARCS equipment
- Movement of Valet Booth and removal of any current signage and denotation as Valet Area
- A full signage package at, and leading to, the new Valet Operation and Customer Self-Park Lot

Financial information can be found under the Financials in Section 6. With implementation of all the proposed changes, the updated parking allocation would add 708± public parking spaces (including spaces gained from employee parking in all lots and spaces gained from South Vendor Lot, not including valet vehicle stacking capabilities in Valet Operation) and changes Employee Parking space available from 667± reserved employee spaces to 1,300± spaces if Economy 3 Lot is partially built out (or 1,800 spaces if fully built out) as shown in Table 12:

Table 12: Proposed Reallocation Parking Supply, Allocation, Users, and Access Credentials

Lot	Total Spaces	Designated Spaces					Users	Distributed Access Cards
		Employee Spaces	Public Spaces	Valet	Reserved	Other		
Valet Parking/Premier/Customer Self-Park/Vendor	471	-	261	200	10	-	Public, Vendors	-
Hourly Garage	1,133	-	1,133	-	-	-	Public	-
Daily Garage	1,949	-	1,949	-	-	-	Public	-
Daily Surface Lot	1,722		1,722	-		-	Public	-
Economy Lot 1	1,935	-	1,935	-	-		Public	-
Economy Lot 2	1,276	-	1,276	-	-	-	Public	-
Pre-Arranged Lot/TNC Lot	51	-	-	-	51	-	Pre-arranged, TNC	-
Valet Pickup and Drop-Off/Staging/Vendor Lot	61	-	-	51	10	-	Valet, Vendors	
Employee Lot	1,300	1,300	-	-	-	-	Employees	2,277
Total	**9,898**	**1,300**	**8,276**	**251**	**71**	**-**		**2,277**

Source: *Walker Consultants*, 2018

03 Vehicular Circulation

SECTION 3 - VEHICULAR CIRCULATION

This section provides an overview of potential impacts related to vehicular circulation as a result of the proposed recommendations presented in this report. This section begins an overview of the circulation related impacts and recommendations presented in the Phase I Parking Study and follows with the analysis and recommendations completed for this Phase II study.

PHASE I RECOMMENDATIONS REVIEW

As part of the Phase I Parking Study, Walker conducted a high-level review of concerns expressed by JAX around the current vehicular circulation patterns throughout the airport, including the roads, parking garages and parking lots. Traffic challenges were experienced, and were observed by Walker, around the intersection of Pecan Park Road and Yankee Clipper Drive. The majority of these challenges stemmed from the rental car employees driving between the RRA in the Hourly/Daily Garage and the support facilities off of Pecan Park Road. This challenge is most likely going to be solved by either moving the rental car support facilities or forcing the drivers to enter the support facility from a different location/street.

Walker recommended an overall in-depth traffic analysis be performed by a traffic engineer to advise on best options to alleviate the vehicular circulation problems that JAX was experiencing.

PHASE II CIRCULATION ANALYSIS OVERVIEW

For the Phase II Parking Study, Walker provides a preliminary review of traffic impacts that would potentially occur as a result of the recommended relocation of employees from the Employee Lot, Hourly Garage, Daily Garage and Daily Surface lot to Economy Lot 3, the proposed relocation of the Valet operations from the Departures Level/Daily Surface Lot to the South Vendor Lot, the movement of TNCs from the Arrivals Roadway to the Pre-Arranged Lot, recommendations for possible changes to rental car traffic between the RRA and the QTA, as well as Departure Level, Arrival Level, and Commercial Lane changes, and recommendations for changes to the Air Cargo Area. These changes will result in some redistribution of existing traffic and change traffic patterns in the vicinity of the airport.

CIRCULATION IMPACT OF RENTAL CAR RELOCATION STUDY RECOMMENDATIONS

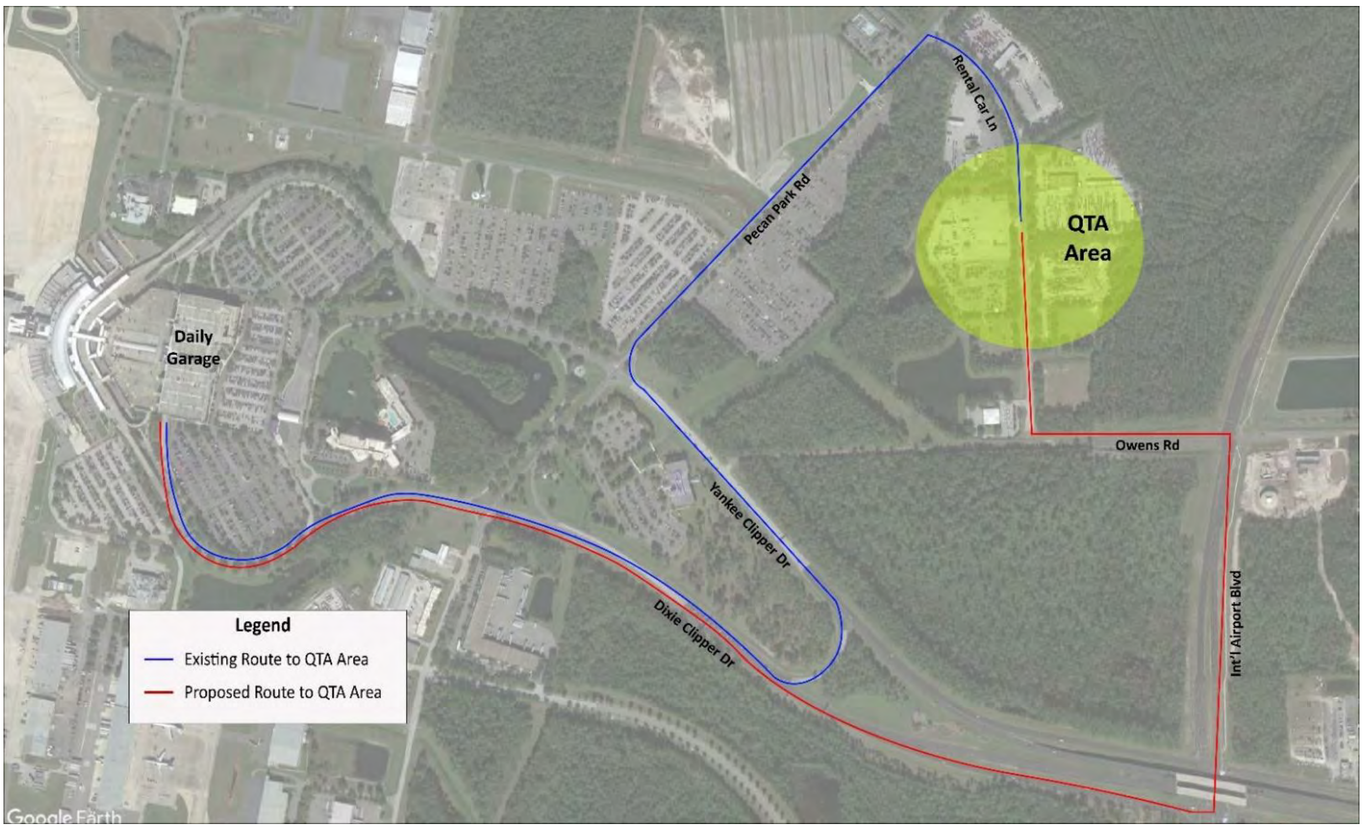
RENTAL CAR CIRCULATION

Currently, rental cars are returned by driving past the entrances to the Daily Surface Lot, Daily Garage, and Hourly Garage and proceeding into the Rental Car Area. There is little that can be done to change the rental car return if rental cars remain in their current location.

To get to the Quick Turn Around area (QTA), rental company employees must drive the vehicles out of the Hourly Garage, onto Dixie Clipper Drive, proceed all the way to the turnaround to Yankee Clipper Drive south of the JAX building, turn right onto Pecan Park Road, proceed past the Economy Lots and turn right onto Rental Car Lane. To go from the QTA back to the Rental Car Area, employees drive the vehicles from Rental Car Lane to Pecan Park Road, turn right onto Yankee Clipper Drive and proceed back to the Rental Car Area along the same path as customer’s returning rental cars, and customers accessing parking, utilize.

Currently Rental Car Lane ends in a cul-de-sac short of Owens Road. If feasible, Walker's recommendation would be to extend Rental Car Lane to Owens Road. Under this scenario, to get to the QTA, rental car company employees would continue to drive the vehicles out of the Hourly/Daily Garage, onto Dixie Clipper Drive, proceed to International Airport Boulevard, and turn right onto Owens Road. With this change, vehicles will turn right onto Rental Car Lane, which is a similar/shorter path compared to the current route and eliminates the need for employees to weave over to the right-turn lane onto Pecan Park Road immediately after merging onto Yankee Clipper Drive from the Dixie Clipper Drive turnaround. This would reduce traffic volumes at the Yankee Clipper Drive/Pecan Park Road intersection.

Figure 14: Rental Car Circulation



Source: Base Image via *Google Earth*, 2018; *Walker Consultants*, 2018

The Rental Car Relocation Study in Section 1 of this report provided three alternative sites for the location of a new rental car Ready Return Area (RRA) or Rental Car Facility (RAC). The potential circulation impacts of each option are discussed below.

Currently customers enter the RRA by keeping to the left as they approach the terminal area and entering the RRA after the Hourly Garage entrance, without traversing the terminal area itself. Customers exit the RRA by exiting the Hourly/Daily Garage and merging onto Dixie Clipper Drive past the terminal area.

OPTION 1 – BUILD NEW RAC IN DAILY SURFACE LOT NORTHEAST OF THE DAILY GARAGE

The first option presented is relocating the RRA to the Daily Surface Lot northeast of the Daily Garage and would likely have the following effects on terminal-area circulation:

- Customer Entry: Customers would keep to the left and enter in a new access point of Yankee Clipper Drive well before approaching the terminal area.
- Customer Exit: Customers would exit through the Daily Surface Lot exit (which would need to be redesigned to accommodate rental car egress) or through a new direct connection to Thomas Imeson Road and exit the airport. Either option would maintain the existing condition of exiting vehicles not traversing the terminal area.
- QTA Circulation: Under Option 1, vehicles traveling to/from the RAC and QTA should to exit the RAC area through a different lane from customers (this should be specified in any new RAC design specifications) which could even be through a new direct connection to Thomas Imeson Road. Vehicles traveling to the QTA from the RAC would proceed on a similar path as they currently do, exiting onto Dixie Clipper Drive, taking the turnaround loop onto Yankee Clipper Drive and turning right onto Pecan Park Road, or taking the recommended path provided in the existing rental car circulation section (assuming Rental Car Lane is extended to Owens Road). Vehicles traveling to the RAC would again take the same type of path as customers but would not traverse the terminal area.

Option 1 is the only option that does not require rental car customers to traverse the terminal area, would have a very similar circulation to the current condition, but also has its advantages (no driving through the terminal area) and disadvantages (long trip to the QTA).

OPTION 2 – BUILD NEW RAC SOUTH OF THE TERMINAL

The second option presented is relocating the RRA south of the terminal, which would likely have the following effects on terminal area circulation:

- Customer Entry: In Option 2, customers would traverse through the terminal area to access the garage. The net impact of the change for entering customers (rental car returns) would be an increase in trips through the terminal area. The planning hour for returns identified in the rental car relocation study was 305 returns, so this would represent the addition of 305± trips through the terminal area during the planning hour.
- Customer Exit: In Option 2, customers would exit the garage onto Dixie Clipper south of the terminal area and exit the airport. The net impact of the change for exiting would be negligible.
- QTA Circulation: Under Option 2, vehicles traveling to the QTA from the RAC would proceed on a similar path as they currently do, exiting onto Dixie Clipper Drive, taking the turnaround loop onto Yankee Clipper Drive and turning right onto Pecan Park Road, or taking the recommended path provided in the rental car circulation section (above) (assuming Rental Car Lane is extended to Owens Road). Vehicles traveling to the from the QTA would have to traverse the terminal area to access the garage, which would result in an increase in trips through the terminal area versus existing conditions where they exit into the Hourly Garage before the terminal area.

Option 2 would maintain the existing, sub-optimal QTA trip route, and increase trips through the terminal area due to returning customers needing to traverse the terminal area to drop off their rental. JAX could also explore the possibility of designing the RRA garage and the wayfinding to/from the RRA so that customers are directed to enter/exit the RRA garage via Pecan Park Road and Kittyhawk Road. The advantage of this would be a reduction in trips through the terminal area. The disadvantages of this route would be that its more circuitous as well as the mixing of Air Cargo traffic with Rental Car traffic, and an increase in traffic pressure at the Yankee Clipper Drive/Pecan Park Road and Dixie Clipper Drive/Pecan Park Road intersections since returning customers (305± during the planning hour) would likely have to cross over both Yankee Clipper Drive and Dixie Clipper Drive at the stop signs on Pecan Park Road.

OPTION 3 – BUILD NEW RAC NORTH OF THE TERMINAL

The third option presented is relocating the RAC north of the terminal, which would likely have the following effects on terminal-area circulation:

- Customer Entry: In Option 3, customers would instead keep to the right as they approach the terminal area and turn right into the RRA without traversing the terminal area. The net impact of the change for entering customers (rental car returns) would be negligible.
- Customer Exit: In Option 3, customers would exit the garage and proceed through either the Arrivals Level or Departures Level (depending on where the exit from the RAC garage is ultimately located) and exit the airport. This would result in a net increase in trips traversing the terminal area, and impact either the Arrivals or Departures level accordingly.
- QTA Circulation: Under Option 3, vehicles traveling to/from the QTA would have their own dedicated entry/exit in the RAC garage, providing access to Barnstormer Road. Vehicles would access the QTA via Barnstormer Road and Pecan Park Road to/from Rental Car Lane, simplifying QTA circulation and reducing vehicles at the Yankee Clipper Drive/Pecan Park Road intersection.

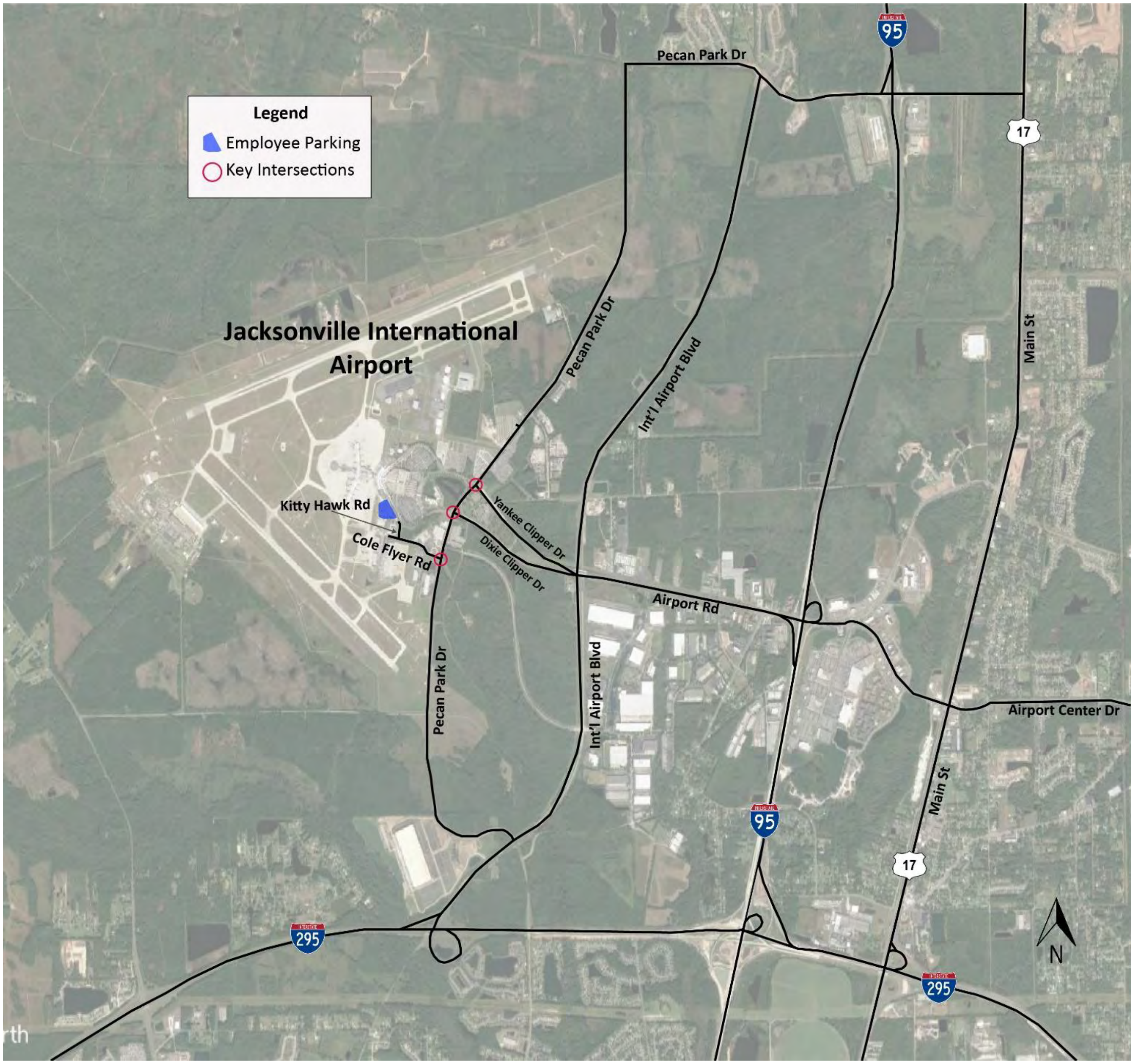
Option 3 provides the best circulation for QTA trips but increases trips through the terminal area due to existing customers needing to traverse the area after picking up their rental car. The current planning hour for rental car transactions is 359± vehicles, so up to 359± or more additional vehicles would traverse the terminal area in the planning hour. JAX could also explore the possibility of designing the wayfinding so that customers are directed to enter/exit the RAC garage via Pecan Park Road and Barnstormer Road. The advantage of this would be a reduction in trips through the terminal area. The disadvantages of this would be the mingling of QTA trips and customer trips, and an increase in traffic pressure at the Yankee Clipper Drive/Pecan Park Road intersection since exiting customers (359± planning hour customers) would likely have to cross over Yankee Clipper Drive at the stop sign on Pecan Park Road.

EXISTING AND PROJECTED EMPLOYEE CIRCULATION

EXISTING CIRCULATION TO/FROM EMPLOYEE PARKING LOT AND DAILY SURFACE LOT

Currently, access to the Employee Lot and South Vendor Lot are provided via Kitty Hawk Road, off Cole Flyer Road. Each employee’s point of origin is the main determinant of their route to/from JAX. The following figure shows likely paths to and from the current Employee Lot from several points in and around the Jacksonville metropolitan area under the current Employee Lot parking program.

Figure 15: Existing Employee Circulation to/from JAX



Source: Base image via *Google Earth,* 2018; *Walker Consultants*, 2018

Based on Walker's preliminary review of local and regional travel routes to JAX, employees with proximate access to I-295 likely arrive via Pecan Park Road to the south.

Employees from the north, south, and east who currently arrive via I-95 and Airport Center Drive, traverse through the stop sign on Pecan Park Road at Dixie Clipper Drive.

Employees with existing parking privileges in the Hourly Garage, Daily Garage, and Daily Surface Lot arrive in the same direction of travel as airport customers.

PROJECTED EMPLOYEE CIRCULATION TO/FROM ECONOMY LOT 3 (NEW EMPLOYEE LOT)

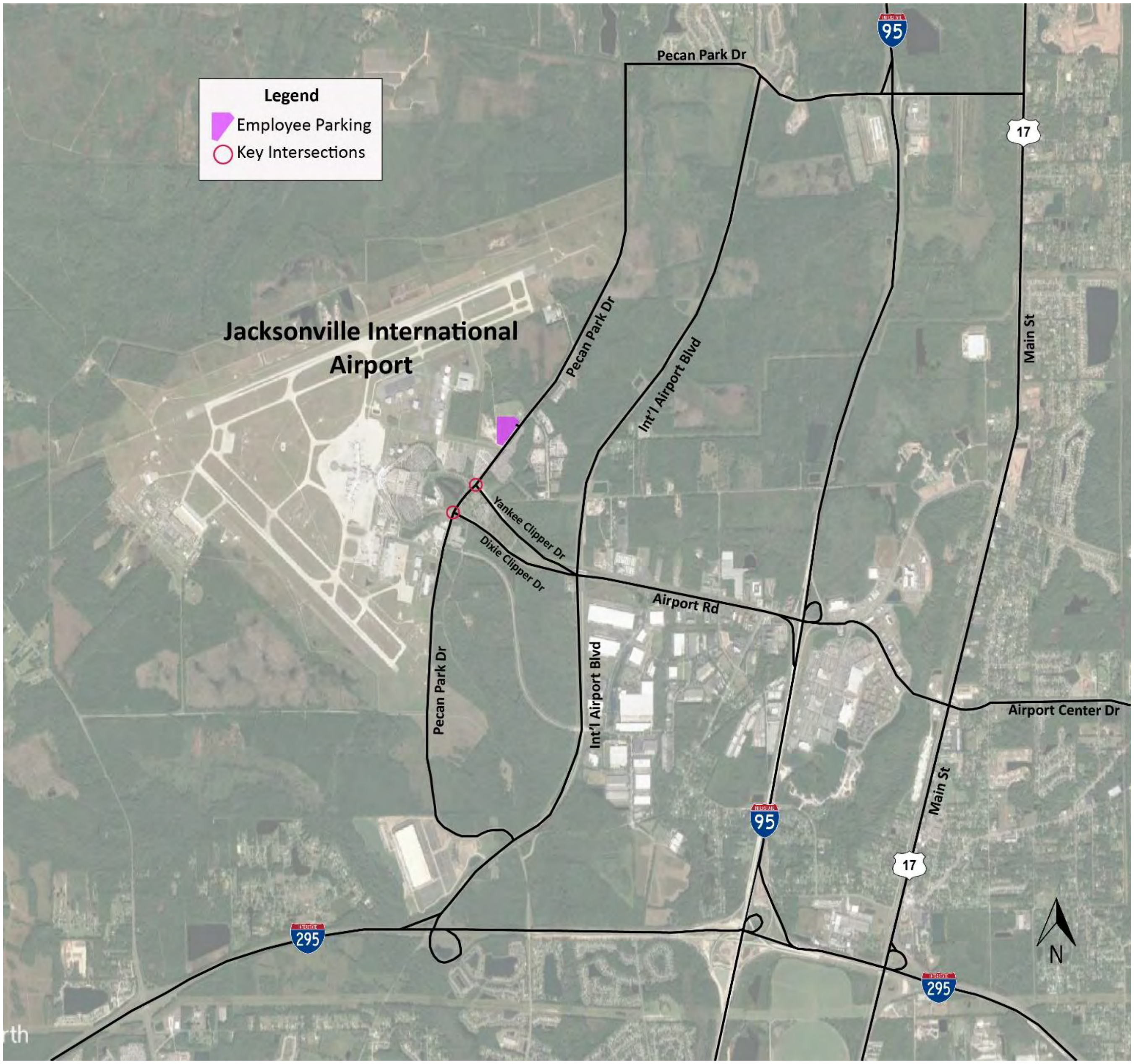
With the allocation changes, employees with proximate access to US-295 will likely arrive/depart via US-295 to/from International Airport Boulevard, which would increase the number of vehicles proceeding through the stop sign on Pecan Park Road at Yankee Clipper Drive.

Conversely, employees from the south and east would no longer need to travel through the Dixie Clipper Drive/Pecan Park Road intersection, instead turning right onto Pecan Park Road to access what is now Economy Lot 3 but will become the new Employee Lot. Similarly, employees coming to/from the north would no longer need to pass through the airport, instead traveling on Main Street (State Route 17) or I-95 to Pecan Park Road.

Employees who currently drive into the airport to park at the Daily Surface Lot, Daily Garage, and Hourly Garage would instead turn right onto Pecan Park Road to access the new Employee Lot. Similar to other reallocation effects, this will decrease vehicles traveling into/around the airport area during employee ingress but result in more vehicles needing to cross Yankee Clipper Drive at the stop sign on Pecan Park Road during egress.

The following figure shows likely employee travel paths to the new Employee Lot with the reallocation.

Figure 16: Employee Circulation to New Employee Lot



Source: Base Image via *Google Earth*, 2018; *Walker Consultants*, 2018

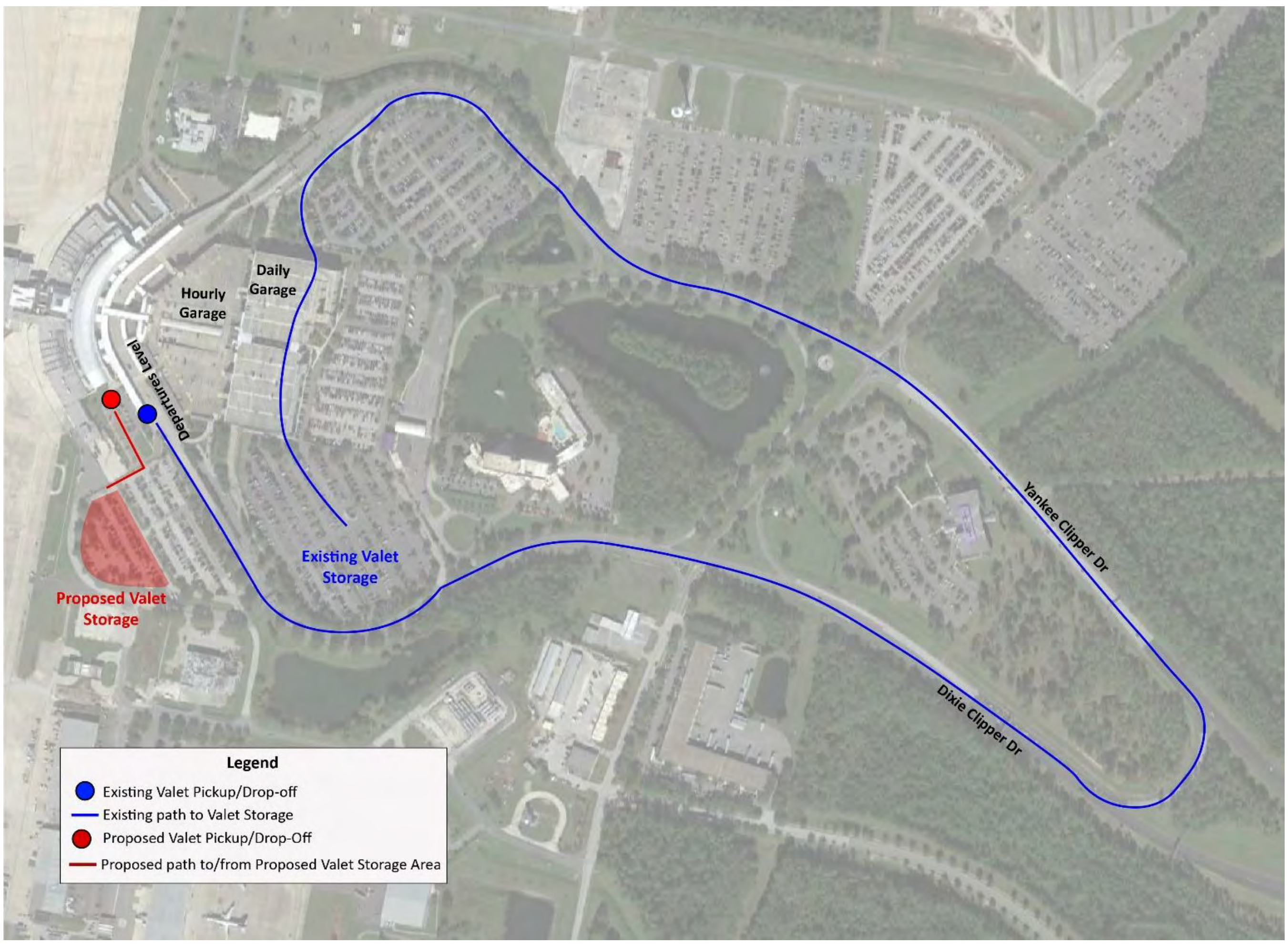
PROJECTED IMPACTS OF EMPLOYEE LOT CHANGE TO VALET, PREMIER, AND CUSTOMER PARKING

The proposed relocation of the Valet Stand and Staging Area from the Departures Level to the South Vendor Lot would decrease circulation maneuvers at the airport overall, while slightly increasing vehicles on the Arrivals Level. Currently customers drive through the Departures Level to drop their vehicle off at the Valet Stand. The valets then drive the vehicles to the Daily Surface Lot Valet Parking Area. To retrieve a vehicle, the valet must recover the vehicle from the Daily Surface Lot, loop back around to the airport via Thomas Imeson Avenue, and circulate through the Departures Level to the current Valet Stand.

With the proposed Valet relocation to the South Vendor Lot, customers will drive through the Arrivals Level and proceed into the Valet and Customer Self-Parking Lot entrance which will be located to the right just after what is currently the TNC pick up area (which will be relocated). The relocation of the Valet Stand and Valet Staging and the Valet Vehicle Parking Area would eliminate the need for valets to drive the vehicles on airport roadways and reduce the number of vehicles circulating in and around the airport.

The proposed Valet Staging Area (what is currently the South Vendor Lot) is utilized by both JAX vehicles and vendor vehicles. The plans for the Valet Staging Area includes retention of approximately 10± reserved spaces in the Valet Staging Area for the JAA and for vendor parking in addition to approximately 10± reserved spaces in the Customer Self-Parking Lot.

Figure 17: Valet Circulation



Source: Base Image via *Google Earth,* 2018*; Walker Consultants,* 2018

PREMIER PARKING RELOCATION

Moving Premier Parking from the existing Pre-Arranged Lot to a portion of the former Employee Lot will slightly increase the number of vehicles traversing through the Arrivals Level, as these vehicles currently turn into the Pre-

Arranged Lot at the entrance to the Arrivals Level. The move should have a positive impact on egress; currently Premier Parking vehicles exit via Barnstormer Road to Pecan Park Road and have to traverse over Yankee Clipper Drive at the stop-controlled Yankee Clipper Drive/Pecan Park Road intersection. With the move, these vehicles will simply exit the airport onto Dixie Clipper Drive and proceed to exit JAX, reducing traffic volumes at the stop sign on Pecan Park Road at Yankee Clipper Drive.

NEW CUSTOMER SELF PARK AREA

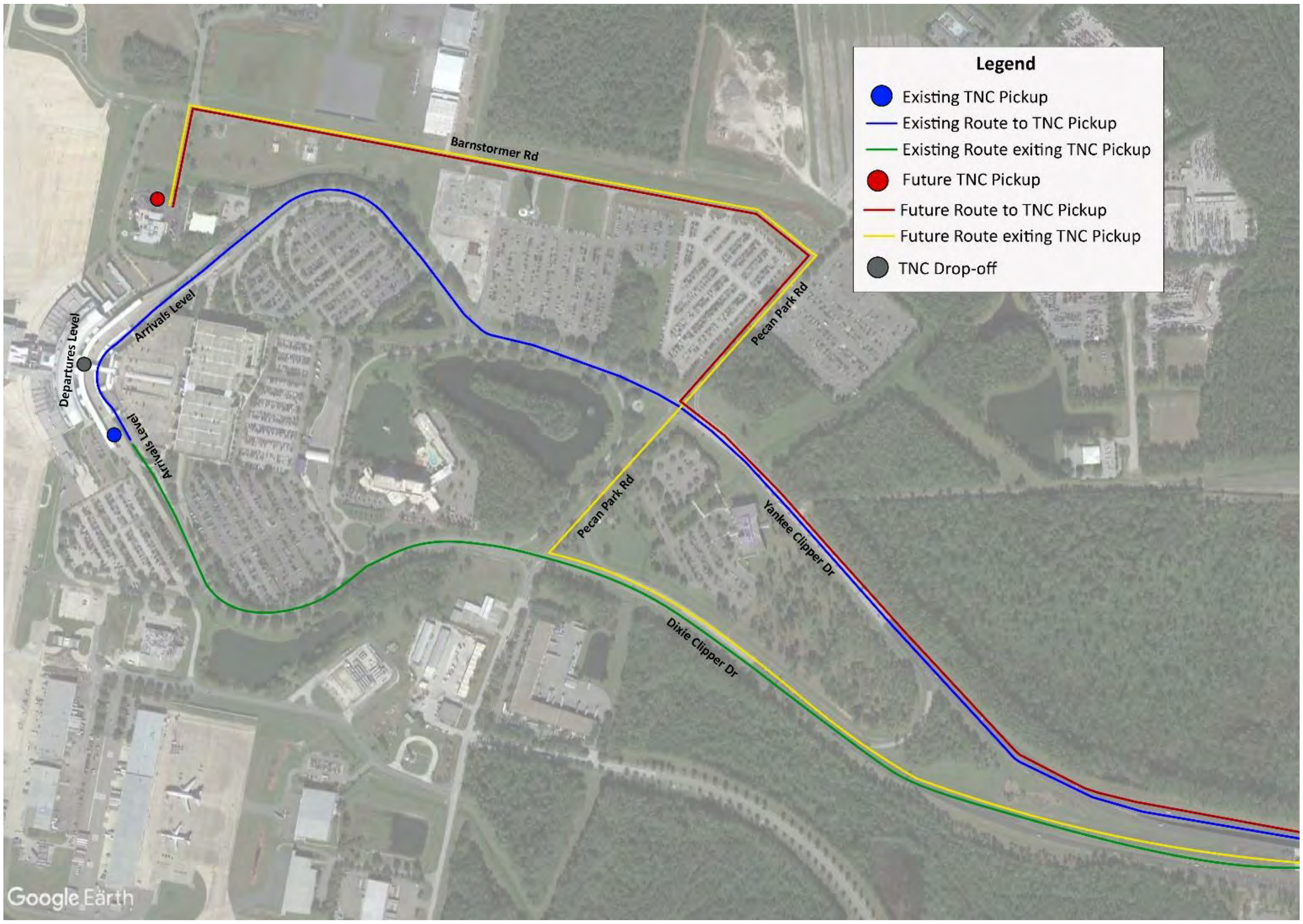
Adding customer parking to a portion of the former Employee Lot will slightly increase the number of vehicles traversing through the Arrivals Level, as this will be the only method for accessing the new Customer Self-Parking area. The rate structure for this lot should be set to discourage short term transient parking in this area, and to discourage people from driving to/past this lot thinking they want to park, but then having to exit and return to the other customer parking areas. As originating enplanements at the airport grow, it may become necessary to devote this area to more longer-term parking.

CIRCULATION IMPACT OF PROPOSED TNC CHANGES

The recommendation to move TNC pick-ups from the Arrivals Level to the Pre-Arranged Lot would reduce vehicles traveling to and from the terminal area and free up curb space on the Arrivals Level. TNCs would access the TNC/Pre-Arranged area via Barnstormer Road. TNCs would exit the TNC/Pre-Arranged area via Barnstormer Road to Pecan Park Road. Vehicles heading to the north could turn left onto Pecan Park Road and head to I-95. TNCs headed to the east, west, and south would turn right onto Pecan Park Road, proceed across Yankee Clipper Drive and merge onto Dixie Clipper Drive.

While the relocation of TNCs would decrease traffic volumes on the Arrivals Level and improve circulation there, it would result in more southbound through movements at the Yankee Clipper Drive/Pecan Park Road intersection. This movement is currently stop-controlled, and the addition of trips to this movement could eventually lead to the need for a traffic signal at Yankee Clipper Drive/Pecan Park Road. Figure 18 shows the existing routes of TNC vehicles and the changes in circulation upon implementation of the proposed recommendations.

Figure 18: Existing and Future TNC Circulation



Source: Base Image via *Google Earth*, 2018; *Walker Consultants,* 2018

CIRCULATION IMPACT OF EMPLOYEE SHUTTLES FROM ECONOMY LOT 3

The relocation of employee parking to Economy Lot 3 would require a shuttle bus to bring employees to the terminal area. The preferred shuttle airport drop-off/pickup point for employees is in the Pre-Arranged Lot. This would limit the shuttles impact on circulation as the shuttle would travel on Pecan Park Road and Barnstormer Road, without traveling on Yankee Clipper Drive through the terminal area. This option would also result in no additional traffic at the Yankee Clipper Drive/Pecan Park Road intersection.

CIRCULATION IMPACT OF COMMERCIAL LANE, ARRIVAL/DEPARTURE LANES, AND AIR CARGO RECOMMENDATIONS

The recommendations provided in this report related to the Commercial Lane (CL), Arrival/Departure lanes and Air Cargo Area are not projected to significantly change the way vehicles circulate at JAX. The addition of a second entry lane and second exit lane to the CL should improve ingress/egress efficiencies to/from the roadway and ease congestion but will not change travel patterns or routes to/from the CL. Additional analysis of the circulation and configuration of the CL, Arrivals and Departure Lanes, and the Air Cargo Area are provided in detail in Section 4 of this report. Recommendations provided in Section 4 include removing the handrails on the Arrivals Level Roadway and providing additional parking to the Air Cargo Area. Removing the handrails will enhance access to the curb and decrease congestion, while not changing the way circulation occurs. The addition of parking to the Air Cargo Area is intended to remedy an existing shortage, but again, will not in and of itself change circulation or increase trips.

PRELIMINARY REVIEW OF KEY INTERSECTIONS OPERATIONS

During our site visit in June 2018, Walker staff observed operations at both Yankee Clipper Drive/Pecan Park Road and Dixie Clipper Drive/Pecan Park Road intersections.

YANKEE CLIPPER DRIVE/PECAN PARK ROAD

Yankee Clipper Drive is a three-lane, one-way (westbound) roadway at Pecan Park Drive. Pecan Park Drive has two-way traffic north of Yankee Clipper Drive and one-way (southbound) traffic flow in two lanes south of Yankee Clipper Drive. Both left-turns and right-turns from Yankee Clipper Drive onto Pecan Park Road are channelized, free movements at the intersection with their own receiving lanes on Pecan Park Road. Because of this, the only controlled movements at the intersection are southbound right-turns and southbound through movements on Pecan Park Road which are stop-controlled.

INTERSECTION LEVEL OF SERVICE

Level of Services (LOS) is commonly utilized to describe the quality of flow on roadways and at intersections using a range of LOS from LOS A to LOS F. The Highway Capacity Manual (HCM) 2010 provides LOS standards for unsignalized intersections in seconds per vehicle. LOS at unsignalized intersections is based on the average stopped delay per vehicle for the worst performing stop-controlled minor street movement or major street left-turn movement. The following table summarizes the general characteristics of traffic flow and accompanying delay ranges at intersections.

Table 13: Level of Service Standards

Level of Service	Delay Range (seconds/vehicle)	Description
A	≤10	Little or no delay.
B	10.01 – 15.00	Short traffic delays.
C	15.01 – 25.00	Average traffic delays.
D	25.01 – 35.00	Multiple vehicles in queue. Drivers feel restricted.
E	35.01 – 50.00	Delays approaching intolerable levels.
F	>50	Very constrained flow representing an intersection failure.

Source: *2010 Highway Capacity Manual, Transportation Research Board*, 2010

In general, the intersection operates at an acceptable LOS, since most movements are free and experience no delay. While the intersection does not fit into a conventional mold for analysis using a methodology such as the HCM, due to its numerous free turning movements, traffic analysis software, such as Synchro, provides some level of performance reporting, which was used for this analysis. Based on the volumes observed by Walker, the stop controlled southbound movements on Pecan Park Road at Yankee Clipper Drive operate at LOS C (15-25 second average delay for the movements).

Based on Walker's observations, the southbound through movement on Pecan Park Road occasionally experiences delays over one-minute as vehicles must wait for an acceptable gap in traffic to cross Yankee Clipper Drive. Based on the volumes, the Synchro analysis software reports an average delay for the southbound through movement of approximately 18 seconds. While there are no nearby upstream traffic signals to create platoons and gaps in traffic on Yankee Clipper Drive, Walker staff observed that there were long intervals with no traffic on Yankee Clipper Drive that allowed southbound movements to progress and for queues on Pecan Park Road to clear. The longest southbound through-queue observed during the observations was five vehicles.

While moving employees to Economy Lot 3 could result in longer queues for vehicles attempting to cross Yankee Clipper Drive on Pecan Park Road, the projected growth in enplanements at the airport, provided by JAX, result in the need to put Economy Lot 3 into service in the very near future, whether it is as employee parking or customer parking. Crossing over Yankee Clipper Drive at Pecan Park will inevitably become more difficult as traffic volumes increase on both roads, with the most likely remedy being either signalization of the intersection, or creation of an alternative route to/from the Economy Lot areas and International Airport Boulevard. The recently completed extension of International Airport Boulevard provides an alternative north-south route near JAX that may reduce reliance on Pecan Park Road if appropriate wayfinding is provided.

YANKEE CLIPPER ROAD/PECAN PARK DRIVE SIGNAL WARRANT

The investigation of the need for a traffic signal includes an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions. The Federal Highway Administration has developed a series of traffic signal warrants to aid in the decision to change the traffic control type at an intersection including the following warrants: Eight-Hour Vehicular Volume, Four-Hour Vehicular Volume, Peak Hour Volume, Pedestrian Volume, School Crossing, Coordinated Signal System, Crash Experience, Roadway Network, and Intersection Near a Grade Crossing. The easiest warrant to obtain data for is typically the peak hour volume warrant, and as such, this warrant is often used as an initial screening when thinking about traffic signal installation. The satisfaction of a traffic signal warrant or warrants does not in itself require the installation of a traffic control, and there are alternatives to signalization that can also be explored as the need arises.

A peak hour signal warrant was prepared for the intersection based on data collected by Walker in the field in June 2018. Results of the warrant analysis are provided in Appendix B. While the intersection does not currently meet peak hour signal warrants based on the limited amount of data collected for this analysis, the proposed relocation of employee parking to Economy Lot 3 would likely result in an increase in stop-controlled, southbound through, movements at the intersection and accelerate the timetable for potential signalization of the intersection. As originating enplanements, employee counts, and general activity are projected to grow at the airport, additional signal warrant analysis should be performed periodically to determine if and when a signal, or alternative traffic control measures, are warranted at this location. It is likely, as the airport continues its positive growth, that increased traffic at this intersection will require a signal.

DIXIE CLIPPER DRIVE/PECAN PARK ROAD

Dixie Clipper Drive is a three-lane, one-way (eastbound) roadway at Pecan Park Drive. Pecan Park Drive has two-way traffic south of Dixie Clipper Drive and one-way (southbound) traffic flow between Yankee Clipper Drive and Dixie Clipper Drive. Both left-turns and right-turns from Dixie Clipper Drive onto Tom Imeson Road and Pecan Park Road are channelized, free movements at the intersection with their own receiving lanes. The only controlled movements at the intersection are westbound through movements on Pecan Park Road across Dixie Clipper Drive and northbound right-turns from Pecan Park Road onto Dixie Clipper Drive which are stop-controlled.

INTERSECTION LEVEL OF SERVICE

In general, the intersection operates at an acceptable level-of-service since most movements are free and experience no delay, with the only movement that experiences delay being the westbound through movement as vehicles wait to cross Dixie Clipper Drive.

DIXIE CLIPPER DRIVE/PECAN PARK ROAD SIGNAL WARRANT

The intersection does not meet signal warrants currently, but the proposed relocation of employee parking to Economy Lot 3, would likely result in an increase in stop-controlled westbound through movements at the intersection and accelerate the timetable for potential signalization of the intersection. It should be noted that increased parking demand is projected for all of the Economy Lots due to the airport's projected enplanement growth, which could degrade operations at this intersection regardless of the employee parking allocation change.

As originating enplanements and activity are projected to grow at the airport, signal warrant analysis should be performed periodically to determine if and when a signal is warranted at this location. The recently completed extension of International Airport Boulevard provides an alternative north-south route in the vicinity of JAX that may reduce reliance on Pecan Park Road and, if appropriate, wayfinding signage may be provided.

CIRCULATION OPTIONS TO REDUCE NEED FOR TRAFFIC SIGNAL

The summary of proposed user relocations reviewed in the circulation analysis include:

- Relocation of Valet Stand/Staging/ Parking to what is currently the South Vendor Lot
- Relocation of Premier Parking to the proposed new Valet Parking Lot
- Relocation of TNC Pick Up Area to what is currently the Pre-Arranged Lot
- Relocation of employee parking to Economy Lot 3

While allocation changes will help reduce congestion in the terminal area, we anticipate increased usage of the Economy Lots and anticipated increases in overall parking demand as the airport grows. The growth and relocations will put pressure on the stop-controlled movements at the Yankee Clipper Drive/Pecan Park Road (and to a lesser extent Dixie Clipper Drive/Pecan Park Road) intersection. The additional volume may eventually result in a need to install traffic signals at one or both locations. Walker recommends that JAX implement the following changes to help forestall the need for traffic signal installation.

- Extend Rental Car Lane from its current terminus in a cul-de-sac north of Owens Road, to Owens Road, creating a new T-intersection. This would allow rental car runners to bring vehicles from the Hourly/Daily Garage to the QTA area without utilizing the Yankee Clipper Drive/Pecan Park Road intersection and without having to weave over three lanes on Yankee Clipper Drive to get to Pecan Park Road.
    - Rental Car Lane is a narrow cross-section that is unsuitable for high traffic volumes. If it is extended to Owens Road, it is likely that employees may utilize Rental Car Lane to access Owens Road to International Airport Boulevard. While the use of this route by employees would reduce the pressure to signalize Yankee Clipper Drive/Pecan Park Road, Rental Car Lane may require some upgrades including curbs, cutters, and a slightly wider cross-section. It is unclear if JAX has the right-of-way and authority to improve Rental Car Lane.
    - Passengers and the general public should not be encouraged to utilize Rental Car Lane if it is extended.

- JAX should provide additional signage on I-95 and Pecan Park Road for passenger's traveling to/from the north to exit I-95 at Pecan Park Road for the Economy Lots and to utilize Pecan Park Road to I-95 when leaving the airport rather than traveling south to Dixie Clipper Drive. This would reduce traffic at the stop sign on Pecan Park Road to cross Yankee Clipper Drive.
- If, in the future, the QTA vacates Rental Car Lane, the road may be improved with wayfinding signage to direct passengers to/from the Economy Lots via International Airport Boulevard and Owens Road, which would also help to reduce traffic at the stop sign on Pecan Park Road to cross Yankee Clipper Drive.
    - Walker is not recommending the QTA be vacated and understands that the QTA is part of the RAC agreements between the rental car companies and JAA. Rather, we are noting that utilizing International Airport Boulevard, Owens Road, and an improved Rental Car Lane, without rental car traffic would make an ideal alternative route for accessing parking areas north of Yankee Clipper Drive and would reduce traffic at the stop sign on Pecan Park Road to cross Yankee Clipper Drive.

04 Commercial Lane, Arrivals/Departures Roadways, & Air Cargo

SECTION 4 – COMMERCIAL LANE, ARRIVALS/DEPARTURES, & AIR CARGO

As part of the Phase I Parking Study, Walker reviewed traffic circulation throughout the airport parking facilities and observed traffic at Pecan Park Road where it intersects with Yankee Clipper Drive and Dixie Clipper Drive. Traffic challenges had been experienced by JAX and were observed by Walker during this first study. Walker recommended an in-depth traffic analysis be performed to advise on best options to alleviate issues.

The Phase II study provides the more in-depth analysis of traffic circulation recommended in the previous study. The following section provides an overview of the existing conditions and proposed recommendations to improve circulation in the Commercial Lane, Arrival and Departure Lanes, and at the Air Cargo Area. Information regarding other areas within JAX that were analyzed as part of the vehicular circulation review and can be found in the Traffic Circulation section, Section 3, of this report.

COMMERCIAL LANE

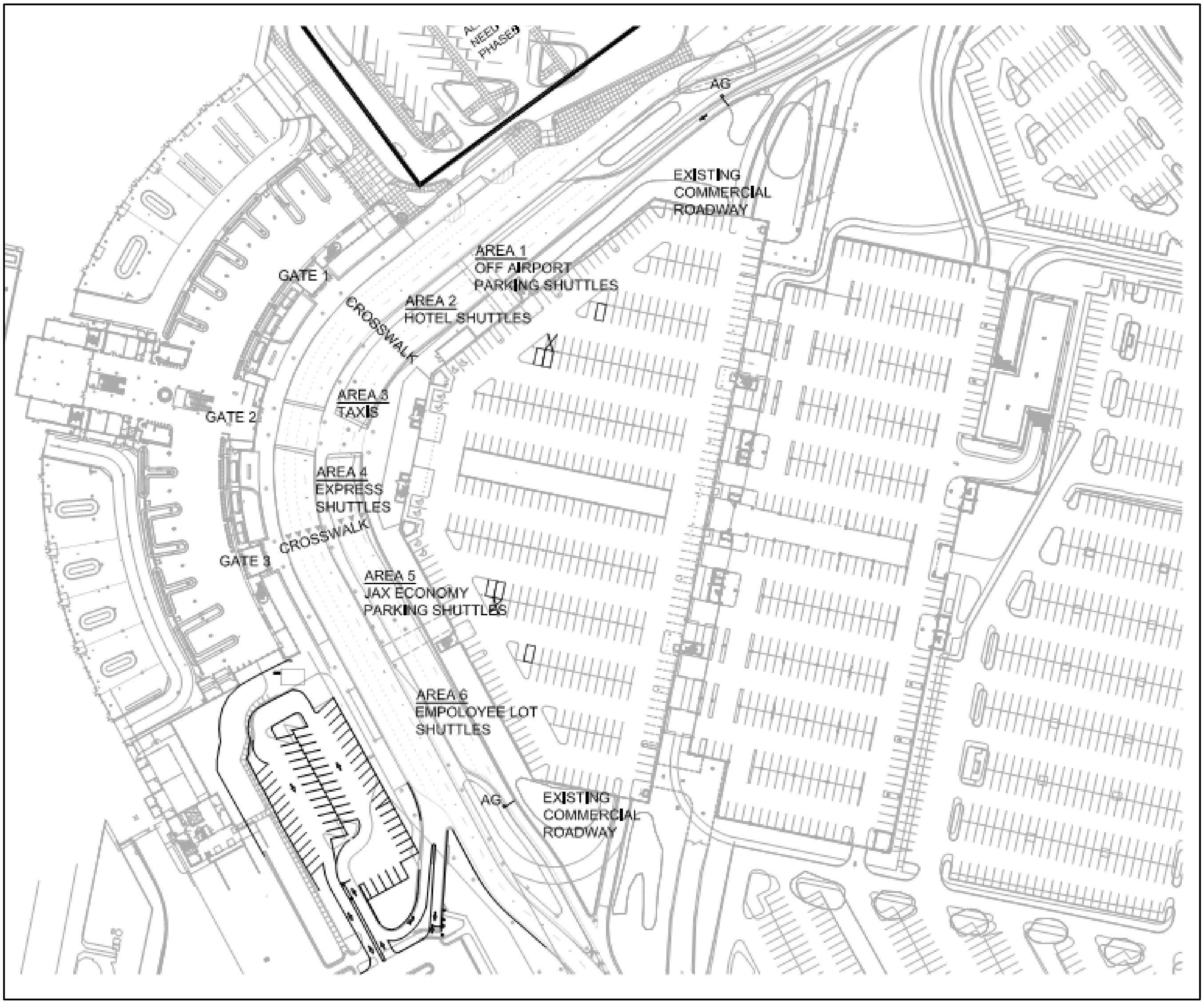
The current Commercial Lane (CL) has one entry lane that provides access to drivers that are part of a group of pre-approved transportation companies that are allowed to access and utilize the CL area at JAX. The entry lane to the CL is accessed from Yankee Clipper Drive and is located between the public Arrivals Level Lane (to the right) and the entrance to the parking/rental car areas (to the left).

At the entrance to the CL, there is one barrier gate with a proximity card reader where drivers are required to swipe their access credentials to gain entry. Once through the gate, the roadway opens up to three lanes, including one staging lane adjacent to the curb (to the right) and two travel lanes (to the left). The CL consists of the following six staging areas for the different user groups:

- **Area 1:** Off Airport Shuttles – Parking and Rental Cars
- **Area 2:** JAX Parking Shuttles – Economy (Daily Surface Lot shuttles are golf cart type vehicles that pick up inside the 1st floor of the Hourly Garage, adjacent to the elevators)
- **Area 3**: Taxis
- **Area 4:** Express Shuttles
- **Area 5**: JAX Parking Shuttles - Economy
- **Area 6:** Hotel/Motel Shuttles

Once the driver has picked up their passenger(s), they enter one of the two travel lanes to exit the CL. The travel lanes funnel down to one exit lane with one exit barrier gate with a proximity reader where drivers swipe their credentials to exit. Figure 19 shows the current CL layout (also available in Appendix A).

Figure 19: Existing Commercial Lane



Source: *Walker Consultants*, 2018

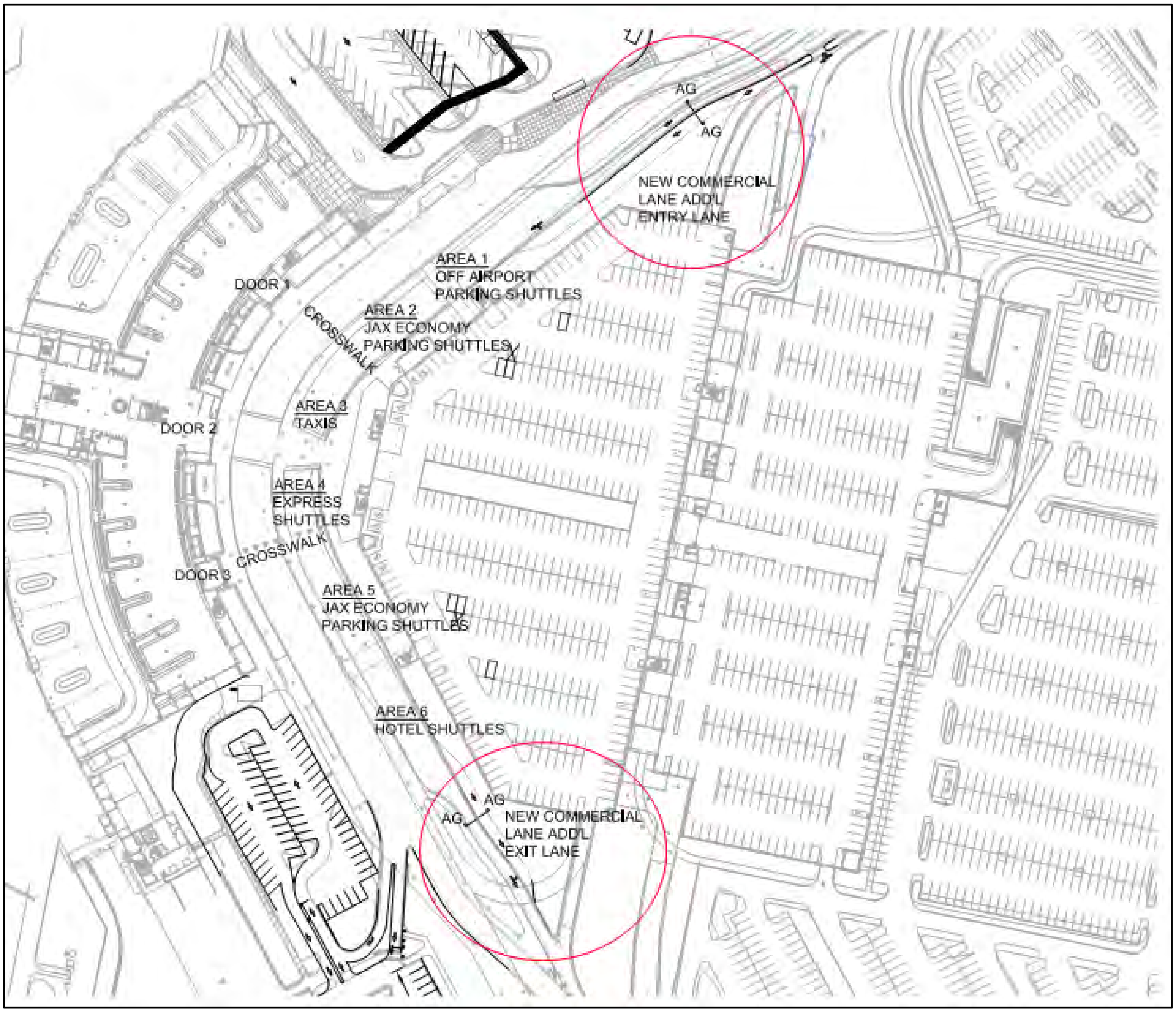
RECOMMENDATIONS FOR THE COMMERCIAL LANE

The following are recommendations to assist with traffic flow on the Commercial Lane:

CREATE A SECOND ENTRY LANE AND A SECOND EXIT LANE

During Walker's site visit conducted in June 2018, it was observed the CL entry and exit lanes would frequently become congested. In conversations with the commercial drivers who use the CL, they commonly expressed their frustrations over the congestion encountered at both the entry and exit lanes. Some drivers noted that any time there is a problem at the entry or exit, such as a customer getting stuck at the gates or an equipment or access problem, they experience significant delays. If JAX removed the landscaped area near the Hourly Garage near both the entry and the exit areas, there would be sufficient space to provide a second entry and second exit lane as shown in Figure 20 (also available in Appendix A). In order to reduce delays for CL users, a second entry and exit lane should be considered. However, it is assumed that JAX will first verify the minimum landscape requirements and any other required codes or needs before considering implementation.

Figure 20: Proposed Second Entry Lane and Second Exit Lane –



Source: *Walker Consultants,* 2018

RENTAL CAR/HOURLY GARAGE ACCESS – ESCAPE LANE

Currently, the “escape lane,” provided from the rental car/Hourly Garage access entry lane only leads to the CL entrance gate – there is no access to the Arrivals Level Lane. Customers frequently use this escape lane and are then stuck at the barrier gate to the CL. The customer then must call on the intercom, as they have no way to exit, explain their predicament, and have the attendant provide them entry into the CL. By this time, a backup has most likely occurred as commercial drivers try to access the CL. This is frustrating for both the customer and the commercial driver. In order to prevent this from occurring, the configuration should be changed to allow a break in the barrier between the CL and Arrivals Level Lane, allowing customers to access the Arrivals Lane.

Walker recommends reconfiguring the lane to provide an escape lane that provides access onto the Arrivals Level as shown in Figure 21 (as well as Appendix A). JAX will need to consider adding signage in this area if this recommendation is implemented that includes Stop and Yield signs for both the customer trying to use the escape lane and other drivers that are approaching these escape lane areas, so they are aware to look for vehicles using the escape lane.

Figure 21: Recommendation for Rental Car/Hourly Garage Access Escape Lane

Source: *Walker Consultants*, 2018

JAX may also consider closing the escape lane off completely and adding signage that would lead customers through the Rental Car Level of the Hourly Garage, out on to Dixie Clipper Drive and then to the turnaround road back to the terminal. However, in Section 1, it was noted by the rental car companies that customers driving through their areas cause congestion issues on a daily basis, so this may not be a feasible option. While neither option is optimal for the customer, this is a real issue that occurs daily that should be addressed.

ARRIVALS AND DEPARTURES ROADWAYS

During our observations for both the Arrival and Departure Level Roadways, it was noted that congestion can occur on these thoroughfares during peak times. There is currently limited enforcement of existing regulations on the roadways. Overall enforcement of these areas, at least during their respective peak times, by trained roadway staff to implement the no parking/stopping/standing rules (effectively moving any vehicles that are not actively loading and unloading), could assist traffic to flow more quickly and adequately.

Figure 22: Example Signage – Active Loading and Unloading Only

Source: *Sogrady.org*, 2013

In advance of any enforcement initiative or staffing, we would recommend:

- Investing in a marketing campaign to ensure drivers know they are allowed to park/stand along the roadway only when they are actively loading and unloading and to utilize the free cell phone lot for waiting. It should be communicated why this is being done (mobility and congestion issues), that an alternative is provided (cell phone lot) and that citations and/or towing could result from noncompliance.
- Ensure signage is placed strategically on the terminal roadways stating, “Active Loading and Unloading Only” and have a towing and/or citation sign/policy in place for violators. The inset figure provides an example of these types of signs. Adding the phrase “Violators will be cited and towed” to this sign would also make it clear to customers the consequences of not following these rules.
- Provide further signage informing and directing customers to the cell phone lot on the approach to, and on, the Arrival and Departure Levels.

ARRIVALS LEVEL ROADWAY

The Arrivals Level Roadway is located between the CL (to the left) and the Terminal Baggage Claim Level (to the right) and is utilized by the public to pick up passengers arriving on flights. The Arrivals Level Roadway is made up of four lanes – the lane closest to the terminal is used to stop and pick up passengers while the other three lanes are meant to be used as driving lanes (though customers often stop in these lanes in an effort to pick up their passengers during peak periods). At the far end of the Arrivals Level Roadway is the TNC pick up area.

RECOMMENDATIONS FOR THE ARRIVAL LEVEL ROADWAY

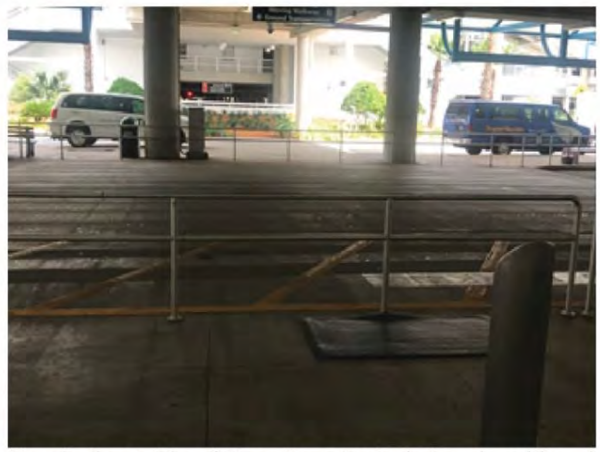
Following are recommendations to assist with traffic flow on the Arrivals Level Roadway:

HANDRAIL AND RAISED CONCRETE AREA ON ARRIVALS LEVEL ROADWAY NEAR DOOR TWO

There are two crosswalks that traverse the sidewalk from the Arrivals Level Roadway to the CL. While these two crosswalks appear to be the only intended crossing areas for pedestrians from the terminal to the CL or rental car/Hourly Garage area, there is an area near Door 2 that has proven confusing to pedestrians as the area resembles a third crosswalk due to its raised pavement and striped pavement markings. Previously, pedestrians attempted to use this area as a crosswalk and were met with a handrail traversing the length of the CL, requiring walking in active traffic lanes to access the crosswalk opening- a notable pedestrian/vehicular conflict point. In an effort to alleviate the potential conflict and overall confusion, JAX placed handrails to deter pedestrian usage. Figure 23 shows the handrails and raised pavement area.

Figure 23: Handrail in Front of Door 2 and Raised Pavement Area

Handrail outside of Door 2 on Arrivals Level



Handrail outside of Door 2 on Arrivals Level and hand-rails along CL deterring pedestrian crossing

View from opening of pedestrian crosswalk toward handrail and raised pavement area

Close up view of raised pavement area

Source*: Walker Consultants,* 2018

While blocking the area with a handrail assists with deterring pedestrians, it also limits passenger pick up capabilities on an already congested roadway.

In order to remedy the confusing pedestrian crossings on the Arrivals Level Roadway, Walker recommends the following:

- Removing the raised pavement area and returning the area to a regular traffic lane that blends with the current traffic lanes.
- Once the above item is completed, removing the handrail near Door 2 which is currently affecting the ability for passengers to use this area for pickup.
- Placing signage stating pedestrian crossing is only allowed at designated crosswalks

REPURPOSE THE GROUND TRANSPORTATION BOOTH NEAR THE PRE-ARRANGED LOT

There is currently a Ground Transportation Booth located near the Pre-Arranged Lot. Drivers that are using the Pre-Arranged Lot (not the CL) are required to check-in at this booth to notify the attendant that they are there to pick up a customer. The driver then goes inside the terminal and meets their customer at Baggage Claim – this is a duplication of effort as the driver is checking in at the booth and then meeting the customer, meaning there is no reason to check in at the booth. Checking-in at the booth is an unnecessary step in this process, we recommend that this process be eliminated.

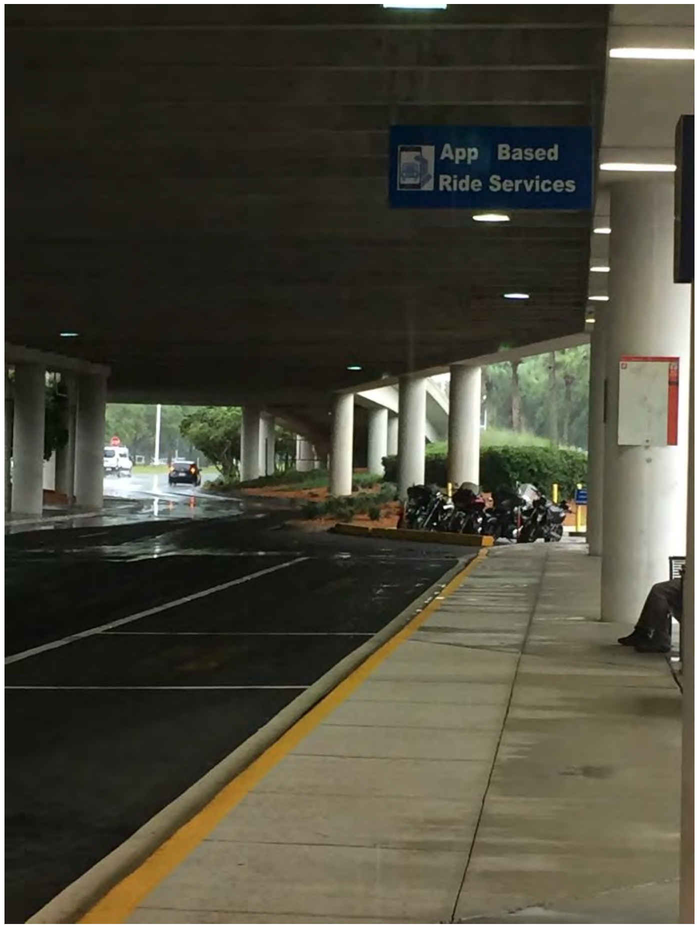
As further discussed in the TNC Section of this report, Section 5, we are recommending moving the TNC pickup into the Pre-Arranged Lot and providing TNCs access to the Pre-Arranged Lot via a hybrid system of a gate attendant and a ticket. During the peak times, the attendant (who could be repurposed from the Ground Transportation Booth to a booth at the gated entrance) would manage access. This attendant would ensure that only TNCs (vehicles clearly marked with an Uber or Lyft sticker) and Pre-Arranged drivers enter the lot (these drivers would continue to use their access credentials and would not be checked or delayed). During non-peak or when the attendant is unavailable, the ticket system and the Pre-Arranged drivers access credentials would be in use. In the future, as PARCS technology improves, there will likely be an opportunity to integrate the TNC app with gate access, removing the need for an attendant.

OTHER RECOMMENDATIONS FOR ARRIVALS LEVEL ROADWAY

As part of the overall location/area movements discussed in further detail in Section 2, Walker is recommending the following. We believe that these measures, among others as described in their respective sections, will help with curbside congestion issues:

- Moving the TNCs to the Pre-Arranged Lot.
- Signalizing all crosswalks to control when pedestrians cross. This may reduce pedestrian and vehicular conflicts as well as help control pedestrian movement vs. vehicular movement alleviating continual crossing of a few pedestrians at a time and coordinating crossing as a pedestrian group.

Figure 24: Current TNC Pick Up Area



Source: *Walker Consultants*, 2018

DEPARTURE LEVEL ROADWAY

The Departure Level roadway is located between the Hourly Parking Garage (to the left) and the Terminal Ticketing Level (to the right) and is utilized by the public to drop off passengers departing on flights. The Departure Level Roadway is made up of four lanes – the lane closest to the terminal is used to stop and drop off passengers while the other three lanes are meant as driving lanes (though customers sometimes stop in these lanes in an effort to drop off their passengers during peak periods). At the far end of the Departure Level Roadway is the Valet Stand where valet customers drop of and pick up their valet vehicles and where the Valet Staging Area is.

RECOMMENDATIONS FOR DEPARTURES LEVEL ROADWAY

As part of the overall location/area movements discussed in further detail in Section 2, Walker is recommending the following. We believe that these measures, among other reasons as described in their respective sections, will help with curbside congestion issues:

- Moving the Valet Stand/Staging Area to the current South Vendor Lot area.

- Signalizing all crosswalks to control when pedestrians cross. This may help control pedestrian movement vs. vehicular movement (will help control the one pedestrian/small group continual crossing at a time allowing for better, more controlled vehicular movement)

AIR CARGO AREA

As part of the Phase 1 Parking Study, Walker reviewed the Airport Master Plan recommendations for actual parking spaces needed for the Air Cargo Areas vs. actual parking spaces provided. The current Air Cargo Parking Areas consist of 61± parking spaces in Air Cargo 1 and 2 parking areas and 73± parking spaces in Air Cargo 2 parking area for a total of 134± parking spaces total for all of Air Cargo.

The Master Plan that Walker reviewed utilized a calculation for parking spaces needed utilizing a 3-space per 1000 sq. ft. of warehouse space, projecting that 333± parking spaces were currently needed. Of these total spaces, 187± of them were needed for Air Cargo 1 and 2, and 146± spaces were needed for Air Cargo 3. Utilizing the calculation method from the Master Plan, there would be an overall deficit in parking spaces of 199± spaces total; a 126± space deficit in Air Cargo 1 and 2, and a 73± space deficit at Air Cargo 3.

There is no current standard in the parking industry for a ratio of air cargo employee parking spaces to gross floor area (GFA). The 3-space per 1000 sq. ft. ratio used in the Master Plan is typical of office tower and business environments but may be excessive when compared to the typical industrial environment of Air Cargo. The 4th Edition of "Parking Generation" suggests the following parking ratios for industrial environments:

- General Light Industrial - .36 – 1.19 spaces per 1000 sq. ft. of GFA
- Industrial Park - .60 - 1.36 and .55 – 2.44 spaces per 1000 sq. ft. of GFA
- Warehousing - .03 – 1.92 spaces per 1000 sq. ft.

The average of these ratios is approximately 1.06 spaces per 1000 sq. ft. of GFA.

Walker reviewed the parking ratio of Air Cargo Facilities at three different airports to determine what current practices are being utilized and found the following.

- Memphis International Airport – 2 spaces per 1000 sq. ft. of GFA
- Chicago – O'Hare International Airport - 1.03 spaces per 1000 sq. ft. of GFA
- Dallas/Fort Worth International Airport – 1 space per 1000 sq. ft. of GFA

Considering the parking ratios suggested for industrial environments, compared to the ones currently utilized at the three airports reviewed, a ratio of 1 parking space per 1000 sq. ft. of GFA is standard.

For JAX Air Cargo, there is 61,536 sq. ft. of GFA in Air Cargo 1 and 2 combined, and 100,000 sq. ft. of GFA in Air Cargo 3. This equates to a need for approximately 62± parking spaces at Air Cargo 1 and 2 and 100± parking spaces at Air Cargo 3.

Based on this method the parking area for Air Cargo 1 and 2 is (1) ± parking space short and the Air Cargo 3 area is (27) ± parking spaces short.

In the Phase I Parking Study, in an effort to improve the existing deficit in parking spaces noted above at the Air Cargo Lots, Walker recommended building parking on available land located south of the current facilities, between Air Cargo 2 and 3, as shown in the following Figure.

Figure 25: Phase I Proposed Additional Air Cargo Parking Plan

Source: *Walker Consultants*, 2018

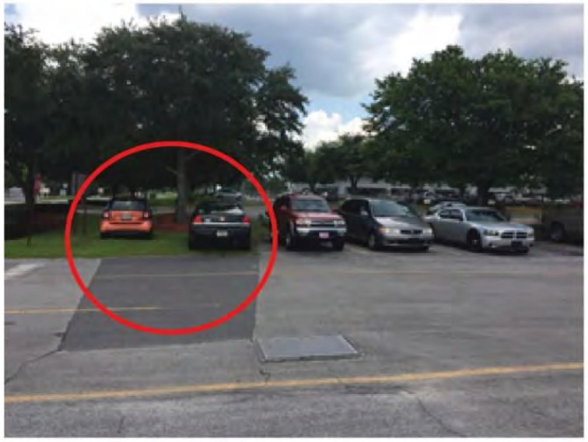
During our site visit in June 2018, Walker noted that a new parking lot had been created in the recommended area, containing approximately 80 -100± parking spaces, as shown in the Figure below. According to JAX, the lot will open in October 2018 and will be used by FedEx and UPS pilots at a cost of $275/year as well as by employees of Air Cargo 1 and 2.

Figure 26: New Air Cargo Parking Area

Source: *Walker Consultants,* 2018

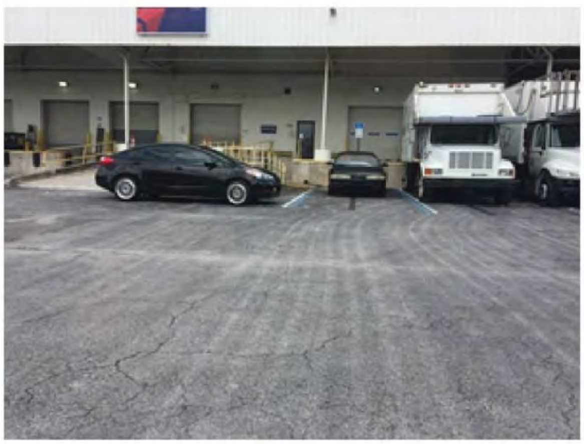
As part of the Phase II study, Walker again reviewed the Air Cargo Area, in more detail, and determined that parking for employees at Air Cargo 1 and 2 and Air Cargo 3 remains a challenge. During our site visit, we observed the parking areas for Air Cargo 1, 2, and 3 and found vehicles parked in non-designated parking spaces and in Air Cargo loading and unloading areas which could present both access issues and conflicts between different user groups. Walker observed that space unavailability seemed to be consistent with the overlap in shift changes. Figure 27 shows conditions observed during the late morning/early afternoon during our June 2018 site visit. Figure 28 shows the issues caused in the morning hours during shift change.

Figure 27: Air Cargo Parking In Non-Designated spaces – Late Morning/Early Afternoon Time Periods



Parked outside of designated spots

Parked in Air Cargo loading/unloading area



Parked outside of designated spot in Air Cargo area / Parked in ADA with no permit visible

Parked in Air Cargo loading/unloading area

Source: *Walker Consultants,* 2018

Figure 28: Air Cargo Parking In Non-Designated spaces – Early Morning Time Period

Parked in Air Cargo loading/unloading area

Parked in Air Cargo loading/unloading area

Tandem parking in Air Cargo loading/unloading area

Parking in FedEx area non-designated spaces

Source: *Walker Consultants*, 2018

RECOMMENDATIONS FOR AIR CARGO AREA

To assist with the parking issues occurring during shift changes, assure that all employee vehicles are parked in actual designated spaces and not in spaces meant for Air Cargo loading and unloading, ADA, and/or in non-designated spaces, and help prepare for growth, Walker recommends the following:

- Further expand the new 80-100± space parking area to allow for the original estimate of 140-150± additional parking spaces, **potentially adding 40 – 70± spaces to this lot** (depending on final space count of the lot).
- Remove landscaping/greenspace from both entries and turn into parking spaces (Figure 29).
- Remove landscaping island between Air Cargo 1 and 2 and Air Cargo 3. Move parking spaces over towards Air Cargo 1 and 2, move Fed Ex gate over, remove landscaping between Fed Ex gate area and Fed Ex office

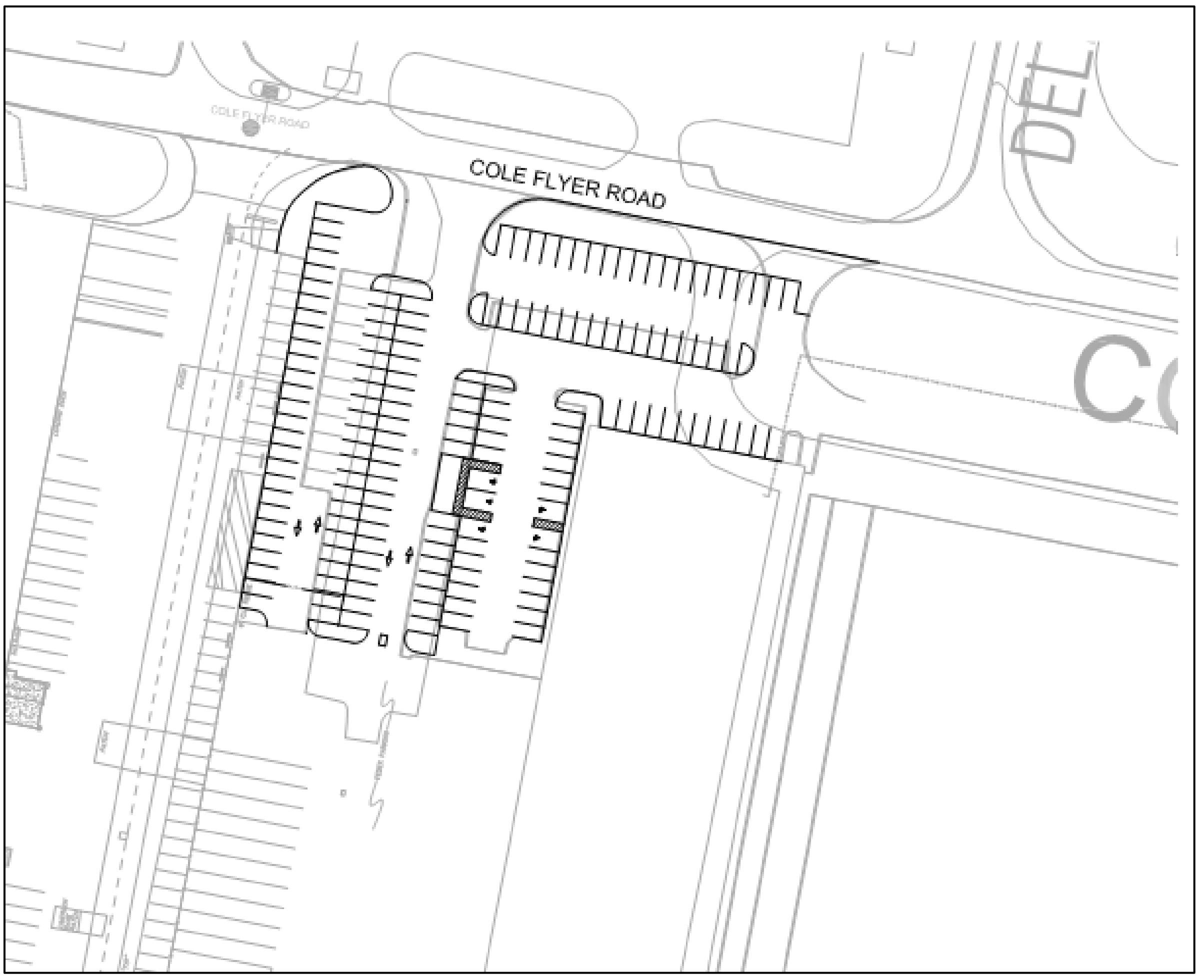
and create more parking spaces (Figure 29). **Implementation of these recommendations may potentially add 28± parking spaces** (changing current space count from 134± spaces to 162± spaces).

However, these recommendations assume JAX will verify minimum green space/landscape requirements and any other codes and needs before considering implementation (may affect number of actual spaces gained).

If the above recommendations are followed, a total of 68± to 98± parking spaces could potentially be added to Air Cargo parking areas.

JAX has noted that a new parking permit program will be put in to place for all Air Cargo employees in the near future. Walker believes this will also improve the parking program by allowing tracking of permits and users and allow JAX the information needed to enforce program policies and procedures. Figure 29 (also provided in Appendix A) shows the proposed Air Cargo Parking configuration.

Figure 29: Proposed New Air Cargo Parking



Source: *Walker Consultants*, 2018

In reviewing any impacts on traffic that may occur from these recommended changes that will add spaces at Air Cargo, Walker sees little, if any, impact. Currently, many of the vehicles in the Air Cargo areas are making their own parking spaces – meaning that the spaces we are recommending be added are for vehicles that are already parking, albeit in areas other than true employee vehicle parking spaces. Any spaces above those that will qualify as these "back fill" spaces, are expected to have minimal if any impact to current traffic circulation.

As part of this study, Walker also reviewed traffic and vehicular circulation in the Air Cargo areas to determine if there were any measures that could be taken to alleviate the challenges associated with passenger vehicles, Air Cargo trucks, vehicle traffic patterns, and congestion. In studying the layout of the dock areas in both Air Cargo 1 and 2 areas and Air Cargo 3 in relation to the current areas that are/could be used for employee parking, Walker is unable to determine another traffic pattern that may be instituted to not involve intermingling of passenger vehicles and Air Cargo dock vehicle traffic.

05 Transportation Network Companies

SECTION 5 – TRANSPORTATION NETWORK COMPANIES

This section provides a TNC analysis and benchmarking review of how five other airports plan and manage TNCs (e.g. Uber, Lyft, and Wingz), reviews TNC operations at JAX, and provides options and recommendations for relocation of the TNC area, including conceptual design plans.

PHASE I REVIEW OF RECOMMENDATIONS

In the Phase I Parking Study, Walker reviewed challenges related to TNC usage (Lyft, Uber). An area of concern was the potential increase in TNC usage by airport customers. TNCs are dropping off their customers at the front door of the Departures Level and picking them up in the designated area on the Arrivals Level. From September 2017 to December 2017 there was an average of 12,500 pickups from the current TNC pickup area on the southern portion of the Arrival Lane Roadway. Not only does the area become congested, the TNC pickup also shares their area with the City Bus stop, whose drop off and pickup area is directly adjacent to the TNC pick up area. Walker stated that the area is congested now, and as TNC usage continues to increase, an alternate location will become a priority, and recommended moving the TNC pick up area to either the Pre-Arranged Lot or the South Vendor Lot.

PHASE II OVERVIEW

In this Phase II Parking Study, Walker builds on the Phase I Study by reviewing options and providing recommendations around relocation of the TNC pickup area. Walker also benchmarked five other airports regarding their management of TNCs. As part of the benchmarking review, we asked airport officials information on topics outside of the scope of work for this project, but related to TNCs, such as TNC fees, effect on parking, car rentals, and other transportation services, and auditing. We received anecdotal information on these topics and have provided it as part of our review for this study. A TNC fee or revenue analysis or an examination of the correlation between TNCs and parking at JAX or the other airports was not part of this study. The Phase II analysis focuses on the relocation of the TNC pickup/drop-off areas.

The following analysis reviews how airports plan and manage TNCs, reviews TNC operations at JAX, and provides options and recommendations for relocation of the TNC area, including conceptual design plans. Within this analysis we seek to:

- Identify industry standards/best practices for TNC planning, operations, and management.
- Review TNC operations and management in the following airports:
  - Tampa International Airport
  - San Francisco International Airport
  - Greater Rochester, New York International Airport
  - Southwest Florida International Airport
  - Orlando International Airport
- Study options for new TNC areas and make a recommendation for JAX.

- Provide conceptual design plans for TNC pick up area.
- Report findings from a review of TNC management at five airports across the country and in Florida.

TNC OVERVIEW

TNCs such as Uber, Lyft, and Wingz, provide door to door pick up and drop off service through a mobile/smart phone application (app) that connects riders to drivers who use their personal vehicles. TNC use by airport travelers has grown dramatically over the past five years and has impacted airports in different ways depending on location. Some airports have experienced a decline in the demand for parking and other ground transportation services and an increase in traffic congestion, especially at the terminal curb.

Walker has studied the effects of TNCs at airports and found that impacts are typically location specific. A study of a non-hub airport was conducted in 2015 to estimate the effects of TNCs on parking demand. The results of this study indicated that parking volume was displaced by 3% to 5% from the prior year. This displacement was predominantly affecting longer-term parking where customers typically park three to four or more days in duration.

Conversely, during a different airport engagement, Walker found TNC trips increased by 600% (on a per enplanement basis) from 2014 to 2016. Meanwhile, the total parking transactions per enplanement decreased by 11% during that same time period. In this second case, long-term and remote parking grew, while short-term parking declined. One potential reason for this difference is that patrons could be using TNCs (which never park) rather than being picked up or dropped off with a personal vehicle (which occupy short-term parking).

The drastically different findings from these engagements demonstrate the complicated nature of TNCs influence on airports in terms of parking, taxis, car-rental, and other transportation options, and the associated revenue as well as traffic congestion.

Virtually all major airports have begun charging a fee on TNC rides, similar to fees charged for taxi rides, either to or from the airport, or for both directions, using geo-fencing technology. Additionally, airports frequently charge a one-time or annual fee to the TNCs, similar to that of airlines, car rental, and taxi company fees.

Given these issues, airports need to proactively plan for changes in response to the evolution of TNCs. Even at airports that have not experienced major changes as a result of TNCs, the industry is projected to experience growing demand. However, each airport will likely experience different changes and thus require specific solutions. This is why implementing TNC planning that accommodates current transportation trends and is able to adapt to foreseeable changes in the transportation industry is of increasing importance to airports.

TNC BEST PRACTICES

Over the past several years, Walker has studied TNC management at airports. As a result of that work, as well as through interviews with airport agency staff and industry research, we have found that it is critical to properly plan for, manage, and monitor TNC operations, even at those airports that are not currently experiencing large TNC volumes. This is because the industry is expected to grow as there is increased demand for the service.

The following section presents overall best practices for TNC management at Airports:

REGULATORY

Most airports require TNCs to sign an airport agreement and obtain a permit to drop off and pick up airport passengers. While airports often rely on state and local TNC regulations, most airport agreements establish additional requirements for the use of airport roadways, curb areas, locations for passenger drop off and pick up, staging, driver background checks and vehicle requirements, fee and payment processes, and compliance. Contract terms can be month-to-month, yearly, or until either party terminates with notice.

Under Florida's state TNC statute, airports are limited to the background and insurance requirements defined in the statute as explained in Section IV.

PLANNING AND OPERATIONS

TNC drop-off and pickup areas can be located curbside or in a designated area away from the curb, usually in a parking garage or lot. Curbside drop-off and pickup can be located in the same location, or separate locations (usually drop-off is at Departures Level).

Some airports including San Francisco, Seattle Tacoma, and Las Vegas have moved their TNC pickup off the curb and into a garage to eliminate terminal curbside congestion associated with TNCs. Although these airports are larger than JAX, it is likely TNC usage will continue to grow overall as annual enplanements increase, resulting in the need for additional space that may be best found off of the Arrivals and Departures curb.

Even if an airport is not experiencing high TNC volumes, it is important to plan ahead and create pickup areas that can be expanded, should demand increase, to prevent traffic congestion.

Many airports also have a dedicated staging area for TNCs to wait for a passenger, although this is not a requirement. Some airports limit the staging area parking time to 60 minutes. Airports may also limit the number of TNCs that are permitted to park in the staging area.

FINANCIAL

Most airports have implemented an annual permit fee and a per passenger trip fee for either pick up or drop off or for both pick up and drop off. The fee can vary depending on how long TNCs have operated at the airport or if the airport is under cost recovery. Some airports also require a minimum annual guaranteed amount, where the TNC pays the greater of a minimum annual guarantee or the total of the per passenger trip fee.

TNC fee revenue should not be viewed as additional revenue, as some airports have seen declines in parking, car rental, and other transportation fees as a result of TNCs. Some airports direct this revenue to their general fund, while others are required to recover the cost of managing their TNCs and direct revenues to pay for TNC costs.

AUDITS AND MONITORING

Airports collect TNC fees by various methods. Most airports rely on a geo-fence that surrounds the entire airport to detect and report TNC data back to the airport. Some require TNCs to report the number of trips to calculate the total fee amount due as well as submit additional trip data such as day, time, and driver ID. Airports that require TNCs to report themselves usually conduct random audits to ensure compliance.

Airports use a range of data collection and reporting services to receive and monitor TNC data. Many airports, including JAX, use the American Association of Airport Executives (e) ABT Clearinghouse. The ABT Clearinghouse was developed in partnership with San Francisco International Airport (SFO) to track TNC vehicles for fee calculation and auditing as well as monitoring for roadway planning and enforcement. The airport benefits because it receives data within the geo-fence and does not have to rely on the TNCs for data. Each time a TNC driver passes the geo-fence, the airport receives real-time information on the following:

- Transaction type
- Identification
- Date
- Time
- Geographical location
- Unique driver identification
- Vehicle license plate number
- Number of active rides in the vehicle following the trigger event (entry, drop-off, pick-up, exit)

Airports should audit TNC operations annually as well as monitor ongoing compliance.

AIRPORT COSTS ASSOCIATED WITH TNCS

Costs associated with TNC management depend on the size of the airport, upfront construction costs of creating TNC zones, and number of TNC trips. For example, SFO has hired 120 TNC management and enforcement officers while the much smaller Rochester International Airport has allocated no funds as TNC management has had minimal impact on airport operations. Most airports report that TNCs have increased costs for on-going maintenance of roads and landscaping.

STATE OF FLORIDA TNC REGULATIONS

The State of Florida regulates TNCs under Florida State Statute, Title XXXVII, Chapter 627, Section 748 Transportation Network Companies. Effective July 1, 2017, TNCs are subject to the following requirements:

- TNCs must have minimum insurance levels of $50,000 for death and bodily injury per person, $100,000 for death and bodily injury per accident, and $25,000 for property damage.
- TNC companies must complete a local and national criminal driver background check that includes a driving history research report.
- There is zero tolerance for drugs and alcohol, enforced through rider complaints and an investigation by the TNC.

There is no requirement for vehicle inspections and the statute prohibits locals from creating rules governing TNCs.

The law does allow airports to charge a pickup fee (drop-off fees are prohibited), under the following section: Airports are not prohibited*, "from charging reasonable pick-up fees consistent with any pick-up fees charged to taxicab companies at that airport…"* The law also does not*, "…prohibit the airport or seaport from designating locations for staging, pick-up, and other similar operations at the airport or seaport."*

CURRENT CONDITIONS OF TNCS AT JACKSONVILLE INTERNATIONAL AIRPORT

From January 2018 through May of 2018, there was a total of 145,546 TNC trips to and from JAX including 76,839 pickups and 68,707 drop-offs. Demand for the service varies by day of week and time of day. Based on analysis of JAX TNC data, generally, the busiest pick up times are between 10am and 1pm. The peak pick up hour is 11am, while some weekdays experience a second peak at 7pm. The peak drop-off hour is 9am, with significant activity also at 5am.

REGULATORY

JAX has a separate agreement with Uber and Lyft that both terminate on April 30, 2019. As part of that agreement, the companies are held to the following operations and financial requirements:

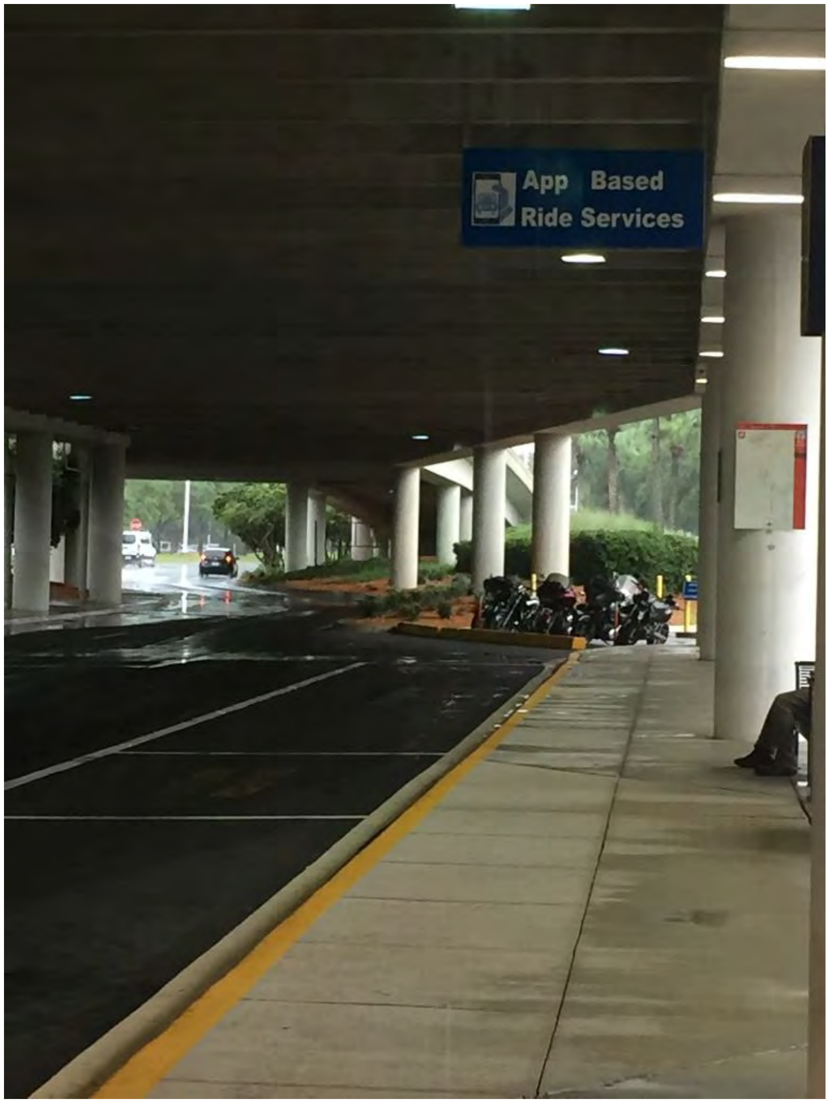
- Pay an annual $5,000 permit fee
- Pay a $3.25 fee per passenger pick-up
- Drop-off and pick-up in an airport designated area
- Stage vehicles waiting for passengers in a designated area outside of JAX's geo-fence
- Drivers are prohibited from turning off their app while on airport grounds
- Adhere to JAX auditing requirements
- Comply with geofencing to track vehicles and fee obligations
- Drivers are prohibited from circulating on airport grounds
- No rematch, drivers are prohibited from drop-off and pick-up in the same loop

TNC PICKUP, DROP-OFF, AND STAGING AREA

Currently JAX has placed the TNC pickup area on the southern portion of the curbside Arrivals Level. As shown in Figure 30 , the TNC pick-up area is designed with an overhead sign stating, "app-based ride service."

TNC vehicles at JAX drop off passengers on the curb, at the front door of the Departures Level.

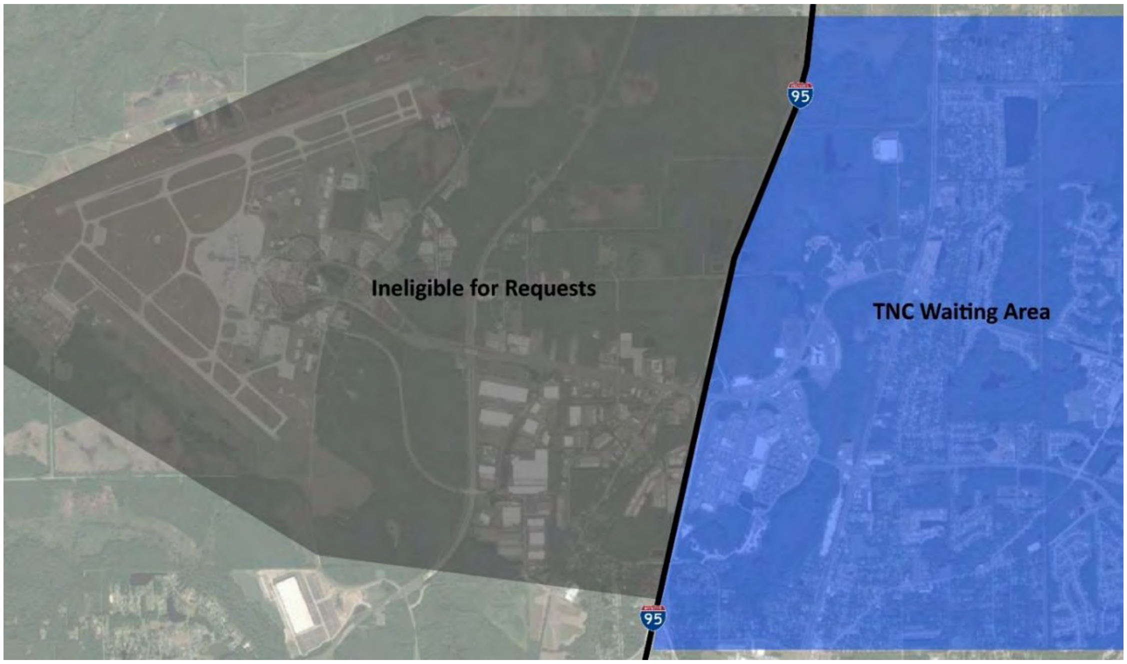
Figure 30: JAX TNC Arrivals Area



Source: Walker Consultants*, 2018*

TNCs are required to stage off airport until a ride is requested as shown in Figure 31 below. JAX does not provide a designated TNC staging area.

Figure 31: JAX TNC Area Map



Source: *Uber,* 2018; Graphic created by *Walker Consultants*, 2018

REVENUE

JAX charges a $3.25 fee for each pick up. Fees are not assessed on drop-offs, as required by the Florida Statutes. From April 2017 through December 2017, TNC fee revenue was $310,391. From January 2018 through May 2018, TNC revenue was $249,727.

AUDITS AND MONITORING

Like most airports, JAX uses a "geo-fence" to monitor TNC activity. As defined in the TNC agreement, a geo-fence is a "…virtual boundary around the physical geographical area that is Airport property corresponding with the set of (GPS) coordinates defining that area." The geo-fence works by "pinging" a point of data for the following TNC activities within the JAX geo-fence:

- Entry
- Ride completion or drop-off
- Ride pick-up
- Exit

As stated previously, JAX uses the American Association of Airport Executives (e) ABT Clearinghouse to manage and monitor TNC operations and revenue. JAX receives data within the geo-fence on TNC activity instead of having to rely on the TNCs for trip data. This is also useful for auditing purposes. Each time a TNC driver passes the geo-fence, JAX receives real-time information on the following:

- Transaction type
- Identification
- Date
- Time
- Geographical location
- Unique driver identification
- Vehicle license plate number
- Number of active rides in the vehicle following the trigger event (entry, drop-off, pick-up, exit)

The Clearinghouse also collects and distributes fees from TNCs owed to the airport in exchange for 5% of the monies collected and received from the TNC. Figure 32 displays the TNC geo-fence area at JAX:

Figure 32: JAX TNC Geo-Fence Area

Source: *JAX,* 2018

TNC MANAGEMENT RECOMMENDATION

JAX has placed the TNC pickup area on the southern portion of the Arrival Lane., Walker recommends moving the TNC pick-up area away from the curb for two reasons. First, In Section 2 of this report, we recommend changing the use of the South Vendor Lot to Valet and changing the Employee Lot to a Valet/Customer Self-Park Lot. This change will move the entrance areas to the Valet and Customer Self-Park area directly in front of where the current TNC pickup is located. These two parking services (Valet/Customer Self-Parking) and TNC pickup cannot be located in the same location as it will cause both congestion/traffic issues and customer service issues. Also, the TNC area already becomes very congested during peak pick up times and as TNC usage is only expected to increase, an alternate pick up location is a priority to prevent traffic congestion now and the further congestion associated with an increased service demand.

SHORT-TERM RELOCATION OF TNC PICK UP AREA

Relocate the TNC pick-up area to the Pre-Arranged Parking Lot at the north end of the terminal.

For the short-term, Walker suggests relocating the TNC pick-up to the Pre-Arranged Lot. Currently, the Pre-Arranged Lot is a staging area for pre-arranged transportation services. Members of the Premier Parking Program also park in this lot. However, as recommended under Section 2, the Premier Parking Program parkers should be moved to either the Valet Staging Lot or the Customer Self-Park Lot, making space in this lot for TNC pick-ups. It is recommended that when TNCs are relocated, they should enter and exit the TNC pickup area in the current Pre-Arranged Lot via Barnstormer Road. By following this traffic pattern, TNC vehicles that are picking up no longer are intermingled with regular airport traffic as they will not be turning on to Pecan Park Road, then Barnstormer Road, to access the current Pre-Arranged Lot.

The Pre-Arranged Lot also has a gated entry with secure access. Vehicles currently using this lot have registered with the airport to gain access. However, it would be a challenge as well as time consuming to collect information on the thousands of TNC vehicles. Further, per Florida state law, *"…a TNC driver is not required to register the vehicle that the TNC driver uses to provide prearranged rides as a commercial motor vehicle or a for-hire vehicle."*

We recommend installing a ticketed gate with a 10-minute free parking window for TNCs to gain access to the Pre-Arranged Lot for pick up. Drivers will pull the ticket, pick up their passengers, and exit within 10 minutes. Limiting the time to 10 minutes will also deter any drivers who may not obey JAX TNC regulations and stage in the lot, as they will have to pay upon exit after their 10 minutes is up (we would suggest a premium parking amount be charged for stays over 10 minutes to deter this behavior).

To manage TNCs and enforce access to the lot we recommend signage stating no public parking (Pre-Arranged and TNCs Only) and a hybrid system of a gate attendant and ticket. As discussed in Section 4, the attendant that is currently in the Ground Transportation Booth on the Arrivals Level Roadway could be repurposed to help manage this process. During the peak, the attendant would be positioned in a booth at the gated entrance to manage access. This attendant would ensure that only TNCs (vehicles clearly marked with a TNC sticker) and pre-arranged vehicles that have access credentials are entering the gate. During non-peak or when the attendant is unavailable, the ticket system would be in use for TNCs and pre-arranged vehicle drivers would continue to use their access credentials. In the future, as PARCS technology improves, there will likely be an opportunity to integrate the TNC app with gate access, removing the need for an attendant. There could be a QR or Quick Response Code in the TNC app when a trip is accepted, that would be used for gate access. In interviews with officials at Southwest Florida International Airport (Ft. Myers, FL) they said this was an idea they floated as a potential method for gate access in the future.

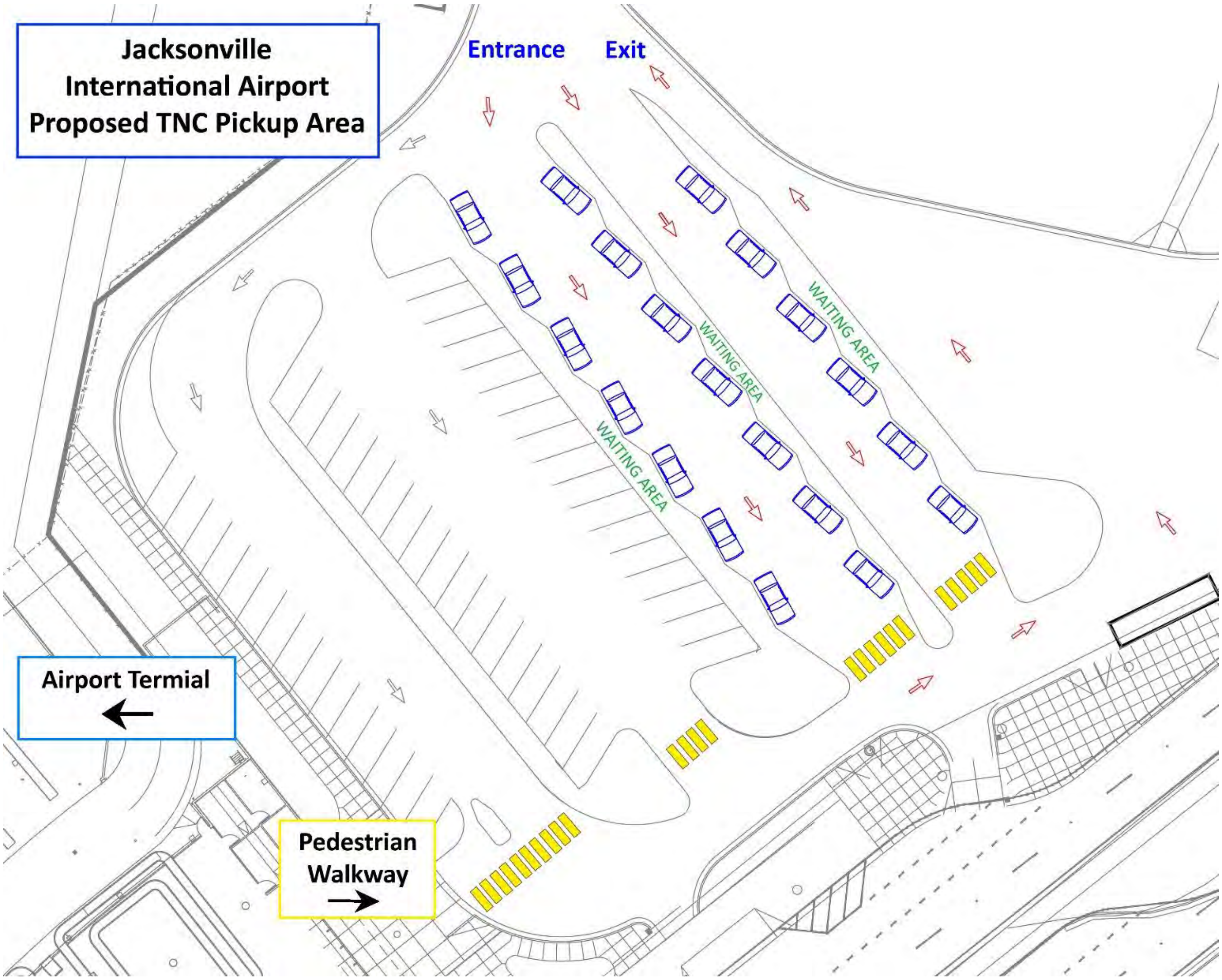
We recommend locating the TNC pickup at the far end of the lot, furthest from the terminal, and pre-arranged transportation closer to the terminal. This gives Pre-Arranged drivers a preferential site just next to the terminal, as they are required to actually park and enter the terminal to find their passengers. Further, we recommend TNCs pull through and pick up along the cub, not park. Unlike Pre-Arranged transportation services, the TNC driver is not going inside the terminal to locate a passenger. Instead the passenger walks to the TNC pickup area, via the existing crosswalk, and immediately enters the TNC vehicle. We also do not recommend TNCs park because reversing could potentially cause safety and congestion issues.

TNCs will enter the lot and make a turn to navigate down the TNC aisle, limiting the area of the lot they access and their interaction with the Pre-Arranged drivers. The islands/curbs will be redesigned to create more room for vehicles and navigation. After picking up their passenger, the TNC will make an immediate turn to exit the lot as shown in Figure 33 (also in Appendix A).

As part of these changes, we also recommend removing the parking spaces currently in the back section of the Pre-Arranged Lot and striping those spaces for buses. The area is currently being used by buses (it is the best area for the larger shuttles and Coach buses), so it would be reasonable to change the parking spaces to accommodate what they are being used for. With the movement of Premium Parking Program parkers out of this lot (as explained in Section 2), the need for the regular parking spaces in that area decreases and the conversion to bus spaces makes sense.

Figure 33 below is a conceptual design for the short-term TNC pick-up area.

Figure 33: Design Concept: Short Term and Long Term TNC Pick Up Area at JAX



Source: Walker Consultants, 2018

LONG-TERM RELOCATION OF TNC PICK UP AREA

Relocate the TNC Pickup area to Hourly Garage Level 1.

Should the RAC in the Hourly/Daily Garage on Level 1 move to the new RAC (as discussed in Section 1), which will encompass the Pre-Arranged and TNC Lot and/or if TNC demand increases and room for growth is needed, Walker suggests moving the TNC pickup area to the Hourly Garage Level 1 (currently Rental Car area), which has direct access to the Terminal.

We recommend the pickup area be operated similar to the curb, where drivers utilize pull through spaces instead of pulling in and backing out. Avoiding backing out of spaces will help prevent congestion and may provide an added safety benefit. While we do not have a definitive area chosen for the TNCs (and also the Pre-Arranged drives who will need to be moved), at this time, we would suggest the north side of the Hourly Garage and utilizing approximately 175± spaces to accommodate the TNCs and Pre-Arranged drivers.

CASE STUDIES

The following case studies are a review and frame of reference regarding the management and operations of TNCs at airports. TNC management at the following airports was reviewed:

- Tampa International Airport
- San Francisco International Airport
- Greater Rochester, NY International Airport
- Southwest Florida International Airport (Ft. Myers, FL)
- Orlando International Airport

Tampa and Southwest Florida International Airports were selected because of their proximity to Jacksonville and Orlando International Airport is a major airport near Jacksonville. San Francisco International Airport has experienced some of the biggest TNC impacts of any airport and as a result, has implemented best practices, so while SFO is considerably larger than JAX, it was included in this review for lessons learned. Rochester International Airport is a non-hub airport and has experienced an uptick in TNC activity.

Walker researched TNC operations and management for each airport as well as interviewed airport officials. A full list of interview questions and table of relevant comparative responses can be found interview responses in Appendix C.

OVERALL FINDINGS

- All the airports require a TNC agreement or permit to operate.
- All airports have TNC pick-up fees and two also have a TNC drop-off fee. Airports reviewed in the State of Florida are only permitted to enforce a pick-up fee per state law.
- Fees range from $2 for pick-ups to $5 for both pick-up and drop-offs.
- All airports have a staging area located near the terminal.
- All airports have TNCs drop-off at the terminal. Many currently pick-up at the curb. San Francisco International Airport (SFO) moved pick-up for pooled TNCs to the garage. Other airports are evaluating moving pick-up to the garage to eliminate the TNC curbside congestion they are experiencing.
- Two airports allow rematch (drop-off and pick-up in the same loop).
- A variety of auditing and monitoring is used as well as a range of data clearinghouses.
- Impact of TNCs on parking and other transportation options varies by airport. Rochester International Airport has seen no impact, while Tampa International Airport has experienced a 3% decline in parking.
- Only SFO has hired additional staff to manage the TNC garage area. However, TNCs have increased the cost of ongoing road and landscaping maintenance at all airports, especially in the TNC staging area.

SAN FRANCISCO INTERNATIONAL AIRPORT, SAN FRANCISCO, CA (SFO)

OVERVIEW

San Francisco International Airport (SFO) is the seventh busiest airport in the United States, serving nearly 54 million passengers and 26.9 million enplanements in 2017. SFO was one of the first airports to experience TNCs on their roadways. The goal of SFO's TNC regulations and management polices is to meet airport and passenger needs including cost recovery and traffic management.

REGULATIONS

Currently, Lyft, Uber, and Wingz all operate at SFO under an agreement and annual permit. Drivers are required to have a criminal and DMV background check as well as a 19-point vehicle inspection.

PLANNING, OPERATIONS AND MANAGEMENT

SFO was experiencing curbside congestion due to TNCs eliminating private vehicle trips and public transit trips. To alleviate curbside congestion, the airport recently moved from an all curbside pick-up and drop-off to designating three areas for TNC pick-up and drop-offs, depending on the type of ride.

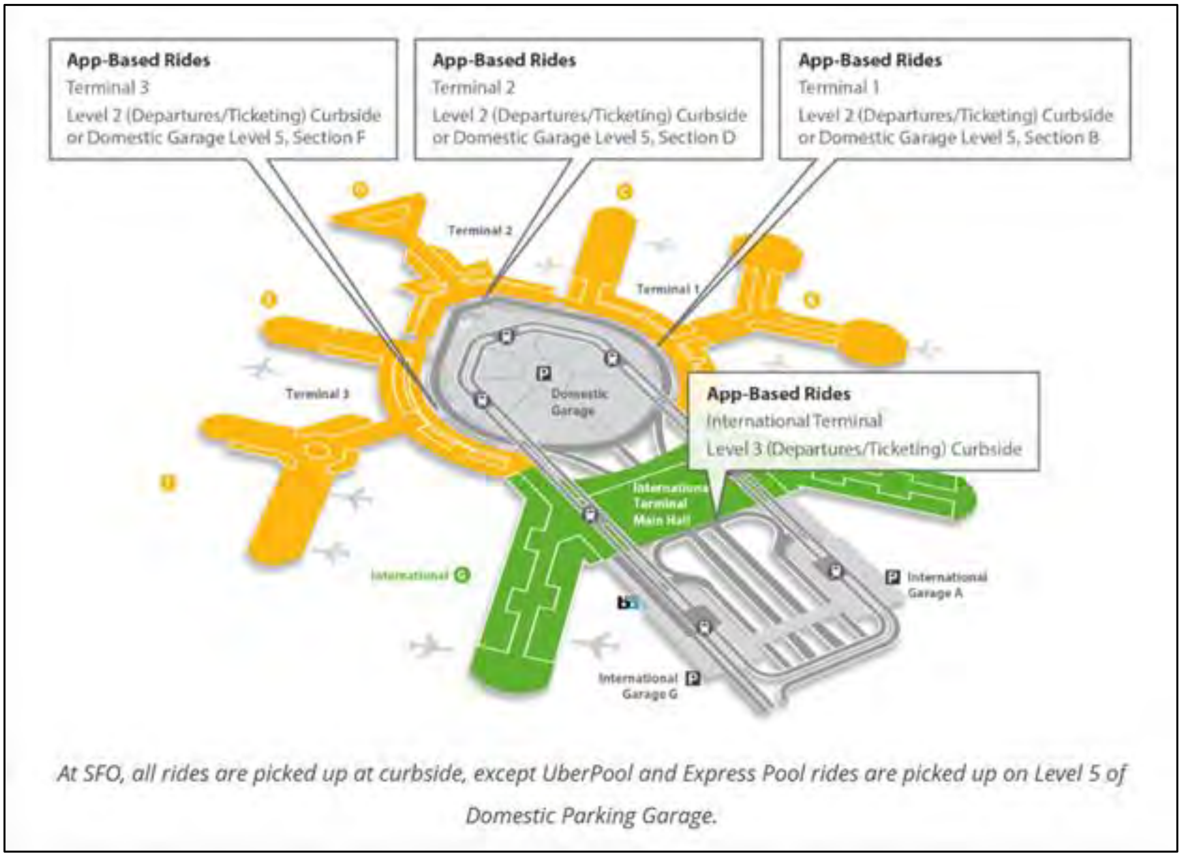
Passengers requesting regular Lyft and Uber X as well as international arrivals are picked-up and dropped off at the curbside Departures Level. All international passengers use the curb because there is no direct access to the new TNC garage pick-up area.

Domestic arrival passengers requesting Uber Pool and Lyft shared rides pick-up and drop-off on the fifth floor of the garage, which has direct access to the domestic terminal.

There is also employee parking on this level. Upon entrance, an attendant checks to see if the vehicle has an employee hangtag or TNC sticker. The employee is directed to the employee parking area, where there is a staffed gate, and the TNC to the TNC area.

The TNC area is set up like a curbside, where drivers directly pull in and out of one of the areas, B, D, and E. There is no reversing. See Figure 34 below:

Figure 34: San Francisco International Airport TNC Area Map



Source: *Uber*, 2018

SFO hired about 150 attendants to staff and patrol the TNC areas, approximately 40 at a time. Each TNC zone in the garage (B, D, and E) has three to four attendants to help passengers find the correct TNC as well as guide the TNCs. Attendants are airport employees; they are not hired through a service contract and can issue citations.

The cost to convert the garage was approximately $3 million, including restriping, gates, tents, and seats for staff.

TNCs wait in one of two staging lots, about a three-minute drive to the terminal. Rematch is permitted to reduce congestion, so drivers can drop-off and pick-up in the same loop without exiting the airport. There can be a delay in the rematch, so if a driver has already passed the pick-up, they will have to circle again.

SFO projects 28.6 million curbside trips, of which 15.7 million are private vehicles. The remaining 54.6 million trips are split between TNC and pre-arranged limos.

FINANCIAL

A fee of $3.60 is charged for each TNC pick-up and drop-off. For low occupancy vehicles, including TNCs such as Uber X and Regular Lyft that use the curb, there is an additional $1.40 curbside access premium charge. This two-tiered fee system was implemented on July 1, 2018.

The fee is assessed via a geo-fence that pings when a TNC enters airport property, picks up or drops off a passenger, and then exits.

Last fiscal year, the TNC fees at SFO generated $34.5 million. This fiscal year, SFO projects TNC fees will bring in $40.5 million. TNC fees have been increasing at a steady rate -just two years ago the fees generated $26.5 million and three years ago $15 million.

All revenues go toward a ground side cost center. SFO is under cost recovery, thus all costs associated with the ground side including operations, debt service, and ongoing costs for administration, planning, and design must be recovered through fees from those services.

Limo and taxi related revenues have dropped since TNCs began operations. Because parking rates increased during this time, SFO states it is unclear how TNCs affected parking. Car rentals have experienced a negligible decline.

AUDITING AND MONITORING

SFO uses the AAAE (e) ABT Clearinghouse to complete an annual audit, comparing the TNC company provided data (from Uber, Wingz, and Lyft) to their own data. Previous to use of the Clearinghouse, the TNCs were underreporting, however with the Clearinghouse underreporting has not been an issue.

LESSONS LEARNED

In the garage pick-up area, some passengers have experienced high wait times as if the driver misses the turn for the garage, they must circle back around the airport.

SFO encourages engaging TNCs early and working with them as part of the planning process, as they find the companies know they are causing congestion at the airport and are willing to pay the penalty because of that congestion. SFO also recommends planning for the future, as the most difficult thing to do is change passenger behavior. For example, SFO had to undergo significant planning and construction operations to move TNCs to the garage, including moving public and employee parking, restriping, and wayfinding signage.

ROCHESTER INTERNATIONAL AIPRORT, ROCHESTER, NY (ROC)

OVERVIEW

Rochester International Airport (ROC) located in Rochester, NY had 2.4 million passengers in 2017. The State of New York approved legislation in August 2017 allowing TNCs to operate in upstate New York (effective July 2017). ROC entered into agreements with both Uber and Lyft. While TNC activity is not as high at ROC as other airports, ROC saw that passengers wanted the service and they wanted to provide a smooth, safe, and hassle free TNC environment. Lyft began operating at the airport in June 2017 and Uber in August 2017. From January through July of 2018 there were 94,239 total TNC trips that generated fees of $186,462.

Passengers are reported to be thrilled when TNCs were allowed at ROC, as there is a big difference in price between TNCs and taxis.

REGULATIONS

ROC requires TNCs sign an agreement and receive a permit to operate on airport premises. Regulations are the same as for taxi operations including vehicle standard requirements and drinking and smoking prohibition.

PLANNING, OPERATIONS AND MANAGEMENT

TNCs pick-up and drop-off at different curbside locations. There is a three-space covered area at both Arrivals for drop-off and Departures for pick-up. There has not been added traffic congestion to date.

TNCs are required to wait at a defined TNC staging area on airport grounds. It's about a two-minute trip from the staging area to the pick-up area. Rematch, or drop-off and pick-up in the same trip is permitted, but the fee is assessed for each trip.

Figure 35: Rochester International Airport TNC Area Map

Source: *Uber*, 2018

ENFORCEMENT

ROC currently does not have additional enforcement for TNCs.

FINANCIAL

TNCs are required to pay an annual subscription fee that differs by company depending on if they use the geo-fence and ranges from $2,000 to $10,000. TNCs are also required to pay a $2 pick-up and $2 drop-off fee. The airport has incurred no additional costs associated with TNC planning and management.

Rochester officials anecdotally reported that TNCs have had very little impact on revenues associated with parking but have affected taxi revenues.

TNC revenues are directed to the airport's general fund.

AUDITING AND MONITORING

ROC conducts monthly internal audits as well an annual outside audit of TNCs. They use the AAAE geo-fence for Lyft operations, but not Uber. Because Uber does not use the AAAE geo-fence, ROC needs to conduct more compliance monitoring for Uber activity, which is why Uber pays a higher annual subscription fee ($10,000 and Lyft $2,000).

LESSONS LEARNED

While ROC has not experienced additional traffic congestion as a result of TNC activity, they have a long covered curb area with three roadways, so have enough space to move the TNC drop-off, pick-up zone if demand increases.

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT, FT MYERS, FL (RSW)

OVERVIEW

Southwest Florida International Airport (RSW), located in Ft Myers, FL had 8.8 million passengers in 2017. Both Lyft and Uber operate at the airport under an authorization letter until an agreement and permit is in place. Currently, Uber has an injunction against the airport. No TNC passenger data is available until the injunction has been lifted.

REGULATIONS

Airport TNC agreements mirror Florida state statute as outlined previously.

PLANNING, OPERATIONS AND MANAGEMENT

TNCs are permitted to drop-off or pick-up anywhere on the terminal curb front. There is no dedicated area or signage.

There has been discussion about moving TNCs to a specific area or the parking garage but RSW decided instead to spread them out across the entire curb to avoid one area of congestion. RSW will outgrow the terminal curb front in five years, so the airport may adjust the TNC pick-up area at some point.

Similar to JAX, RSW has a passenger lane and commercial lane. The airport has done some analysis on moving TNCs to the commercial lane, but it does not want to raise the gate for an unregulated vehicle or incur the staffing and security impacts. As under Florida state law RSW is prohibited from legally registering the vehicle for the commercial lane, one option could be to work with the TNCs to use RFID or a QR code on the driver's phone to provide access to the gate reader.

As a result of the decrease in taxi demand (20% to 30%) taxi traffic that had occurred in the commercial lane has now moved to TNCs at the curb.

Initially, there was some passenger confusion related to locating their TNCs, so the airport worked with Uber to remedy the situation. Uber chose to move all pick-ups to Arrivals and adjusted their app to direct customers to proceed to Arrivals.

TNCs stage in a converted cell phone lot. TNCs can also stage in the Short-Term Parking Garage, but must pay for parking, so it is not used by TNCs. It is less than one mile from the TNC staging area to the terminal.

The airport does not allow rematch or pre-match. Lyft was issued a cease and desist order because they turned on pre-match in the app without authorization. RSW does not allow rematch or pre-match because TNCs were queueing on the terminal roadway, blocking traffic. There have also been issues with passengers requesting their TNC at bag claim and the vehicle needing to wait at the curb and refusing to leave because they do not want to pull away and lose the ride.

ENFORCEMENT

RSW has not hired additional staff to enforce TNCs. The main issue RSW has experienced as a result of TNCs is unattended cell phones in the staging area. TNC drivers have implemented a program where ten or so drivers leave their TNC phone with one person who monitors the app, so not all of the drivers have to wait in the lot. When they get a ride, the monitor then calls the driver on their non-TNC phone for the pick-up. This is not something that RSW feels that they can dissuade or enforce.

FINANCIAL

A $2 fee is assessed on TNCs only for pick-ups. TNCs are treated similar to an on-demand taxi service in terms of fees and regulations.

Revenues for TNCs are directed to the General Fund.

Officials have anecdotally reported the following: Little additional costs related to TNCs other than on-going maintenance and cleaning of the staging area, a 20% to 30% decrease in demand for taxi service (previous to TNCs, taxi service had increased every year), and no significant impact on rental cars or parking.

AUDITING AND MONITORING

A geo-fence pings when a TNC driver enters, picks up, drops off, and exits the airport. RSW uses GateKeeper as their data monitor and bills the TNCs based on that data. The TNCs are also required to self-report. RSW accepts the TNC self-report if it is within 2% of GateKeeper data. If not, the TNC pays the higher of the two. If there is a dispute, the TNC must hire an independent auditor.

There is no annual audit, however staff monitors GateKeeper to ensure there are no duplicate trips.

TAMPA INTERNATIONAL AIRPORT, TAMPA, FL (TPA)

OVERVIEW

Tampa International Airport (TPA) in Tampa, Florida served approximately 20.6 million passengers last year. Uber, Lyft, and Wingz all operate at the airport, serving about 71,000 trips per month.

REGULATIONS

TNCs all operate at TPA under a signed agreement, which also serves as a permit. Requirements for driver background checks and insurance mirror Florida state statute outlined in Section IV.

PLANNING, OPERATIONS AND MANAGEMENT

Prior to TNCs legally being permitted to operate, drivers staged and picked-up passengers in the garage, as the first hour of parking is free. TPA wanted TNCs out of the garage due to the wear and tear on their Parking Access and Revenue Control System (PARCS) equipment. When the agreements were signed with TNC companies, pick-up and drop-off was moved to Arrivals Level, anywhere on the curb.

Given the amount of congestion at the curb, which is significant at peak times, TPA is now studying various options for TNC pick-ups. They are looking at moving pick-up to the Departures Level, as there is more capacity. They are also considering moving TNCs to the south curb about 1.5 miles from the terminal, near the car rental facility. Passengers would have to use the airport train to reach this facility. Currently TNCs are permitted to pick-up passengers at this facility and some choose to do so because there is less congestion, making it easier to find their passenger.

TNC staging is in a periphery lot as shown in Figure 36.

Figure 36: Tampa International Airport TNC Staging Lot

Source: *Uber*, 2018

TPA does not allow rematch. The curbs are short, which makes rematch difficult. TPA did ask each TNC company to study rematch, and the companies came back to say it did not make sense because of the short curb.

ENFORCEMENT

Airport police as well as transportation specialists patrol and enforce TNCs in the staging area and at the curb. There have been no additional hires.

FINANCIAL

There is no annual TNC fee. TNCs pay $3 per pick-up. Tampa operates under cost recovery. TNC fee revenues (approximately $2.6 million last fiscal year) go toward the ground transportation budget.

While TPA has not hired additional staff to manage TNCs, they had upfront costs to create a staging area. There is also increased police and traffic specialist patrols, and the airport must budget more for ongoing road and landscaping maintenance costs. TPA set the TNC pick-up fee at $3 (permitted under state statute as it is the same fee paid by taxis) to recover the additional costs as a result of TNCs.

The airport has seen a decline in parking (3%) and rental cars (1%) as a result of TNCs and is currently assessing the total impact.

AUDITING AND MONITORING

TPA has a geo-fence that pings upon TNC entry, pick-up, drop-off, and exit. The geo-fence is integrated with their PARCS equipment, which transmits data to the airport for monitoring. TPA also receives TNC data reports from the companies. They do not complete an additional audit.

LESSONS LEARNED

In a perfect world, the airport would stage TNCs in a guarded, fenced in area, paid for by the TNCs.

ORLANDO INTERNATIONAL AIRPORT, ORLANDO, FL (MCO)

OVERVIEW

Orlando International Airport (MCO) served 44 million passengers in 2017. Uber, Lyft, and Wingz all operate at the airport. TNC data is not available.

REGULATIONS

MCO agreements with TNCs are regulated by Florida state law. The agreements mirror the state law for background checks, insurance requirements, and fees. There is no annual TNC fee or TNC drop off fee. TNCs pay $5.80 per pick-up.

PLANNING, OPERATIONS AND MANAGEMENT

TNC pick-ups at MCO occur at the Arrivals Level curbside. The total curbside area is one-mile long. There are four specific pick-up areas in total, two for Terminal A and two for Terminal B, at the beginning and end of the terminal curb. Each pick-up area holds about ten vehicles.

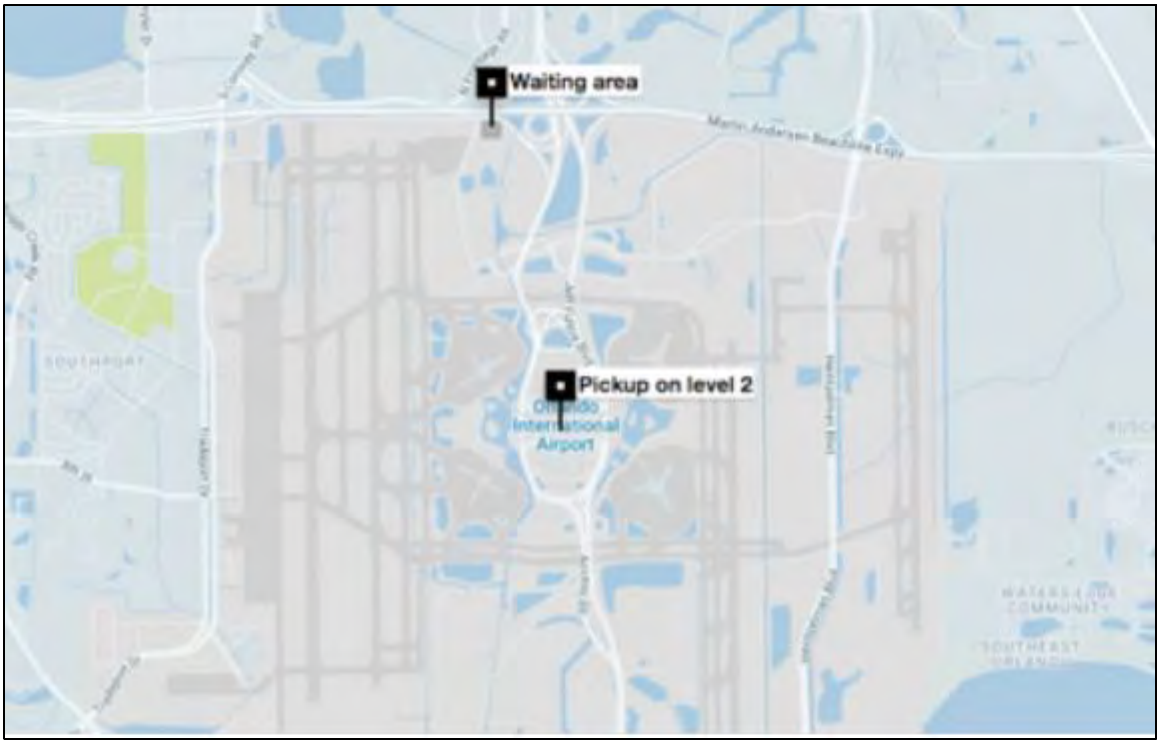
Signage on each terminal door directs passengers to the correct TNC pick up area, depending on where they are in the airport.

Rematch is not permitted because Departures and Arrivals are on separate levels.

A former overflow parking lot that was used once a year during the holidays was converted into a TNC staging area. The area is approximately one-mile from the terminal and holds 85 vehicles.

TNC vehicles are only permitted on airport grounds in the staging lot and pick-up zone.

Figure 37: Orlando International Airport TNC Staging Lot and Pickup Area



Source: *Uber, 2018*

ENFORCEMENT

MCO has not hired additional staff. Existing police and traffic specialist patrol the staging area and enforce the curb. They issue a citation if TNCs are parked at the curb if they are not waiting for a passenger.

FINANCIAL

TNCs are charged a pick-up fee of $5.80.

MCO has experienced additional costs associated with TNCs due to ongoing staging lot maintenance and installation of portable restroom facilities. Since MCO has lost the ability to use the lot during holiday overflow periods, it has foregone the associated parking revenue.

Officials anecdotally reported that parking and rental car demand has not decreased as a result of TNCs at the airport, however, there has been a decline in demand for taxis and other ground transportation.

AUDITING AND MONITORING

MCO tracks TNC activity through a geo-fence and a GateKeeper system. For billing purposes, TNCs provide MCO with a monthly report, which airport staff reconcile with GateKeeper data.

LESSONS LEARNED

The biggest issue related to TNCs at MCO is managing the staging lot. In the agreement with TNCs it states if the staging lot is full, drivers must leave. However, drivers do not want to leave because they will lose their spot in line, and thereby lose their customer.

06 Feasibility Study

SECTION 6 – FEASIBILITY STUDY

This section provides an analysis of parking demand projections for the next 20 years and information around when additional parking supplies will need to be provided via a new parking structure and possible scenarios/implementation plans related to different aspects of implementing the recommendations from Section 2, relocation of the RAC, and/or restriping of lots.

The potential interim solution for the RAC, expanding the footprint of the Daily Garage to mirror the existing structure potentially providing more spaces for rental car operations and customers, is not currently modeled in these projections. If JAA does pursue this option, the increase in spaces should be considered and the model and timelines adjusted.

PHASE I REVIEW OF RECOMMENDATIONS

In the Phase I Parking Study, Walker reviewed the Airport Master Plan in relation to public parking to provide recommendations around parking allocations and operations meant to increase the level of supply at JAX to support the projected growth of the airport. The following is a summary of the parking related elements in the Master Plan and Walker's analysis and recommendations in relation to this section of the Master Plan from the Phase I Parking Study.

PROPOSED PARKING STRUCTURE FOR PUBLIC PARKING

The Master Plan suggested the construction of a new parking garage and used the following data to substantiate that recommendation:

Table 14: Public Parking Facility Requirements - By Product

	Total Passengers	Number of Public Parking Spaces				
		Hourly Garage	Daily Garage	Daily Surface	Economy Lots	Total Parking
Existing Capacity						
Actual		773	1,963	1,722	3,181	7,639
Operational		734	1,767	1,550	2,863	6,876
Demand						
PAL[1] 1 (Baseline)	6 MAP[2]	694	1,707	1,012	2,306	5,620
PAL 2	8 MAP	847	2,082	1,234	2,813	6,855
PAL 3	10 MAP	1,062	2,611	1,548	3,527	8,597

[1]PAL = Planning Activity Levels
[2]MAP = Million Annual Passengers

Source: *Jacksonville Airport Authority*, Public Transportation Data, July – August 2008 (baseline demand); *Ricondo & Associates, Inc.* (forecast demand), 2008

The Master Plan suggested the construction of the new parking garage immediately east of the existing Daily Garage. The addition of a net 1,000 space parking garage, per the Master Plan recommendation, would bring the amount of parking spaces in the terminal area to 5,804±, meeting the Master Plan projected demand for terminal area parking through Planning Activity Level (PAL) PAL 3 of 5,221 parking spaces.

The Phase I Parking Study recommended that a Parking Garage Feasibility Study, review of current parking assets and potential additions and improvements to them, and a study of the potential relocation of the RAC be conducted. The Phase II Parking Study takes these recommendations into account.

The projected amount of parking spaces in the Master Plan appeared to be below the actual observed parking demand for the current level of originating enplanements at the airport. Due to this, it is possible that a new parking garage may be needed when the airport reaches 8 Million Annual Passengers (MAP) as opposed to 10 MAP. However, the effect that TNC's may have on airport parking demand may impact the demand numbers as the long-term effects of TNC usage were unclear at the time.

PHASE II OVERVIEW: PARKING STRUCTURE FEASIBILITY STUDY/ADDITIONAL SUPPLY ANALYSIS

The Phase II Parking Study provides for a program-level analysis of adding a new parking structure. Items considered in this analysis are:

- Parking demand increases that would trigger the need for a parking structure.
- The impact of Walker's recommended parking reallocations as well as other parking reallocation activities (including rental car relocation and possible addition of spaces in Economy 1, Economy 2, and/or Daily Surface Lot parking) on the decision to add a new parking structure.

FUTURE PARKING DEMAND NEEDS

A key planning decision that typically triggers the addition of parking spaces to the existing supply is the criteria JAX intends to follow to decide how much they want to build "ahead" of the projected demand, thus maintaining a high level of customer service at all times. Several factors customarily come into play in these criteria, among them TNC impacts and the current service life of existing parking structures.

TNC IMPACT ON AIRPORT PARKING DEMAND

While JAX has not seen a noticeable impact on parking activity due to TNCs as of yet, as discussed in other sections of this report, TNC usage is becoming increasingly popular at airports while negatively impacting parking demand, particularly long-term parking. Airport parking demand projections for the diverse public parking products (Hourly, Daily, and Economy) are no longer solely in direct correlation with originating enplanements. In addition to the current impact of TNCs, growing anticipation of the arrival and impact of Automated Vehicles (AV) could influence future parking demand trends. The development of AV technology has impacted many Master Plans as future parking strategies should include provisions for regulating the expansion of parking supply as trends impacting parking demand evolve. Should a planning department choose to "build ahead" for the projected future, it is potentially a risk as future demand may not materialize. Therefore, Walker typically recommends building to be "just ahead" of current demand.

PARKING ADEQUACY

As shown in Table 15, the current system-wide parking adequacy (effective supply [1]minus demand) is 723± spaces.

[1] A portion of a parking system's spaces are unavailable for use due to factors such as spaces needing repairs, maintenance, mis-parked or oversized vehicles occupying more than one space. Traffic may also cause spaces to be unavailable as motorists wait for another driver to vacate a space (or pedestrian to walk by), empty spaces ahead may remain unused. Additionally,

The excess capacity may allow JAX to implement a gradual, well-regulated plan for increasing its parking supply. However, most of this availability is located in the Economy Lot 1 and Economy Lot 2. There appears to be an existing need for supplementary Employee parking and valet capacity, and additionally, as the airport grows, the future growth of employee and valet parking is likely to increase demand.

Table 15: Existing Parking Adequacy by Parking Area and by User Group

Lot	Total Spaces	Effective Supply	Existing Peak (1PM) Demand	Adequacy
Employee Lot	471	447	459	(12)
Hourly Garage	1133	1046	809	237
Daily Garage	1949	1793	1784	9
Daily Surface	1722	1603	1608	(5)
Economy Lot 1	1935	1780	1593	187
Economy Lot 2	1276	1174	900	274
Premier/Pre-Arranged	51	51	45	6
S Vendor Lot	44	44	17	27
Economy Lot 3	0	0	0	0
Total	**8,581**	**7,938**	**7,215**	**723**

User Group	Total Spaces	Effective Supply	Existing Peak (1PM) Demand	Adequacy
Passenger/Visitor	7620	7010	6308	702
Employee	667	634	625	9
Valet	199	199	220	(21)
Vendor	44	44	17	27
Pre-Arranged	51	51	45	6
Total	**8581**	**7938**	**7215**	**723**

Source: *Walker Consultants*, 2018

It should be noted that Economy Lot 3 has not been included in the existing conditions table, since it is not fully improved for parking and is very infrequently open to parking (per JAX, it is only used for holiday parking demand).

Walker projected parking demand through 2038 based on data provided by JAX as well as the FAA TAF in the Rental Car Relocation Study, included in Section 1 of this report. The data provide by JAX projects 4.0% annual growth in all airport activities over the next five years, while the TAF suggests a long-term growth rate of 2.7%. Thus, the baseline parking demand projections assume all user group parking demand increases by 4.0% per year for the next 5 years, and 2.7% per year thereafter.

Table 16 shows the parking demand projections in aggregate, and includes the following assumptions related to

spaces may remain unused as motorists miss spaces obscured by landscaping or structures or they may be reluctant to use spaces that appear difficult to navigate. To account for this, parking supply/demand is evaluated by applying an effective supply factor (ESF) to the supply's inventory. An ESF of 0.90 means that parking area with an inventory of 100 spaces is going to have an effective supply of 90 spaces (at any given time). An ESF of 0.92 was applied for JAX demand calculations.

Walker's recommended parking reallocations in addition to the growth rate assumptions discussed above:

- Improving Economy Lot 3 for parking and designating it as the new Employee Lot would provide 1,300± employee parking spaces.
- Removing all employee parking from the Hourly Garage, Daily Garage and Daily Surface Lot, and reconfiguring the Employee Lot and South Vendor Lot for Valet and Customer parking would provide an additional 708± customer parking spaces over existing conditions.
- Future demand growth does not include a reduction for TNC and AV impacts, as the long-term effects of these technologies has yet to be identified.

The table below assumes, starting in 2019, the reallocation of parking, as per Walker's recommendations, bringing the total (including the 1,300 Economy 3 spaces) to 9,898± total parking spaces. This table does not assume the impacts from the rental car relocation to a new RAC facility nor does it take in to account the possible addition of spaces due to restriping of parking areas (discussed later in this section).

Table 16: Aggregate 20-Year Overall Parking Demand Projection

Year	Supply	Effective Supply	Demand	Adequacy
Existing	8581	7938	7215	723
2019	9898	9172	7504	1668
2020	9898	9172	7804	1368
2021	9898	9172	8116	1056
2022	9898	9172	8441	731
2023	9898	9172	8779	393
2024	9898	9172	9016	156
2025	9898	9172	9259	(87)
2026	9898	9172	9509	(337)
2027	9898	9172	9766	(594)
2028	9898	9172	10030	(858)
2029	9898	9172	10301	(1129)
2030	9898	9172	10579	(1407)
2031	9898	9172	10865	(1693)
2032	9898	9172	11158	(1986)
2033	9898	9172	11459	(2287)
2034	9898	9172	11768	(2596)
2035	9898	9172	12086	(2914)
2036	9898	9172	12412	(3240)
2037	9898	9172	12747	(3575)
2038	9898	9172	13091	(3919)

Source: *Walker Consultants*, 2018; *Ricondo & Associates, Inc.*, 2018

Table 17 summarizes the parking demand projections broken down by customers and employees, again, assuming Walker's parking reallocation recommendations are implemented. This table does not assume the RAC impacts or possible additional spaces due to restriping, as discussed in the above.

Table 17: 20-Year Parking Demand Projection by User Group

Year	Customer Parking				Employee Parking			
	Supply	Effective Supply	Demand	Adequacy	Supply	Effective Supply	Demand	Adequacy
Existing	7620	7010	6308	702	667	634	625	9
2019	8276	7614	6560	1054	1300	1235	650	585
2020	8276	7614	6822	792	1300	1235	676	559
2021	8276	7614	7095	519	1300	1235	703	532
2022	8276	7614	7379	235	1300	1235	731	504
2023	8276	7614	7674	(60)	1300	1235	760	475
2024	8276	7614	7881	(267)	1300	1235	781	454
2025	8276	7614	8094	(480)	1300	1235	802	433
2026	8276	7614	8313	(699)	1300	1235	824	411
2027	8276	7614	8537	(923)	1300	1235	846	389
2028	8276	7614	8767	(1153)	1300	1235	869	366
2029	8276	7614	9004	(1390)	1300	1235	892	343
2030	8276	7614	9247	(1633)	1300	1235	916	319
2031	8276	7614	9497	(1883)	1300	1235	941	294
2032	8276	7614	9753	(2139)	1300	1235	966	269
2033	8276	7614	10016	(2402)	1300	1235	992	243
2034	8276	7614	10286	(2672)	1300	1235	1019	216
2035	8276	7614	10564	(2950)	1300	1235	1047	188
2036	8276	7614	10849	(3235)	1300	1235	1075	160
2037	8276	7614	11142	(3528)	1300	1235	1104	131
2038	8276	7614	11443	(3829)	1300	1235	1134	101

Source: *Walker Consultants*, 2018

Assuming the proposed system-wide reallocations occur, employee parking is projected to be adequately served by Economy Lot 3 throughout the projected horizon. For customers, projected parking demand exceeds effective supply in 2023 and is likely to exceed the total passenger parking supply in 2026.

The projections above indicate that additional parking capacity should be planned and constructed between 2022 and 2024, while the airport still has additional parking capacity to handle the temporary displacement of parking that may occur if a new structure is built on an existing surface parking lot. However, before doing so, the airport should also consider the impacts that would occur by following the recommendations of removing landscaping/restriping the lots, and relocating/building a facility for the RAC, both discussed later in this section, which would each garner additional parking spaces that could be utilized for customer parking, pushing the need to build a new garage further back.

PHASING PLANS

The phasing plans below represent several possibilities to build and relocate customer parking during construction.

PHASING PLAN 1 – NO RAC RELOCATION, NO SURFACE LOT RESTRIPING

Design and construction of a parking structure could take two to three years depending on its size. Adding a 1,000± space parking structure for passengers by year 2024 would allow JAX to remain "just ahead" of the projected demand. A second 1,000± space parking structure (or addition to the one built in 2024) would potentially be necessary in 2028 or 2029. This phased approach would provide flexibility to monitor and assess long-term trends in parking demand that may occur as a result of TNCs and/or AV adoption. The plan below shows a total of 4 net 1,000± parking structures over the 20-year planning horizon, subject to re-evaluation of the airport's growth as well as the growth and/or possible decline of parking demand over the planning horizon.

Planning for an expansion to the parking structure five years later would give JAX the opportunity to remain "just ahead" of the projected demand without overbuilding. By year 2028/2029, the addition of 2,000± passenger parking spaces would keep JAX ahead of projections, but not too far ahead. The supply would match the projected demand with a small cushion; any reductions in the future demand due to the trends discussed above would only increase the cushion. This is one way to prevent "overbuilding" for a demand that may not materialize.

An update to this parking study at the beginning of the planning phase of the new structure would allow JAX to compare the measured demand to the projections and adjust the expansion to its parking supply accordingly. Additionally, a detailed set of phasing, maintenance, and traffic/parking drawings will need to be included as part of the design phase of the parking structure, which is not included in this study.

The discussion above focuses on the first two planned parking capacity expansions. As each expansion is designed and constructed, Walker recommends that an updated analysis of originating enplanement and parking demand trends be conducted to account for potential changes in parking demand patterns. For example, the first update, in 2021 to 2022 could result in a reduction of the parking demand projections which would allow for the push of the second expansion to later than the 2027 to 2029 timeframe currently projected. The deficits projected in the horizon years may not materialize if/when AV adoption becomes widespread.

Phasing Plan 1 assumes no RAC relocation and no re-striping of surface lots to gain additional parking spaces. The phasing plan can be summarized in the following table:

Table 18: Customer Parking Adequacy with Recommended Parking Structure Phasing Plan 1

Year	Customer Parking				Action Needed
	Supply	Effective Supply	Demand	Adequacy	
Existing	7620	7010	6308	702	
2019	8276	7614	6560	1054	
2020	8276	7614	6822	792	
2021	8276	7614	7095	519	Begin to plan/design for new structure & Update parking demand analysis
2022	8276	7614	7379	235	
2023	8276	7614	7674	(60)	Build new net 1,000 space structure
2024	9276	8534	7881	653	New structure opens
2025	9276	8534	8094	440	Begin to plan/design structure expansion subject to any parking demand projection revisions
2026	9276	8534	8313	221	
2027	9276	8534	8537	(3)	Construct 1,000 net space structure expansion
2028	10276	9454	8767	687	Structure expansion opens
2029	10276	9454	9004	450	Begin to plan/design structure expansion subject to any parking demand projection revisions
2030	10276	9454	9247	207	
2031	10276	9454	9497	(43)	Construct 1,000 net space structure expansion
2032	11276	10374	9753	621	Structure expansion opens
2033	11276	10374	10016	358	Begin to plan/design structure expansion subject to any parking demand projection revisions
2034	11276	10374	10286	88	
2035	11276	10374	10564	(190)	Construct 1,000 net space structure expansion
2036	12276	11294	10849	445	Structure Expansion Opens
2037	12276	11294	11142	152	
2038	12276	11294	11443	(149)	

Source: *Walker Consultants*, 2018

PHASING PLAN 2 – SURFACE LOT RESTRIPING, NO RAC RELOCATION

Walker has reviewed the parking lots and determined that the Daily Surface Lot, Economy Lot 1, and Economy Lot 2, are potential candidates for additional spaces which could be gained via restriping and/or removal of landscaping (it is assumed that JAX will be responsible to verify the landscape/greenspace requirements and any other codes to determine the feasibility before proceeding). Up to 1,450± spaces could potentially be gained in these lots via restriping. Phasing Plan 2 in Table 19 incorporates these space gains into the 20-year parking projections for customer parking.

Phasing Plan 2 assumes no RAC relocation. The phasing plan can be summarized in the following table:

Table 19: Customer Parking Adequacy with Recommended Parking Structure Phasing Plan 2

Year	Customer Parking				Action Needed
	Supply	Effective Supply	Demand	Adequacy	
Existing	7620	7010	6308	702	
2019	8276	7614	6560	1054	
2020	8276	7614	6822	792	
2021	8276	7614	7095	519	
2022	8276	7614	7379	235	Restripe Daily Surface Lot (+327 spaces)
2023	8603	7915	7674	241	Restripe/expand Economy Lot 1 (+998 spaces)
2024	9601	8833	7881	952	
2025	9601	8833	8094	739	Update Parking Demand Analysis
2026	9601	8833	8313	520	Begin to plan/design for new structure
2027	9601	8833	8537	296	Restripe/expand Economy Lot 2 (+128 spaces)
2028	9729	8951	8767	184	Construct 1,000 net space structure
2029	10729	9871	9004	867	Structure expansion opens
2030	10729	9871	9247	624	Begin to plan/design structure expansion subject to any parking demand projection revisions
2031	10729	9871	9497	374	
2032	10729	9871	9753	118	Construct 1,000 net space structure expansion
2033	11729	10791	10016	775	Structure expansion opens
2034	11729	10791	10286	505	Begin to plan/design structure expansion subject to any parking demand projection revisions
2035	11729	10791	10564	227	
2036	11729	10791	10849	(58)	Construct 1,000 net space structure expansion
2037	12729	11711	11142	569	Structure expansion opens
2038	12729	11711	11443	268	

Source: *Walker Consultants*, 2018

Restriping the surface lots would potentially push the need for additional structured capacity back five-years, allowing for more time to evaluate the potential impacts of TNCs and AVs. In Phasing Plan 2, the Daily Surface Lot and Economy Lot 1 would be restriped first, then Economy Lot 2, with the planning of a new structure pushed back to 2026. Planning for the parking structure to be constructed in 2028 would give JAX the opportunity to remain "just ahead" of the projected demand without overbuilding. By year 2032/2033, the addition of 2,000± passenger parking spaces would keep JAX ahead of projections, but not too far ahead. The supply would match the projected demand with a small cushion; any reductions in the future demand due to the trends discussed above would only increase the cushion. This is one way to prevent "overbuilding" for a demand that may not materialize.

PHASING PLAN 3 – RAC RELOCATION NORTH OF PARKING GARAGE, NO SURFACE LOT RESTRIPING

The Rental Car Relocation Study in Section 1 of this report recommends that the rental car area be relocated to a parking structure in the northern portion of the Daily Surface Lot. The effect of this would be to return a portion of the 729 parking spaces currently utilized by rental car operations on the first floor of the Daily Garage and Hourly Garage to the customer parking supply. For the purposes of this analysis, the following assumptions were made:

- 554+ of the 729 spaces in the current ready/return area would go into the customer parking supply
- A similar number of spaces (554+) would be displaced in the Daily Surface Lot when the ARC parking structure is constructed.
- 175+ of the 729 spaces in the current ready/return area would be utilized for TNC activity.
- The RAC would be relocated in 2025.

Phasing Plan 3 assumes no restriping of surface lots. The phasing plan can be summarized in the following table:

Table 20: Customer Parking Adequacy with Recommended Parking Structure Phasing Plan 3

Year	Customer Parking				Action Needed
	Supply	Effective Supply	Demand	Adequacy	
Existing	7620	7010	6308	702	
2019	8276	7614	6560	1054	
2020	8276	7614	6822	792	
2021	8276	7614	7095	519	Begin to plan/design for new structure & Update parking demand analysis
2022	8276	7614	7379	235	
2023	8276	7614	7674	(60)	Construct 1,000 net space structure
2024	8722	8024	7881	143	New structure opens, RAC construction begins
2025	9276	8534	8094	440	RAC Structure Opens
2026	9276	8534	8313	221	Begin to plan/design structure expansion subject to any parking demand projection revisions
2027	9276	8534	8537	(3)	Construct 1,000 net space structure expansion
2028	10276	9454	8767	687	Structure expansion opens
2029	10276	9454	9004	450	Begin to plan/design structure expansion subject to any parking demand projection revisions
2030	10276	9454	9247	207	Construct 1,000 net space structure expansion
2031	11276	10374	9497	877	Structure expansion opens
2032	11276	10374	9753	621	Update parking demand analysis
2033	11276	10374	10016	358	Begin to plan structure expansion
2034	11276	10374	10286	88	Construct 1,000 net space structure expansion
2035	12276	11294	10564	730	Structure expansion opens
2036	12276	11294	10849	445	
2037	12276	11294	11142	152	
2038	12276	11294	11443	(149)	

Source: *Walker Consultants,* 2018

The relocation of the RAC would not change the amount of additional parking needed over the planning horizon, assuming current behaviors remain exactly the same.

PHASING PLAN 4 – SURFACE LOT RESTRIPING AND RAC RELOCATION

Phasing Plan 4 assumes that both the recommended lot restriping and RAC relocation occur within the 20-year planning horizon. The assumptions regarding the lot restriping's and the RAC relocation from Phasing Plans 2 and 3 carry over to Phasing Plan 4.

Table 21: Customer Parking Adequacy with Recommended Parking Structure Phasing Plan 4

Year	Customer Parking				Action Needed
	Supply	Effective Supply	Demand	Adequacy	
Existing	7620	7010	6308	702	
2019	8276	7614	6560	1054	
2020	8276	7614	6822	792	
2021	8276	7614	7095	519	
2022	8276	7614	7379	235	Restripe Daily Surface Lot (+217 spaces)
2023	8493	7814	7674	140	Restripe/expand Economy Lot 1 (+998 spaces)
2024	8937	8222	7881	341	RAC Construction Begins
2025	9491	8732	8094	638	RAC structure opens, update Parking Demand Analysis
2026	9491	8732	8313	419	Begin to plan/design for new structure
2027	9491	8732	8537	195	Restripe/expand Economy Lot 2 (+128 spaces)
2028	9619	8849	8767	82	Construct 1,000 net space structure
2029	10619	9769	9004	765	Structure expansion opens
2030	11173	10279	9247	1032	
2031	11173	10279	9497	782	Update Parking Demand Analysis
2032	11173	10279	9753	526	Begin to plan/design structure expansion subject to any parking demand projection revisions
2033	11173	10279	10016	263	
2034	11173	10279	10286	(7)	Construct 1,000 net space structure expansion
2035	12173	11199	10564	635	Structure expansion opens
2036	12173	11199	10849	350	Update Parking Demand Analysis
2037	12173	11199	11142	57	
2038	12173	11199	11443	(244)	

Source: *Walker Consultants,* 2018

The combination of following the recommendations for re-striping the lots and relocating the RAC potentially reduces the amount of additional structured parking needed to 2,000± spaces over the 20-year planning horizon, assuming no change in parking patterns due to TNCs and AVs.

EXISTING PARKING STRUCTURE SERVICE LIFE

In addition to the above, the current status of the existing parking facilities also impacts JAX's decision to build future parking. If regular maintenance, capital improvements, and protection plans have been deferred, the service life of existing structures and lots may be impacted. JAX should review their current parking facility's needs including looking at anything that has been deferred and if these deferrals could impact service life.

Based on Walker's experience, we believe JAX would benefit from performing any needed maintenance and repairs discussed in the above paragraph (if applicable) by doing these in larger sections of the parking areas (for example, a ½ a floor or a whole floor at a time instead of just a few spaces or rows). Doing repairs on a larger scale is likely to result in cost efficiencies, with the drawback being a larger area of parking being unavailable for parking while the repairs occur. While the current parking adequacy remains for several years, it would be advantageous to complete repairs while a surplus of supply exists, so parkers displaced by the repairs can be relocated to the open parking spaces within the system.

POTENTIAL ADDITION OF SPACES TO CURRENT PARKING

As discussed in previous sections, Walker reviewed the existing parking areas at JAX to determine the feasibility of expansion and/or addition of spaces in an attempt to utilize the parking areas more fully and to help address possible future parking deficits. Walker determined that the parking lots that would be most beneficial for restriping and/or landscape removal as a means to add spaces where the Daily Surface Lot, the Economy Lot 1, and the Economy Lot 2. Following are Walker's recommendations for landscape removal and restriping of these parking areas. Walker assumes that JAX will be responsible to verify landscaping/greenspace and any other codes/requirements are met before proceeding:

- Figure 38: Potential Addition of Spaces to Daily Surface Lot Parking - (327± possible additional spaces – reduced to 217± additional spaces if the area the RAC is recommended to go is excluded)
- Figure 39: Potential Addition of Spaces to Economy Lot 1 - (998± possible additional paces)
- Figure 40: Potential Addition of Spaces to Economy Lot 2 - (128± possible additional spaces)

A total of 1,343-1,453± total spaces could be added to the current parking inventory by following these recommendations.

Additional spaces are shown on each of the below drawings as bolded, dark lines delineating each additional space.

DAILY SURFACE LOT

Walker reviewed the striping of the Daily Surface Lot, looking to gain additional spaces via restriping and other measures such as the removal of landscaping. As shown in Figure 38, with restriping/removal of landscaping a total of 327 ± spaces could be added bringing the total Daily Surface Lot spaces from 1,722 spaces to 2,049 spaces. If the portion of the Daily Surface Lot that the RAC is recommended to be constructed on is excluded from restriping/removal of landscaping since it would subsequently be removed for the RAC, a total of 217± spaces could be added to the lot bringing the total to 1,612 spaces.

ECONOMY LOT 1

Walker reviewed the striping of Economy Lot 1 looking to gain additional spaces via restriping and other measures such as the removal of landscaping. In the case of this lot, the restriping includes the removal of the water tower, which appears to not be in use, and landscaping/green space around the water tower to gain a large number of spaces. As shown in Figure 39, with restriping/removal of the water tower and landscaping a total of 998± spaces could be added bringing the total of Economy Lot 1 from 1,935 spaces to 2,933 spaces.

ECONOMY LOT 2

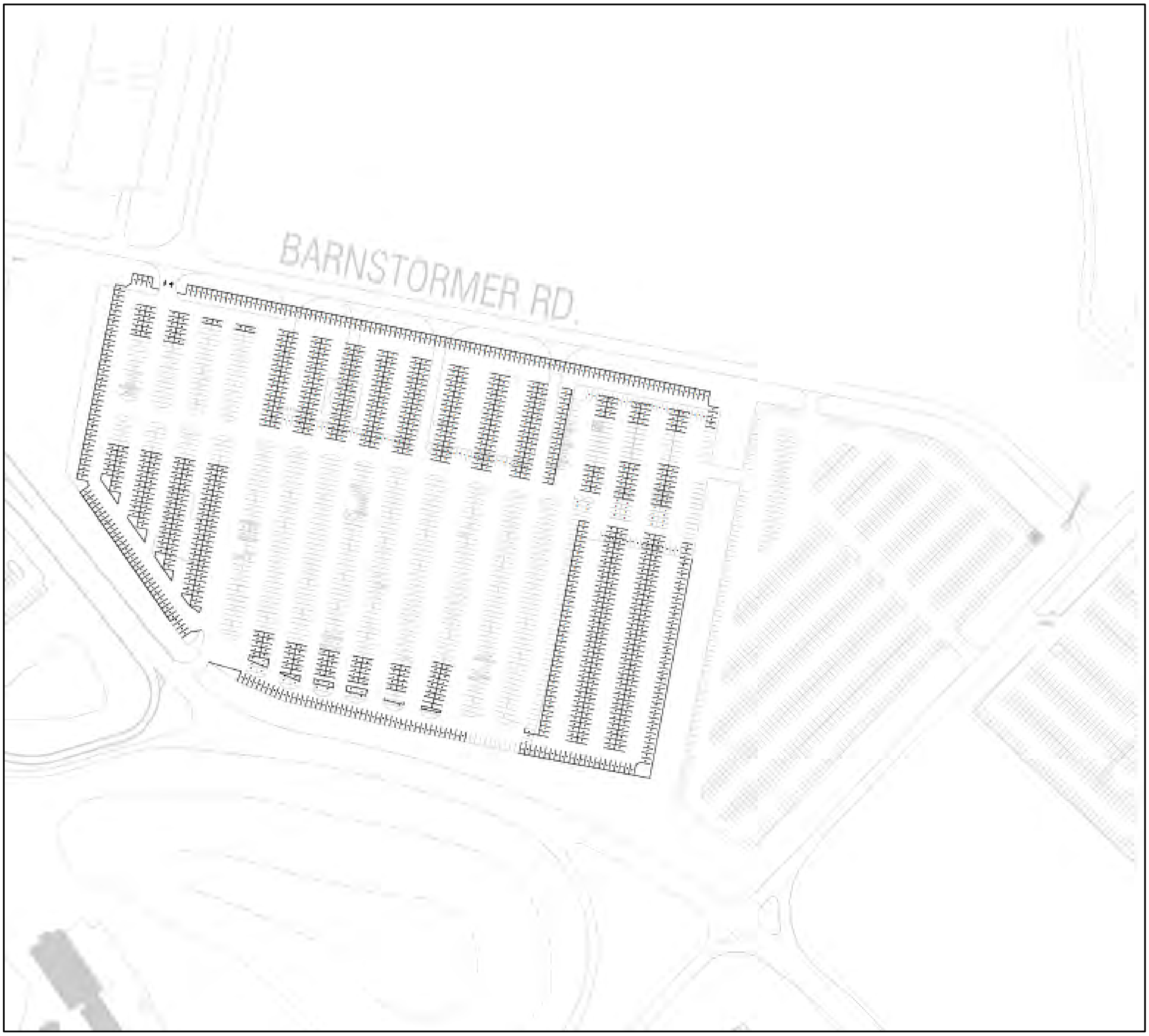
Walker reviewed the striping of Economy Lot 2 looking to gain additional spaces via restriping and other measures such as the removal of landscaping. As shown in Figure 40, with restriping/removal of landscaping a total of 128± spaces could be added bringing the total of Economy Lot 2 from 1,276 spaces to 1,404 spaces.

JAX will be responsible to review the feasibility and any related codes around the removal of landscaping and any other requirements or needs that these recommendations may be subject to. With a total potential for a 1,453±-parking space gain among the three parking lots, it may be possible to delay the parking structure expansions as discussed earlier in this section. It should be noted that only 327± of these spaces would be gained in the terminal area (Daily Surface Lot), with the balance gained in the remote lots (Economy 1 and Economy 2). If the ultimate goal of the parking expansion is an increase in the number of terminal area parking spaces, a new structure would still be necessary in the near future. The following figures show the potential spaces that may be added to the Daily Surface Lot, Economy Lot 1, and Economy Lot 2.

Figure 38: Potential Addition of Spaces to Daily Surface Lot Parking

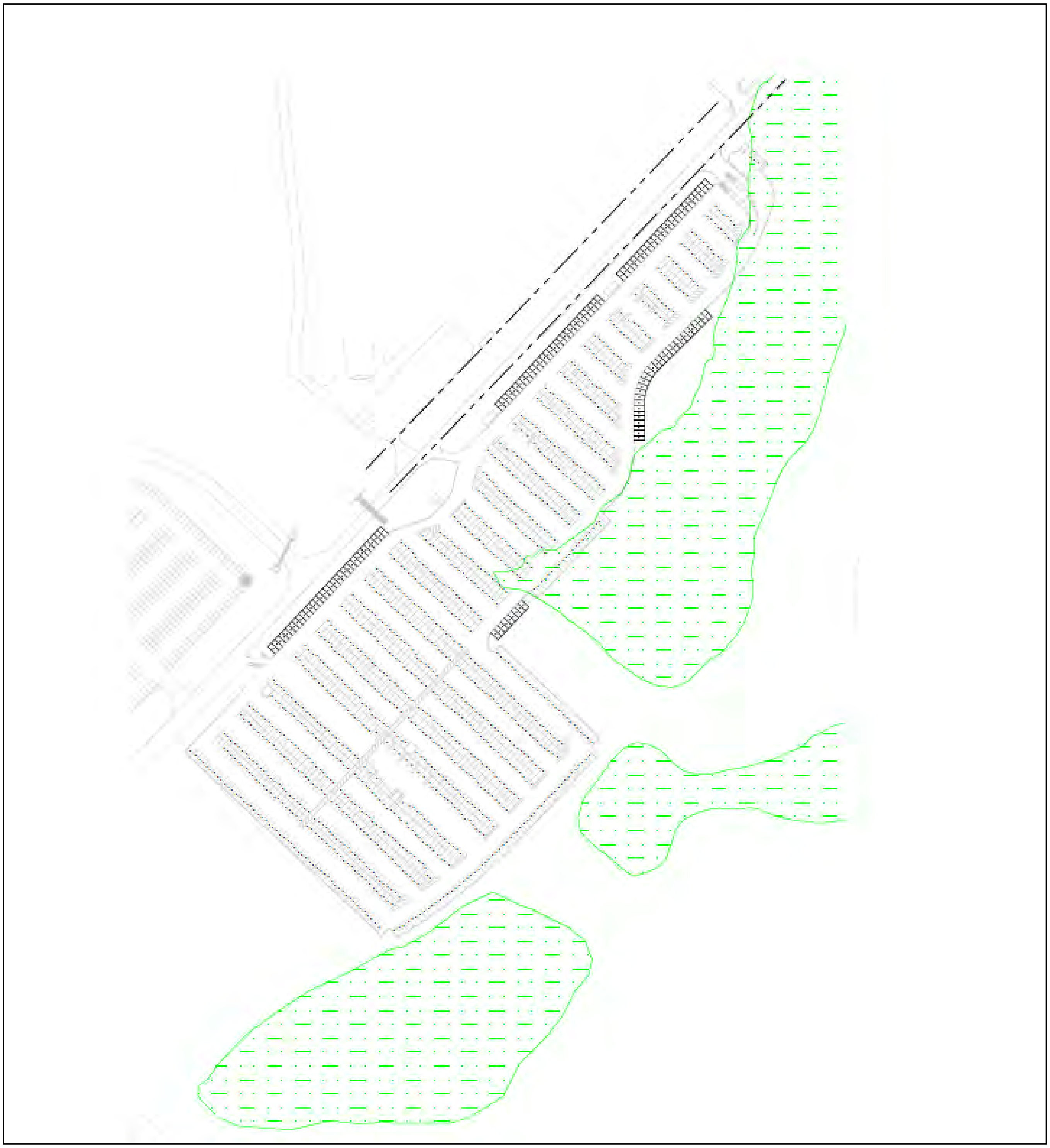
Source: *Walker Consultants*, 2018

Figure 39: Potential Addition of Spaces to Economy Lot 1 Parking



Source*: Walker Consultants*, 2018

Figure 40: Potential Addition of Spaces to Economy Lot 2 Parking



Source: Walker Consultants, 2018

07 Financials

SECTION 7 – FINANCIALS

OPINION OF PROBABLE COSTS

The following are opinion of probable costs for the recommended parking program for JAX. Provided are estimated capital costs and, where appropriate, operating costs. The estimates of probable costs are preliminary in nature and are not for third-party or bonding purposes. Please see Appendix F for full Statement of Limiting Conditions.

Cost efficiencies are built into Walker's estimate due to the assumption that the schedule of changes is intended to be implemented as a whole.

As there are many decisions for fulfilling specific recommendations, Walker has provided as much information as is possible, based on the informational available, as to opinion of probable costs.

PROPOSED VALET AND CUSTOMER SELF-PARKING LOT MODIFICATIONS

Capital costs are estimated to be ±$325,000. Capital cost assumptions include demolition in some of the existing lot, repaving lot and entryways, restriping, addition of two emergency call boxes, new PARCS equipment not previously purchased, moving existing valet booth, signage, and addition of mobile barriers between valet and customer self-parking. This estimate excludes the necessary PARCS equipment already purchased by JAX.

Excluded from this estimate are costs associated with review and construction of a drainage system. This cost will depend on the final design to determine if additional drainage is necessary.

Included in capital cost estimate is a contingency of 25%, encompassing construction overruns and design costs.

PROPOSED ECONOMY 3 LOT MODIFICATIONS

Walker's recommendations include two proposed build-out plans for Economy Lot 3, the new Employee Lot. The proposed lot capacities, capital costs, and estimated operating costs are listed below.

- Recommended initial build-out: **1,300 parking spaces**
  - Capital cost estimate: ±$5.8 million
  - Annual operating cost estimate: ± $24,000

- Full build out: **1,800 parking spaces**
  - Capital cost estimate: ±$8.0 million
  - Annual operating cost estimate: ±$24,000

Capital costs are inclusive of lighting and fixtures, landscaping, drainage, fencing, emergency call boxes, entry and exits, new PARCS equipment not previously purchased, and bus shelters. This estimate excludes the necessary PARCS equipment already purchased by JAX. Actual cost will be dependent on the final design of the lot.

Included in the capital cost estimate is a contingency of 25%, encompassing construction overruns and design costs.

Operating cost are inclusive of basic operating expenses, revenue controls, and security. It is estimated that operating costs will be minimal as this is not a public lot and much of the operating expenses may be shared with the existing operation of the system.

Other items for consideration, not included in this capital cost estimate, are purchasing shuttle real-time arrival trackers, restroom facilities, and CCTV cameras. Cost for each additional item may vary, dependent on economies of scale, vendor selection, and product quality. For example, app-based GPS shuttle tracker systems may cost as low as $20/month plus the cost of developing the mobile application. Portable restrooms may range from $300 to $3,000 for per facility plus additional expenses associated with tying in sewer and water. Outdoor CCTV cameras are estimated to cost $1,000 per camera.

As noted above, these items are not included as part of this capital cost estimate.

EMPLOYEE SHUTTLE SERVICE

To achieve Walker's proposed employee parking reallocation, a new employee only shuttle service must be developed. We assume a capital cost estimate to purchase two new shuttles to be a total of ±$90,000, based on industry standards (the purchase of used shuttles may reduce this cost, in addition to repurposing of any underutilized Economy passenger shuttles already owned by JAX). Per JAX, their experience and local market supports the cost of two shuttles at approximately $140,000 (which may include shuttle options not taken in to Walker's projected possible estimates).

The annual employee shuttle operating cost estimate is ±$901,550 based on an industry standard of $30/hour all in cost and the possible projected scheduled hours for shuttle drivers. Operating costs are inclusive of fuel, labor, maintenance and repair, and insurance assuming a third-party vendor is operating the shuttles. Per JAX, their experience and local market supports lower costs. Walker understands that JAX will negotiate with their third-party vendor to determine actual costs.

The employee shuttle will run twenty-four hours a day, seven days a week. The proposed shuttle schedule will vary based upon peak employee schedules, with two shuttles running during the peak hours every 8 minutes and one shuttle running during off-peak hours every 15 minutes. Further details regarding the Employee Lot shuttle can be found in Section 2 of this report.

PROPOSED RELOCATION OF TNC PICK-UP TO PRE-ARRANGED LOT

The capital cost for the relocation of TNCs to the Pre-Arranged Lot is estimated at ±$65,000. The capital costs include moving the existing pre-arranged booth to the entry/exit plaza, restriping for new directional flow, demolition of curbs and islands, PARCS equipment including entry and exit ticket machines and supplies (i.e. tickets). The annual maintenance of PARCS equipment is estimated to be approximately ±$7,500.

PROJECTED POTENTIAL REVENUE OF ADDITIONAL PUBLIC SPACES

With implementation of all the proposed changes, we project that the updated parking allocation would add 708± public parking spaces (as a result of former employee spaces becoming customer parking, valet parking, and reserved vendor parking and adding South Vendor Lot spaces to become valet) and 554± spaces from relocation of the rental car location (assuming 729± current rental car spaces and using 554± for customer parking and 175± for TNC and Premier Parking once RAC relocates), for a total of 1,262± added spaces potentially able to generate revenue. It must be noted, however, that ultimately parking spaces do not generate revenue, but rather revenue is dependent on the number of customer vehicles that occupy the spaces and their length of stay. The projections of the annual number of vehicles parked, and their length of stay, will depend in part on the number of originating enplanements which will in turn depend upon airport parking alternatives that are available to the public and economic trends, which typically drive the number of enplanements. For this reason, out of necessity, the revenue projections presented here depend on the reasonableness and accuracy of the assumptions made. Changes in these assumptions will impact revenue projections.

Table 22 displays the projected potential annual revenue of adding back the 708± public spaces and the 554± potential spaces from the relocation of the rental car location for a total of 1,262± potential additional parking spaces. Completing Walker's recommendations of adding back the 708± public spaces (not including relocation of the rental car location), could generate projected potential revenue of ±$2.3 million annually. Including the 554± potential spaces from the rental car relocation with the adding back of the 708± public parking spaces could generate projected potential revenue of ±$4.6 million annually.

This revenue estimate is based on FY 2017 enplanements and parking revenues. Any increase or decrease to enplanements or parking activity will impact demand for parking and revenue generated will differ from this potential estimate (see Figure 42 for historical parking revenue and transactions compared to enplanements at JAX). For example, Walker performed a sensitivity test scenario where parking revenues decreased by 10%± due to an increase in TNC use and other transportation services, or a decrease in enplanements. In this scenario possible projected revenues from adding the first 708± public spaces could have a projected potential decrease of ±$260,000.

The gross revenue projects contained in this document and its appendices are preliminary in nature and are not for third-party or bonding purposes. Please see section or Appendix F for full Statement of Limiting Conditions.

An analysis was also performed to determine the estimated potential revenue of adding additional spaces.

- We project that the updated parking allocation could potentially add 708± public parking spaces (as a result of former employee spaces becoming customer parking, valet parking, and reserved vendor parking and adding South Vendor Lot spaces to become valet) and 554± spaces from relocation of the rental car location (assuming 729± current rental car spaces and using 554± spaces for customer parking and 175± spaces for TNC and Premier Parking once RAC relocates), for a total of 1,262± added spaces potentially able to generate revenue. Not including rental car relocation, potential projected revenue of ±$2.3 million annually could be generated.
- With the rental car relocation, potential additional spaces could generate potential projected revenue of ±$4.6 annually.
- The projected revenue is calculated based on the following methodology:
    - Walker estimated a Revenue Per Space Per Enplanement for each parking facility based on total 2017 enplanements and total Fiscal Year 2017 revenues per facility.
    - For example, in the Daily Surface Lot, Fiscal Year 2017 revenues totaled $4,624,219. There are a total of 4,608 spaces in the Daily Surface Lot. Total 2017 enplanements at JAX were 2,759,067. Walker estimates a return of 289 parking spaces. The projected revenue calculation for the Daily Surface Lot is as follows:

1. Revenue per space = Revenue ÷ Enplanements
   = $4,624,219 ÷ 2,759,067 = $3,227

2. Revenue per space per enplanement = Revenue per space ÷ Enplanements

   =$3,227 ÷ 2,759,067 = $0.00117

3. Projected Revenue from Returning Spaces to the Public = (Revenue per space per enplanement x Returned parking spaces) x Enplanements

   ($0.00117 X 289) x 2,759,067 = $932,588

Table 22: Estimated Revenue of Additional Public Spaces

Product	Total Spaces[1]	Current Total Public Spaces[1]	Returned Public Spaces[2]	FY 2017 Enplament-ments[3]	FY 2017 Revenue ($) [4]	Revenue Per Space Per Enplanement ($)[5]	Projected Revenue from Returning Spaces to Public ($) [5]
S. Vendor Lot	471	1,433	261	2,759,067	4,624,219	0.0012	842,234
Valet[6]	61	199	52	2,759,067	406,131	0.0007	106,125
Hourly Garage	1,133	1,033	100	2,759,067	4,535,212	0.0016	439,033
Daily Garage	1,949	1,943	6	2,759,067	7,484,710	0.0014	23,113
Daily Surface	1,722	1,433	289	2,759,067	4,624,219	0.0012	932,588
TOTAL			**708**				**$2,343,093**
Rental Car [7]							
Hourly Garage		1,033	207	2,759,067	4,535,212	0.0016	908,799
Daily Garage		1,943	352	2,759,067	7,484,710	0.0014	1,394,475
TOTAL with Rental Car			**1,262**				**$4,585,894**

[1]Source: JAA. Includes non-public spaces for employees, vendors, etc.
[2]Based on Walker's recommendation.
Source: JAA. 2017 is last full fiscal year of enplanement data.
[3]Source JAA. Total revenue only reflects parking products included in this revenue projection. Total parking revenue for all products at JAX in FY 2017 was $19,290,602
[4]Calculated based on total revenue by parking product and enplanements.
[5]Based on FY 2017 enplanements. Any increase or decrease to enplanement projections will impact demand for parking and projections will differ from actual.
[6]This figure is based on a total valet revenue of $406,131, which was the FY2017 revenue amount of valet to the airport. JAX currently is under a concession
agreement for valet services. The private concessionaire receives revenues from valet parking.
Projected revenue from adding valet spaces for discussion purposes only and does not reflect actuals. should JAX renegotiate its valet concession agreement.
[7]Total public spaces returned from Rental Car relocation (a long-term recommended capital project) is 729 parking spaces. Of that, 175 parking spaces in the Hourly Garage are recommended to be used for the Premier Parking Program and TNC pick-up. The remaining spaces will be split between the Hourly and Daily Garage.
Enplanements at JAX are expected to increase by 4% over the next five years and 2.7% thereafter.
Total public parking spaces s at JAX is 7,819 spaces.
Total FY 2017 parking revenue was $20,126,951.
Assumes current occupancy rates remain the same for new parking spaces.
Fiscal year is Oct. through Sept.

Source: *Walker Consultants,* 2018

Table 23 below shows the calculation of possible projected revenue per space per enplanement to forecast revenues as a result of adding parking spaces to the public.

Table 23: Calculation of Revenue per Space per Enplanement

Product	FY 2017 Enplane-ments[1]	FY 17 Revenue ($)[1]	Current Total Public Spaces[1]	FY 17 Transactions[1]	Enplane ments Per Tran-saction[2]	Trans-actions Per Parking Space[3]	Revenue Per Enplane-ment ($)[4]	Revenue Per Space ($)[5]	Revenue Per Space Per Enplane-ment ($)[6]
Valet [7]	2,759,067	406,131	199	18,095	152.5	90.9	0.15	2,040.86	0.0007
Hourly Garage	2,759,067	4,535,212	1,033	320,946	8.6	310.7	1.64	4,390.33	0.0016
Daily Garage	2,759,067	7,484,710	1,943	157,090	17.6	80.8	2.71	3,852.14	0.0014
Daily Surface	2,759,067	4,624,219	1,433	177,178	15.6	123.6	1.68	3,226.95	0.0012

Walker Notes and Assumptions
[1]Source: JAA.
[2]Calculated based on total parking transactions and enplanements.
[3]Calculated based on total transactions and parking spaces by product.
[4]Calculated based on total FY 2017 revenue by enplanement.
[5]Calculated based on total FY 2017 revenue and parking spaces by product.
[6]Based on FY 2017 enplanements. Any increase or decrease to enplanement projections will impact demand for parking and projections will differ from actual.
Fiscal year is Oct. through Sept.
[7]JAX is under a concession agreement for valet service. In FY 2017 JAX received $406,131 in revenues for valet services, which may not reflect actuals.

Source: *Walker Consultants*, 2018

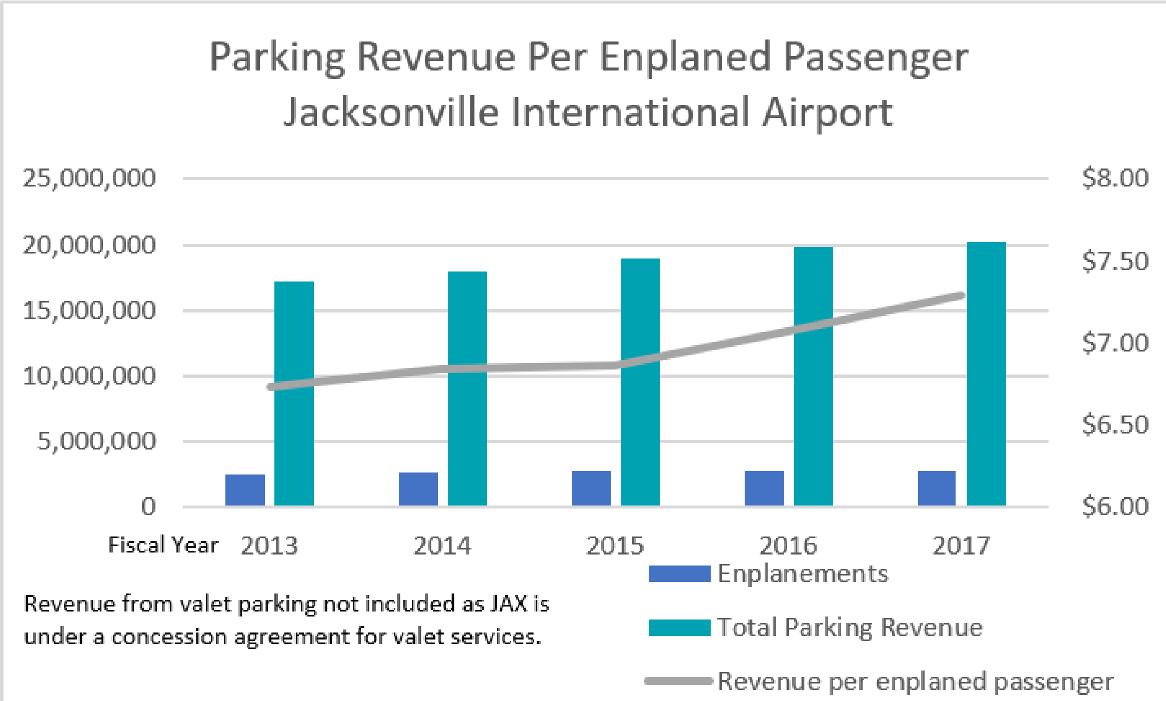
Walker performed an analysis of historical parking transactions per enplanements. Results showing a slight decline from fiscal year 2013 to fiscal year 2017, as displayed in Figure 41. This does not include FY2018, the first full year of TNC usage at the airport, as the data is unavailable. When the data becomes available, Walker can include it in this analysis.

Figure 41: Parking Transactions per Enplaned Passenger

Source: *JAX; Walker Consultants,* 2018

As displayed in Figure 42 Walker performed an analysis of historical parking revenues per enplanements and found an uptick of $0.57 per enplanement from 2012 through 2017. However, this does not include FY2018, the first full year of TNC usage at the airport, as the data is unavailable. When the data becomes available, Walker can include it in this analysis.

Figure 42: Parks Revenue per Enplaned Passenger

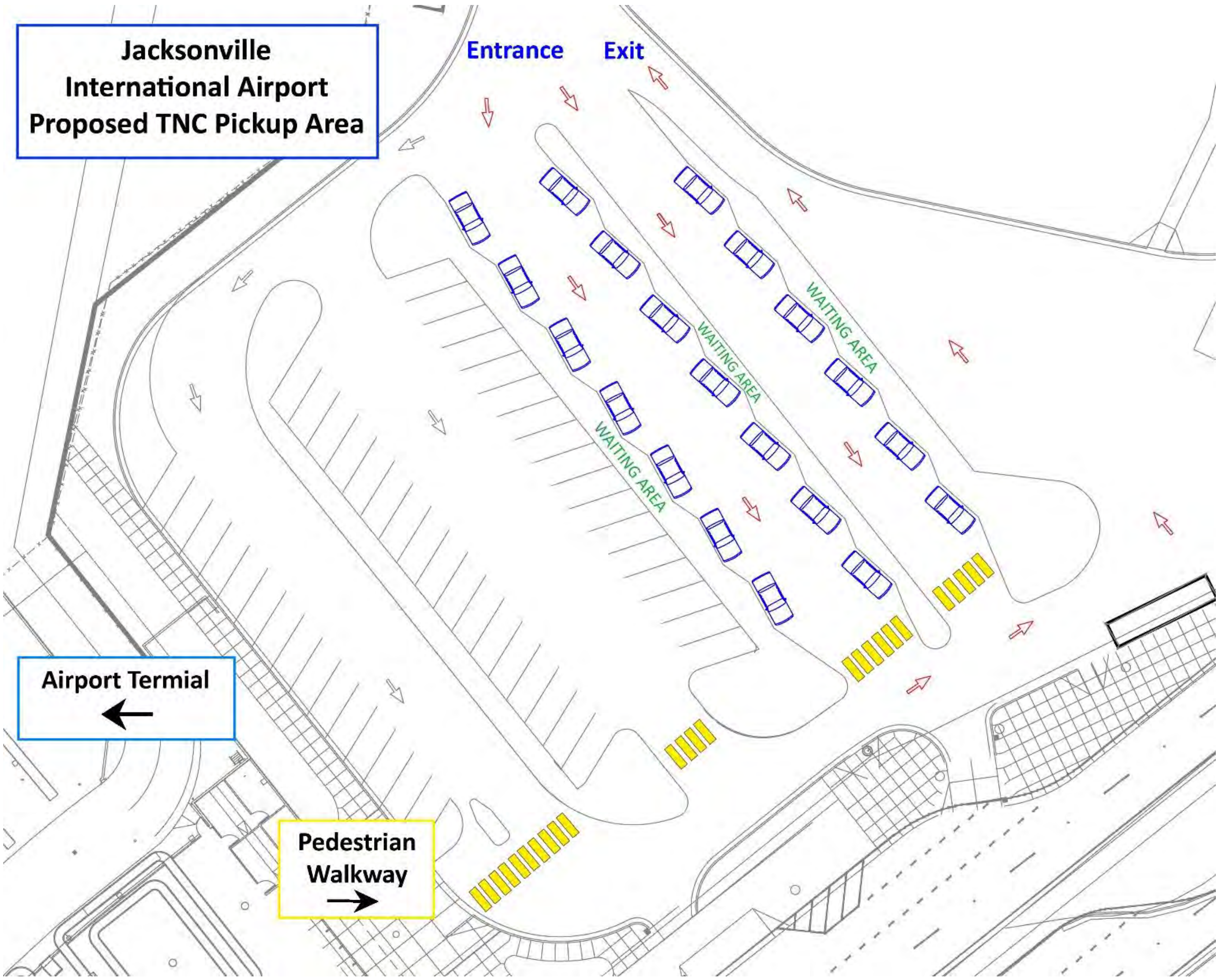


Source: *Walker Consultants*, 2018

Parking Reallocation and Operational Changes

A Appendix

APPENDIX A: PARKING REALLOCATION AND OPERATIONAL CHANGES – TNC LOT



B Appendix

Peak Hour Signal Warrant – Yankee Clipper Drive/Pecan Park Road

APPENDIX B: PEAK HOUR SIGNAL WARRANT

EXISTING CONDITIONS PEAK HOUR VOLUME WARRANT
RURAL CONDITIONS

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

Peak Hour: **AM**

Major Street: **Yankee Clipper (EW)**

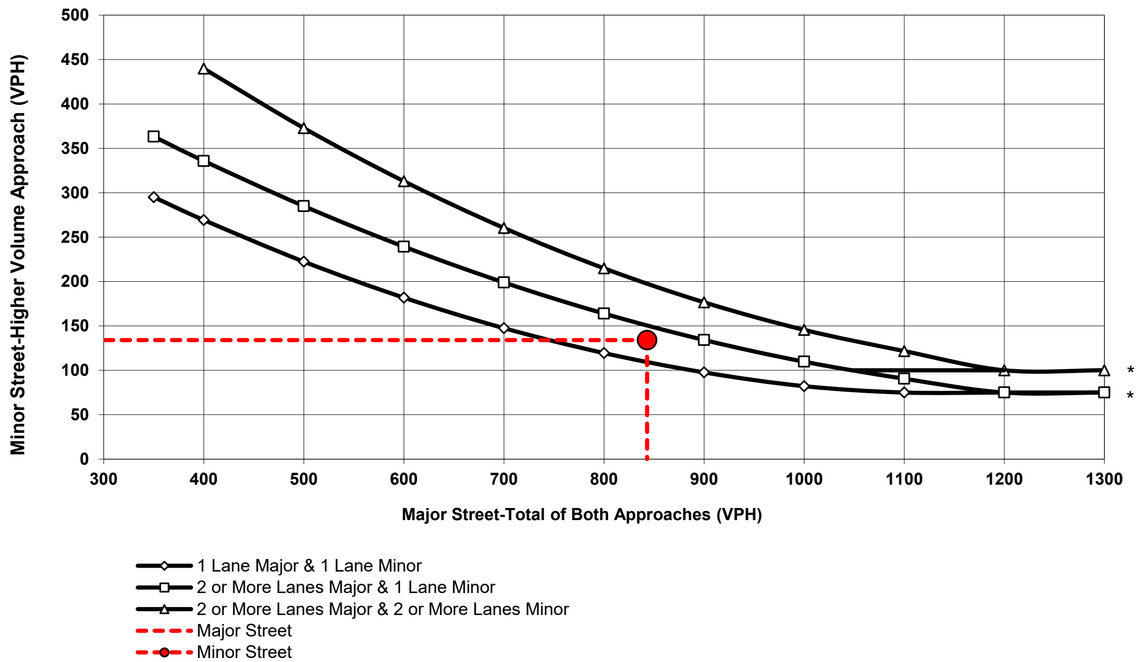
Total of Both Approaches (VPH): **843**
Number of Approach Lanes: **2**

Minor Street: **Pecan Park (NS)**

Higher Volume Approach (VPH): **134**
Number of Approach Lanes: **1**

SIGNAL WARRANT NOT SATISFIED

Figure 4C-4. Peak Hour Warrant (Rural)



* Note:
100 vph Applies as the Lower Threshold Volume for a Minor Street Approach with Two or More Lanes and 75 vph Applies as the Lower Threshold Volume for a Minor Street Approach with One Lane.

Source: 2009 MUTCD with Revisions 1 and 2 (May, 2012)

Existing Condition
Peak Hour Signal Warrant Based on Observed Mid-day Conditions
Yankee Clipper/Pecan Park

TNC Interview Questions & Responses

C Appendix

APPENDIX C: TNC INTERVIEW QUESTIONS AND RESPONSES

INTERVIEW QUESTIONS

The current management of TNC operations was evaluated by conducting interviews with representatives from five airports:

- Tampa International Airport
- Orlando International Airport
- *Fort Lauderdale*-Hollywood International *Airport*
- *San Francisco International Airport*
- *Greater Rochester, NY International Airport*
- Southwest Florida International Airport

The questions asked and elaborated on during the interviews are as follows:

1. Are TNCs legally allowed to operate in the city/county/state?
2. Are TNCs operating on the airport property (with or without permission from the airport)?
3. Which TNC companies?
4. Does the airport require a TNC to acquire permits or enter into an agreement?
5. Do you require background checks for drivers?
6. Other requirements (insurance, vehicle inspections, etc.?)
7. Where are TNCs permitted to pick-up and drop-off passengers?
8. Are TNCs permitted to pick-up and drop-off in the same trip?
9. Do you require TNCs to wait in a staging area? Where?
10. Has traffic congestion increased as a result of TNCs?
11. Have you experienced any security issues?
12. How do you enforce TNCs? Additional airport staff?
13. Do you have an annual fee? Pick-up fee? Drop-off fee? How is the fee assessed?
14. Are revenues directed toward a specific budget line item?
15. Have you incurred additional costs related to TNCs?
16. Has airport revenue from taxis, car rentals, parking, or other areas declined due to TNCs?
17. What is the total amount of annual revenue generated from TNCs?
18. How does the airport monitor TNC activity?
19. What challenges have you faced in regulating and managing TNCs?
20. What advice do you have for other airports?
21. What would you have done differently?

A-Table 1: Comparative Responses of TNC Interviews

Airport	Passengers	Number of TNC Trips	TNC Operating on Airport	Permit or Agreement Required	Background Checks and Other Requirements	Pick-Up and Drop-Off Area	Pick-up and Drop Off allowed in same trip (Rematch)	Increase in Traffic Congestion	Staging Area	Monitoring/Auditing	Fees/Annual Revenue	Enforcement	Additional Costs	Impact on Other Revenues	Contact
San Francisco International Airport (SFO)	54 million	9.5 million (2017)	Uber Lyft Wingz	Yes	Drivers are required to have a criminal and DMV background check 19-point vehicle inspection	Lyft shared rides and Uber Pool - Garage Regular Lyft and Uber X -at curb: Drop-off and Pick-up at departure level	Yes	Yes Moved some TNCs to garage to limit congestion	Two airport lots, 3 min drive to terminal	Annual audit Use AAAE ABT Clearinghouse	\$3.60 fee for pick-up and drop-off Additional \$1.40 for curbside access	Have hired 150 attendants to monitor garage and curb	Additional enforcement staffing costs \$3M for garage conversion	Limo and taxi related revenues have declined. Parking rates increased at the same time TNCs began operations, so data cannot be analyzed	Brandon Carballo Airport Economic Planner Financial Planning & Analysis 650-821-2887 brandon.carballo@flysfo.com
Rochester, NY International Airport (ROC)	2.4 million	94,239 (Jan 18 - July 18)	Uber Lyft	Yes	Same as taxi requirements including vehicle and insurance requirements	Covered curbside area at both arrivals and departures for pick-up and drop-off, three parking spaces	Yes	None	Defined TNC staging area on airport grounds, two-minute trip to the terminal	Use AAAE ABT Clearinghouse for Lyft data, not Uber. Uber pays an additional permit fee of \$8K because they require more auditing Monthly internal audit and annual audit	\$2,000 - \$10,000 annual fee based on use of geo-fence \$2 per trip fee for pick-up and drop-off	No need to currently enforce	None	No impact on parking revenue. Some decline in tax related revenues	Donald L. Crumb, Jr. Senior Deputy County Attorney Monroe County Department of Law (585) 753-1465 DonaldCrumb@monroecounty.gov

Airport	Passengers	Number of TNC Trips	TNC Operating on Airport	Permit or Agreement Required	Background Checks and Other Requirements	Pick-Up and Drop-Off Area	Pick-up and Drop Off allowed in same trip (Rematch)	Increase in Traffic Congestion	Staging Area	Monitoring/Auditing	Fees/Annual Revenue	Enforcement	Additional Costs	Impact on Other Revenues	Contact
Southwest Florida International Airport (RSW)	8.8 million	N/A	Uber Lyft	Yes, but agreement not yet been agreed to by both parties	Mirrors State of Florida statute	Entire curb, no dedicated space or sign	No	None, but curbside will be outgrown in five years so may make adjustments	Defined staging area at parking lot one mile from terminal	GateKeeper reports geo-fence data, staff makes sure no duplicates and compares to TNC data No annual audit	$2 pick-up fee No drop off or annual fee	No additional security/enforcement has been necessary	None	No impact on parking or car rental revenues. Taxi demand has declined 20-30%	April R. Russ Lee County Port Authority Landside Manager, Airport Operations (239) 590-4725 arruss@flylcpa.com
Tampa International Airport (TPA)	20.6 million	850,000 (2017)	Uber Lyft Wingz	Yes	Mirrors State of Florida statute	Entire curb at arrivals level, no dedicated space or sign	No	Yes, significant at peak	Defined staging area at remote parking lot. TNCs are also permitted to stage/pick-up at rental car location	Geo-fence is integrated with PARCS equipment, no annual audit	$3 pick-up fee No drop-off or annual fee	No additional staff have increase police and traffic specialist patrols,	Small upfront costs to create staging area, more budget for police and traffic patrols, ongoing road and landscaping costs. Under cost recovery, revenue from $3 TNC pick-up fee funds these costs.	Decline in parking last year was 3%, rental car 1%	Laurie Noyes Vice President of Concessions 813-554-1447 lnoyes@tampaairport.com

Airport	Passengers	Number of TNC Trips	TNC Operating on Airport	Permit or Agreement Required	Background Checks and Other Requirements	Pick-Up and Drop-Off Area	Pick-up and Drop Off allowed in same trip (Rematch)	Increase in Traffic Congestion	Staging Area	Monitoring/Auditing	Fees/Annual Revenue	Enforcement	Additional Costs	Impact on Other Revenues	Contact
Orlando International Airport (MCO)	44 million	N/A	Uber Lyft Wingz	Yes	Mirrors State of Florida statute	Four curbside defined areas, two in each terminal	No	At peak	Defined staging area at remote parking lot that holds 85 vehicles	Geo-fence is integrated with GateKeeper. Staff compared Gatekeeper data with TNC provided data for billing purposes. No annual audit	$5.80 pick-up fee. No drop-off or annual fee	No additional staff. Existing staff enforces and issues citations	Staging area maintenance and expenses for restroom trailers in lot	No real impact on parking or car rental. Decline in taxi and pre-arranged transportation	Ratib Hussein, Manager of Parking & Ground Transportation Services 407-825-2610 rhussein@goaa.org

Statement of Limiting Conditions

D Appendix

APPENDIX D: STATEMENT OF LIMITING CONDITIONS

1. This report is to be used in whole and not in part.
2. Walker's report and recommendations are based on certain assumptions pertaining to the future performance of the local economy and other factors typically related to individual user characteristics that are either outside Walker's control or that of the client. To the best of Walker's ability, we analyzed available information that was incorporated in projecting future performance of the subject site.
3. Financial projections presented in this report are conceptual estimates in nature and will differ from actual results.
4. All information, estimates, and opinions obtained from the Client and others not employed by Walker Consultants are assumed to be true and correct; we can assume no liability resulting from misinformation.
5. None of this material may be reproduced in any form without our written permission, and the report cannot be disseminated to the public through advertising, public relations, news, sales, or other media.
6. We take no responsibility for any events or circumstances that take place subsequent to the date of our field inspections.
7. The quality of a parking facility's on-site management will have a direct effect on a property's economic viability. The financial projections presented assume responsible ownership and competent management. Any departure from this assumption can have a significant impact on the projected operating results.
8. The estimated operating results presented are based on an evaluation of the overall economy, and neither take into account nor make provisions for the effect of any sharp rise or decline in local or national economic conditions. We do not warrant that the projections will be attained, but they have been prepared on the basis of information obtained during the course of this study and are intended to reflect the expectations of a typical parking patron.
9. This report was prepared by Walker Consultants; the opinions, recommendations, and conclusions expressed for this assignment are rendered by Walker's staff members as employees, rather than as individuals.
10. This report is set forth as a preliminary financial analysis for the Subject Property and is not an appraisal report.
11. The conclusions and recommendations presented were reached based on Walker's analysis of the information obtained from the Client and our own sources. Information furnished by others, upon which portions of this study are based, is believed to be reliable; however, it has not been verified in all cases. No warranty is given to the accuracy of such information, and any significant differences between these assumptions and actual performance can have an impact on the financial projections for the proposed parking operation

APPENDIX C

Bus Gate Alternatives

APPENDIX C BUS GATE ALTERNATIVES

During the preparation of this Master Plan Update the JAA initiated design services for the proposed Concourse B. However, it is anticipated that gate demand will exceed gate capacity before the additional Concourse B gates are operational. To provide for aircraft parking capability, the aircraft hardstand alternatives discussed in the previous section were prepared. The aircraft hardstand aprons will allow for the boarding and deplaning of passengers onto and off aircraft from the hardstand in lieu of a contact gate. During these "hardstand operations" passengers will need to be bussed from to/from the terminal and aircraft which requires an access point in the terminal for passengers to traverse to/from a bus. This section provides three bus gate alternatives illustrating options for passengers to traverse from the concourse level of the terminal to/from the ramp level to access a bus. These concepts assume Cobus 3000 or equivalent buses would be utilized to transport passengers and are depicted on **Exhibits C-1** through **C-3** and are described below.

C.1 BUS GATE – ALTERNATIVE 1

Alternative 1, as illustrated on Exhibit C-1, is located west of the SSCP and between Gate C2 and the centralized concessions area. This alternative requires the relocation of approximately 2,600 square feet of existing concessions space to be utilized as proposed holdroom. A covered pedestrian ramp would extend from the holdroom to the west approximately 120 linear feet to provide ADA compliant access from the concourse level of the terminal to the ramp level. Once passengers reach the ramp level a bus loading area with covered canopy is proposed to allow for passenger queuing space while they are boarding or off-loading from the Cobus.

The Cobus would access the bus loading using the existing vehicle service road behind Gate C2, turn to the east toward the terminal and would make a large U-turn to pull alongside of the bus loading area. Proposed pavement markings would be required to direct Cobus operators where to maneuver and begin a 180-degree turn to stop within the proposed bus curb. This alternative also requires the relocation of Ground Support Equipment (GSE), as well as, shifting Gate C2 aircraft containment lines, lead-in line, and passenger boarding bridge stow box to the south by approximately 16 feet.

C.2 BUS GATE - ALTERNATIVE 2

Alternative 2, is shown on Exhibit C-2. This alternative is also located west of the SSCP and between Gate C2 and the centralized concessions area. This alternative requires the relocation of approximately 320 feet of existing concessions space to be utilized as access to a proposed bus gate holdroom that would be constructed adjacent to and at the same level as Concourse C. The proposed bus gate holdroom is approximately 2,650 square feet. A sloped, ADA compliant, covered pedestrian ramp approximately 240 linear feet in length would provide access along the south side of the future Concourse B from the concourse level of the terminal to the ramp. At the ramp level, a bus loading area with covered canopy would allow queuing space for passengers to board the Cobus.

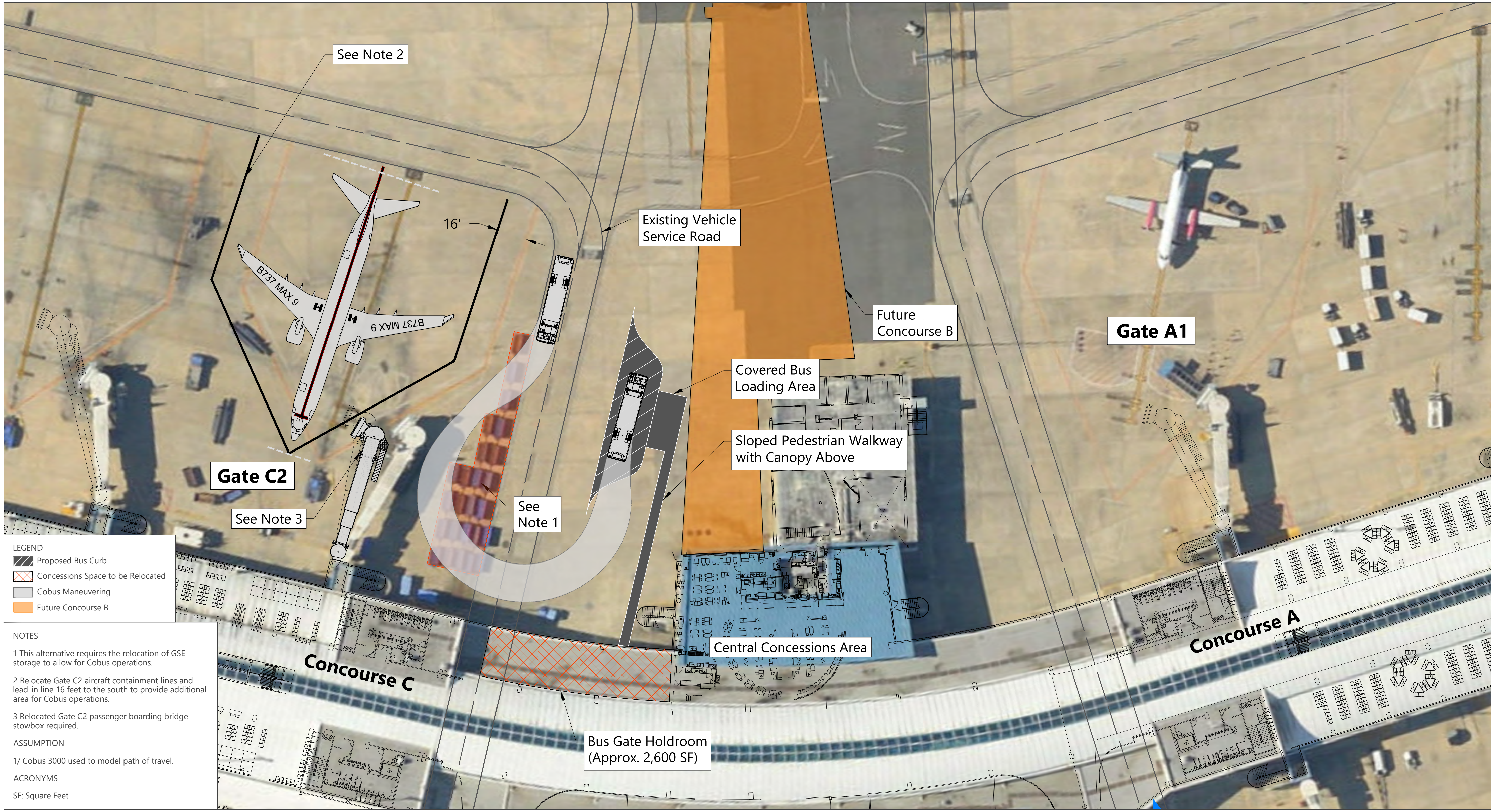
The Cobus would access the bus loading area by using the existing vehicle service road behind Gate C2 and would turn to the west into the proposed bus curb.

C.3 BUS GATE – ALTERNATIVE 3

Alternative 3, as depicted on Exhibit C-3, has a similar layout to Alternative 2, however, this alternative is located between Gate A1 and the centralized concessions area. This alternative concept requires the relocation of approximately 320 feet of existing concessions space to be utilized as access to a proposed bus gate holdroom that would be constructed adjacent to and at the same level as Concourse A. The proposed bus gate holdroom is approximately 2,650 square feet. A sloped, ADA compliant, covered pedestrian ramp approximately 320 linear feet in length would provide access along the north side of the future Concourse B from the proposed holdroom down to the ramp level. At the ramp level a bus loading area with covered canopy would allow queuing space for passengers to board the Cobus.

The Cobus would access the loading area by using the existing vehicle service road behind Gate A2 then turning to the west into the proposed bus curb.

The development of Bus Gate alternatives was not originally included in the scope for the Alternatives Chapter, however, this facility could accommodate the increased aircraft gate demand prior to the construction of Concourse B – Phase 1. While these Bus Gate alternatives have been presented to JAA, a preferred alternative has not been selected as of the writing of this Master Plan Update.



NOTES

1 This alternative requires the relocation of GSE storage to allow for Cobus operations.

2 Relocate Gate C2 aircraft containment lines and lead-in line 16 feet to the south to provide additional area for Cobus operations.

3 Relocated Gate C2 passenger boarding bridge stowbox required.

ASSUMPTION

1/ Cobus 3000 used to model path of travel.

ACRONYMS

SF: Square Feet

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (basemap); Jacksonville Aviation Authority, November 2018 (airside basemap); AviPLAN, May 2019 (Cobus 3000APX); Ricondo & Associates, Inc., May 2019 (bus gate alternative).

NORTH 0 50 ft.

EXHIBIT C-1

BUS GATE ALTERNATIVE 1

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\XX - Temporary Bus Gate\CAD\Exhibit C-1_Bus Gate_Cobus Manuevering_Alternative 1_Extended Ramp Concept.dwgLayout: Exhibit 1 Plotted: Nov 13, 2019, 05:33PM

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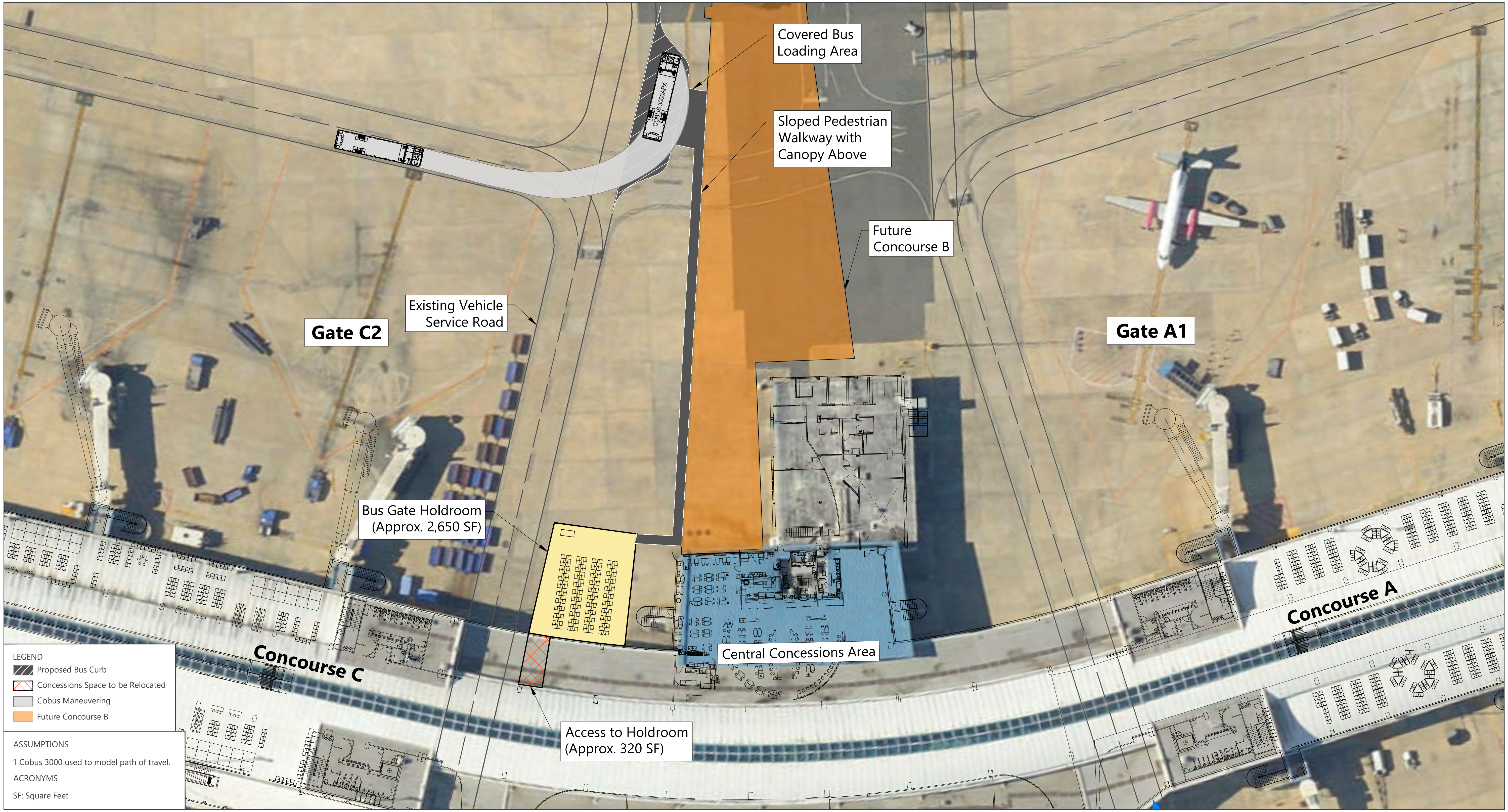

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (basemap); Jacksonville Aviation Authority, November 2018 (airside basemap); AviPLAN, May 2019 (Cobus 3000APX); Ricondo & Associates, Inc., May 2019 (bus gate alternative).

NORTH 0 50 ft.

EXHIBIT C-2

BUS GATE ALTERNATIVE 2

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\XX - Temporary Bus Gate\CAD\Exhibit C-2_Bus Gate_Cobus Manuevering_Alternative 2_Extended Ramp Concept.dwgLayout: Exhibit 2 Plotted: Nov 13, 2019, 05:35PM

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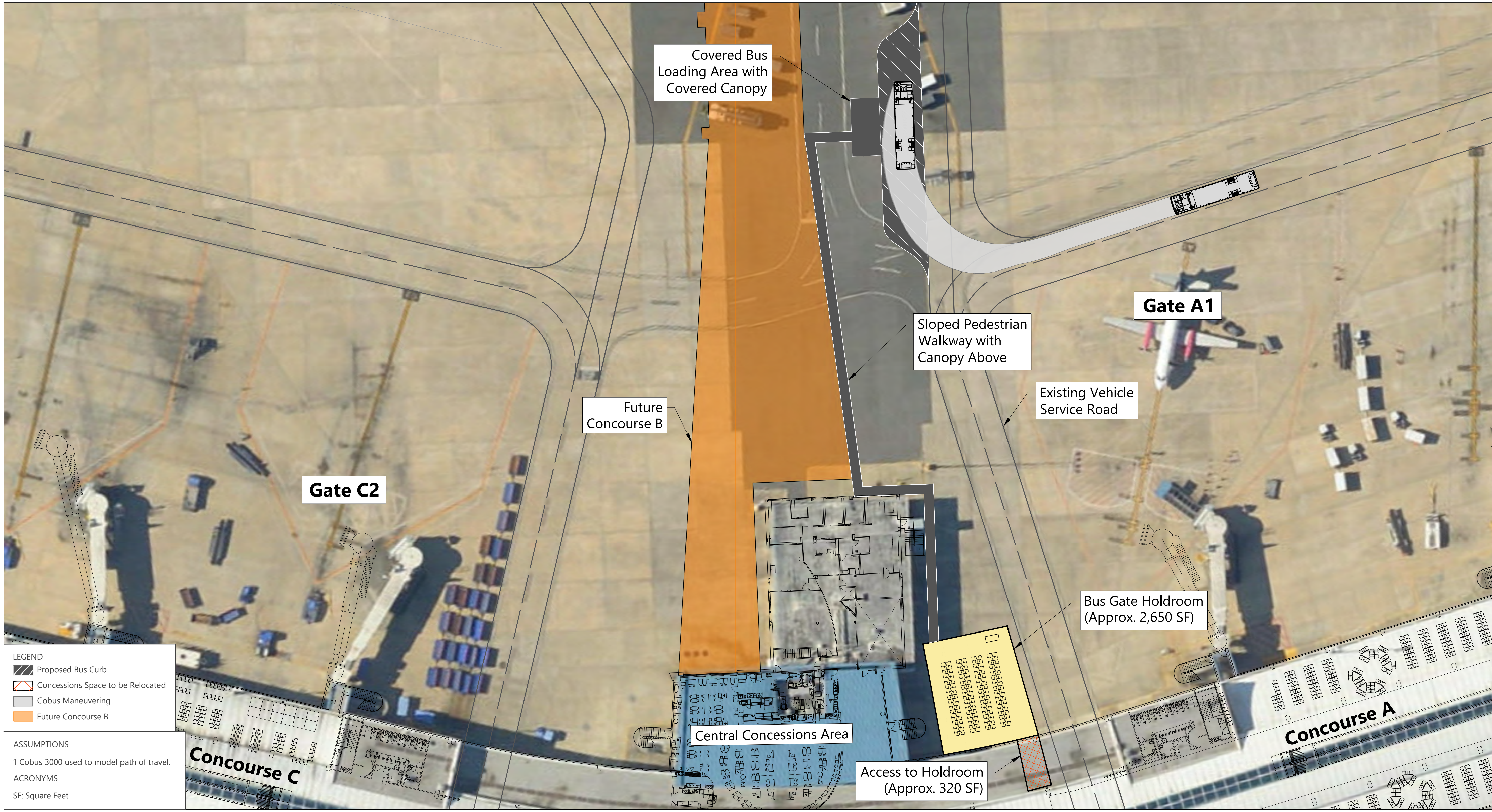

SOURCES: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, February 2017 (basemap); Jacksonville Aviation Authority, November 2018 (airside basemap); AviPLAN, May 2019 (Cobus 3000APX).

NORTH 0 50 ft.

EXHIBIT C-3

BUS GATE
ALTERNATIVE 3

Drawing: P:\Project-Dallas\JAA\2018 Master Plan and ALP Update\05-TaskOrders\Master Plan Update\XX - Temporary Bus Gate\CAD\Exhibit C-3_Bus Gate_Cobus Manuevering_Alternative 3_Extended Ramp Concept.dwgLayout: Exhibit 3 Plotted: Nov 13, 2019, 05:37PM

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APPENDIX D

Capital Improvement Program Project Sheets

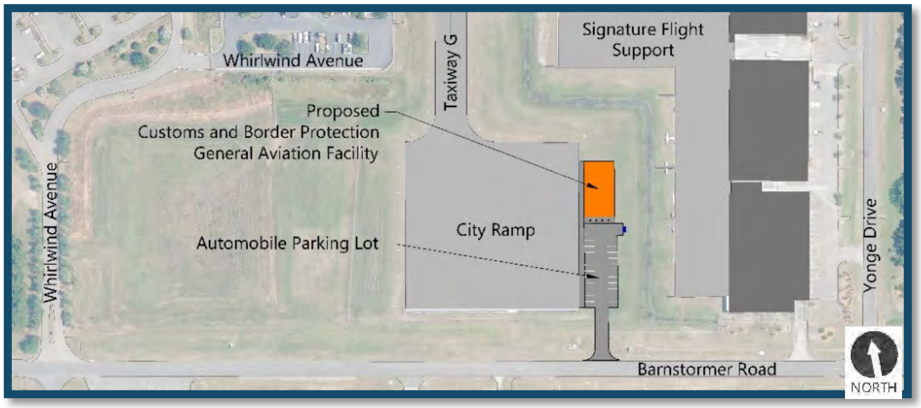
JAX Jacksonville International Airport

CUSTOMS AND BORDER PROTECTION GENERAL AVIATION FACILITY

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: FACILITY

PROJECT CONTRIBUTION: OPERATIONAL ENHANCEMENT



1. PROJECT TITLE:

Customs and Border Protection (CBP) General Aviation (GA) Facility

2. PROGRAMMED FISCAL YEAR (FY): Active; Design FY 2020, Construction FY 2021

3. JUSTIFICATION/PURPOSE/NEED:

Due to the growth in international GA activity at JAX, there is a need to construct a CBP GA Facility to process GA international passengers.

4. PROPOSED PROJECT OVERVIEW:

The CBP GA facility will be approximately 4,900 square feet and will be staffed two CBP officers with the ability to process 20 passengers per hour. Aircraft will park on the existing City Ramp which is approximately 40,000 square feet and able to accommodate two simultaneous Cessna Citation Latitude aircraft operating independently or a single Global Express 6000 aircraft. The automobile parking lot will be approximately 3,100 square feet with 14 parking spaces.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, a portion of the existing City Ramp adjacent to the project site may be unusable during construction.

6. TIMELINE FOR COMPLETION:

2 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

$4.5M; future PFC application files, February 2020.

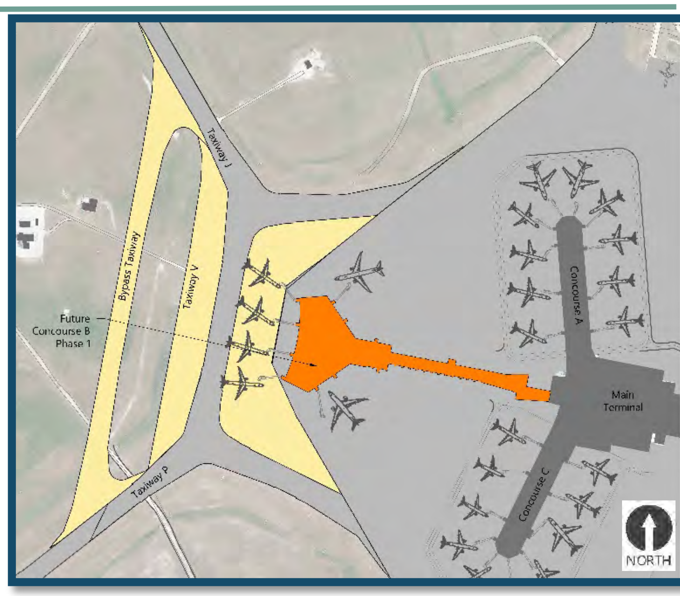
Jacksonville International Airport

CONCOURSE B – PHASE 1 (SIX ADDITIONAL GATES) PROGRAM

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: TERMINAL

PROJECT CONTRIBUTION: EXPANSION



1. PROJECT DESCRIPTION:

Future Concourse B – Phase 1 expansion to add six contact gates at Jacksonville International Airport.

2. PROGRAMMED FISCAL YEAR (FY):

Active (FY 2019)

3. JUSTIFICATION/PURPOSE/NEED:

Future Concourse B – Phase 1 provides an additional six aircraft gates that will accommodate recent passenger and growth airline operations growth at the Airport.

4. PROPOSED SCOPE OVERVIEW:

Future Concourse B – Phase 1 extends approximately 950 feet to the west from the existing Main Terminal. The new concourse would accommodate an additional six aircraft gates and would require the relocation of eight aircraft hardstand positions. Associated airport improvements in the Concourse B Expansion Program include:

- a future ADG-V bypass taxiway ($12.0M),
- infill pavement of the island west of the future Concourse B – Phase 1 ($25.0M),
- airside concessions redevelopment,
- Concourses A and C holdroom modifications, and
- installation of six ASLs in the SSCP

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

Eight aircraft hardstand positions are located within the footprint of the new concourse and require relocation or replacement within proximity to the concourses and the bypass taxiway and infill facilitate aircraft movement on the airfield. The concessions redevelopment, holdroom modifications, and equipment replacement in the SSCP are also driven by increased passenger demand and will improve the passenger experience once completed.

6. TIMELINE FOR COMPLETION:

3 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

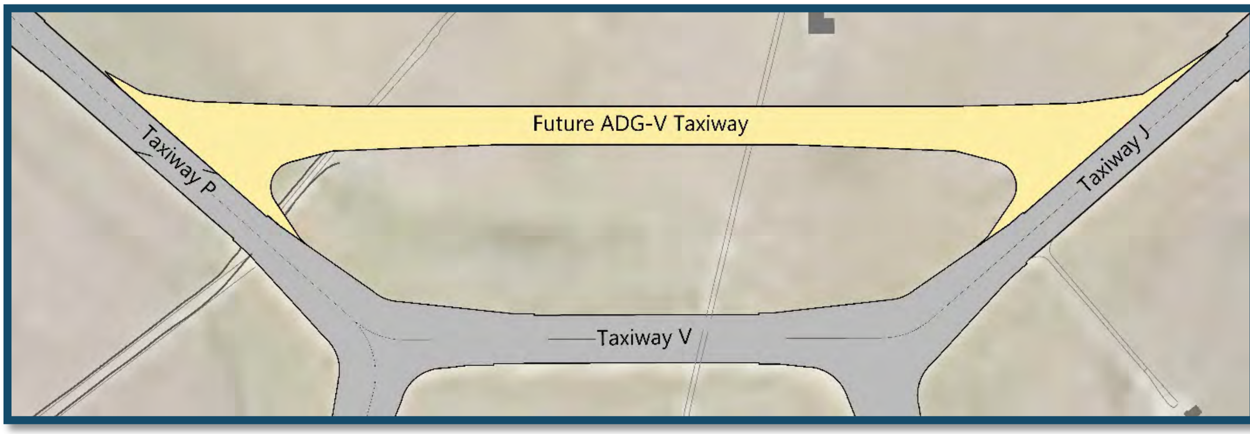
$195.5M; cost estimates prepared by JAA, February 2020.

FUTURE ADG-V TAXIWAY – PARALLEL TO TAXIWAY V

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT: TERMINAL EXPANSION/IMPROVEMENTS

PROJECT CONTRIBUTION: OPERATIONAL ENHANCEMENT



1. PROJECT DESCRIPTION:

Future Bypass Taxiway (TBD) at Jacksonville International Airport.

2. PROGRAMMED FISCAL YEAR (FY): Active

3. JUSTIFICATION/PURPOSE/NEED:

The future bypass Taxiway TBD increases efficiency for taxiing operations. It would provide a shorter distance for cargo operations landing on existing Runway 8-26 taxiing to the cargo area while remaining outside of the Terminal Apron area.

4. PROPOSED SCOPE OVERVIEW:

Future bypass Taxiway TBD is approximately 1,400 feet in length and is 75 feet wide. The future taxiway connects between existing Taxiway J and P, and is located approximately 417 feet west of existing Taxiway V. This offset allows for a full ADG-V taxiway/taxilane separation when Taxiway V is relocated for Concourse B – Phase 2.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS): N/A

6. TIMELINE FOR COMPLETION: 2 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

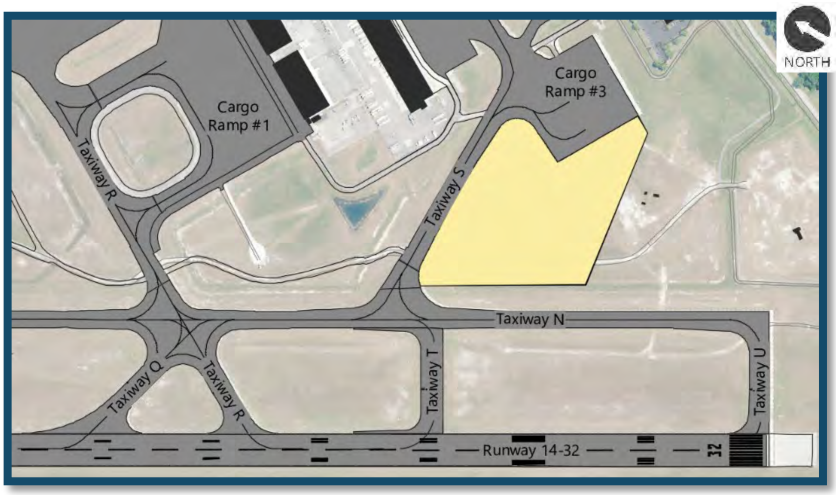
$12.0M; cost estimates prepared by JAA, February 2020.

SOUTH AIR CARGO DEVELOPMENT – PHASE 1

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: CARGO

PROJECT CONTRIBUTION: CAPACITY



1. PROJECT TITLE:

South Air Cargo Ramp #3 Apron Expansion

2. PROGRAMMED FISCAL YEAR (FY):

Design FY 2022, Construction FY 2023

3. JUSTIFICATION/PURPOSE/NEED:

There was minimal growth in air cargo operations and air cargo tonnage projected in the Aviation Activity Forecast. However, the south cargo expansion provides an alternative to the Airport should air cargo operations increase at a greater rate than projected.

4. PROPOSED PROJECT OVERVIEW:

The south air Cargo Ramp #3 expansion is located adjacent to existing air Cargo Ramp #3 north of Runway 32 end. This expansion provides approximately 24,500 cubic yards of additional apron pavement.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, portions of Cargo Ramp #3 may be unusable during construction.

6. TIMELINE FOR COMPLETION:

1.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

$17.0M; cost estimates prepared by JACOBS, November 2019.

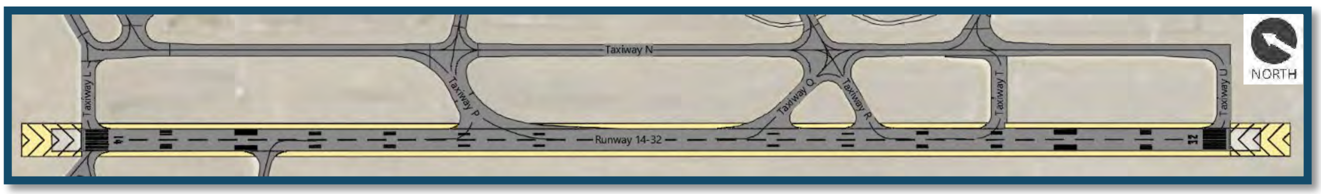
JAX Jacksonville International Airport

RUNWAY 14-32 SHOULDERS AND BLAST PAD EXPANSION

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: AIRFIELD COMPLIANCE

PROJECT CONTRIBUTION: DESIGN STANDARDS



1. PROJECT DESCRIPTION:

Runway 14-32 Shoulders and Blast Pad expansion

2. PROGRAMMED FISCAL YEAR (FY):

Design FY 2025, Construction FY 2026

3. JUSTIFICATION/PURPOSE/NEED:

Per FAA AC 150/5300-13A, Change 1, paved shoulders are required for runways accommodating ADG-IV aircraft and larger. The current runway design code (RDC) for Runway 14-32 is a D-V.

4. PROPOSED PROJECT OVERVIEW:

Proposed Runway 14-32 shoulder pavement to be constructed 25 feet wide down both sides of the runway for the entire length of the runway. Blast pads to be expanded to 400 feet long and 220 feet wide at each runway end.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, closures to Runway 14-32 may be necessary during construction. The shoulder construction could be paired with other Ruwnay 14-32 projects scheduled in the future to minimize the amount of runway closure time.

6. TIMELINE FOR COMPLETION:

2 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

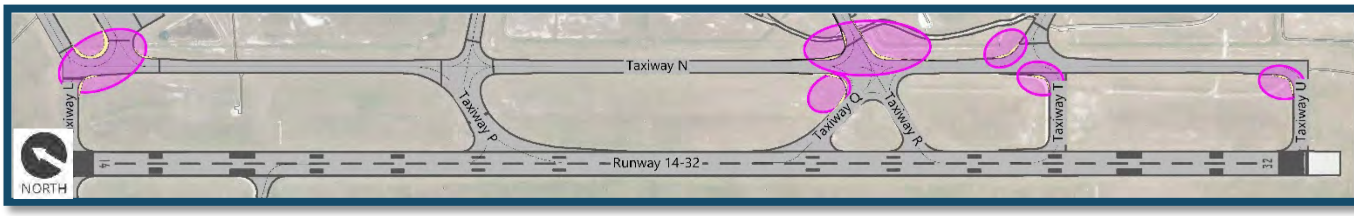
$9.0M; cost estimates prepared by JACOBS, November 2019.

TAXIWAY FILLET MODIFICATIONS

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: AIRFIELD COMPLIANCE

PROJECT CONTRIBUTION: DESIGN STANDARDS



1. PROJECT TITLE:

Taxiway Fillet Modifications

2. PROGRAMMED FISCAL YEAR (FY): Design FY 2026, Construction FY 2027

3. JUSTIFICATION/PURPOSE/NEED:

FAA AC 150/5300-13A, Change 1, requires airfield geometry to provide sufficient full-strength pavement for pilot's to perform cockpit over centerline taxiing maneuvers. Currently at JAX, only ADG-III aircraft can perform this taxiing maneuver at the highlighted intersections above, whereas ADG-IV and ADG-V aircraft must perform judgmental oversteer taxi maneuvers.

4. PROPOSED PROJECT OVERVIEW:

Proposed fillet modifications and associated lighting and marking changes to the areas on the airfield where the geometry does not comply with cockpit over centerline taxiing maneuvers per latest FAA design standards.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, taxiway intersections where modifications are required may be temporarily closed during construction.

6. TIMELINE FOR COMPLETION:

2 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

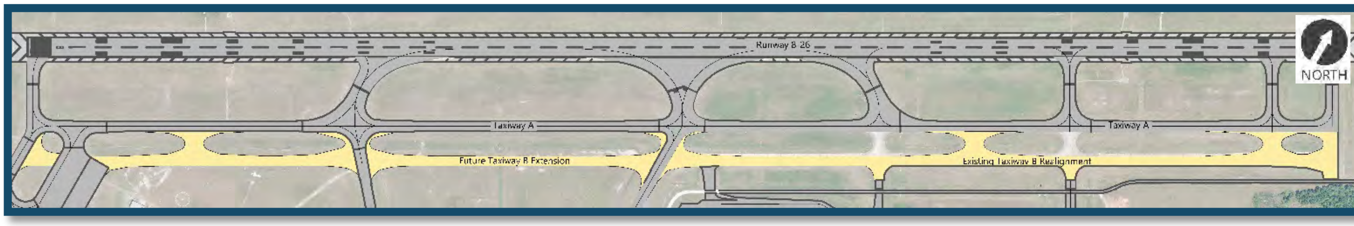
$3.4M; cost estimates prepared by JACOBS, November 2019.

TAXIWAY B EXTENSION AND REALIGNMENT

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT: AIRFIELD

PROJECT CONTRIBUTION: OPERATIONAL ENHANCEMENT



1. PROJECT TITLE:

Existing Taxiway B Realignment and Extension

2. PROGRAMMED FISCAL YEAR (FY):

Design FY 2027, Construction FY 2028

3. JUSTIFICATION/PURPOSE/NEED:

Existing Taxiway B would be relocated to the southeast to provide full Airplane Design Group V taxiway separation from Taxiway A. This realignment would eliminate the existing Modification of Standard currently in place. The Taxiway B extension would extend the taxiway from Taxiway H to Taxiway L providing a second, full-strength, parallel taxiway to Runway 8-26. The dual parallel taxiway system would increase airfield flexibility between commercial service and cargo operations allowing for simultaneous independent taxiing operations. It would also allow for cargo operations to remain outside of the terminal apron area.

4. PROPOSED PROJECT OVERVIEW:

The existing Taxiway B centerline would be relocated approximately 17 feet southeast of Taxiway A to comply with ADG-V design standards. The project would realign Taxiway B for a length of approximately 5,000 feet from Taxiway H to Taxiway C. The project would also extend Taxiway B southwest from Taxiway H to Taxiway L for a length of approximately 4,500 feet. Pavement fillet modifications to Taxiway J and the southwest side of Taxiway H are included in this project. The taxiway would be 75 feet wide to accommodate TDG 5 aircraft.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

Relocation of lights and signs for re-aligned portion and relocation/removal of existing infrastructure, if any, from the proposed extension of Taxiway B.

6. TIMELINE FOR COMPLETION:

3 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

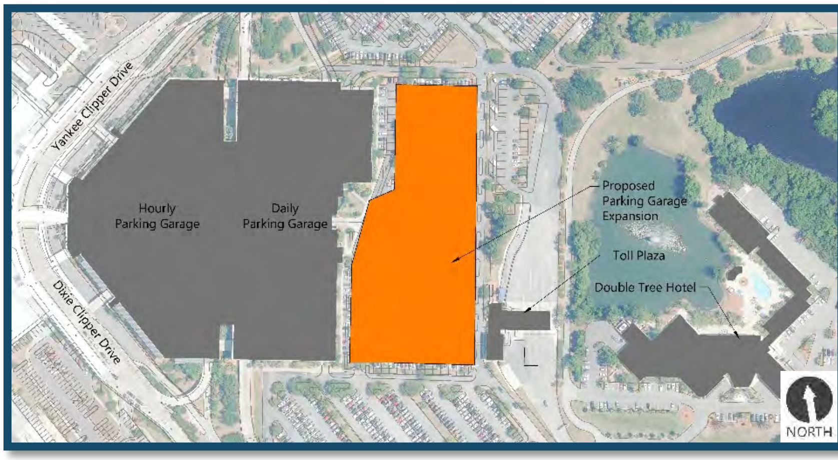
$34.9M; cost estimates prepared by JACOBS, November 2019.

PARKING GARAGE EXPANSION

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: FACILITY

PROJECT CONTRIBUTION: FACILITY CAPACITY



1. PROJECT TITLE:

Parking Garage Expansion

2. PROGRAMMED FISCAL YEAR (FY):

Design FY 2025, Construction FY 2026

3. JUSTIFICATION/PURPOSE/NEED:

Passenger demand at JAX is forecast to continue growing. As a result of increased passenger demand the parking infrastructure is beginning to reach capacity at peak periods. Therefore, additional parking capacity is required to accommodate forecast growth.

4. PROPOSED PROJECT OVERVIEW:

The parking garage expansion will provide an approximate addition of 600,000 square feet of infrastructure. The structure will have four levels and will provide approximately 1,600 additional daily parking spaces.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

The Daily Surface Lot will be replaced by the new parking garage expansion. Total number of displaced Daily Surface Lot spaces has yet to be determined.

6. TIMELINE FOR COMPLETION:

2.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

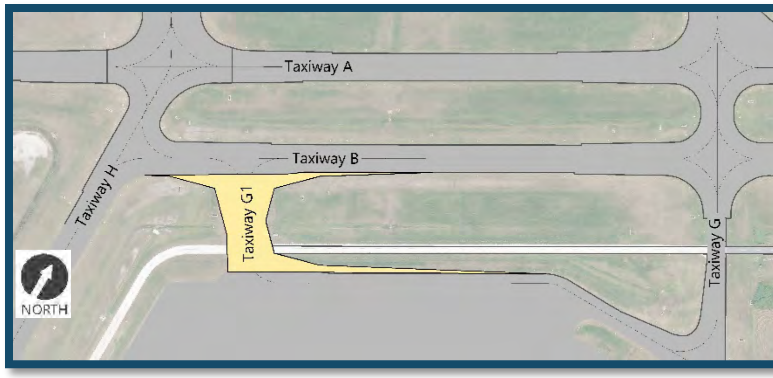
$80.0M; cost estimates provided by JAA, November 2019

TAXIWAY G1 RECONSTRUCTION

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT: AIRFIELD

PROJECT CONTRIBUTION: OPERATIONAL ENHANCEMENT



1. PROJECT TITLE:

Reconstruction of Taxiway G1

2. PROGRAMMED FISCAL YEAR (FY):

Design FY 2027, Construction FY 2027

3. JUSTIFICATION/PURPOSE/NEED:

Existing Taxiway G1 would be reconstructed to accommodate TDG 5 aircraft.

4. PROPOSED PROJECT OVERVIEW:

Existing Taxiway G1 between Taxiway B and GA Ramp would be reconstructed to accommodate TDG 5 aircraft. This improvement would allow TDG 5 aircraft to access the ramp for fueling.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

Relocation of existing lighting and signage.

6. TIMELINE FOR COMPLETION:

1.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

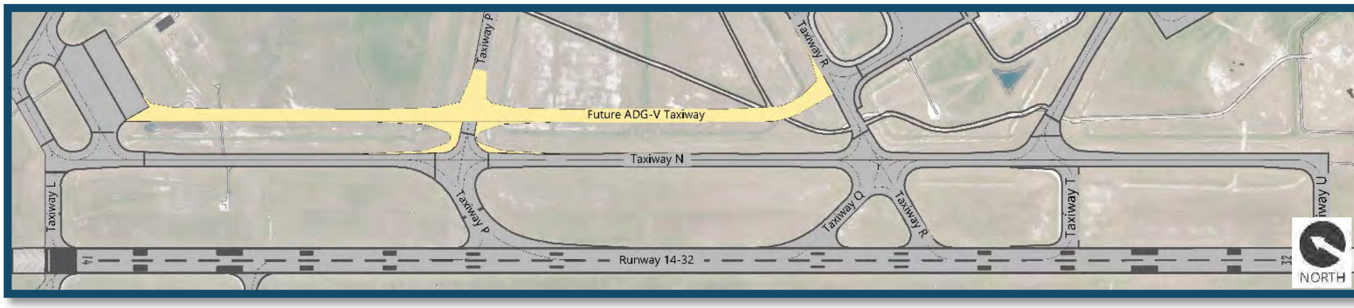
$872,000; cost estimates prepared by JACOBS, November 2019.

NEW ADG-V TAXIWAY – PARALLEL TO TAXIWAY N

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: AIRFIELD

PROJECT CONTRIBUTION: OPERATIONAL ENHANCEMENT



1. PROJECT TITLE:

New ADG-V Taxiway – Parallel to Taxiway N

2. PROGRAMMED FISCAL YEAR (FY):

Design FY 2029, Construction FY 2030

3. JUSTIFICATION/PURPOSE/NEED:

The new ADG-V Taxiway TBD construction would provide a second parallel taxiway to Runway 14-32 from Taxiway K to Taxiway R. The dual parallel taxiway system would increase airfield flexibility between commercial service and cargo operations allowing for simultaneous independent taxiing operations. It would also allow cargo operations to remain outside of the terminal apron area.

4. PROPOSED PROJECT OVERVIEW:

The new ADG-V Taxiway TBD centerline is located 267 feet north of Taxiway N to comply with ADG-V design standards. The project extends from the run-up pad adjacent to Taxiway K and ties into Taxiway R adjacent to Air Cargo Ramp #1. The future taxiway also ties into Taxiway P providing access to bypass Taxiway V. Pavement fillet modifications between the future taxiway and Taxiway N to allow for reverse directional taxiing are included in this project. The future taxiway is approximately 4,100 feet in length and is 75 feet wide and can accommodate TDG 5 aircraft.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, portions of Taxiway P, Taxiway R, and the run-up pad may have temporary closures during construction.

6. TIMELINE FOR COMPLETION:

2.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

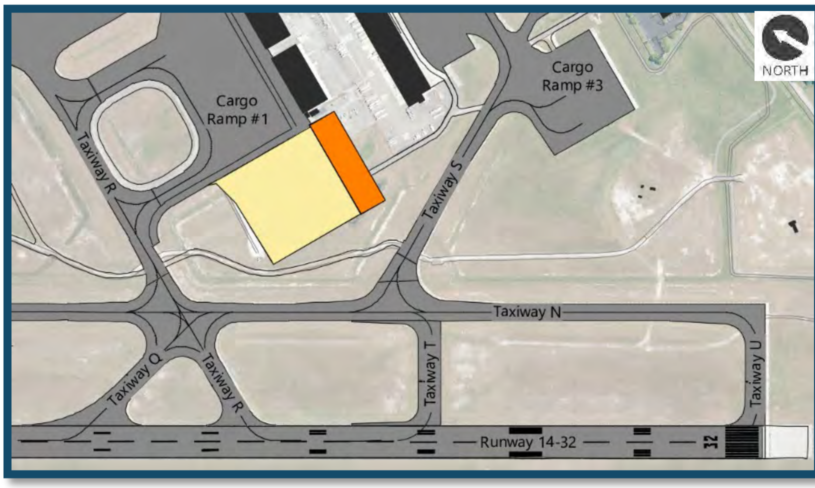
$17.6M; cost estimates prepared by JACOBS, November 2019.

SOUTH AIR CARGO DEVELOPMENT – PHASE 2

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: CARGO

PROJECT CONTRIBUTION: CAPACITY



1. PROJECT TITLE:

South Air Cargo Ramp #1 Apron and Facilities Expansion

2. PROGRAMMED FISCAL YEAR (FY):

Design FY 2023, Construction FY 2025

3. JUSTIFICATION/PURPOSE/NEED:

There was minimal growth in air cargo operations and air cargo tonnage projected in the Aviation Activity Forecast. However, the south cargo expansion provides an alternative to the Airport should air cargo operations increase at a greater rate than projected.

4. PROPOSED PROJECT OVERVIEW:

The south air Cargo Ramp #1 expansion is located adjacent to existing air Cargo Ramp #1 north of Runway 32 end. This expansion provides approximately 15,000 cubic yards of additional apron pavement and one additional cargo warehouse approximately 62,300 square feet.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, portions of Cargo Ramp #1 may be unusable during construction.

6. TIMELINE FOR COMPLETION:

2.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

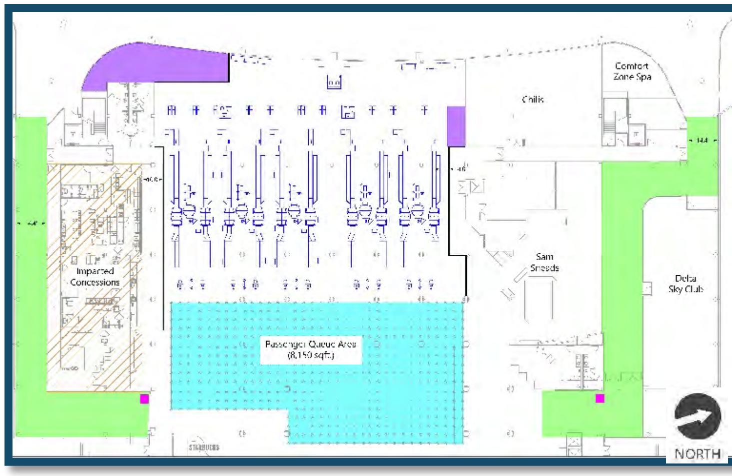
$12.0M; cost estimates prepared by JACOBS, November 2019.

SECURITY SCREENING CHECKPOINT EXPANSION

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: TERMINAL

PROJECT CONTRIBUTION: CAPACITY



1. PROJECT TITLE:

Security Screening Checkpoint (SSCP) Expansion

2. PROGRAMMED FISCAL YEAR (FY):

Design FY 2030, Construction FY 2031

3. JUSTIFICATION/PURPOSE/NEED:

The expansion of the SSCP would increase the total screening area of the SSCP to accommodate the larger CPSSs which would provide the necessary passenger throughput to meet the increased passenger demand levels projected in PAL 2 and PAL 3, which are 9 million and 10 million annual passengers, respectfully. The hourly throughput of the CPSSs is approximate 205 passengers, while the hourly throughput of the existing lanes is approximately 150 passengers.

4. PROPOSED PROJECT OVERVIEW:

This project widens the checkpoint area to include the existing exit corridor and replaces the eight screening lanes with 10 CPSSs (or the most current technology available at the time of implementation). This expansion reduces the landside concessions area by approximately 4,780 square feet and TSA office space would be relocated into this area. This project also expands the passenger queue area to 8,150 square feet. In addition, two new exit corridors to the north and south of the screening area by repurposing existing access corridors from the airside to the landside.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, phasing and coordination with existing concessions space and existing SSCP operations will be required.

6. TIMELINE FOR COMPLETION:

1.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

$5.3M; cost estimates provided by JACOBS, November 2019.

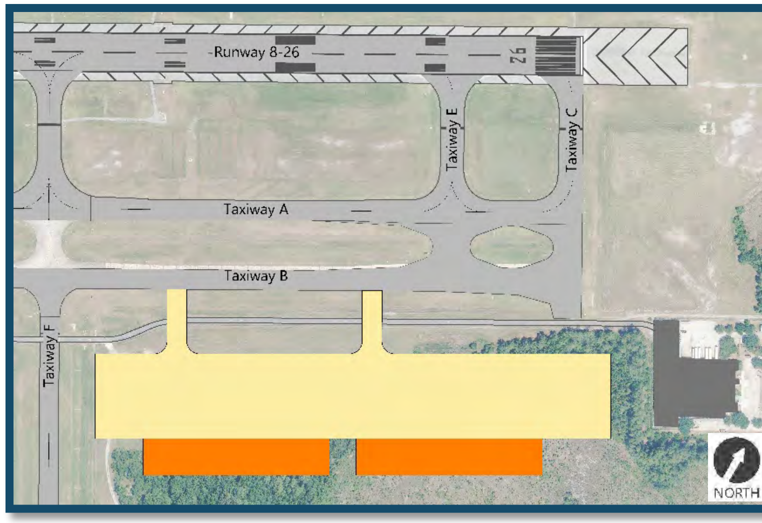
JAX Jacksonville International Airport

NORTH AIR CARGO DEVELOPMENT

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: CARGO

PROJECT CONTRIBUTION: EXPANSION



1. PROJECT TITLE:

North Air Cargo Development

2. PROGRAMMED FISCAL YEAR (FY):

TBD – Based on Demand

3. JUSTIFICATION/PURPOSE/NEED:

There was minimal growth in air cargo operations and air cargo tonnage projected in the Aviation Activity Forecast. However, the north cargo development provides an alternative to the Airport should air cargo operations increase at a greater rate than projected.

4. PROPOSED PROJECT OVERVIEW:

The north air cargo development is located in the northeast quadrant of the airfield south of the Runway 26 end. This development provides approximately 75,700 square yards of additional apron pavement and two additional cargo warehouses approximately 100,100 square feet each.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, clearing and grubbing of the site would be required prior to construction. Wetland mitigation would also be required prior to construction.

6. TIMELINE FOR COMPLETION:

2.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

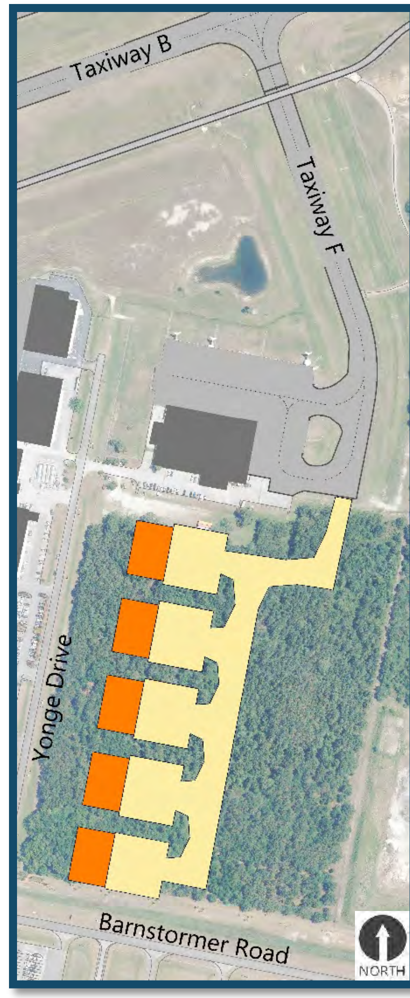
$68.4M, cost estimates prepared by JACOBS, November 2019.

GENERAL AVIATION DEVELOPMENT – PHASE 1

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: GENERAL AVIATION

PROJECT CONTRIBUTION: CAPACITY



1. PROJECT TITLE:

General Aviation Development – Phase 1

2. PROGRAMMED FISCAL YEAR (FY):

TBD – Based on Demand

3. JUSTIFICATION/PURPOSE/NEED:

This general aviation alternative was prepared as a phased approach to GA expansion should JAA choose to develop additional GA facilities.

4. PROPOSED PROJECT OVERVIEW:

Future general aviation development – Phase 1, is the first of a two phase development. This development extends south from Taxiway F and can be built incrementally based on demand. The alternative includes five corporate hangars that are approximately 17,700 square feet each with a proposed 3,200 square yard apron adjacent to each hangar. Landside access would be provided from Barnstormer Road.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, a significant amount of clearing and grubbing will be required when developing this site. Wetland mitigation will also be required when developing this site.

6. TIMELINE FOR COMPLETION:

2.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

$26.6M; cost estimates prepared by JACOBS, November 2019.

GENERAL AVIATION DEVELOPMENT – PHASE 2

CAPITAL IMPROVEMENT PROGRAM PROJECT SHEET

PROJECT TYPE: GENERAL AVIATION

PROJECT CONTRIBUTION: CAPACITY

1. PROJECT TITLE:

General Aviation Development – Phase 2

2. PROGRAMMED FISCAL YEAR (FY):

TBD – Based on Demand

3. JUSTIFICATION/PURPOSE/NEED:

This general aviation alternative was prepared as a phased approach to GA expansion should JAA choose to develop additional GA facilities.

4. PROPOSED PROJECT OVERVIEW:

This future general aviation development is the first of a two phased development. This development extends south from Taxiway F and can be built incrementally based on demand. The alternative includes five corporate hangars that are approximately 17,700 square feet each with a proposed 3,200 square yard apron adjacent to each hangar. Landside access would be provided from Barnstormer Road.

5. KNOWN DEPENDENCIES (OTHER PROJECTS OR EXISTING CONDITIONS):

This project is not dependent on other CIP projects. However, a significant amount of clearing and grubbing will be required when developing this site. Wetland mitigation will also be required prior to construction.

6. TIMELINE FOR COMPLETION:

2.5 years from NTP (includes design and construction)

7. ROUGH ORDER OF MAGNITUDE (ROM) BUDGET, FY2019:

$23.1M, cost estimate prepared by JACOBS, November 2019.

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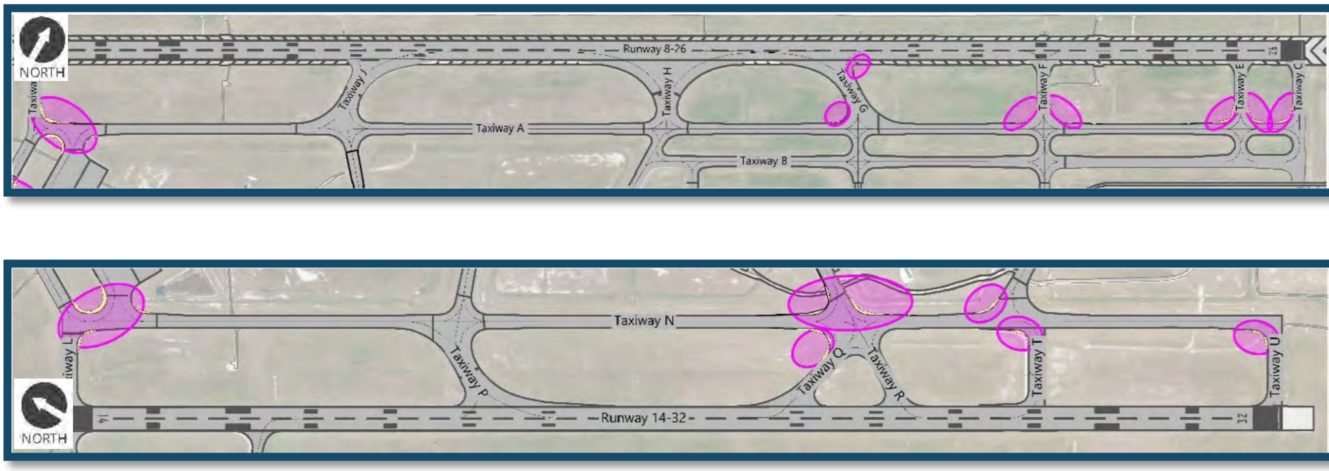
APPENDIX E

Capital Improvement Program
Cost Detail

EXHIBIT E-1 TAXIWAY FILLET ANALYSIS-13A GEOMETRY



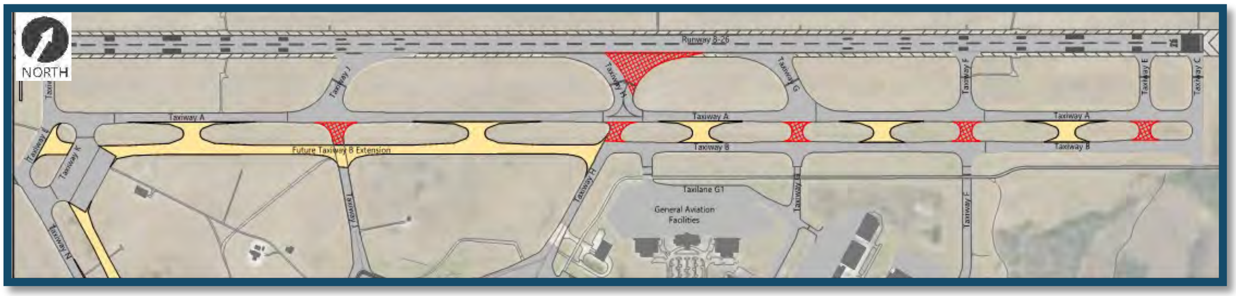
SOURCE: Ricondo & Associates, Inc., July 2019.

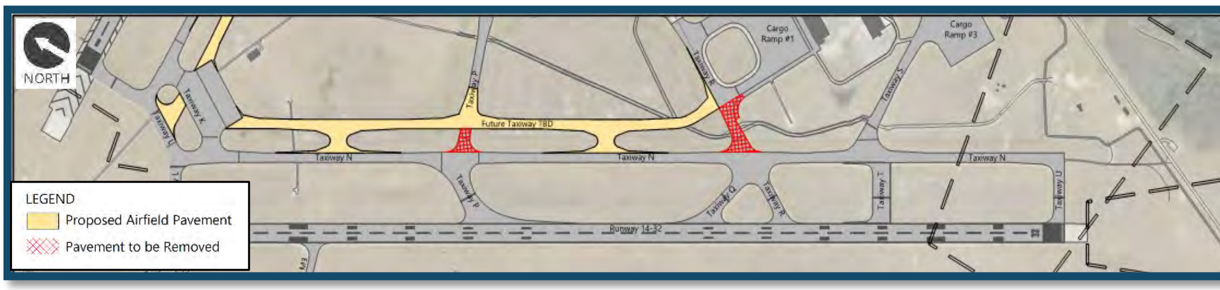
TABLE E-1 TAXIWAY FILLET ANALYSIS-13A GEOMETRY

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$ 220,000.00	1	$ 220,000.00
Concrete Pavement Removal	SY	$ 30.00	100	$ 3,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	3,000	$ 675,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	6,300	$ 378,000.00
Limerock Base Course (P-211)	CY	$ 80.00	1,200	$ 96,000.00
Unclassified Excavation	CY	$ 25.00	4,400	$ 110,000.00
Unsuitable Excavation	CY	$ 25.00	440	$ 11,000.00
Topsoil and Sod	SY	$ 10.00	4,800	$ 48,000.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 20,000.00	1	$ 20,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	144	$ 28,800.00
New Taxiway Lighting	EA	$ 1,500.00	150	$ 225,000.00
Guidance Sign Demo	EA	$ 500.00	20	$ 10,000.00
New Guidance Sign	EA	$ 4,500.00	20	$ 90,000.00
Miscellaneous Electrical to Be Removed	LS	$ 90,000.00	1	$ 90,000.00
Miscellaneous Electrical	LS	$ 175,000.00	1	$ 175,000.00
Overall Construction Contingency (20%)				**$ 445,960.00**
Professional Services - Design, Building, & Permitting (15%)				$ 334,470.00
Professional Services - Construction Administration & RPR (15%)				$ 334,470.00
Total				**$ 3,344,700.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-2 EXISTING CONDITIONS-AREAS OF NON-COMPLIANCE-OPTION 1





SOURCES: Ricondo & Associates, Inc., July 2019; Jacobs Engineering Group, Inc., August 2019.

TABLE E-2 EXISTING CONDITIONS-NON-STANDARD PAVEMENT AREAS-OPTION 1

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$3,070,000.00	1	$ 3,070,000.00
Concrete Pavement Removal	SY	$ 30.00	30,700	$ 921,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	60,300	$ 13,567,500.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	133,800	$ 8,028,000.00
Limerock Base Course (P-211)	CY	$ 80.00	23,400	$ 1,872,000.00
Unclassified Excavation	CY	$ 25.00	85,000	$ 2,125,000.00
Unsuitable Excavation	CY	$ 25.00	9,000	$ 225,000.00
Offsite Borrow	CY	$ 20.00	14,500	$ 290,000.00
Topsoil and Sod	SY	$ 10.00	59,300	$ 593,000.00
Pavement Marking Demo	SF	$ 10.00	1,200	$ 12,000.00
New Pavement Markings	SF	$ 5.00	35,000	$ 175,000.00
Miscellaneous Erosion Control	LS	$ 150,000.00	1	$ 150,000.00
Miscellaneous Drainage	LS	$ 750,000.00	1	$ 750,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	200	$ 40,000.00
New Taxiway Lighting	EA	$ 1,500.00	430	$ 645,000.00
Guidance Sign Demo	EA	$ 500.00	55	$ 27,500.00
New Guidance Sign	EA	$ 4,500.00	75	$ 337,500.00
Miscellaneous Electrical to Be Removed	LS	$ 300,000.00	1	$ 300,000.00
Miscellaneous Electrical	LS	$ 600,000.00	1	$ 600,000.00
Overall Construction Contingency (20%)				**$ 6,745,700.00**
Professional Services - Design, Building, & Permitting (15%)				$ 5,059,275.00
Professional Services - Construction Administration & RPR (15%)				$ 5,059,275.00
Total				**$ $50,592,750.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-2A FUTURE TAXIWAY B EXTENSION

SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-2A FUTURE TWY B EXTENSION

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$2,300,000.00	1	$ 2,300,000.00
Concrete Pavement Removal	SY	$ 30.00	46,150	$ 1,384,500.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	32,200	$ 7,245,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	101,500	$ 6,090,000.00
Limerock Base Course (P-211)	CY	$ 80.00	17,700	$ 1,416,000.00
Unclassified Excavation	CY	$ 25.00	70,800	$ 1,770,000.00
Unsuitable Excavation	CY	$ 25.00	7,080	$ 177,000.00
Offsite Borrow	CY	$ 20.00	5,000	$ 100,000.00
Topsoil and Sod	SY	$ 10.00	25,000	$ 250,000.00
Pavement Marking Demo	SF	$ 10.00	19,800	$ 198,000.00
New Pavement Markings	SF	$ 5.00	50,000	$ 250,000.00
Miscellaneous Erosion Control	LS	$ 100,000.00	1	$ 100,000.00
Miscellaneous Drainage	LS	$ 400,000.00	1	$ 400,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	240	$ 48,000.00
New Taxiway Lighting	EA	$ 1,500.00	480	$ 720,000.00
Guidance Sign Demo	EA	$ 500.00	30	$ 15,000.00
New Guidance Sign	EA	$ 4,500.00	50	$ 225,000.00
Miscellaneous Electrical to Be Removed	LS	$ 175,000.00	1	$ 175,000.00
Miscellaneous Electrical	LS	$ 400,000.00	1	$ 400,000.00
Overall Construction Contingency (20%)				**$ 4,652,700.00**
Professional Services - Design, Building, & Permitting (15%)				$ 3,489,525.00
Professional Services - Construction Administration & RPR (15%)				$ 3,489,525.00
Total				**$ 34,895,250.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-2B FUTURE TAXIWAY TBD EXTENSION

SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-2B FUTURE TWY TBD EXTENSION

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$1,070,000.00	1	$ 1,070,000.00
Concrete Pavement Removal	SY	$ 30.00	3000	$ 90,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	22,200	$ 4,995,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	49,300	$ 2,958,000.00
Limerock Base Course (P-211)	CY	$ 80.00	8,600	$ 688,000.00
Unclassified Excavation	CY	$ 25.00	32,900	$ 822,500.00
Unsuitable Excavation	CY	$ 25.00	3,290	$ 82,250.00
Topsoil and Sod	SY	$ 10.00	11,200	$ 112,000.00
New Pavement Markings	SF	$ 5.00	17,500	$ 87,500.00
Miscellaneous Erosion Control	LS	$ 35,000.00	1	$ 35,000.00
Miscellaneous Drainage	LS	$ 125,000.00	1	$ 125,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	42	$ 8,400.00
New Taxiway Lighting	EA	$ 1,500.00	142	$ 213,000.00
Guidance Sign Demo	EA	$ 500.00	3	$ 1,500.00
New Guidance Sign	EA	$ 4,500.00	8	$ 36,000.00
Miscellaneous Electrical to Be Removed	LS	$ 117,700.00	1	$ 117,700.00
Miscellaneous Electrical	LS	$ 235,400.00	1	$ 235,400.00
Overall Construction Contingency (20%)				**$ 2,335,450.00**
Professional Services - Design, Building, & Permitting (15%)				$ 1,751,587.50
Professional Services - Construction Administration & RPR (15%)				$ 1,751,587.50
Total				**$ 17,515,875.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-2C RUNWAY 14-32 SHOULDERS

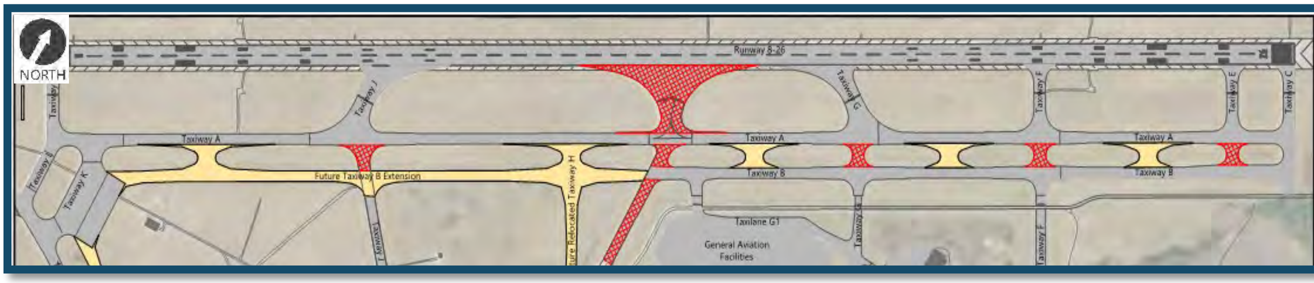
SOURCE: Ricondo & Associates, Inc., July 2019.

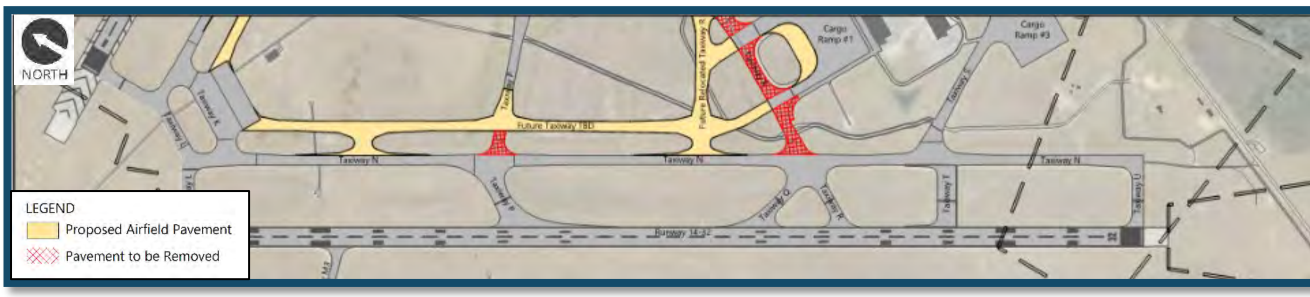
TABLE E-2 RUNWAY 14-32 SHOULDERS

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$ 500,000.00	1	$ 500,000.00
Limerock Base Course (P-211)	CY	$ 80.00	9,500	$ 760,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	13,500	$ 2,025,000.00
Prime Coat	GAL	$ 4.00	15,500	$ 62,000.00
Tack Coat	GAL	$ 4.00	2,600	$ 10,400.00
Unclassified Excavation	CY	$ 25.00	36,000	$ 900,000.00
Unsuitable Excavation	CY	$ 25.00	3,600	$ 90,000.00
Topsoil and Sod	SY	$ 10.00	20,000	$ 200,000.00
Miscellaneous Erosion Control	LS	$ 20,000.00	1	$ 20,000.00
Miscellaneous Drainage	LS	$ 40,000.00	1	$ 40,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	88	$ 17,600.00
New Taxiway Lighting	EA	$ 1,500.00	132	$ 198,000.00
Guidance Sign Demo	EA	$ 500.00	8	$ 4,000.00
New Guidance Sign	EA	$ 4,500.00	8	$ 36,000.00
Miscellaneous Electrical to Be Removed	LS	$ 184,150.00	1	$ 184,150.00
Miscellaneous Electrical	LS	$ 368,300.00	1	$ 368,300.00
Overall Construction Contingency (20%)				**$ 1,083,090.00**
Professional Services - Design, Building, & Permitting (15%)				$ 812,317.50
Professional Services - Construction Administration & RPR (15%)				$ 812,317.50
Total				**$ 8,123,175.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-3 EXISTING CONDITIONS-AREAS OF NON-COMPLIANCE-OPTION 2





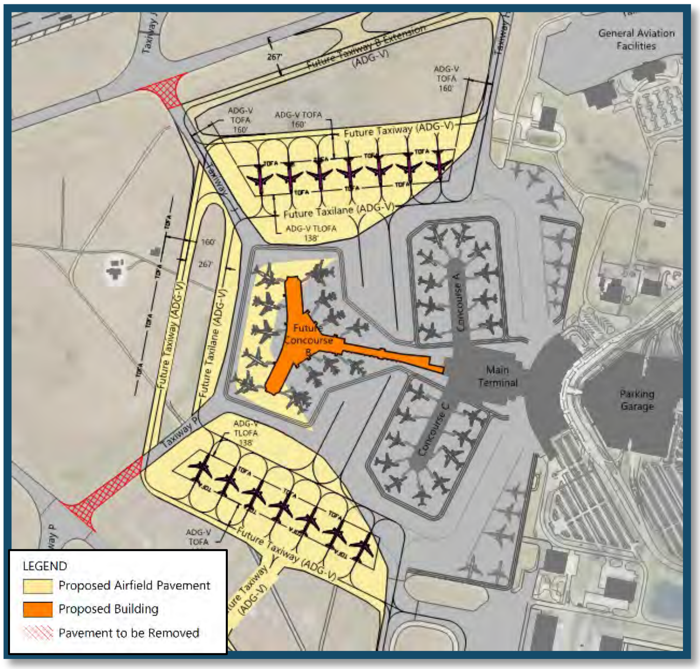
SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-3 EXISTING CONDITIONS-AREAS OF NON-COMPLIANCE-OPTION 2

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$ 3,900,000.00	1	$ 3,900,000.00
Concrete Pavement Removal	SY	$ 30.00	58,000	$ 1,740,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	74,000	$ 16,650,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	163,500	$ 9,810,000.00
Limerock Base Course (P-211)	CY	$ 80.00	30,000	$ 2,400,000.00
Unclassified Excavation	CY	$ 25.00	104,000	$ 2,600,000.00
Unsuitable Excavation	CY	$ 25.00	10,500	$ 262,500.00
Offsite Borrow	CY	$ 20.00	27,500	$ 550,000.00
Topsoil and Sod	SY	$ 10.00	94,500	$ 945,000.00
Pavement Marking Demo	SF	$ 10.00	1,200	$ 12,000.00
New Pavement Markings	SF	$ 5.00	36,800	$ 184,000.00
Miscellaneous Erosion Control	LS	$ 150,000.00	1	$ 150,000.00
Miscellaneous Drainage	LS	$ 750,000.00	1	$ 750,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	200	$ 40,000.00
New Taxiway Lighting	EA	$ 1,500.00	400	$ 600,000.00
Guidance Sign Demo	EA	$ 500.00	50	$ 25,000.00
New Guidance Sign	EA	$ 4,500.00	45	$ 202,500.00
Miscellaneous Electrical to Be Removed	LS	$ 300,000.00	1	$ 300,000.00
Miscellaneous Electrical	LS	$ 600,000.00	1	$ 600,000.00
Overall Construction Contingency (20%)				**$ 8,344,200.00**
Professional Services - Design, Building, & Permitting (15%)				$ 6,258,150.00
Professional Services - Construction Administration & RPR (15%)				$ 6,258,150.00
Total				**$ 62,581,500.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-4 REMOTE AIRCRAFT HARDSTAND ALTERNATIVES-ALTERNATIVE 1



SOURCE: Ricondo & Associates, Inc., July 2019.

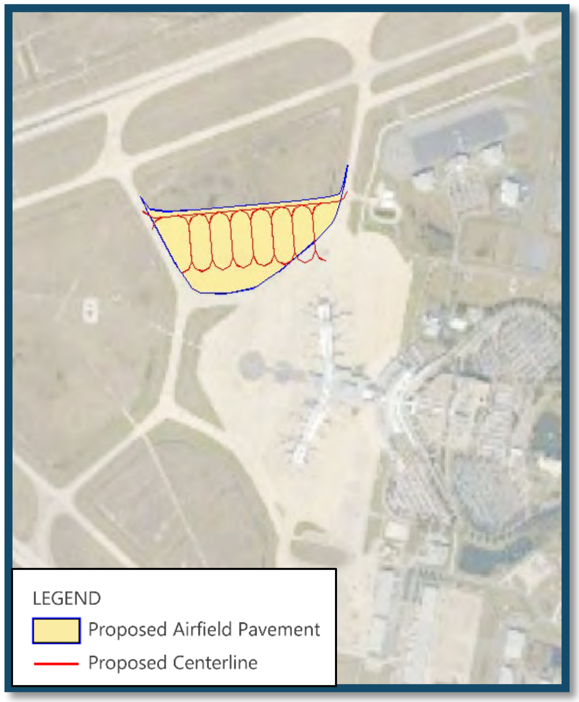
TABLE E-4 REMOTE AIRCRAFT HARDSTAND ALTERNATIVES-ALTERNATIVE 1

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$ 6,500,000.00	1	$ 6,500,000.00
Concrete Pavement Removal	SY	$ 30.00	15,600	$ 468,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	141,000	$ 31,725,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	312,000	$ 18,720,000.00
Limerock Base Course (P-211)	CY	$ 80.00	55,500	$ 4,440,000.00
Unclassified Excavation	CY	$ 25.00	207,000	$ 5,175,000.00
Unsuitable Excavation	CY	$ 25.00	5,000	$ 125,000.00
Offsite Borrow	CY	$ 20.00	6,000	$ 120,000.00
Topsoil and Sod	SY	$ 10.00	18,900	$ 189,000.00
Pavement Marking Demo	SF	$ 10.00	2,500	$ 25,000.00
New Pavement Markings	SF	$ 5.00	99,000	$ 495,000.00
Miscellaneous Erosion Control	LS	$ 300,000.00	1	$ 300,000.00
Miscellaneous Drainage	LS	$ 1,500,000.00	1	$ 1,500,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	150	$ 30,000.00
New Taxiway Lighting	EA	$ 1,500.00	250	$ 375,000.00
Guidance Sign Demo	EA	$ 500.00	20	$ 10,000.00
New Guidance Sign	EA	$ 4,500.00	30	$ 135,000.00
Miscellaneous Electrical to Be Removed	LS	$ 200,000.00	1	$ 200,000.00

Miscellaneous Electrical	LS	$ 400,000.00	1	$	400,000.00
Overall Construction Contingency (20%)				**$**	**14,186,400.00**
Professional Services - Design, Building, & Permitting (15%)				$	10,639,800.00
Professional Services - Construction Administration & RPR (15%)				$	10,639,800.00
Total				**$**	**106,398,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-4A FUTURE NORTH HARDSTAND APRON



SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-4A FUTURE NORTH HARDSTAND APRON

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$2,740,000.00	1	$ 2,740,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	61,200	$ 13,770,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	135,900	$ 8,154,000.00
Limerock Base Course (P-211)	CY	$ 80.00	23,800	$ 1,904,000.00
Unclassified Excavation	CY	$ 25.00	90,600	$ 2,265,000.00
Unsuitable Excavation	CY	$ 25.00	9,100	$ 227,500.00
Topsoil and Sod	SY	$ 10.00	2,500	$ 25,000.00
New Pavement Markings	SF	$ 5.00	27,400	$ 137,000.00
Miscellaneous Erosion Control	LS	$ 150,000.00	1	$ 150,000.00
Miscellaneous Drainage	LS	$ 350,000.00	1	$ 350,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	46	$ 9,200.00
New Taxiway Lighting	EA	$ 1,500.00	100	$ 150,000.00
Guidance Sign Demo	EA	$ 500.00	8	$ 4,000.00
New Guidance Sign	EA	$ 4,500.00	8	$ 36,000.00
Miscellaneous Electrical to Be Removed	LS	$ 68,200.00	1	$ 68,200.00
Miscellaneous Electrical	LS	$ 136,400.00	1	$ 136,400.00
Overall Construction Contingency (20%)				**$ 6,025,260.00**
Professional Services - Design, Building, & Permitting (15%)				$ 4,518,945.00
Professional Services - Construction Administration & RPR (15%)				$ 4,518,945.00
Total				**$ 45,189,450.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-4B FUTURE SOUTH HARDSTAND APRON

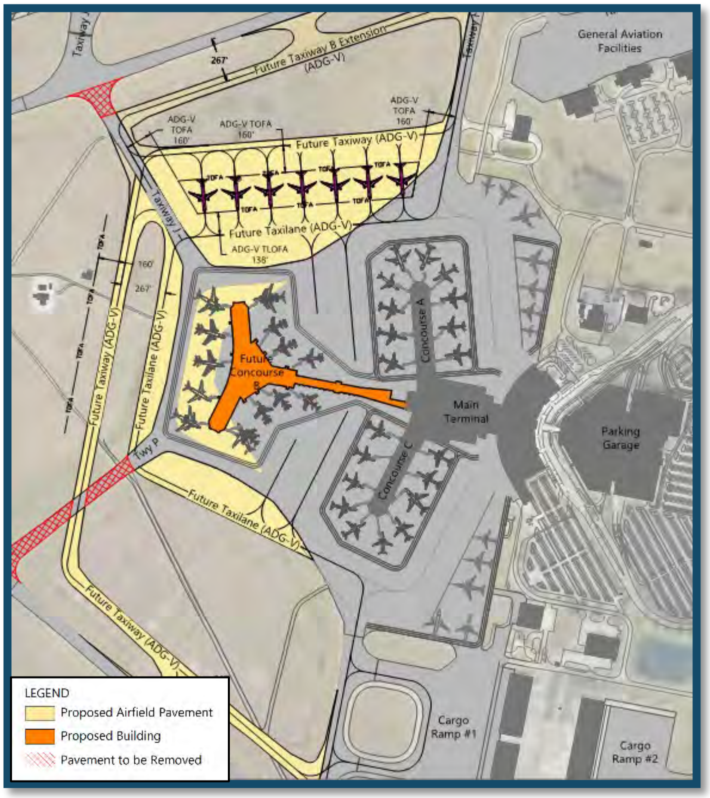
SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-4B FUTURE SOUTH HARDSTAND APRON

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$2,400,000.00	1	$ 2,400,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	53,800	$ 12,105,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	119,600	$ 7,176,000.00
Limerock Base Course (P-211)	CY	$ 80.00	20,900	$ 1,672,000.00
Unclassified Excavation	CY	$ 25.00	79,800	$ 1,995,000.00
Unsuitable Excavation	CY	$ 25.00	8,000	$ 200,000.00
Topsoil and Sod	SY	$ 10.00	2,500	$ 25,000.00
New Pavement Markings	SF	$ 5.00	26,600	$ 133,000.00
Miscellaneous Erosion Control	LS	$ 150,000.00	1	$ 150,000.00
Miscellaneous Drainage	LS	$ 350,000.00	1	$ 350,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	40	$ 8,000.00
New Taxiway Lighting	EA	$ 1,500.00	30	$ 45,000.00
Guidance Sign Demo	EA	$ 500.00	4	$ 2,000.00
New Guidance Sign	EA	$ 4,500.00	4	$ 18,000.00
Miscellaneous Electrical to Be Removed	LS	$ 28,900.00	1	$ 28,900.00
Miscellaneous Electrical	LS	$ 57,800.00	1	$ 57,800.00
Overall Construction Contingency (20%)				**$ 5,273,140.00**
Professional Services - Design, Building, & Permitting (10%)				$ 3,954,855.00
Professional Services - Construction Administration & RPR (8%)				$ 3,954,855.00
Total				**$ 39,548,550.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-5 REMOTE AIRCRAFT HARDSTAND ALTERNATIVE-ALTERNATIVE 2



SOURCE: Ricondo & Associates, Inc., July 2019.

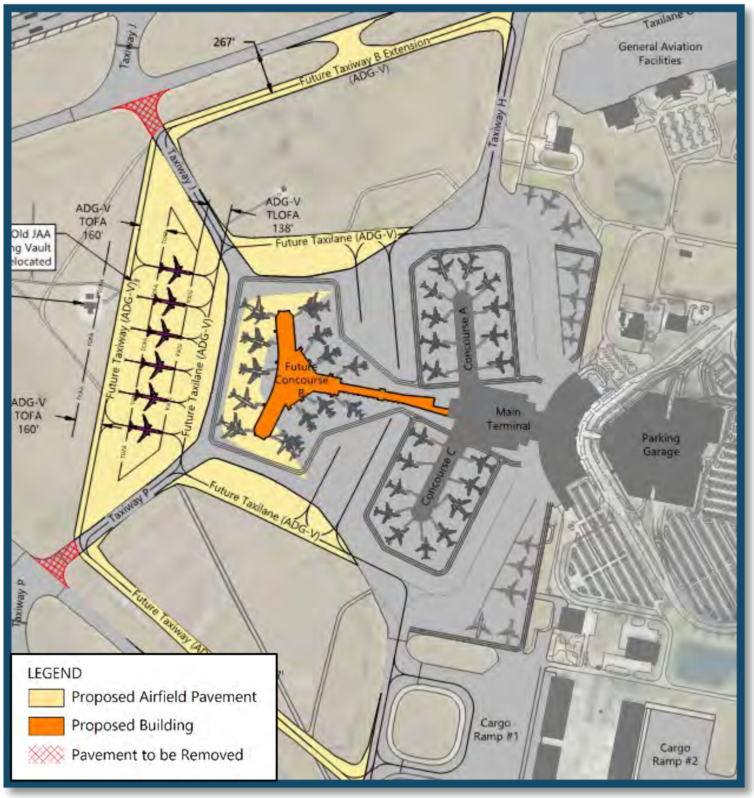
TABLE E-5 REMOTE AIRCRAFT HARDSTAND ALTERNATIVES-ALTERNATIVE 2

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,010,000.00	1	$ 5,010,000.00
Concrete Pavement Removal	SY	$ 30.00	13,000	$ 390,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	107,000	$ 24,075,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	236,000	$ 14,160,000.00
Limerock Base Course (P-211)	CY	$ 80.00	42,500	$ 3,400,000.00
Unclassified Excavation	CY	$ 25.00	165,000	$ 4,125,000.00
Unsuitable Excavation	CY	$ 25.00	5,000	$ 125,000.00
Offsite Borrow	CY	$ 20.00	7,000	$ 140,000.00
Topsoil and Sod	SY	$ 10.00	17,500	$ 175,000.00
Pavement Marking Demo	SF	$ 10.00	2,500	$ 25,000.00
New Pavement Markings	SF	$ 5.00	79,000	$ 395,000.00
Miscellaneous Erosion Control	LS	$ 300,000.00	1	$ 300,000.00
Miscellaneous Drainage	LS	$1,500,000.00	1	$ 1,500,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	150	$ 30,000.00
New Taxiway Lighting	EA	$ 1,500.00	300	$ 450,000.00

Guidance Sign Demo	EA	$ 500.00	20	$	10,000.00
New Guidance Sign	EA	$ 4,500.00	30	$	135,000.00
Miscellaneous Electrical to Be Removed	LS	$ 200,000.00	1	$	200,000.00
Miscellaneous Electrical	LS	$ 400,000.00	1	$	400,000.00
Overall Construction Contingency (20%)				**$**	**11,009,000.00**
Professional Services - Design, Building, & Permitting (15%)				$	8,256,750.00
Professional Services - Construction Administration & RPR (15%)				$	8,256,750.00
Total				**$**	**82,567,500.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-6 REMOTE AIRCRAFT HARDSTAND ALTERNATIVE-ALTERNATIVE 3



SOURCES: Ricondo & Associates, Inc., July 2019.

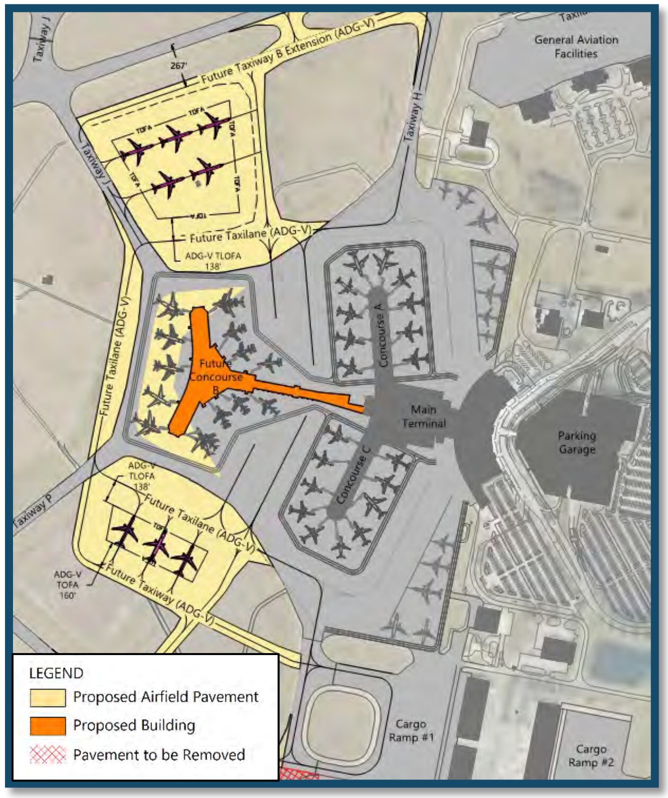
TABLE E-6 REMOTE AIRCRAFT HARDSTAND ALTERNATIVES-ALTERNATIVE 3

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,030,000.00	1	$ 5,030,000.00
Concrete Pavement Removal	SY	$ 30.00	9,400	$ 282,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	108,000	$ 24,300,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	240,000	$ 14,400,000.00
Limerock Base Course (P-211)	CY	$ 80.00	42,500	$ 3,400,000.00
Unclassified Excavation	CY	$ 25.00	168,000	$ 4,200,000.00
Unsuitable Excavation	CY	$ 25.00	5,000	$ 125,000.00
Offsite Borrow	CY	$ 20.00	4,500	$ 90,000.00
Topsoil and Sod	SY	$ 10.00	18,500	$ 185,000.00
Pavement Marking Demo	SF	$ 10.00	2,500	$ 25,000.00
New Pavement Markings	SF	$ 5.00	50,300	$ 251,500.00
Miscellaneous Erosion Control	LS	$ 300,000.00	1	$ 300,000.00
Miscellaneous Drainage	LS	$1,500,000.00	1	$ 1,500,000.00
Electrical				$ 5,030,000.00
Taxiway Lighting Demo	EA	$ 200.00	150	$ 282,000.00

New Taxiway Lighting	EA	$	1,500.00	250	$	375,000.00
Guidance Sign Demo	EA	$	500.00	20	$	10,000.00
New Guidance Sign	EA	$	4,500.00	45	$	202,500.00
Miscellaneous Electrical to Be Removed	LS	$	200,000.00	1	$	200,000.00
Miscellaneous Electrical	LS	$	400,000.00	1	$	400,000.00
Overall Construction Contingency (20%)					**$**	**11,061,200.00**
Professional Services - Design, Building, & Permitting (15%)					$	8,295,900.00
Professional Services - Construction Administration & RPR (15%)					$	8,295,900.00
Total					**$**	**82,959,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-7 REMOTE AIRCRAFT HARDSTAND ALTERNATIVE-ALTERNATIVE 4



SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-7 REMOTE AIRCRAFT HARDSTAND ALTERNATIVES-ALTERNATIVE 4

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,400,000.00	1	$ 5,400,000.00
Concrete Pavement Removal	SY	$ 30.00	500	$ 15,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	117,000	$ 26,325,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	260,000	$ 15,600,000.00
Limerock Base Course (P-211)	CY	$ 80.00	45,400	$ 3,632,000.00
Unclassified Excavation	CY	$ 25.00	181,600	$ 4,540,000.00
Unsuitable Excavation	CY	$ 25.00	5,000	$ 125,000.00
Offsite Borrow	CY	$ 20.00	500	$ 10,000.00
Topsoil and Sod	SY	$ 10.00	13,400	$ 134,000.00
Pavement Marking Demo	SF	$ 10.00	5,500	$ 55,000.00
New Pavement Markings	SF	$ 5.00	54,000	$ 270,000.00
Miscellaneous Erosion Control	LS	$ 300,000.00	1	$ 300,000.00
Miscellaneous Drainage	LS	$1,500,000.00	1	$ 1,500,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	80	$ 16,000.00

New Taxiway Lighting	EA	$	1,500.00	190	$	285,000.00
Guidance Sign Demo	EA	$	500.00	15	$	7,500.00
New Guidance Sign	EA	$	4,500.00	35	$	157,500.00
Miscellaneous Electrical to Be Removed	LS	$	150,000.00	1	$	150,000.00
Miscellaneous Electrical	LS	$	300,000.00	1	$	300,000.00
Overall Construction Contingency (20%)					**$**	**11,764,400.00**
Professional Services - Design, Building, & Permitting (15%)					$	8,823,300.00
Professional Services - Construction Administration & RPR (15%)					$	8,823,300.00
Total					**$**	**88,233,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-8 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 1

SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-8 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 1

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$4,100,000.00	1	$ 4,100,000.00
Limerock Base Course (P-211)	CY	$ 80.00	13,400	$ 1,072,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	17,000	$ 2,550,000.00
Full Strength Pavement (P-401) - Base Course	TON	$ 150.00	15,500	$ 2,325,000.00
Prime Coat	GAL	$ 4.00	22,000	$ 88,000.00
Tack Coat	GAL	$ 4.00	4,000	$ 16,000.00
Unclassified Excavation	CY	$ 25.00	38,000	$ 950,000.00
Unsuitable Excavation	CY	$ 25.00	3,800	$ 95,000.00
Topsoil and Sod	SY	$ 10.00	148,000	$ 1,480,000.00
New Pavement Markings	SF	$ 5.00	13,500	$ 67,500.00
Miscellaneous Erosion Control	LS	$ 100,000.00	1	$ 100,000.00
Miscellaneous Drainage	LS	$ 250,000.00	1	$ 250,000.00
New Fencing	LF	$ 50.00	2,200	$ 110,000.00
Clearing and Grubbing	AC	$ 8,000.00	40	$ 320,000.00
Architectural				
Proposed Structures	SF	$ 125.00	239,000	$ 29,875,000.00
Electrical				
New Taxiway Lighting	EA	$ 1,500.00	120	$ 180,000.00

New Guidance Sign	EA	$	4,500.00	1	$	4,500.00
Miscellaneous Electrical	LS	$	225,000.00	1	$	225,000.00
High Mast Lighting	EA	$	24,000.00	24	$	576,000.00
Overall Construction Contingency (20%)					**$**	**8,876,800.00**
Professional Services - Design, Building, & Permitting (15%)					$	6,657,600.00
Professional Services - Construction Administration & RPR (15%)					$	6,657,600.00
Total					**$**	**66,576,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-8A GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 1 (PHASE 1)

SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-8A GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 1 (PHASE 1)

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$1,700,000.00	1	$ 1,700,000.00
Limerock Base Course (P-211)	CY	$ 80.00	5,600	$ 448,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	7,200	$ 1,080,000.00
Full Strength Pavement (P-401) - Base Course	TON	$ 150.00	9,400	$ 1,410,000.00
Prime Coat	GAL	$ 4.00	9,200	$ 36,800.00
Tack Coat	GAL	$ 4.00	1,600	$ 6,400.00
Unclassified Excavation	CY	$ 25.00	16,100	$ 402,500.00
Unsuitable Excavation	CY	$ 25.00	1,610	$ 40,250.00
Topsoil and Sod	SY	$ 10.00	81,700	$ 817,000.00
New Pavement Markings	SF	$ 5.00	14,000	$ 70,000.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 100,000.00	1	$ 100,000.00
New Fencing	LF	$ 50.00	530	$ 26,500.00
Clearing and Grubbing	AC	$ 8,000.00	25	$ 200,000.00
Architectural				
Proposed Structures	SF	$ 125.00	88,624	$ 11,078,000.00
Electrical				
New Taxiway Lighting	EA	$ 1,500.00	85	$ 127,500.00

New Guidance Sign	EA	$	4,500.00	1	$ 4,500.00
Miscellaneous Electrical	LS	$	130,820.00	1	$ 130,820.00
Overall Construction Contingency (20%)					**$ 3,545,654.00**
Professional Services - Design, Building, & Permitting (15%)					$ 2,659,240.50
Professional Services - Construction Administration & RPR (15%)					$ 2,659,240.50
Total					**$ 26,592,405.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-8B GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 1 (PHASE 2)

SOURCE: Ricondo & Associates, Inc., July 2019.

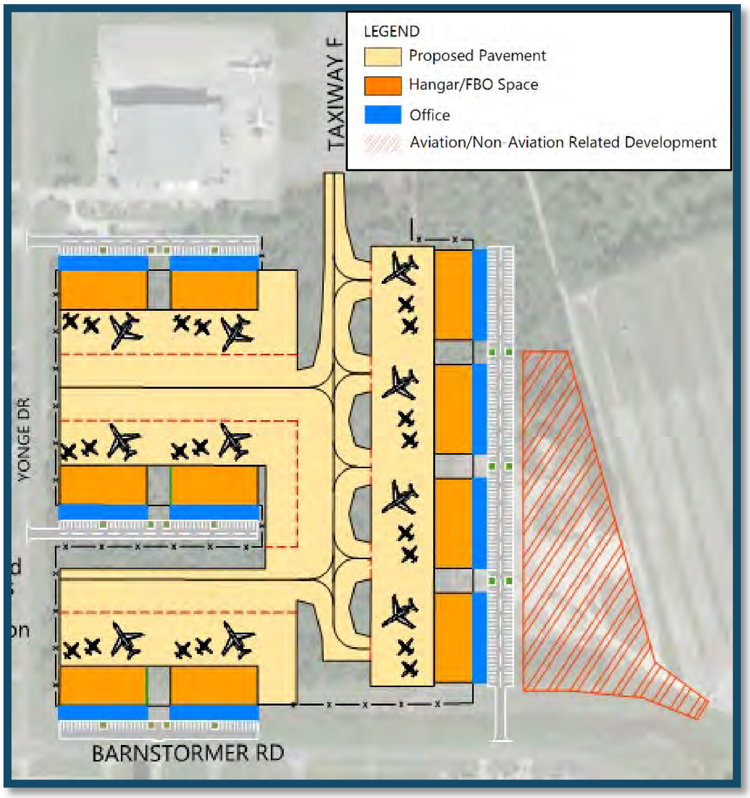
TABLE E-8B GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 1 (PHASE 2)

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$1,400,000.00	1	$ 1,400,000.00
Limerock Base Course (P-211)	CY	$ 80.00	3,600	$ 288,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	4,600	$ 690,000.00
Full Strength Pavement (P-401) - Base Course	TON	$ 150.00	6,100	$ 915,000.00
Prime Coat	GAL	$ 4.00	5,900	$ 23,600.00
Tack Coat	GAL	$ 4.00	990	$ 3,960.00
Unclassified Excavation	CY	$ 25.00	10,900	$ 272,500.00
Unsuitable Excavation	CY	$ 25.00	1,090	$ 27,250.00
Topsoil and Sod	SY	$ 10.00	25,000	$ 250,000.00
New Pavement Markings	SF	$ 5.00	11,000	$ 55,000.00
Miscellaneous Erosion Control	LS	$ 40,000.00	1	$ 40,000.00
Miscellaneous Drainage	LS	$ 75,000.00	1	$ 75,000.00
New Fencing	LF	$ 50.00	1,100	$ 55,000.00
Architectural				
Proposed Structures	SF	$ 125.00	88,700	$ 11,087,500.00
Electrical				
New Taxiway Lighting	EA	$ 1,500.00	60	$ 90,000.00
Miscellaneous Electrical	LS	$ 91,750.00	1	$ 91,750.00
Overall Construction Contingency (20%)				**$ 3,072,912.00**
Professional Services - Design, Building, & Permitting (15%)				$ 2,304,684.00

Professional Services - Construction Administration & RPR (15%)	$	2,304,684.00
Total	**$**	**23,046,840.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-9 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 2



SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-9 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 2

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,100,000.00	1	$ 5,100,000.00
Limerock Base Course (P-211)	CY	$ 80.00	17,500	$ 1,400,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	23,300	$ 3,495,000.00
Full Strength Pavement (P-401) - Base Course	TON	$ 150.00	25,750	$ 3,862,500.00
Prime Coat	GAL	$ 4.00	30,000	$ 120,000.00
Tack Coat	GAL	$ 4.00	5,000	$ 20,000.00
Unclassified Excavation	CY	$ 25.00	50,000	$ 1,250,000.00
Unsuitable Excavation	CY	$ 25.00	5,000	$ 125,000.00
Topsoil and Sod	SY	$ 10.00	80,000	$ 800,000.00
New Pavement Markings	SF	$ 5.00	14,000	$ 70,000.00
Miscellaneous Erosion Control	LS	$ 100,000.00	1	$ 100,000.00
Miscellaneous Drainage	LS	$ 250,000.00	1	$ 250,000.00
New Fencing	LF	$ 50.00	2,850	$ 142,500.00
Clearing and Grubbing	AC	$ 8,000.00	40	$ 320,000.00
Architectural				
Proposed Structures	SF	$ 125.00	300000	$ 37,500,000.00
Electrical				
New Taxiway Lighting	EA	$ 1,500.00	95	$ 142,500.00

New Guidance Sign	EA	$ 4,500.00	1	$	4,500.00
Miscellaneous Electrical	LS	$ 150,000.00	1	$	150,000.00
High Mast Lighting	EA	$ 24,000.00	24	$	576,000.00
Overall Construction Contingency (20%)				**$**	**11,085,600.00**
Professional Services - Design, Building, & Permitting (15%)				$	8,314,200.00
Professional Services - Construction Administration & RPR (15%)				$	8,314,200.00
Total				**$**	**83,142,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-10 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 3

SOURCE: Ricondo & Associates, Inc., July 2019.

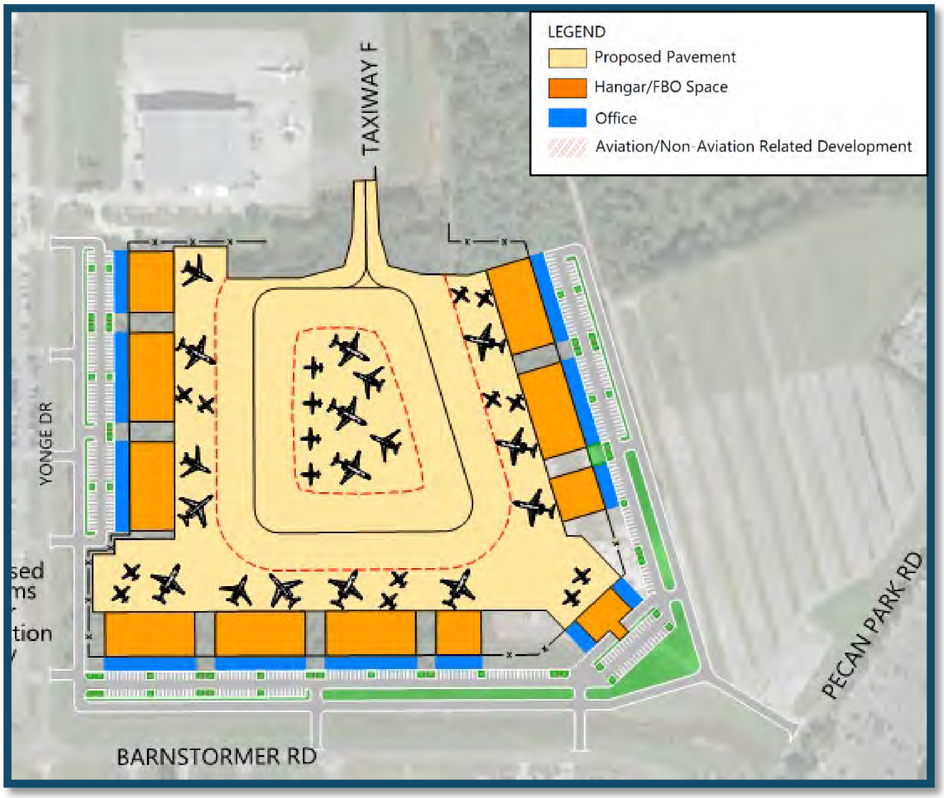
TABLE E-10 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 3

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,200,000.00	1	$ 5,200,000.00
Limerock Base Course (P-211)	CY	$ 80.00	19,000	$ 1,520,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	24,500	$ 3,675,000.00
Full Strength Pavement (P-401) - Base Course	TON	$ 150.00	23,000	$ 3,450,000.00
Prime Coat	GAL	$ 4.00	32,000	$ 128,000.00
Tack Coat	GAL	$ 4.00	6,000	$ 24,000.00
Unclassified Excavation	CY	$ 25.00	55,000	$ 1,375,000.00
Unsuitable Excavation	CY	$ 25.00	5,000	$ 125,000.00
Topsoil and Sod	SY	$ 10.00	85,000	$ 850,000.00
New Pavement Markings	SF	$ 5.00	15,000	$ 75,000.00
Miscellaneous Erosion Control	LS	$ 100,000.00	1	$ 100,000.00
Miscellaneous Drainage	LS	$ 250,000.00	1	$ 250,000.00
New Fencing	LF	$ 50.00	1,900	$ 95,000.00
Clearing and Grubbing	AC	$ 8,000.00	40	$ 320,000.00
Architectural				
Proposed Structures	SF	$ 125.00	311,000	$ 38,875,000.00
Electrical				
New Taxiway Lighting	EA	$ 1,500.00	20	$ 30,000.00

New Guidance Sign	EA	$ 4,500.00	1	$	4,500.00
Miscellaneous Electrical	LS	$ 24,500.00	1	$	24,500.00
High Mast Lighting	EA	$ 24,000.00	40	$	960,000.00
Overall Construction Contingency (20%)				**$**	**11,416,200.00**
Professional Services - Design, Building, & Permitting (15%)				$	8,562,150.00
Professional Services - Construction Administration & RPR (15%)				$	8,562,150.00
Total				**$**	**85,621,500.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-11 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 4



SOURCE: Ricondo & Associates, Inc., July 2019.

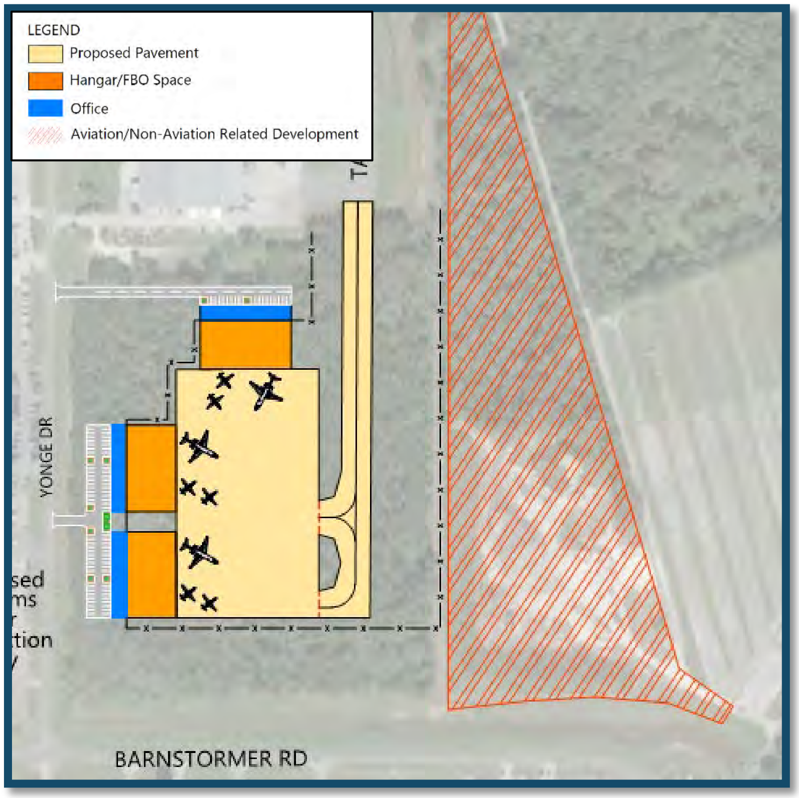
TABLE E-11 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 4

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,300,000.00	1	$ 5,300,000.00
Limerock Base Course (P-211)	CY	$ 80.00	23,000	$ 1,840,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	31,000	$ 4,650,000.00
Full Strength Pavement (P-401) - Base Course	TON	$ 150.00	28,000	$ 4,200,000.00
Prime Coat	GAL	$ 4.00	4,000	$ 16,000.00
Tack Coat	GAL	$ 4.00	7,000	$ 28,000.00
Unclassified Excavation	CY	$ 25.00	68,500	$ 1,712,500.00
Unsuitable Excavation	CY	$ 25.00	7,000	$ 175,000.00
Topsoil and Sod	SY	$ 10.00	64,000	$ 640,000.00
New Pavement Markings	SF	$ 5.00	10,600	$ 53,000.00
Miscellaneous Erosion Control	LS	$ 100,000.00	1	$ 100,000.00
Miscellaneous Drainage	LS	$ 250,000.00	1	$ 250,000.00
New Fencing	LF	$ 50.00	2,000	$ 100,000.00
Clearing and Grubbing	AC	$ 8,000.00	50	$ 400,000.00
Architectural				
Proposed Structures	SF	$ 125.00	294,000	$ 36,750,000.00
Electrical				
New Taxiway Lighting	EA	$ 1,500.00	50	$ 75,000.00

New Guidance Sign	EA	$	4,500.00	1	$ 4,500.00
Miscellaneous Electrical	LS	$	50,000.00	1	$ 50,000.00
High Mast Lighting	EA	$	24,000.00	40	$ 960,000.00
Overall Construction Contingency (20%)					**$ 11,460,800.00**
Professional Services - Design, Building, & Permitting (15%)					$ 8,595,600.00
Professional Services - Construction Administration & RPR (15%)					$ 8,595,600.00
Total					**$ 85,956,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-12 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 5



SOURCE: Ricondo & Associates, Inc., July 2019.

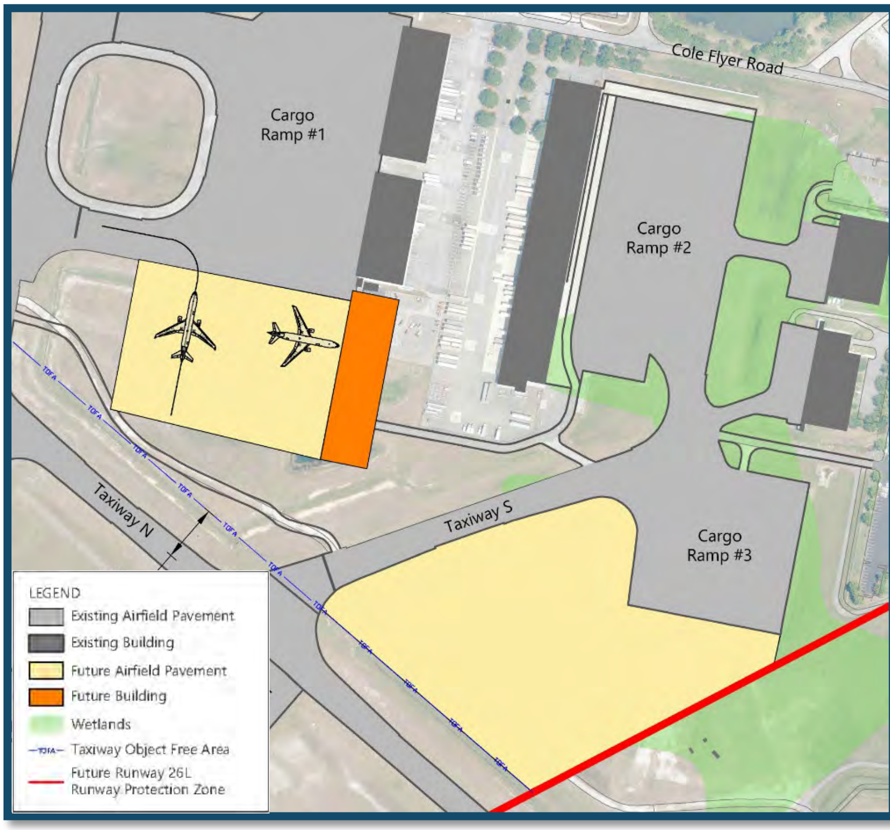
TABLE E-12 GENERAL AVIATION DEVELOPMENT-ALTERNATIVE 5

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$2,100,000.00	1	$ 2,100,000.00
Limerock Base Course (P-211)	CY	$ 80.00	7,200	$ 576,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	10,000	$ 1,500,000.00
Full Strength Pavement (P-401) - Base Course	TON	$ 150.00	11,500	$ 1,725,000.00
Prime Coat	GAL	$ 4.00	12,500	$ 50,000.00
Tack Coat	GAL	$ 4.00	2,500	$ 10,000.00
Unclassified Excavation	CY	$ 25.00	21,000	$ 525,000.00
Unsuitable Excavation	CY	$ 25.00	2,100	$ 52,500.00
Topsoil and Sod	SY	$ 10.00	100,000	$ 1,000,000.00
New Pavement Markings	SF	$ 5.00	6,500	$ 32,500.00
Miscellaneous Erosion Control	LS	$ 100,000.00	1	$ 100,000.00
Miscellaneous Drainage	LS	$ 250,000.00	1	$ 250,000.00
New Fencing	LF	$ 50.00	2,700	$ 135,000.00
Clearing and Grubbing	AC	$ 8,000.00	26	$ 208,000.00
Architectural				
Proposed Structures	SF	$ 125.00	110,000	$ 13,750,000.00
Electrical				
New Taxiway Lighting	EA	$ 1,500.00	50	$ 75,000.00

New Guidance Sign	EA	$ 5,000.00	1	$	5,000.00
Miscellaneous Electrical	LS	$ 80,000.00	1	$	80,000.00
High Mast Lighting	EA	$ 24,000.00	10	$	240,000.00
Overall Construction Contingency (20%)				**$**	**4,482,800.00**
Professional Services - Design, Building, & Permitting (15%)				$	3,362,100.00
Professional Services - Construction Administration & RPR (15%)				$	3,362,100.00
Total				**$**	**33,621,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-13 AIR CARGO-ALTERNATIVE 1



SOURCE: Ricondo & Associates, Inc., July 2019.

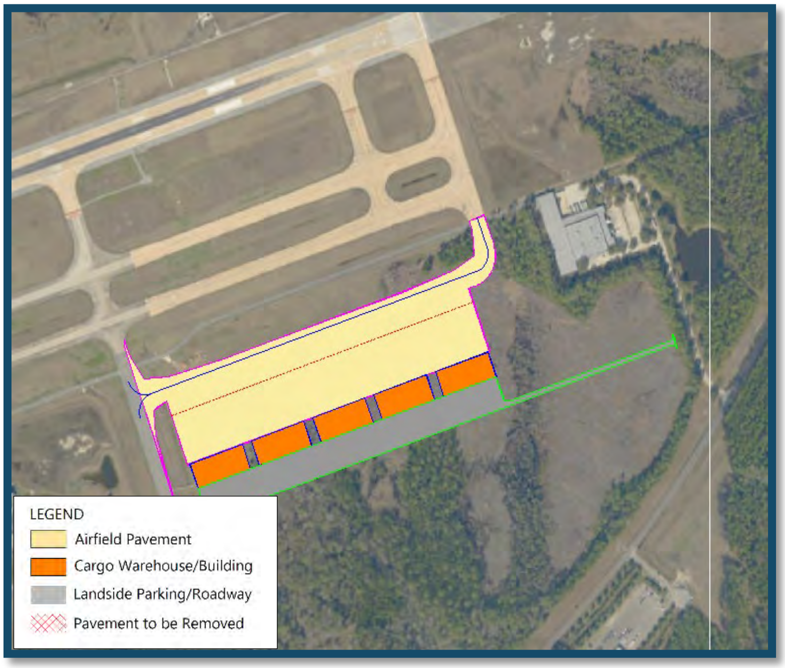
TABLE E-13 AIR CARGO-ALTERNATIVE 1

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$1,820,000.00	1	$ 1,820,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	39,500	$ 8,887,500.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	87,800	$ 5,268,000.00
Limerock Base Course (P-211)	CY	$ 80.00	15,500	$ 1,240,000.00
Unclassified Excavation	CY	$ 25.00	55,800	$ 1,395,000.00
Unsuitable Excavation	CY	$ 25.00	5,580	$ 139,500.00
Topsoil and Sod	SY	$ 10.00	2,500	$ 25,000.00
New Pavement Markings	SF	$ 5.00	13,100	$ 65,500.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 100,000.00	1	$ 100,000.00
Architectural				
Proposed Structures	SF	$ 125.00	6,300	$ 787,500.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	30	$ 6,000.00
New Taxiway Lighting	EA	$ 1,500.00	40	$ 60,000.00
Guidance Sign Demo	EA	$ 500.00	1	$ 500.00
New Guidance Sign	EA	$ 4,500.00	2	$ 9,000.00

Miscellaneous Electrical to Be Removed	LS	$ 45,950.00	1	$	45,950.00
Miscellaneous Electrical	LS	$ 91,900.00	1	$	91,900.00
Overall Construction Contingency (20%)				**$**	**3,998,270.00**
Professional Services - Design, Building, & Permitting (15%)				$	2,998,702.50
Professional Services - Construction Administration & RPR (15%)				$	2,998,702.50
Total				**$**	**29,987,025.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-14 AIR CARGO-ALTERNATIVE 2 CONCEPT 1



SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-14 AIR CARGO-ALTERNATIVE 2 CONCEPT 1

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$4,610,000.00	1	$ 4,610,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	41,600	$ 9,360,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	92,400	$ 5,544,000.00
Limerock Base Course (P-211)	CY	$ 80.00	22,000	$ 1,760,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	7,500	$ 1,125,000.00
Prime Coat	GAL	$ 4.00	9,600	$ 38,400.00
Tack Coat	GAL	$ 4.00	1,600	$ 6,400.00
Unclassified Excavation	CY	$ 25.00	80,000	$ 2,000,000.00
Unsuitable Excavation	CY	$ 25.00	8,000	$ 200,000.00
Topsoil and Sod	SY	$ 10.00	116,400	$ 1,164,000.00
New Pavement Markings	SF	$ 5.00	3,600	$ 18,000.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 150,000.00	1	$ 150,000.00
Clearing and Grubbing	AC	$ 8,000.00	53	$ 424,000.00
Architectural				
Proposed Structures	SF	$ 125.00	191,600	$ 23,950,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	10	$ 2,000.00
New Taxiway Lighting	EA	$ 1,500.00	62	$ 93,000.00
Guidance Sign Demo	EA	$ 500.00	3	$ 1,500.00
New Guidance Sign	EA	$ 4,500.00	4	$ 18,000.00
Miscellaneous Electrical to Be Removed	LS	$ 45,875.00	1	$ 45,875.00
Miscellaneous Electrical	LS	$ 91,750.00	1	$ 91,750.00

Overall Construction Contingency (20%)	**$**	**10,130,385.00**
Professional Services - Design, Building, & Permitting (15%)	$	7,597,788.75
Professional Services - Construction Administration & RPR (15%)	$	7,597,788.75
Total	**$**	**75,977,887.50**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-15 AIR CARGO-ALTERNATIVE 2 CONCEPT 2

SOURCE: Ricondo & Associates, Inc., July 2019.

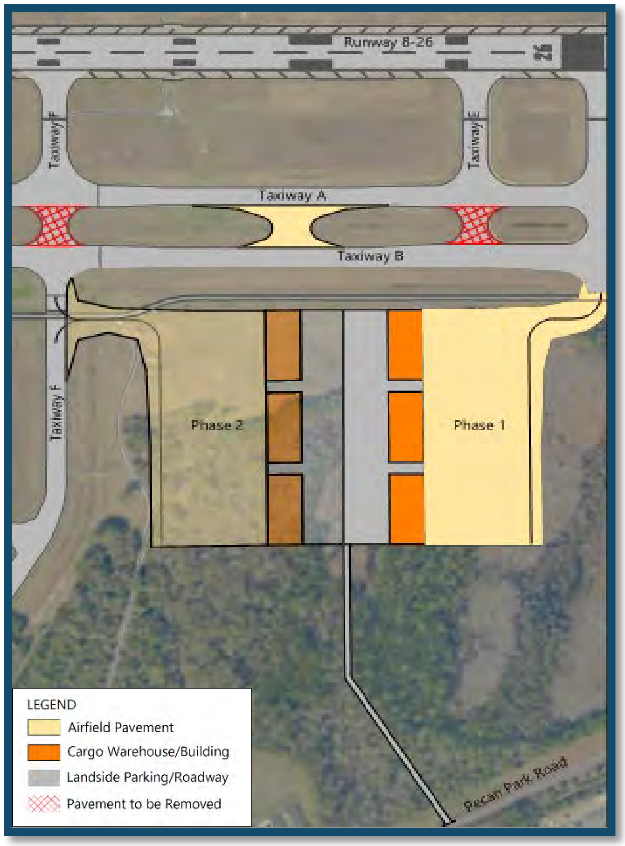
TABLE E-15 AIR CARGO-ALTERNATIVE 2 CONCEPT 2

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,160,000.00	1	$ 5,160,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	42,900	$ 9,652,500.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	95,300	$ 5,718,000.00
Limerock Base Course (P-211)	CY	$ 80.00	25,100	$ 2,008,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	10,800	$ 1,620,000.00
Prime Coat	GAL	$ 4.00	13,800	$ 55,200.00
Tack Coat	GAL	$ 4.00	2,300	$ 9,200.00
Unclassified Excavation	CY	$ 25.00	91,200	$ 2,280,000.00
Unsuitable Excavation	CY	$ 25.00	9,120	$ 228,000.00
Topsoil and Sod	SY	$ 10.00	50,000	$ 500,000.00
New Pavement Markings	SF	$ 5.00	3,600	$ 18,000.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 150,000.00	1	$ 150,000.00
Clearing and Grubbing	AC	$ 8,000.00	41	$ 328,000.00
Architectural				
Proposed Structures	SF	$ 125.00	230,000	$ 28,750,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	7	$ 1,400.00
New Taxiway Lighting	EA	$ 1,500.00	40	$ 60,000.00

New Guidance Sign	EA	$ 4,500.00	2	$	9,000.00
Miscellaneous Electrical to Be Removed	LS	$ 27,550.00	1	$	27,550.00
Miscellaneous Electrical	LS	$ 55,100.00	1	$	55,100.00
Overall Construction Contingency (20%)				**$**	**11,335,990.00**
Professional Services - Design, Building, & Permitting (15%)				$	8,501,992.50
Professional Services - Construction Administration & RPR (15%)				$	8,501,992.50
Total				**$**	**85,019,925.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-16 AIR CARGO-ALTERNATIVE 2 CONCEPT 3



SOURCE: Ricondo & Associates, Inc., July 2019.

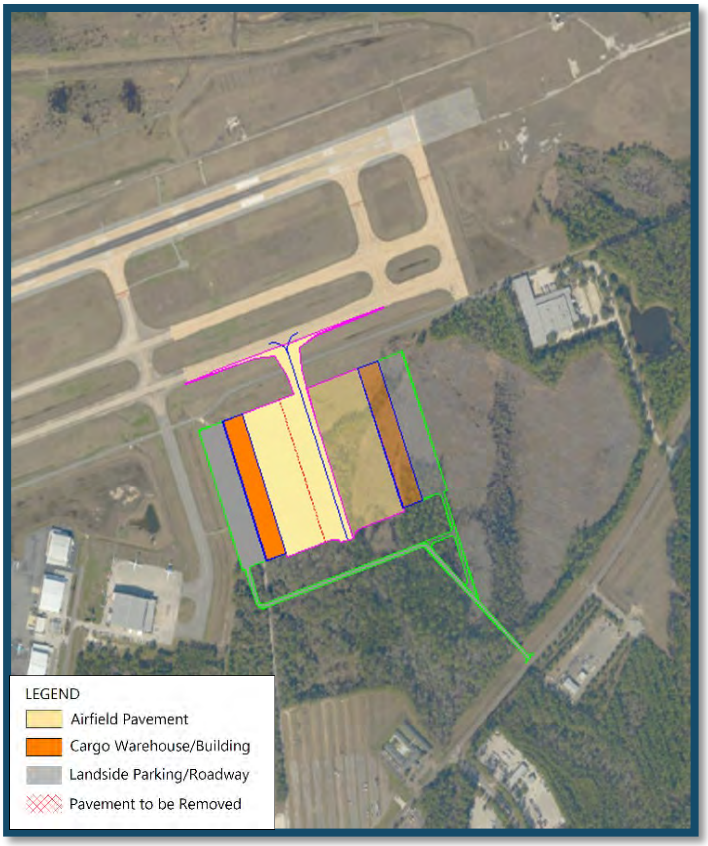
TABLE E-16 AIR CARGO-ALTERNATIVE 2 CONCEPT 3

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,450,000.00	1	$ 5,450,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	49,000	$ 11,025,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	109,000	$ 6,540,000.00
Limerock Base Course (P-211)	CY	$ 80.00	27,000	$ 2,160,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	10,000	$ 1,500,000.00
Prime Coat	GAL	$ 4.00	11,500	$ 46,000.00
Tack Coat	GAL	$ 4.00	2,000	$ 8,000.00
Unclassified Excavation	CY	$ 25.00	104,000	$ 2,600,000.00
Unsuitable Excavation	CY	$ 25.00	5,000	$ 125,000.00
Topsoil and Sod	SY	$ 10.00	126,500	$ 1,265,000.00
New Pavement Markings	SF	$ 5.00	3,800	$ 19,000.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 150,000.00	1	$ 150,000.00
Clearing and Grubbing	AC	$ 8,000.00	61	$ 488,000.00
Architectural				
Proposed Structures	SF	$ 125.00	225,000	$ 28,125,000.00

Electrical					
Taxiway Lighting Demo	EA	$	200.00	20	$ 4,000.00
New Taxiway Lighting	EA	$	1,500.00	80	$ 120,000.00
Guidance Sign Demo	EA	$	500.00	5	$ 2,500.00
New Guidance Sign	EA	$	4,500.00	5	$ 22,500.00
Miscellaneous Electrical to Be Removed	LS	$	53,000.00	1	$ 53,000.00
Miscellaneous Electrical	LS	$	106,000.00	1	$ 106,000.00
Overall Construction Contingency (20%)					**$ 11,971,800.00**
Professional Services - Design, Building, & Permitting (15%)					$ 8,978,850.00
Professional Services - Construction Administration & RPR (15%)					$ 8,978,850.00
Total					**$ 89,788,500.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-17 AIR CARGO-ALTERNATIVE 3 CONCEPT 1



SOURCE: Ricondo & Associates, Inc., July 2019.

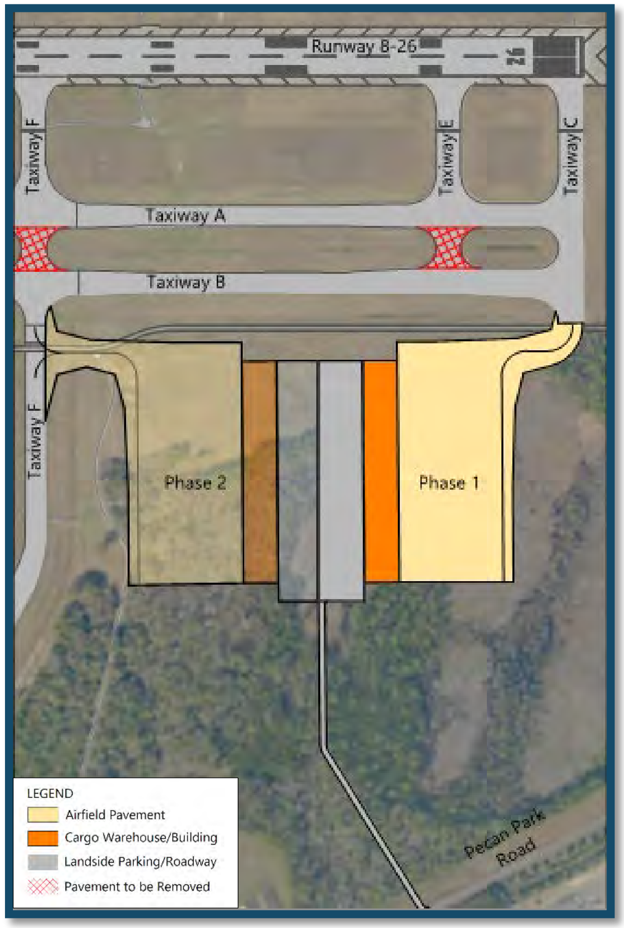
TABLE E-17 AIR CARGO-ALTERNATIVE 3 CONCEPT 1

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$4,710,000.00	1	$ 4,710,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	37,500	$ 8,437,500.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	83,250	$ 4,995,000.00
Limerock Base Course (P-211)	CY	$ 80.00	21,500	$ 1,720,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	8,900	$ 1,335,000.00
Prime Coat	GAL	$ 4.00	11,400	$ 45,600.00
Tack Coat	GAL	$ 4.00	1,900	$ 7,600.00
Unclassified Excavation	CY	$ 25.00	78,000	$ 1,950,000.00
Unsuitable Excavation	CY	$ 25.00	7,800	$ 195,000.00
Topsoil and Sod	SY	$ 10.00	58,400	$ 584,000.00
New Pavement Markings	SF	$ 5.00	3,600	$ 18,000.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 150,000.00	1	$ 150,000.00
Clearing and Grubbing	AC	$ 8,000.00	41	$ 328,000.00
Architectural				
Proposed Structures	SF	$ 125.00	216,000	$ 27,000,000.00

Electrical						
Taxiway Lighting Demo	EA	$	200.00	11	$	2,200.00
New Taxiway Lighting	EA	$	1,500.00	51	$	76,500.00
New Guidance Sign	EA	$	5,000.00	2	$	10,000.00
Miscellaneous Electrical to Be Removed	LS	$	35,800.00	1	$	35,800.00
Miscellaneous Electrical	LS	$	71,600.00	1	$	71,600.00
Overall Construction Contingency (20%)					**$**	**10,344,360.00**
Professional Services - Design, Building, & Permitting (15%)					$	7,758,270.00
Professional Services - Construction Administration & RPR (15%)					$	7,758,270.00
Total					**$**	**77,582,700.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-18 AIR CARGO-ALTERNATIVE 3 CONCEPT 2



SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-18 AIR CARGO-ALTERNATIVE 3 CONCEPT 2

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$5,150,000.00	1	$ 5,150,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	46,500	$ 10,462,500.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	102,000	$ 6,120,000.00
Limerock Base Course (P-211)	CY	$ 80.00	25,000	$ 2,000,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	7,500	$ 1,125,000.00
Prime Coat	GAL	$ 4.00	10,000	$ 40,000.00
Tack Coat	GAL	$ 4.00	2,000	$ 8,000.00
Unclassified Excavation	CY	$ 25.00	95,000	$ 2,375,000.00
Unsuitable Excavation	CY	$ 25.00	5,000	$ 125,000.00
Topsoil and Sod	SY	$ 10.00	124,000	$ 1,240,000.00
New Pavement Markings	SF	$ 5.00	7,000	$ 35,000.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 150,000.00	1	$ 150,000.00
Clearing and Grubbing	AC	$ 8,000.00	55	$ 440,000.00

Architectural						
Proposed Structures	SF	$	125.00	216000	$	27,000,000.00
Electrical						
Taxiway Lighting Demo	EA	$	200.00	20	$	4,000.00
New Taxiway Lighting	EA	$	1,500.00	70	$	105,000.00
Guidance Sign Demo	EA	$	500.00	5	$	2,500.00
New Guidance Sign	EA	$	4,500.00	5	$	22,500.00
Miscellaneous Electrical to Be Removed	LS	$	52,000.00	1	$	52,000.00
Miscellaneous Electrical	LS	$	104,000.00	1	$	104,000.00
Overall Construction Contingency (20%)					**$**	**11,322,100.00**
Professional Services - Design, Building, & Permitting (15%)					$	8,491,575.00
Professional Services - Construction Administration & RPR (15%)					$	8,491,575.00
Total					**$**	**84,915,750.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-19 AIR CARGO-ALTERNATIVE 3 CONCEPT 3

SOURCE: Ricondo & Associates, Inc., July 2019.

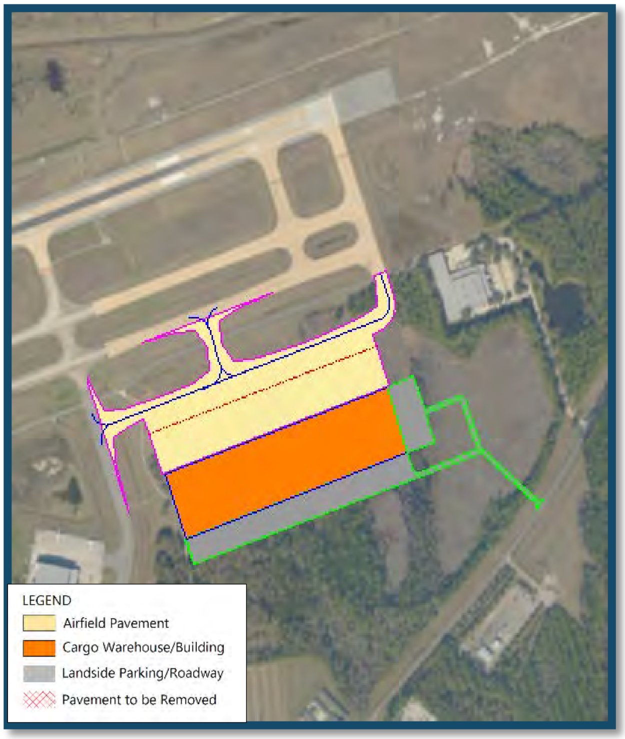
TABLE E-19 AIR CARGO-ALTERNATIVE 3 CONCEPT 3

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$4,920,000.00	1	$ 4,920,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	40,700	$ 9,157,500.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	90,500	$ 5,430,000.00
Limerock Base Course (P-211)	CY	$ 80.00	21,800	$ 1,744,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	7,600	$ 1,140,000.00
Prime Coat	GAL	$ 4.00	9,700	$ 38,800.00
Tack Coat	GAL	$ 4.00	1,700	$ 6,800.00
Unclassified Excavation	CY	$ 25.00	79,000	$ 1,975,000.00
Unsuitable Excavation	CY	$ 25.00	7,900	$ 197,500.00
Topsoil and Sod	SY	$ 10.00	57,200	$ 572,000.00
New Pavement Markings	SF	$ 5.00	6,100	$ 30,500.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 150,000.00	1	$ 150,000.00
Clearing and Grubbing	AC	$ 8,000.00	42	$ 336,000.00
Architectural				
Proposed Structures	SF	$ 125.00	225,000	$ 28,125,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	10	$ 2,000.00
New Taxiway Lighting	EA	$ 1,500.00	64	$ 96,000.00
Guidance Sign Demo	EA	$ 500.00	1	$ 500.00
New Guidance Sign	EA	$ 4,500.00	3	$ 13,500.00
Miscellaneous Electrical to Be Removed	LS	$ 42,550.00	1	$ 42,550.00

Miscellaneous Electrical	LS	$	85,100.00	1	$ 85,100.00
Overall Construction Contingency (20%)					**$ 10,822,550.00**
Professional Services - Design, Building, & Permitting (15%)					$ 8,116,912.50
Professional Services - Construction Administration & RPR (15%)					$ 8,116,912.50
Total					**$ 81,169,125.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-20 AIR CARGO-ALTERNATIVE 4



SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-20 AIR CARGO-ALTERNATIVE 4

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$8,230,000.00	1	$ 8,230,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	41,900	$ 9,427,500.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	93,000	$ 5,580,000.00
Limerock Base Course (P-211)	CY	$ 80.00	23,300	$ 1,864,000.00
Full Strength Pavement (P-401) - Surface Course	TON	$ 150.00	9,000	$ 1,350,000.00
Prime Coat	GAL	$ 4.00	11,600	$ 46,400.00
Tack Coat	GAL	$ 4.00	2,000	$ 8,000.00
Unclassified Excavation	CY	$ 25.00	84,700	$ 2,117,500.00
Unsuitable Excavation	CY	$ 25.00	8,470	$ 211,750.00
Topsoil and Sod	SY	$ 10.00	66,300	$ 663,000.00
New Pavement Markings	SF	$ 5.00	8,700	$ 43,500.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 150,000.00	1	$ 150,000.00
Clearing and Grubbing	AC	$ 8,000.00	54	$ 432,000.00
Architectural				
Proposed Structures	SF	$ 100.00	600,000	$ 60,000,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	12	$ 2,400.00
New Taxiway Lighting	EA	$ 1,500.00	90	$ 135,000.00
Guidance Sign Demo	EA	$ 500.00	4	$ 2,000.00

New Guidance Sign	EA	$	4,500.00	7	$ 31,500.00
Miscellaneous Electrical to Be Removed	LS	$	57,650.00	1	$ 57,650.00
Miscellaneous Electrical	LS	$	115,300.00	1	$ 115,300.00
Overall Construction Contingency (20%)					**$ 18,103,500.00**
Professional Services - Design, Building, & Permitting (15%)					$ 13,577,625.00
Professional Services - Construction Administration & RPR (15%)					$ 13,577,625.00
Total					**$ 135,776,250.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-21 AIR CARGO-PREFERRED ALTERNATIVE

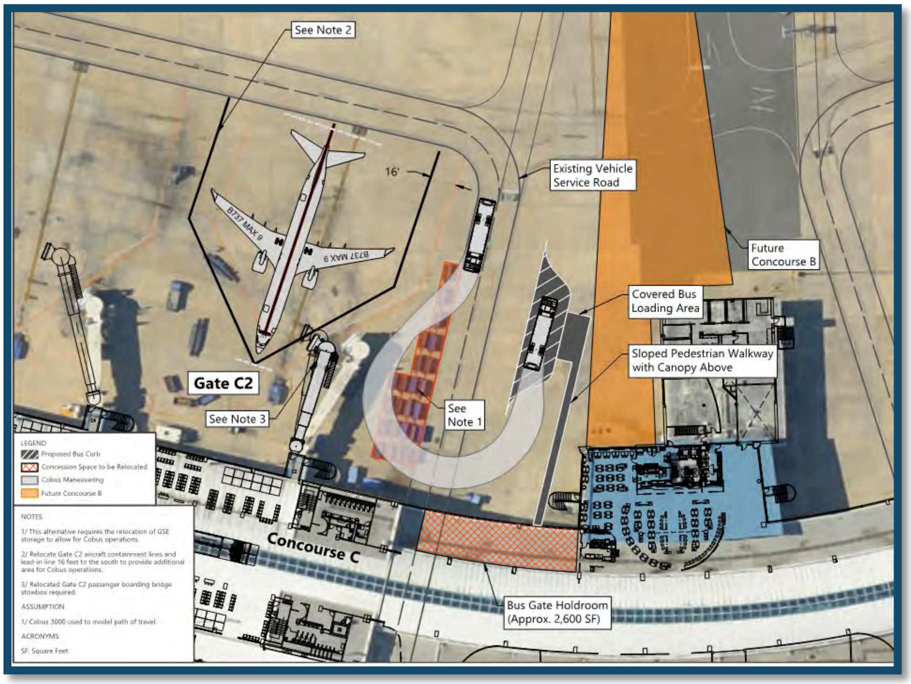
SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-21 AIR CARGO-PREFERRED ALTERNATIVE

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Civil				
Mobilization	LS	$4,150,000.00	1	$ 4,150,000.00
Full Depth Concrete Pavement (P-501)	CY	$ 225.00	35,800	$ 8,055,000.00
Lean Concrete Base Course (P-306)	SY	$ 60.00	79,500	$ 4,770,000.00
Limerock Base Course (P-211)	CY	$ 80.00	13,900	$ 1,112,000.00
Unclassified Excavation	CY	$ 25.00	50,500	$ 1,262,500.00
Unsuitable Excavation	CY	$ 25.00	5,050	$ 126,250.00
Topsoil and Sod	SY	$ 10.00	45,600	$ 456,000.00
New Pavement Markings	SF	$ 5.00	2,300	$ 11,500.00
Miscellaneous Erosion Control	LS	$ 50,000.00	1	$ 50,000.00
Miscellaneous Drainage	LS	$ 150,000.00	1	$ 150,000.00
Clearing and Grubbing	AC	$ 8,000.00	24	$ 192,000.00
Architectural				
Proposed Structures	SF	$ 125.00	200,200	$ 25,025,000.00
Electrical				
Taxiway Lighting Demo	EA	$ 200.00	4	$ 800.00
New Taxiway Lighting	EA	$ 1,500.00	54	$ 81,000.00
Guidance Sign Demo	EA	$ 500.00	-	$ -
New Guidance Sign	EA	$ 4,500.00	4	$ 18,000.00
Miscellaneous Electrical to Be Removed	LS	$ 42,550.00	1	$ 42,550.00
Miscellaneous Electrical	LS	$ 85,100.00	1	$ 85,100.00
Overall Construction Contingency (20%)				**$ 9,117,540.00**
Professional Services - Design, Building, & Permitting (15%)				$ 6,838,155.00
Professional Services - Construction Administration & RPR (15%)				$ 6,838,155.00
Total				**$ 68,381,550.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-22 BUS GATE-ALTERNATIVE 1



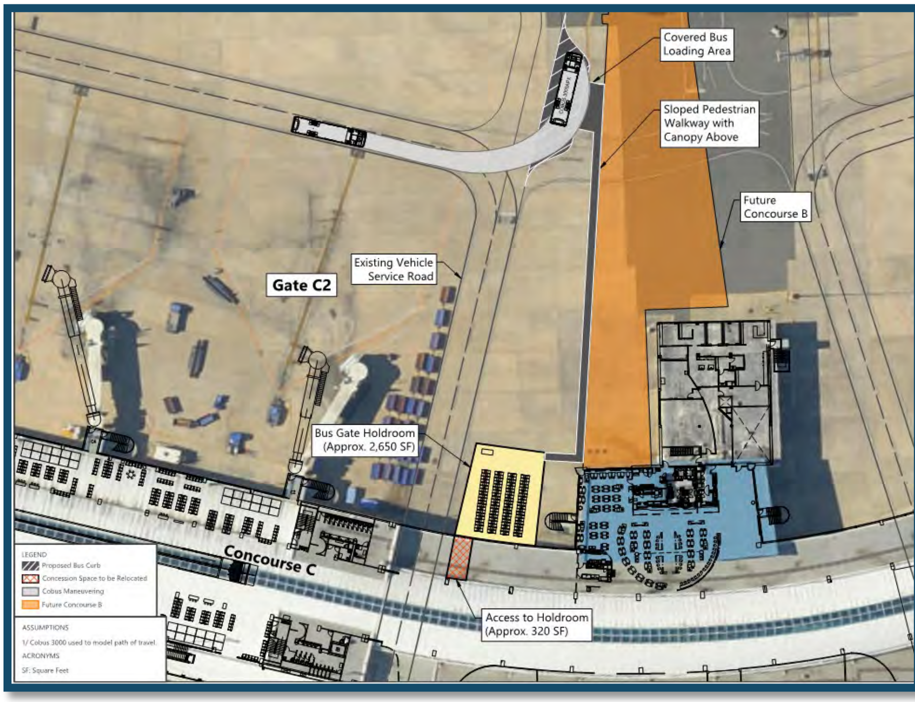
SOURCES: Ricondo & Associates, Inc., July 2019.

TABLE E-22 BUS GATE-ALTERNATIVE 1

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Architectural				
Mobilization	LS	$ 60,000.00	1	$ 60,000.00
Covered Pedestrian Walkway and Loading Area	SF	$ 45.00	1,000	$ 45,000.00
Bus Gate Holdroom Renovation	SF	$ 200.00	2,600	$ 520,000.00
Civil				
Pavement Marking	SF	$ 5.00	3,000	$ 15,000.00
Overall Construction Contingency (25%)				**$ 160,000.00**
Professional Services - Design, Building, & Permitting (15%)				$ 96,000.00
Professional Services - Construction Administration & RPR (15%)				$ 96,000.00
Total				**$ 992,000.00**

SOURCES: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-23 BUS GATE-ALTERNATIVE 2



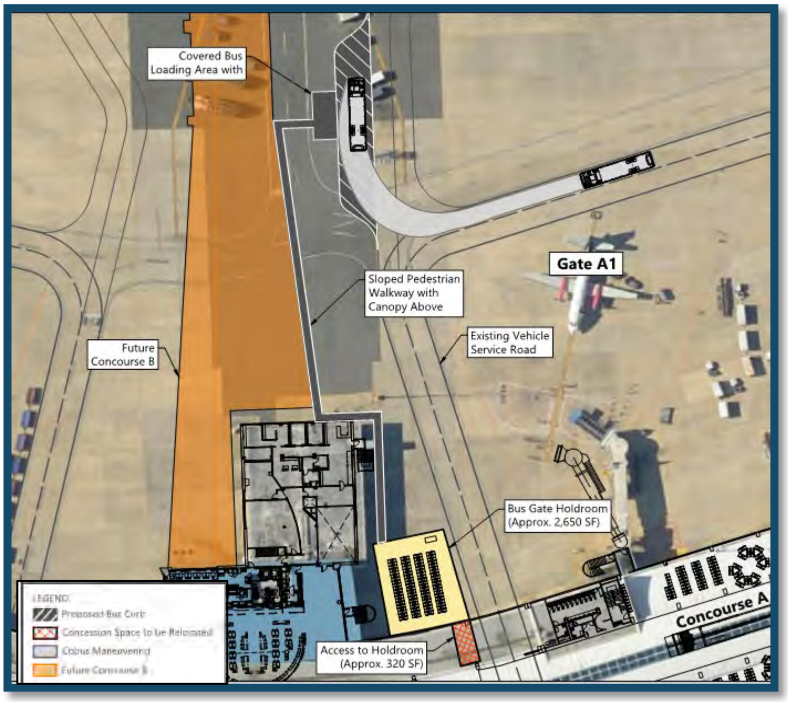
SOURCE: Ricondo & Associates, July 2019.

TABLE E-23 BUS GATE-ALTERNATIVE 2

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Architectural				
Mobilization	LS	$ 100,000.00	1	$ 100,000.00
Covered Pedestrian Walkway and Loading Area	SF	$ 45.00	1,600	$ 72,000.00
Bus Gate Holdroom	SF	$ 300.00	2,650	$ 795,000.00
Bus Gate Holdroom Access Renovation	SF	$ 200.00	320	$ 64,000.00
Civil				
Pavement Marking	SF	$ 5.00	1,600	$ 8,000.00
Overall Construction Contingency (25%)				**$ 234,750.00**
Professional Services - Design, Building, & Permitting (15%)				$ 140,850.00
Professional Services - Construction Administration & RPR (15%)				$ 140,850.00
Total				**$ 1,555,450.00**

SOURCES: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-24 BUS GATE-ALTERNATIVE 3



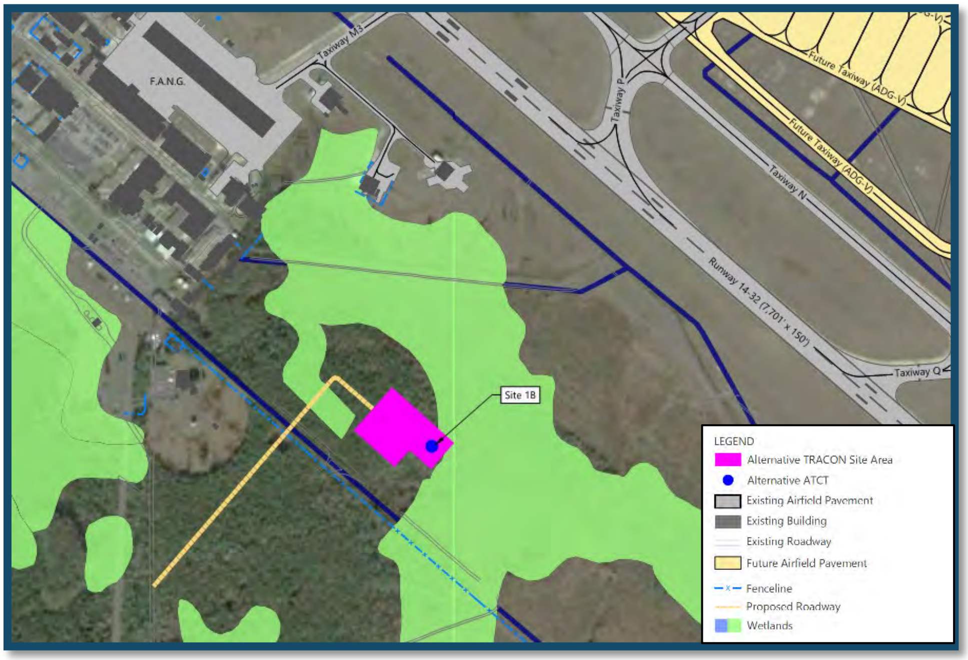
SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-24 BUS GATE-ALTERNATIVE 3

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Architectural				
Mobilization	LS	$ 100,000.00	1	$ 100,000.00
Covered Pedestrian Walkway and Loading Area	SF	$ 45.00	2,200	$ 99,000.00
Bus Gate Holdroom	SF	$ 300.00	2,650	$ 795,000.00
Bus Gate Holdroom Access Renovation	SF	$ 200.00	320	$ 64,000.00
Civil				
Pavement Marking	SF	$ 5.00	1,600	$ 8,000.00
Overall Construction Contingency (25%)				**$ 241,500.00**
Professional Services - Design, Building, & Permitting (15%)				$ 144,900.00
Professional Services - Construction Administration & RPR (15%)				$ 144,900.00
Total				**$ 1,597,300.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-25 AIR TRAFFIC CONTROL TOWER SITE 1B



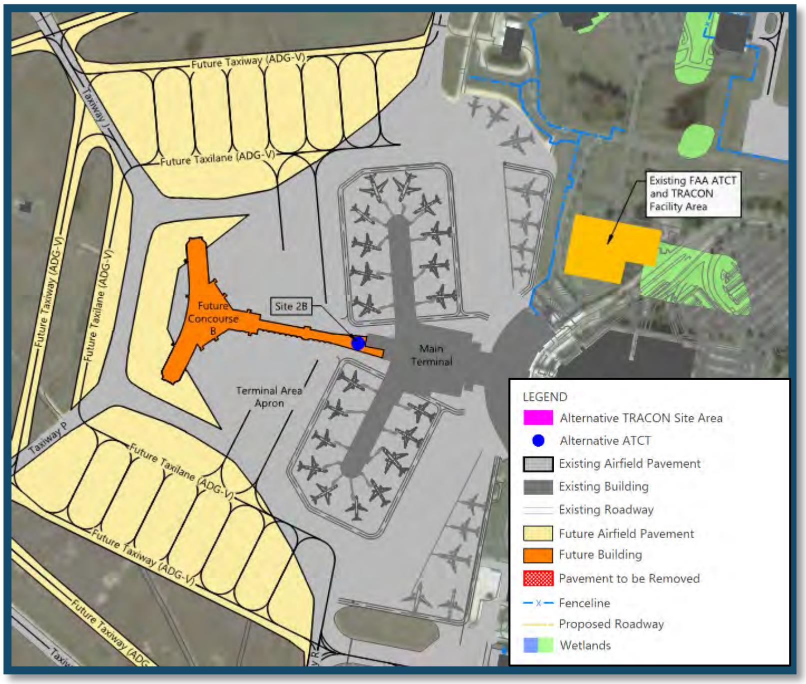
SOURCES: Ricondo & Associates, Inc., July 2019.

TABLE E-25 AIR TRAFFIC CONTROL TOWER SITE 1B

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Architectural				
Proposed TRACON Site	SF	$ 650.00	13,200	$ 8,580,000.00
Proposed ATCT	LS	$ 21,200,000.00	1	$ 21,200,000.00
Civil				
Proposed Roadway Improvements	LS	$ 280,000.00	1	$ 280,000.00
Site Work - Clearing and Grubbing	AC	$ 8,000.00	12	$ 96,000.00
Overall Construction Contingency (20%)				**$ 6,031,200.00**
Professional Services - Design, Building, & Permitting (15%)				$ 4,523,400.00
Professional Services - Construction Administration & RPR (15%)				$ 4,523,400.00
Total				**$ 45,234,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-26 AIR TRAFFIC CONTROL TOWER SITE 2B



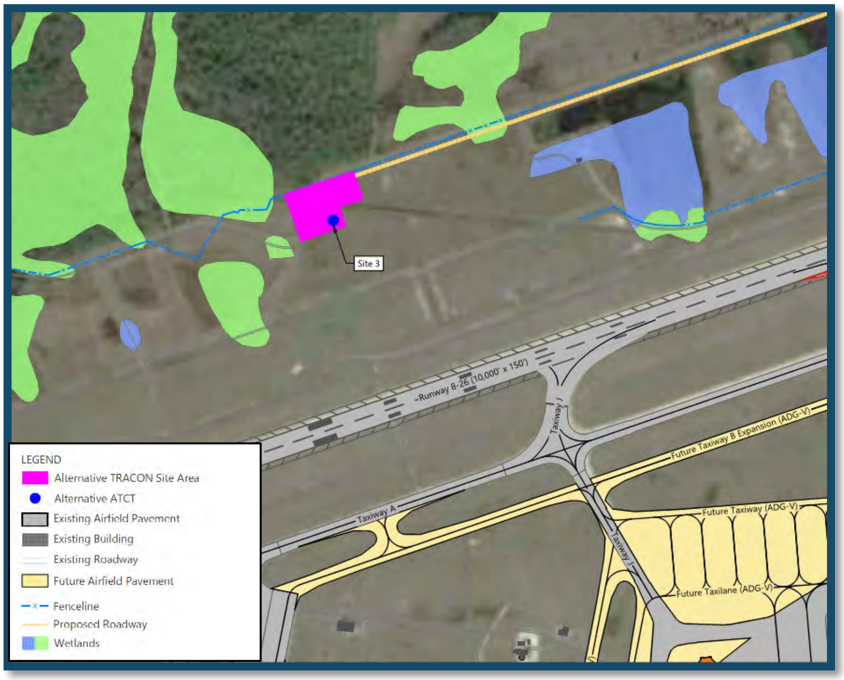
SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-26 AIR TRAFFIC CONTROL TOWER SITE 2B

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Architectural				
Proposed ATCT	LS	$18,400,000.00	1	$ 18,400,000.00
TRACON Renovation	SF	$ 200.00	13,200	$ 2,640,000.00
Overall Construction Contingency (20%)				**$ 4,208,000.00**
Professional Services - Design, Building, & Permitting (15%)				$ 3,156,000.00
Professional Services - Construction Administration & RPR (15%)				$ 3,156,000.00
Total				**$ 31,560,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-27 AIR TRAFFIC CONTROL TOWER SITE 3



SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-27 AIR TRAFFIC CONTROL TOWER SITE 3

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Architectural				
Proposed TRACON Site	SF	$ 650.00	13,200	$ 8,580,000.00
Proposed ATCT	LS	$16,000,000.00	1	$ 16,000,000.00
Civil				
Proposed Roadway Improvements	LS	$ 2,000,000.00	1	$ 2,000,000.00
Site Work - Clearing and Grubbing	AC	$ 8,000.00	3	$ 24,000.00
Overall Construction Contingency (20%)				**$ 5,320,800.00**
Professional Services - Design, Building, & Permitting (15%)				$ 3,990,600.00
Professional Services - Construction Administration & RPR (15%)				$ 3,990,600.00
Total				**$ 39,906,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

EXHIBIT E-28 AIR TRAFFIC CONTROL TOWER SITE 4

SOURCE: Ricondo & Associates, Inc., July 2019.

TABLE E-28 AIR TRAFFIC CONTROL TOWER SITE 4

ALTERNATIVES	UNIT	UNIT COST	QUANTITY	TOTAL
Architectural				
Proposed ATCT	LS	$ 26,000,000.00	1	$ 26,000,000.00
TRACON Renovation	SF	$ 200.00	13,200	$ 2,640,000.00
Overall Construction Contingency (20%)				**$ 5,728,000.00**
Professional Services - Design, Building, & Permitting (15%)				$ 4,296,000.00
Professional Services - Construction Administration & RPR (15%)				$ 4,296,000.00
Total				**$ 42,960,000.00**

SOURCE: Jacobs Engineering Group, Inc., August 2019.

APPENDIX F

Capital Projects by Funding Source

TABLE F-1 (1 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
Gross Project Costs																						
1	Customs and Border Protection General Aviation Facility	MP	Aviation	$2,250,000	$2,317,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$4,567,500
4	Concourse B Replacement	MP	Terminal	$-	$100,682,500	$103,702,975	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$204,385,475
5	Concourse B Ramp Rehabilitation	MP	Airfield	$-	$13,132,500	$13,526,475	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$26,658,975
6	Future ADG-V Taxiway - Parallel to Taxiway V	MP	Airfield	$6,000,000	$6,180,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$12,180,000
2	Parking Garage Expansion	MP	Parking	$-	$-	$-	$-	$-	$30,913,975	$31,841,395	$32,796,636	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$95,552,006
7	Runway 14-32 Shoulders and Blast Pad Expansion	MP	Airfield	$-	$-	$-	$-	$-	$5,216,733	$5,373,235	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$10,589,969
8	Taxiway Fillet Modifications	MP	Airfield	$-	$-	$-	$-	$-	$-	$2,029,889	$2,090,786	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$4,120,674
9	Taxiway B Extension and Realignment	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$14,307,533	$14,736,759	$15,178,861	$-	$-	$-	$-	$-	$-	$-	$-	$44,223,153
10	Taxiway G1 Reconstruction	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$536,225	$552,312	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,088,537
11	New ADG-V Taxiway - Parallel to Taxiway N	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$7,654,669	$7,884,309	$8,120,839	$-	$-	$-	$-	$-	$-	$23,659,817
14	Security Screening Checkpoint Expansion	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,561,378	$3,668,220	$-	$-	$-	$-	$-	$-	$7,229,598
21	Questica Upgrade	Non-MP	Administration	$-	$25,750	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$25,750
22	GIS Improvements	Non-MP	Administration	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
23	PA System Upgrade or Replacement	Non-MP	Terminal	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
24	EASE hardware replacement	Non-MP	Terminal	$-	$103,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$103,000
25	IT Infrastructure Refresh (2021)	Non-MP	Administration	$-	$350,200	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$350,200
26	Courtyard Column Light Replacement	Non-MP	Maintenance	$-	$169,950	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$169,950
27	Field Maintenance Bulldozer Replacement	Non-MP	Maintenance	$-	$319,300	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$319,300
28	Elgin Runway Sweeper	Non-MP	Maintenance	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
29	Generator # 4 Replacement (Parking Plaza)	Non-MP	Parking	$-	$113,300	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$113,300
30	ARFF Vehicle Replacement (Crash 18)	Non-MP	ARFF	$-	$978,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$978,500
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$618,000	$636,540	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,254,540
32	Economy 1 Signage Update	Non-MP	Parking	$-	$154,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$154,500
33	Economy 2 Signage Update	Non-MP	Parking	$-	$128,750	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$128,750
34	Roadway and Garage Light Pole Ph 2	Non-MP	Maintenance	$-	$195,700	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$195,700
35	Slope Mower	Non-MP	Maintenance	$-	$226,600	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$226,600
36	CAT 330 Excavator Track Hoe with Cutting Head	Non-MP	Maintenance	$-	$283,250	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$283,250
37	JAX Canopy and Steel Support Replacement and Refurbishment	Non-MP	Terminal	$-	$3,708,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,708,000
38	Administrative Building AC Replacement	Non-MP	Administration	$-	$494,400	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$494,400
39	Garage Structure Rehab (Ph 3 of 4)	Non-MP	Parking	$-	$2,060,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,060,000
40	Design & Construct Wildlife Fence	Non-MP	Airfield	$-	$206,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$206,000
41	Bypass for A & C Concourse Terrazzo Installation	Non-MP	Terminal	$-	$386,250	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$386,250
43	Airside/Landside Bathroom Rehabilitation Phase 2	Non-MP	Terminal	$250,000	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$507,500
45	Admin Building Bathroom Rehabilitation	Non-MP	Administration	$-	$206,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$206,000
46	JAX Roof Rehabilitation	Non-MP	Terminal	$-	$4,068,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$4,068,500

TABLE F-1 (2 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
50	Flex Warehouse Roof Refurbishment	Non-MP	Maintenance	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
51	FEDEX Roof Replacement	Non-MP	Maintenance	$-	$412,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$412,000
52	ARFF Station Roof Replacement	Non-MP	ARFF	$-	$1,030,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,030,000
54	Garage Structure Rehabilitation (Ph 4 of 4)	Non-MP	Parking	$-	$-	$2,121,800	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,121,800
55	Replace Loading Dock Freight Elevators (2 Units)	Non-MP	Terminal	$-	$412,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$412,000
56	Common Use Terminal Equipment Acquisition and Installation	Non-MP	Terminal	$-	$1,030,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,030,000
57	Departures Curbside Kiosk Replacement	Non-MP	Terminal	$-	$-	$175,049	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$175,049
58	Escalator 3 & 4 Ticketing Replacement	Non-MP	Terminal	$-	$1,236,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,236,000
59	Replace Airfield Large Dump-truck	Non-MP	Maintenance	$-	$-	$238,703	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$238,703
61	Airfield Wetland Mitigation	Non-MP	Airfield	$-	$-	$-	$2,185,454	$2,251,018	$2,318,548	$2,388,105	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$9,143,124
62	Replace Ticketing Escalators 1 & 2	Non-MP	Terminal	$1,200,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,200,000
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$655,636	$675,305	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,330,941
64	PC Units (16)	Non-MP	Terminal	$-	$669,500	$689,585	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,359,085
70	South Air Cargo Ramp Concrete Restoration	Non-MP	Airfield	$919,839	$947,434	$975,857	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,843,130
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Non-MP	Airfield	$133,514	$137,519	$141,645	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$412,678
73	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$1,464,190	$1,508,116	$1,553,359	$1,599,960	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$6,125,626
74	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$87,803	$90,437	$93,150	$95,945	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$367,336
75	Taxiway H Concrete Restoration	Non-MP	Airfield	$531,243	$547,180	$563,596	$580,504	$597,919	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,820,441
76	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$90,771	$93,494	$96,299	$99,188	$102,164	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$481,917
77	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$253,846	$261,462	$269,305	$277,385	$285,706	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,347,704
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$81,466	$83,910	$86,427	$89,020	$91,691	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$432,514
79	Taxiway C Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$120,893	$124,520	$128,256	$132,103	$136,067	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$641,840
80	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$65,405	$67,367	$69,388	$71,470	$73,614	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$347,244
81	Taxiway A (between F and C) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$723,620	$745,329	$767,688	$790,719	$814,441	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,841,797
89	Employee Parking Relocation (Economy 3)	Non-MP	Parking	$7,000,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$7,000,000
91	Cargo Apron Expansion	Non-MP	Airfield	$2,610,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,610,000
92	Surface Lot Rehabilitation Phase I	Non-MP	Parking	$2,000,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,000,000
94	Twy H&R Rehabilitation	Non-MP	Airfield	$1,000,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,000,000
95	Bag Claim Ceiling Rehabilitation	Non-MP	Terminal	$-	$1,030,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,030,000
96	Parking Canopies	Non-MP	Parking	$500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$500,000
97	Landside Air Handler Replacement	Non-MP	Terminal	$-	$515,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$515,000
98	Air Cargo 4 Access Road Rehab	Non-MP	Aviation	$400,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$400,000
99	Elevator Replacement (ADO, 1-hour garage, 2 ticketing)	Non-MP	Terminal	$-	$618,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$618,000
100	IT Infrastructure Upgrade	Non-MP	Terminal	$250,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$250,000
101	FIDS Upgrade	Non-MP	Terminal	$200,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$200,000
102	Airport Drainage Rehabilitation	Non-MP	Airfield	$756,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$756,000

TABLE F-1 (3 OF) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
103	Rocket Motor Test Facility	Non-MP	Spaceport	$1,000,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,000,000
104	Design and Construct Wildlife Fence	Non-MP	Jax Ex at Craig Airport	$1,500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,500,000
105	Communication Fiber and Cameras	Non-MP	Jax Ex at Craig Airport	$500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$500,000
106	Southside Access Road	Non-MP	Jax Ex at Craig Airport	$736,974	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$736,974
107	Airfield Ramp Security Lighting (East/West FBO)	Non-MP	Herlong Recreational Airport	$250,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$250,000
82	Future CIP - 2024 - 2028	Non-MP	Airfield	$-	$-	$-	$-	$7,327,062	$7,546,874	$7,773,280	$8,006,479	$8,246,673	$-	$-	$-	$-	$-	$-	$-	$-	$-	$38,900,369
83	Future CIP - 2024 - 2028	Non-MP	Terminal	$-	$-	$-	$-	$4,175,638	$4,300,907	$4,429,934	$4,562,832	$4,699,717	$-	$-	$-	$-	$-	$-	$-	$-	$-	$22,169,028
134	Future CIP - 2024 - 2028	Non-MP	Administration	$-	$-	$-	$-	$382,673	$394,153	$405,978	$418,157	$430,702	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,031,663
135	Future CIP - 2024 - 2028	Non-MP	Parking	$-	$-	$-	$-	$1,125,509	$1,159,274	$1,194,052	$1,229,874	$1,266,770	$-	$-	$-	$-	$-	$-	$-	$-	$-	$5,975,479
136	Future CIP - 2024 - 2028	Non-MP	Cecil Airport	$-	$-	$-	$-	$562,754	$579,637	$597,026	$614,937	$633,385	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,987,740
137	Future CIP - 2024 - 2028	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$225,102	$231,855	$238,810	$245,975	$253,354	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,195,096
138	Future CIP - 2024 - 2028	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$67,531	$69,556	$71,643	$73,792	$76,006	$-	$-	$-	$-	$-	$-	$-	$-	$-	$358,529
139	Future CIP - 2024 - 2028	Non-MP	Spaceport	$-	$-	$-	$-	$56,275	$57,964	$59,703	$61,494	$63,339	$-	$-	$-	$-	$-	$-	$-	$-	$-	$298,774
140	Future CIP - 2024 - 2028	Non-MP	ARFF	$-	$-	$-	$-	$348,908	$359,375	$370,156	$381,261	$392,699	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,852,399
141	Future CIP - 2024 - 2028	Non-MP	Maintenance	$-	$-	$-	$-	$1,238,060	$1,275,201	$1,313,458	$1,352,861	$1,393,447	$-	$-	$-	$-	$-	$-	$-	$-	$-	$6,573,027
142	Future CIP - 2024 - 2028	Non-MP	Public Safety	$-	$-	$-	$-	$112,551	$115,927	$119,405	$122,987	$126,677	$-	$-	$-	$-	$-	$-	$-	$-	$-	$597,548
143	Future CIP - 2024 - 2028	Non-MP	Aviation	$-	$-	$-	$-	$112,551	$115,927	$119,405	$122,987	$126,677	$-	$-	$-	$-	$-	$-	$-	$-	$-	$597,548
144	Future CIP - 2024 - 2028	Non-MP	Non-aviation	$-	$-	$-	$-	$56,275	$57,964	$59,703	$61,494	$63,339	$-	$-	$-	$-	$-	$-	$-	$-	$-	$298,774
84	Future CIP - 2029 - 2033	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$8,494,073	$8,748,896	$9,011,362	$9,281,703	$9,560,154	$-	$-	$-	$-	$45,096,189
85	Future CIP - 2029 - 2033	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$4,840,709	$4,985,930	$5,135,508	$5,289,573	$5,448,260	$-	$-	$-	$-	$25,699,979
145	Future CIP - 2029 - 2033	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$443,623	$456,932	$470,640	$484,759	$499,301	$-	$-	$-	$-	$2,355,254
146	Future CIP - 2029 - 2033	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,304,773	$1,343,916	$1,384,234	$1,425,761	$1,468,534	$-	$-	$-	$-	$6,927,218
147	Future CIP - 2029 - 2033	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$652,387	$671,958	$692,117	$712,880	$734,267	$-	$-	$-	$-	$3,463,609
148	Future CIP - 2029 - 2033	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$260,955	$268,783	$276,847	$285,152	$293,707	$-	$-	$-	$-	$1,385,444
149	Future CIP - 2029 - 2033	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$78,286	$80,635	$83,054	$85,546	$88,112	$-	$-	$-	$-	$415,633
150	Future CIP - 2029 - 2033	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$65,239	$67,196	$69,212	$71,288	$73,427	$-	$-	$-	$-	$346,361
151	Future CIP - 2029 - 2033	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$404,480	$416,614	$429,112	$441,986	$455,245	$-	$-	$-	$-	$2,147,438
152	Future CIP - 2029 - 2033	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,435,251	$1,478,308	$1,522,657	$1,568,337	$1,615,387	$-	$-	$-	$-	$7,619,940
153	Future CIP - 2029 - 2033	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$130,477	$134,392	$138,423	$142,576	$146,853	$-	$-	$-	$-	$692,722
154	Future CIP - 2029 - 2033	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$130,477	$134,392	$138,423	$142,576	$146,853	$-	$-	$-	$-	$692,722
155	Future CIP - 2029 - 2033	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$65,239	$67,196	$69,212	$71,288	$73,427	$-	$-	$-	$-	$346,361
86	Future CIP - 2034 - 2037	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$9,846,959	$10,142,368	$10,446,639	$10,760,038	$41,196,004
87	Future CIP - 2034 - 2037	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$5,611,708	$5,780,059	$5,953,461	$6,132,065	$23,477,293
156	Future CIP - 2034 - 2037	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$514,281	$529,709	$545,600	$561,968	$2,151,558
157	Future CIP - 2034 - 2037	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,512,590	$1,557,967	$1,604,706	$1,652,848	$6,328,111
158	Future CIP - 2034 - 2037	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$756,295	$778,984	$802,353	$826,424	$3,164,056
159	Future CIP - 2034 - 2037	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$302,518	$311,593	$320,941	$330,570	$1,265,622
160	Future CIP - 2034 - 2037	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$90,755	$93,478	$96,282	$99,171	$379,687
161	Future CIP - 2034 - 2037	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$75,629	$77,898	$80,235	$82,642	$316,406
162	Future CIP - 2034 - 2037	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$468,903	$482,970	$497,459	$512,383	$1,961,714
163	Future CIP - 2034 - 2037	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,663,849	$1,713,764	$1,765,177	$1,818,132	$6,960,922
164	Future CIP - 2034 - 2037	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$151,259	$155,797	$160,471	$165,285	$632,811
165	Future CIP - 2034 - 2037	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$151,259	$155,797	$160,471	$165,285	$632,811
166	Future CIP - 2034 - 2037	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$75,629	$77,898	$80,235	$82,642	$316,406
Total Gross Project Costs				$31,884,180	$148,934,093	$124,784,338	$5,761,836	$20,702,417	$55,743,272	$59,445,459	$68,078,400	$33,876,295	$41,139,498	$30,300,835	$31,209,860	$20,003,425	$20,603,528	$21,221,634	$21,858,283	$22,514,031	$23,189,452	$781,250,837

TABLE F-1 (4 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
AIP - Entitlement Funded																						
1	Customs and Border Protection General Aviation Facility	MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
4	Concourse B Replacement	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
5	Concourse B Ramp Rehabilitation	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
6	Future ADG-V Taxiway - Parallel to Taxiway V	MP	Airfield	$1,500,000	$1,545,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,045,000
2	Parking Garage Expansion	MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
7	Runway 14-32 Shoulders and Blast Pad Expansion	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
8	Taxiway Fillet Modifications	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
9	Taxiway B Extension and Realignment	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
10	Taxiway G1 Reconstruction	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$402,169	$414,234	$-	$-	$-	$-	$-	$-	$-	$-	$-	$816,403
11	New ADG-V Taxiway - Parallel to Taxiway N	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,000,652	$2,060,672	$2,122,492	$-	$-	$-	$-	$-	$-	$6,183,816
14	Security Screening Checkpoint Expansion	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
21	Questica Upgrade	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
22	GIS Improvements	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
23	PA System Upgrade or Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
24	EASE hardware replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
25	IT Infrastructure Refresh (2021)	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
26	Courtyard Column Light Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
27	Field Maintenance Bulldozer Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
28	Elgin Runway Sweeper	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
29	Generator # 4 Replacement (Parking Plaza)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
30	ARFF Vehicle Replacement (Crash 18)	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
32	Economy 1 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
33	Economy 2 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
34	Roadway and Garage Light Pole Ph 2	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
35	Slope Mower	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
36	CAT 330 Excavator Track Hoe with Cutting Head	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
37	JAX Canopy and Steel Support Replacement and Refurbishment	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
38	Administrative Building AC Replacement	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
39	Garage Structure Rehab (Ph 3 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
40	Design & Construct Wildlife Fence	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
41	Bypass for A & C Concourse Terrazzo Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
43	Airside/Landside Bathroom Rehabilitation Phase 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
45	Admin Building Bathroom Rehabilitation	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
46	JAX Roof Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (5 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
50	Flex Warehouse Roof Refurbishment	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
51	FEDEX Roof Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
52	ARFF Station Roof Replacement	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
54	Garage Structure Rehabilitation (Ph 4 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
55	Replace Loading Dock Freight Elevators (2 Units)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
56	Common Use Terminal Equipment Acquisition and Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
57	Departures Curbside Kiosk Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
58	Escalator 3 & 4 Ticketing Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
59	Replace Airfield Large Dump-truck	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
61	Airfield Wetland Mitigation	Non-MP	Airfield	$-	$-	$-	$1,639,091	$1,688,263	$1,738,911	$1,791,078	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$6,857,343
62	Replace Ticketing Escalators 1 & 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
64	PC Units (16)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
70	South Air Cargo Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Non-MP	Airfield	$100,135	$103,139	$106,234	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$309,508
73	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
74	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$48,292	$49,741	$51,233	$52,770	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$202,035
75	Taxiway H Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
76	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$68,078	$70,121	$72,224	$74,391	$76,623	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$361,437
77	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$61,100	$62,933	$64,821	$66,765	$68,768	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$324,386
79	Taxiway C Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$90,670	$93,390	$96,192	$99,078	$102,050	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$481,380
80	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$49,054	$50,525	$52,041	$53,602	$55,210	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$260,433
81	Taxiway A (between F and C) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
89	Employee Parking Relocation (Economy 3)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
91	Cargo Apron Expansion	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
92	Surface Lot Rehabilitation Phase I	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
94	Twy H&R Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
95	Bag Claim Ceiling Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
96	Parking Canopies	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
97	Landside Air Handler Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
98	Air Cargo 4 Access Road Rehab	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
99	Elevator Replacement (ADO, 1-hour garage, 2 ticketing)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
100	IT Infrastructure Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
101	FIDS Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
102	Airport Drainage Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (6 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
103	Rocket Motor Test Facility	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
104	Design and Construct Wildlife Fence	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
105	Communication Fiber and Cameras	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
106	Southside Access Road	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
107	Airfield Ramp Security Lighting (East/West FBO)	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
82	Future CIP - 2024 - 2028	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
83	Future CIP - 2024 - 2028	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
134	Future CIP - 2024 - 2028	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
135	Future CIP - 2024 - 2028	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
136	Future CIP - 2024 - 2028	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
137	Future CIP - 2024 - 2028	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
138	Future CIP - 2024 - 2028	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
139	Future CIP - 2024 - 2028	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
140	Future CIP - 2024 - 2028	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
141	Future CIP - 2024 - 2028	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
142	Future CIP - 2024 - 2028	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
143	Future CIP - 2024 - 2028	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
144	Future CIP - 2024 - 2028	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
84	Future CIP - 2029 - 2033	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$521,909	$537,567	$553,694	$570,304	$587,413	$-	$-	$-	$-	$2,770,887
85	Future CIP - 2029 - 2033	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
145	Future CIP - 2029 - 2033	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
146	Future CIP - 2029 - 2033	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
147	Future CIP - 2029 - 2033	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
148	Future CIP - 2029 - 2033	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
149	Future CIP - 2029 - 2033	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
150	Future CIP - 2029 - 2033	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
151	Future CIP - 2029 - 2033	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
152	Future CIP - 2029 - 2033	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
153	Future CIP - 2029 - 2033	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
154	Future CIP - 2029 - 2033	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
155	Future CIP - 2029 - 2033	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
86	Future CIP - 2034 - 2037	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,457,958	$2,531,697	$2,607,648	$2,685,877	$10,283,181
87	Future CIP - 2034 - 2037	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
156	Future CIP - 2034 - 2037	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
157	Future CIP - 2034 - 2037	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
158	Future CIP - 2034 - 2037	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
159	Future CIP - 2034 - 2037	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
160	Future CIP - 2034 - 2037	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
161	Future CIP - 2034 - 2037	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
162	Future CIP - 2034 - 2037	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
163	Future CIP - 2034 - 2037	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
164	Future CIP - 2034 - 2037	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
165	Future CIP - 2034 - 2037	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
166	Future CIP - 2034 - 2037	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total AIP Entitlement Funded Project Costs				$1,716,506	$1,768,001	$229,691	$1,967,075	$1,971,734	$1,951,965	$2,010,524	$628,197	$414,234	$2,522,561	$2,598,238	$2,676,185	$570,304	$587,413	$2,457,958	$2,531,697	$2,607,648	$2,685,877	$31,895,809

TABLE F-1 (7 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
AIP - Discretionary Funded																						
1	Customs and Border Protection General Aviation Facility	MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
4	Concourse B Replacement	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
5	Concourse B Ramp Rehabilitation	MP	Airfield	$-	$9,849,375	$10,144,856	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$19,994,231
6	Future ADG-V Taxiway - Parallel to Taxiway V	MP	Airfield	$3,000,000	$3,090,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$6,090,000
2	Parking Garage Expansion	MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
7	Runway 14-32 Shoulders and Blast Pad Expansion	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
8	Taxiway Fillet Modifications	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
9	Taxiway B Extension and Realignment	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
10	Taxiway G1 Reconstruction	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
11	New ADG-V Taxiway - Parallel to Taxiway N	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
14	Security Screening Checkpoint Expansion	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
21	Questica Upgrade	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
22	GIS Improvements	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
23	PA System Upgrade or Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
24	EASE hardware replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
25	IT Infrastructure Refresh (2021)	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
26	Courtyard Column Light Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
27	Field Maintenance Bulldozer Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
28	Elgin Runway Sweeper	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
29	Generator # 4 Replacement (Parking Plaza)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
30	ARFF Vehicle Replacement (Crash 18)	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
32	Economy 1 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
33	Economy 2 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
34	Roadway and Garage Light Pole Ph 2	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
35	Slope Mower	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
36	CAT 330 Excavator Track Hoe with Cutting Head	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
37	JAX Canopy and Steel Support Replacement and Refurbishment	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
38	Administrative Building AC Replacement	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
39	Garage Structure Rehab (Ph 3 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
40	Design & Construct Wildlife Fence	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
41	Bypass for A & C Concourse Terrazzo Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
43	Airside/Landside Bathroom Rehabilitation Phase 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
45	Admin Building Bathroom Rehabilitation	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
46	JAX Roof Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (8 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
50	Flex Warehouse Roof Refurbishment	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
51	FEDEX Roof Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
52	ARFF Station Roof Replacement	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
54	Garage Structure Rehabilitation (Ph 4 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
55	Replace Loading Dock Freight Elevators (2 Units)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
56	Common Use Terminal Equipment Acquisition and Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
57	Departures Curbside Kiosk Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
58	Escalator 3 & 4 Ticketing Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
59	Replace Airfield Large Dump-truck	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
61	Airfield Wetland Mitigation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
62	Replace Ticketing Escalators 1 & 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
64	PC Units (16)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
70	South Air Cargo Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
73	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
74	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
75	Taxiway H Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
76	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
77	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
79	Taxiway C Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
80	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
81	Taxiway A (between F and C) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$542,715	$558,996	$575,766	$593,039	$610,831	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,881,348
89	Employee Parking Relocation (Economy 3)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
91	Cargo Apron Expansion	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
92	Surface Lot Rehabilitation Phase I	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
94	Twy H&R Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
95	Bag Claim Ceiling Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
96	Parking Canopies	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
97	Landside Air Handler Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
98	Air Cargo 4 Access Road Rehab	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
99	Elevator Replacement (ADO, 1-hour garage, 2 ticketing)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
100	IT Infrastructure Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
101	FIDS Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
102	Airport Drainage Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (9 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
103	Rocket Motor Test Facility	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
104	Design and Construct Wildlife Fence	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
105	Communication Fiber and Cameras	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
106	Southside Access Road	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
107	Airfield Ramp Security Lighting (East/West FBO)	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
82	Future CIP - 2024 - 2028	Non-MP	Airfield	$-	$-	$-	$-	$2,701,221	$2,782,258	$2,865,726	$2,951,697	$3,040,248	$-	$-	$-	$-	$-	$-	$-	$-	$-	$14,341,150
83	Future CIP - 2024 - 2028	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
134	Future CIP - 2024 - 2028	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
135	Future CIP - 2024 - 2028	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
136	Future CIP - 2024 - 2028	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
137	Future CIP - 2024 - 2028	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
138	Future CIP - 2024 - 2028	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
139	Future CIP - 2024 - 2028	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
140	Future CIP - 2024 - 2028	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
141	Future CIP - 2024 - 2028	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
142	Future CIP - 2024 - 2028	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
143	Future CIP - 2024 - 2028	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
144	Future CIP - 2024 - 2028	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
84	Future CIP - 2029 - 2033	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,392,410	$3,494,183	$3,599,008	$3,706,978	$3,818,188	$-	$-	$-	$-	$18,010,767
85	Future CIP - 2029 - 2033	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
145	Future CIP - 2029 - 2033	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
146	Future CIP - 2029 - 2033	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
147	Future CIP - 2029 - 2033	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
148	Future CIP - 2029 - 2033	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
149	Future CIP - 2029 - 2033	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
150	Future CIP - 2029 - 2033	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
151	Future CIP - 2029 - 2033	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
152	Future CIP - 2029 - 2033	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
153	Future CIP - 2029 - 2033	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
154	Future CIP - 2029 - 2033	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
155	Future CIP - 2029 - 2033	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
86	Future CIP - 2034 - 2037	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,781,474	$3,894,919	$4,011,766	$4,132,119	$15,820,278
87	Future CIP - 2034 - 2037	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
156	Future CIP - 2034 - 2037	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
157	Future CIP - 2034 - 2037	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
158	Future CIP - 2034 - 2037	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
159	Future CIP - 2034 - 2037	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
160	Future CIP - 2034 - 2037	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
161	Future CIP - 2034 - 2037	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
162	Future CIP - 2034 - 2037	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
163	Future CIP - 2034 - 2037	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
164	Future CIP - 2034 - 2037	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
165	Future CIP - 2034 - 2037	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
166	Future CIP - 2034 - 2037	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total AIP Discretionary Funded Project Costs				$3,000,000	$12,939,375	$10,144,856	$-	$3,243,936	$3,341,254	$3,441,492	$3,544,737	$3,651,079	$3,392,410	$3,494,183	$3,599,008	$3,706,978	$3,818,188	$3,781,474	$3,894,919	$4,011,766	$4,132,119	$77,137,774

TABLE F-1 (10 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
FDOT and Space Florida																						
1	Customs and Border Protection General Aviation Facility	MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
4	Concourse B Replacement	MP	Terminal	$-	$7,055,500	$7,267,165	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$14,322,665
5	Concourse B Ramp Rehabilitation	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
6	Future ADG-V Taxiway - Parallel to Taxiway V	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
2	Parking Garage Expansion	MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
7	Runway 14-32 Shoulders and Blast Pad Expansion	MP	Airfield	$-	$-	$-	$-	$-	$2,608,367	$2,686,618	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$5,294,984
8	Taxiway Fillet Modifications	MP	Airfield	$-	$-	$-	$-	$-	$-	$1,014,944	$1,045,393	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,060,337
9	Taxiway B Extension and Realignment	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$2,828,710	$2,913,571	$3,000,978	$-	$-	$-	$-	$-	$-	$-	$-	$8,743,259
10	Taxiway G1 Reconstruction	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
11	New ADG-V Taxiway - Parallel to Taxiway N	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
14	Security Screening Checkpoint Expansion	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,780,689	$1,834,110	$-	$-	$-	$-	$-	$-	$3,614,799
21	Questica Upgrade	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
22	GIS Improvements	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
23	PA System Upgrade or Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
24	EASE hardware replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
25	IT Infrastructure Refresh (2021)	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
26	Courtyard Column Light Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
27	Field Maintenance Bulldozer Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
28	Elgin Runway Sweeper	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
29	Generator # 4 Replacement (Parking Plaza)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
30	ARFF Vehicle Replacement (Crash 18)	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
32	Economy 1 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
33	Economy 2 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
34	Roadway and Garage Light Pole Ph 2	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
35	Slope Mower	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
36	CAT 330 Excavator Track Hoe with Cutting Head	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
37	JAX Canopy and Steel Support Replacement and Refurbishment	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
38	Administrative Building AC Replacement	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
39	Garage Structure Rehab (Ph 3 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
40	Design & Construct Wildlife Fence	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
41	Bypass for A & C Concourse Terrazzo Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
43	Airside/Landside Bathroom Rehabilitation Phase 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
45	Admin Building Bathroom Rehabilitation	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
46	JAX Roof Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (11 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
50	Flex Warehouse Roof Refurbishment	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
51	FEDEX Roof Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
52	ARFF Station Roof Replacement	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
54	Garage Structure Rehabilitation (Ph 4 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
55	Replace Loading Dock Freight Elevators (2 Units)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
56	Common Use Terminal Equipment Acquisition and Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
57	Departures Curbside Kiosk Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
58	Escalator 3 & 4 Ticketing Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
59	Replace Airfield Large Dump-truck	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
61	Airfield Wetland Mitigation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
62	Replace Ticketing Escalators 1 & 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
64	PC Units (16)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
70	South Air Cargo Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
73	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
74	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
75	Taxiway H Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
76	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
77	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
79	Taxiway C Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
80	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
81	Taxiway A (between F and C) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
89	Employee Parking Relocation (Economy 3)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
91	Cargo Apron Expansion	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
92	Surface Lot Rehabilitation Phase I	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
94	Twy H&R Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
95	Bag Claim Ceiling Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
96	Parking Canopies	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
97	Landside Air Handler Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
98	Air Cargo 4 Access Road Rehab	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
99	Elevator Replacement (ADO, 1-hour garage, 2 ticketing)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
100	IT Infrastructure Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
101	FIDS Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
102	Airport Drainage Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (12 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
103	Rocket Motor Test Facility	Non-MP	Spaceport	$500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$500,000
104	Design and Construct Wildlife Fence	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
105	Communication Fiber and Cameras	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
106	Southside Access Road	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
107	Airfield Ramp Security Lighting (East/West FBO)	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
82	Future CIP - 2024 - 2028	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
83	Future CIP - 2024 - 2028	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
134	Future CIP - 2024 - 2028	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
135	Future CIP - 2024 - 2028	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
136	Future CIP - 2024 - 2028	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
137	Future CIP - 2024 - 2028	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
138	Future CIP - 2024 - 2028	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
139	Future CIP - 2024 - 2028	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
140	Future CIP - 2024 - 2028	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
141	Future CIP - 2024 - 2028	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
142	Future CIP - 2024 - 2028	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
143	Future CIP - 2024 - 2028	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
144	Future CIP - 2024 - 2028	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
84	Future CIP - 2029 - 2033	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,061,759	$1,093,612	$1,126,420	$1,160,213	$1,195,019	$-	$-	$-	$-	$5,637,024
85	Future CIP - 2029 - 2033	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
145	Future CIP - 2029 - 2033	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
146	Future CIP - 2029 - 2033	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
147	Future CIP - 2029 - 2033	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
148	Future CIP - 2029 - 2033	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
149	Future CIP - 2029 - 2033	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
150	Future CIP - 2029 - 2033	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
151	Future CIP - 2029 - 2033	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
152	Future CIP - 2029 - 2033	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
153	Future CIP - 2029 - 2033	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
154	Future CIP - 2029 - 2033	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
155	Future CIP - 2029 - 2033	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
86	Future CIP - 2034 - 2037	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,230,870	$1,267,796	$1,305,830	$1,345,005	$5,149,500
87	Future CIP - 2034 - 2037	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,805,854	$2,890,030	$2,976,730	$3,066,032	$11,738,646
156	Future CIP - 2034 - 2037	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
157	Future CIP - 2034 - 2037	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
158	Future CIP - 2034 - 2037	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
159	Future CIP - 2034 - 2037	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
160	Future CIP - 2034 - 2037	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
161	Future CIP - 2034 - 2037	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
162	Future CIP - 2034 - 2037	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
163	Future CIP - 2034 - 2037	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
164	Future CIP - 2034 - 2037	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
165	Future CIP - 2034 - 2037	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
166	Future CIP - 2034 - 2037	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total FDOT and Space Florida				$500,000	$7,055,500	$7,267,165	$-	$-	$2,608,367	$3,701,562	$3,874,103	$2,913,571	$4,062,738	$2,874,301	$2,960,530	$1,160,213	$1,195,019	$4,036,724	$4,157,826	$4,282,560	$4,411,037	$57,061,216

TABLE F-1 (13 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
PFC PAYGO Funded																						
1	Customs and Border Protection General Aviation Facility	MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
4	Concourse B Replacement	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
5	Concourse B Ramp Rehabilitation	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
6	Future ADG-V Taxiway - Parallel to Taxiway V	MP	Airfield	$1,500,000	$1,545,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,045,000
2	Parking Garage Expansion	MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
7	Runway 14-32 Shoulders and Blast Pad Expansion	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
8	Taxiway Fillet Modifications	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
9	Taxiway B Extension and Realignment	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$2,459,748	$2,533,540	$2,609,546	$-	$-	$-	$-	$-	$-	$-	$-	$7,602,834
10	Taxiway G1 Reconstruction	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
11	New ADG-V Taxiway - Parallel to Taxiway N	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,957,160	$2,015,875	$2,076,351	$-	$-	$-	$-	$-	$-	$6,049,385
14	Security Screening Checkpoint Expansion	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
21	Questica Upgrade	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
22	GIS Improvements	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
23	PA System Upgrade or Replacement	Non-MP	Terminal	$-	$193,125	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$193,125
24	EASE hardware replacement	Non-MP	Terminal	$-	$77,250	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$77,250
25	IT Infrastructure Refresh (2021)	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
26	Courtyard Column Light Replacement	Non-MP	Maintenance	$-	$127,463	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$127,463
27	Field Maintenance Bulldozer Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
28	Elgin Runway Sweeper	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
29	Generator # 4 Replacement (Parking Plaza)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
30	ARFF Vehicle Replacement (Crash 18)	Non-MP	ARFF	$-	$978,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$978,500
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$463,500	$477,405	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$940,905
32	Economy 1 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
33	Economy 2 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
34	Roadway and Garage Light Pole Ph 2	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
35	Slope Mower	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
36	CAT 330 Excavator Track Hoe with Cutting Head	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
37	JAX Canopy and Steel Support Replacement and Refurbishment	Non-MP	Terminal	$-	$2,781,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,781,000
38	Administrative Building AC Replacement	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
39	Garage Structure Rehab (Ph 3 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
40	Design & Construct Wildlife Fence	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
41	Bypass for A & C Concourse Terrazzo Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
43	Airside/Landside Bathroom Rehabilitation Phase 2	Non-MP	Terminal	$187,500	$193,125	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$380,625
45	Admin Building Bathroom Rehabilitation	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
46	JAX Roof Rehabilitation	Non-MP	Terminal	$-	$3,051,375	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,051,375

TABLE F-1 (14 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
50	Flex Warehouse Roof Refurbishment	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
51	FEDEX Roof Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
52	ARFF Station Roof Replacement	Non-MP	ARFF	$-	$1,030,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,030,000
54	Garage Structure Rehabilitation (Ph 4 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
55	Replace Loading Dock Freight Elevators (2 Units)	Non-MP	Terminal	$-	$309,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$309,000
56	Common Use Terminal Equipment Acquisition and Installation	Non-MP	Terminal	$-	$772,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$772,500
57	Departures Curbside Kiosk Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
58	Escalator 3 & 4 Ticketing Replacement	Non-MP	Terminal	$-	$927,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$927,000
59	Replace Airfield Large Dump-truck	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
61	Airfield Wetland Mitigation	Non-MP	Airfield	$-	$-	$-	$546,364	$562,754	$579,637	$597,026	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,285,781
62	Replace Ticketing Escalators 1 & 2	Non-MP	Terminal	$900,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$900,000
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$491,727	$506,479	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$998,206
64	PC Units (16)	Non-MP	Terminal	$-	$502,125	$517,189	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,019,314
70	South Air Cargo Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
73	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
74	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
75	Taxiway H Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
76	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
77	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
79	Taxiway C Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
80	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
81	Taxiway A (between F and C) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
89	Employee Parking Relocation (Economy 3)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
91	Cargo Apron Expansion	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
92	Surface Lot Rehabilitation Phase I	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
94	Twy H&R Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
95	Bag Claim Ceiling Rehabilitation	Non-MP	Terminal	$-	$772,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$772,500
96	Parking Canopies	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
97	Landside Air Handler Replacement	Non-MP	Terminal	$-	$386,250	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$386,250
98	Air Cargo 4 Access Road Rehab	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
99	Elevator Replacement (ADO, 1-hour garage, 2 ticketing)	Non-MP	Terminal	$-	$463,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$463,500
100	IT Infrastructure Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
101	FIDS Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
102	Airport Drainage Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (15 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
103	Rocket Motor Test Facility	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
104	Design and Construct Wildlife Fence	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
105	Communication Fiber and Cameras	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
106	Southside Access Road	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
107	Airfield Ramp Security Lighting (East/West FBO)	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
82	Future CIP - 2024 - 2028	Non-MP	Airfield	$-	$-	$-	$-	$900,407	$927,419	$955,242	$983,899	$1,013,416	$-	$-	$-	$-	$-	$-	$-	$-	$-	$4,780,383
83	Future CIP - 2024 - 2028	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
134	Future CIP - 2024 - 2028	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
135	Future CIP - 2024 - 2028	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
136	Future CIP - 2024 - 2028	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
137	Future CIP - 2024 - 2028	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
138	Future CIP - 2024 - 2028	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
139	Future CIP - 2024 - 2028	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
140	Future CIP - 2024 - 2028	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
141	Future CIP - 2024 - 2028	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
142	Future CIP - 2024 - 2028	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
143	Future CIP - 2024 - 2028	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
144	Future CIP - 2024 - 2028	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
84	Future CIP - 2029 - 2033	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,826,682	$1,881,483	$1,937,927	$1,996,065	$2,055,947	$-	$-	$-	$-	$9,698,105
85	Future CIP - 2029 - 2033	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$143,525	$147,831	$152,266	$156,834	$161,539	$-	$-	$-	$-	$761,994
145	Future CIP - 2029 - 2033	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
146	Future CIP - 2029 - 2033	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
147	Future CIP - 2029 - 2033	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$326,193	$335,979	$346,058	$356,440	$367,133	$-	$-	$-	$-	$1,731,805
148	Future CIP - 2029 - 2033	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$130,477	$134,392	$138,423	$142,576	$146,853	$-	$-	$-	$-	$692,722
149	Future CIP - 2029 - 2033	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$39,143	$40,317	$41,527	$42,773	$44,056	$-	$-	$-	$-	$207,817
150	Future CIP - 2029 - 2033	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
151	Future CIP - 2029 - 2033	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
152	Future CIP - 2029 - 2033	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
153	Future CIP - 2029 - 2033	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
154	Future CIP - 2029 - 2033	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
155	Future CIP - 2029 - 2033	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
86	Future CIP - 2034 - 2037	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,376,657	$2,447,956	$2,521,395	$2,597,037	$9,943,045
87	Future CIP - 2034 - 2037	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,805,854	$2,890,030	$2,976,730	$3,066,032	$11,738,646
156	Future CIP - 2034 - 2037	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
157	Future CIP - 2034 - 2037	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
158	Future CIP - 2034 - 2037	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$567,221	$584,238	$601,765	$619,818	$2,373,042
159	Future CIP - 2034 - 2037	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$226,888	$233,695	$240,706	$247,927	$949,217
160	Future CIP - 2034 - 2037	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$68,067	$70,109	$72,212	$74,378	$284,765
161	Future CIP - 2034 - 2037	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$56,722	$58,424	$60,176	$61,982	$237,304
162	Future CIP - 2034 - 2037	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$351,677	$362,227	$373,094	$384,287	$1,471,286
163	Future CIP - 2034 - 2037	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
164	Future CIP - 2034 - 2037	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
165	Future CIP - 2034 - 2037	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$113,444	$116,848	$120,353	$123,964	$474,608
166	Future CIP - 2034 - 2037	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
PFC PAYGO Project Costs				$2,587,500	$14,573,213	$994,594	$1,038,091	$1,969,640	$1,507,056	$1,552,268	$3,443,647	$3,546,956	$7,032,727	$4,555,877	$4,692,553	$2,694,688	$2,775,529	$6,566,530	$6,763,526	$6,966,432	$7,175,425	$80,436,251

TABLE F-1 (16 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
PFC-Backed Notes Funded																						
1	Customs and Border Protection General Aviation Facility	MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
4	Concourse B Replacement	MP	Terminal	$-	$65,443,625	$67,406,934	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$132,850,559
5	Concourse B Ramp Rehabilitation	MP	Airfield	$-	$3,283,125	$3,381,619	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$6,664,744
6	Future ADG-V Taxiway - Parallel to Taxiway V	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
2	Parking Garage Expansion	MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
7	Runway 14-32 Shoulders and Blast Pad Expansion	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
8	Taxiway Fillet Modifications	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
9	Taxiway B Extension and Realignment	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
10	Taxiway G1 Reconstruction	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
11	New ADG-V Taxiway - Parallel to Taxiway N	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
14	Security Screening Checkpoint Expansion	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
21	Questica Upgrade	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
22	GIS Improvements	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
23	PA System Upgrade or Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
24	EASE hardware replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
25	IT Infrastructure Refresh (2021)	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
26	Courtyard Column Light Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
27	Field Maintenance Bulldozer Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
28	Elgin Runway Sweeper	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
29	Generator # 4 Replacement (Parking Plaza)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
30	ARFF Vehicle Replacement (Crash 18)	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
32	Economy 1 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
33	Economy 2 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
34	Roadway and Garage Light Pole Ph 2	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
35	Slope Mower	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
36	CAT 330 Excavator Track Hoe with Cutting Head	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
37	JAX Canopy and Steel Support Replacement and Refurbishment	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
38	Administrative Building AC Replacement	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
39	Garage Structure Rehab (Ph 3 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
40	Design & Construct Wildlife Fence	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
41	Bypass for A & C Concourse Terrazzo Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
43	Airside/Landside Bathroom Rehabilitation Phase 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
45	Admin Building Bathroom Rehabilitation	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
46	JAX Roof Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (17 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
50	Flex Warehouse Roof Refurbishment	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
51	FEDEX Roof Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
52	ARFF Station Roof Replacement	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
54	Garage Structure Rehabilitation (Ph 4 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
55	Replace Loading Dock Freight Elevators (2 Units)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
56	Common Use Terminal Equipment Acquisition and Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
57	Departures Curbside Kiosk Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
58	Escalator 3 & 4 Ticketing Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
59	Replace Airfield Large Dump-truck	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
61	Airfield Wetland Mitigation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
62	Replace Ticketing Escalators 1 & 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
64	PC Units (16)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
70	South Air Cargo Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
73	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
74	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
75	Taxiway H Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
76	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
77	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
79	Taxiway C Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
80	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
81	Taxiway A (between F and C) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
89	Employee Parking Relocation (Economy 3)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
91	Cargo Apron Expansion	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
92	Surface Lot Rehabilitation Phase I	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
94	Twy H&R Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
95	Bag Claim Ceiling Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
96	Parking Canopies	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
97	Landside Air Handler Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
98	Air Cargo 4 Access Road Rehab	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
99	Elevator Replacement (ADO, 1-hour garage, 2 ticketing)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
100	IT Infrastructure Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
101	FIDS Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
102	Airport Drainage Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (18 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
103	Rocket Motor Test Facility	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
104	Design and Construct Wildlife Fence	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
105	Communication Fiber and Cameras	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
106	Southside Access Road	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
107	Airfield Ramp Security Lighting (East/West FBO)	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
82	Future CIP - 2024 - 2028	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
83	Future CIP - 2024 - 2028	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
134	Future CIP - 2024 - 2028	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
135	Future CIP - 2024 - 2028	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
136	Future CIP - 2024 - 2028	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
137	Future CIP - 2024 - 2028	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
138	Future CIP - 2024 - 2028	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
139	Future CIP - 2024 - 2028	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
140	Future CIP - 2024 - 2028	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
141	Future CIP - 2024 - 2028	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
142	Future CIP - 2024 - 2028	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
143	Future CIP - 2024 - 2028	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
144	Future CIP - 2024 - 2028	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
84	Future CIP - 2029 - 2033	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
85	Future CIP - 2029 - 2033	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
145	Future CIP - 2029 - 2033	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
146	Future CIP - 2029 - 2033	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
147	Future CIP - 2029 - 2033	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
148	Future CIP - 2029 - 2033	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
149	Future CIP - 2029 - 2033	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
150	Future CIP - 2029 - 2033	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
151	Future CIP - 2029 - 2033	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
152	Future CIP - 2029 - 2033	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
153	Future CIP - 2029 - 2033	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
154	Future CIP - 2029 - 2033	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
155	Future CIP - 2029 - 2033	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
86	Future CIP - 2034 - 2037	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
87	Future CIP - 2034 - 2037	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
156	Future CIP - 2034 - 2037	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
157	Future CIP - 2034 - 2037	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
158	Future CIP - 2034 - 2037	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
159	Future CIP - 2034 - 2037	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
160	Future CIP - 2034 - 2037	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
161	Future CIP - 2034 - 2037	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
162	Future CIP - 2034 - 2037	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
163	Future CIP - 2034 - 2037	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
164	Future CIP - 2034 - 2037	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
165	Future CIP - 2034 - 2037	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
166	Future CIP - 2034 - 2037	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total PFC-Backed Notes Project Costs				$-	$68,726,750	$70,788,553	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$139,515,303

TABLE F-1 (19 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
Local Funds - PAYGO									$-													
1	Customs and Border Protection General Aviation Facility	MP	Aviation	$2,250,000	$2,317,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$4,567,500
4	Concourse B Replacement	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
5	Concourse B Ramp Rehabilitation	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
6	Future ADG-V Taxiway - Parallel to Taxiway V	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
2	Parking Garage Expansion	MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
7	Runway 14-32 Shoulders and Blast Pad Expansion	MP	Airfield	$-	$-	$-	$-	$-	$2,608,367	$2,686,618	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$5,294,984
8	Taxiway Fillet Modifications	MP	Airfield	$-	$-	$-	$-	$-	$-	$1,014,944	$1,045,393	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,060,337
9	Taxiway B Extension and Realignment	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$9,019,075	$9,289,647	$9,568,337	$-	$-	$-	$-	$-	$-	$-	$-	$27,877,059
10	Taxiway G1 Reconstruction	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$134,056	$138,078	$-	$-	$-	$-	$-	$-	$-	$-	$-	$272,134
11	New ADG-V Taxiway - Parallel to Taxiway N	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$3,696,857	$3,807,763	$3,921,996	$-	$-	$-	$-	$-	$-	$11,426,616
14	Security Screening Checkpoint Expansion	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,780,689	$1,834,110	$-	$-	$-	$-	$-	$-	$3,614,799
21	Questica Upgrade	Non-MP	Administration	$-	$25,750	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$25,750
22	GIS Improvements	Non-MP	Administration	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
23	PA System Upgrade or Replacement	Non-MP	Terminal	$-	$64,375	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$64,375
24	EASE hardware replacement	Non-MP	Terminal	$-	$25,750	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$25,750
25	IT Infrastructure Refresh (2021)	Non-MP	Administration	$-	$350,200	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$350,200
26	Courtyard Column Light Replacement	Non-MP	Maintenance	$-	$42,488	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$42,488
27	Field Maintenance Bulldozer Replacement	Non-MP	Maintenance	$-	$319,300	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$319,300
28	Elgin Runway Sweeper	Non-MP	Maintenance	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
29	Generator # 4 Replacement (Parking Plaza)	Non-MP	Parking	$-	$113,300	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$113,300
30	ARFF Vehicle Replacement (Crash 18)	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$154,500	$159,135	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$313,635
32	Economy 1 Signage Update	Non-MP	Parking	$-	$154,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$154,500
33	Economy 2 Signage Update	Non-MP	Parking	$-	$128,750	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$128,750
34	Roadway and Garage Light Pole Ph 2	Non-MP	Maintenance	$-	$195,700	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$195,700
35	Slope Mower	Non-MP	Maintenance	$-	$226,600	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$226,600
36	CAT 330 Excavator Track Hoe with Cutting Head	Non-MP	Maintenance	$-	$283,250	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$283,250
37	JAX Canopy and Steel Support Replacement and Refurbishment	Non-MP	Terminal	$-	$927,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$927,000
38	Administrative Building AC Replacement	Non-MP	Administration	$-	$494,400	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$494,400
39	Garage Structure Rehab (Ph 3 of 4)	Non-MP	Parking	$-	$2,060,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,060,000
40	Design & Construct Wildlife Fence	Non-MP	Airfield	$-	$206,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$206,000
41	Bypass for A & C Concourse Terrazzo Installation	Non-MP	Terminal	$-	$386,250	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$386,250
43	Airside/Landside Bathroom Rehabilitation Phase 2	Non-MP	Terminal	$62,500	$64,375	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$126,875
45	Admin Building Bathroom Rehabilitation	Non-MP	Administration	$-	$206,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$206,000
46	JAX Roof Rehabilitation	Non-MP	Terminal	$-	$1,017,125	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,017,125

TABLE F-1 (20 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
50	Flex Warehouse Roof Refurbishment	Non-MP	Maintenance	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
51	FEDEX Roof Replacement	Non-MP	Maintenance	$-	$412,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$412,000
52	ARFF Station Roof Replacement	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
54	Garage Structure Rehabilitation (Ph 4 of 4)	Non-MP	Parking	$-	$-	$2,121,800	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,121,800
55	Replace Loading Dock Freight Elevators (2 Units)	Non-MP	Terminal	$-	$103,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$103,000
56	Common Use Terminal Equipment Acquisition and Installation	Non-MP	Terminal	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
57	Departures Curbside Kiosk Replacement	Non-MP	Terminal	$-	$-	$175,049	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$175,049
58	Escalator 3 & 4 Ticketing Replacement	Non-MP	Terminal	$-	$309,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$309,000
59	Replace Airfield Large Dump-truck	Non-MP	Maintenance	$-	$-	$238,703	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$238,703
61	Airfield Wetland Mitigation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
62	Replace Ticketing Escalators 1 & 2	Non-MP	Terminal	$300,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$300,000
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$163,909	$168,826	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$332,735
64	PC Units (16)	Non-MP	Terminal	$-	$167,375	$172,396	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$339,771
70	South Air Cargo Ramp Concrete Restoration	Non-MP	Airfield	$919,839	$947,434	$975,857	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,843,130
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Non-MP	Airfield	$33,378	$34,380	$35,411	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$103,169
73	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$1,464,190	$1,508,116	$1,553,359	$1,599,960	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$6,125,626
74	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$39,511	$40,697	$41,918	$43,175	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$165,301
75	Taxiway H Concrete Restoration	Non-MP	Airfield	$531,243	$547,180	$563,596	$580,504	$597,919	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,820,441
76	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$22,693	$23,374	$24,075	$24,797	$25,541	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$120,479
77	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$253,846	$261,462	$269,305	$277,385	$285,706	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,347,704
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$20,367	$20,978	$21,607	$22,255	$22,923	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$108,129
79	Taxiway C Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$30,223	$31,130	$32,064	$33,026	$34,017	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$160,460
80	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$16,351	$16,842	$17,347	$17,867	$18,403	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$86,811
81	Taxiway A (between F and C) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$180,905	$186,332	$191,922	$197,680	$203,610	$-	$-	$-	$-	$-	$-	$-	$-	$-	$960,449
89	Employee Parking Relocation (Economy 3)	Non-MP	Parking	$7,000,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$7,000,000
91	Cargo Apron Expansion	Non-MP	Airfield	$2,610,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,610,000
92	Surface Lot Rehabilitation Phase I	Non-MP	Parking	$2,000,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,000,000
94	Twy H&R Rehabilitation	Non-MP	Airfield	$1,000,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,000,000
95	Bag Claim Ceiling Rehabilitation	Non-MP	Terminal	$-	$257,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$257,500
96	Parking Canopies	Non-MP	Parking	$500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$500,000
97	Landside Air Handler Replacement	Non-MP	Terminal	$-	$128,750	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$128,750
98	Air Cargo 4 Access Road Rehab	Non-MP	Aviation	$400,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$400,000
99	Elevator Replacement (ADO, 1-hour garage, 2 ticketing)	Non-MP	Terminal	$-	$154,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$154,500
100	IT Infrastructure Upgrade	Non-MP	Terminal	$250,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$250,000
101	FIDS Upgrade	Non-MP	Terminal	$200,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$200,000
102	Airport Drainage Rehabilitation	Non-MP	Airfield	$756,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$756,000

TABLE F-1 (21 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
103	Rocket Motor Test Facility	Non-MP	Spaceport	$500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$500,000
104	Design and Construct Wildlife Fence	Non-MP	Jax Ex at Craig Airport	$1,500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,500,000
105	Communication Fiber and Cameras	Non-MP	Jax Ex at Craig Airport	$500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$500,000
106	Southside Access Road	Non-MP	Jax Ex at Craig Airport	$736,974	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$736,974
107	Airfield Ramp Security Lighting (East/West FBO)	Non-MP	Herlong Recreational Airport	$250,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$250,000
82	Future CIP - 2024 - 2028	Non-MP	Airfield	$-	$-	$-	$-	$3,725,434	$3,837,197	$3,952,313	$4,070,882	$4,193,009	$-	$-	$-	$-	$-	$-	$-	$-	$-	$19,778,836
83	Future CIP - 2024 - 2028	Non-MP	Terminal	$-	$-	$-	$-	$4,175,638	$4,300,907	$4,429,934	$4,562,832	$4,699,717	$-	$-	$-	$-	$-	$-	$-	$-	$-	$22,169,028
134	Future CIP - 2024 - 2028	Non-MP	Administration	$-	$-	$-	$-	$382,673	$394,153	$405,978	$418,157	$430,702	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,031,663
135	Future CIP - 2024 - 2028	Non-MP	Parking	$-	$-	$-	$-	$1,125,509	$1,159,274	$1,194,052	$1,229,874	$1,266,770	$-	$-	$-	$-	$-	$-	$-	$-	$-	$5,975,479
136	Future CIP - 2024 - 2028	Non-MP	Cecil Airport	$-	$-	$-	$-	$562,754	$579,637	$597,026	$614,937	$633,385	$-	$-	$-	$-	$-	$-	$-	$-	$-	$2,987,740
137	Future CIP - 2024 - 2028	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$225,102	$231,855	$238,810	$245,975	$253,354	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,195,096
138	Future CIP - 2024 - 2028	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$67,531	$69,556	$71,643	$73,792	$76,006	$-	$-	$-	$-	$-	$-	$-	$-	$-	$358,529
139	Future CIP - 2024 - 2028	Non-MP	Spaceport	$-	$-	$-	$-	$56,275	$57,964	$59,703	$61,494	$63,339	$-	$-	$-	$-	$-	$-	$-	$-	$-	$298,774
140	Future CIP - 2024 - 2028	Non-MP	ARFF	$-	$-	$-	$-	$348,908	$359,375	$370,156	$381,261	$392,699	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,852,399
141	Future CIP - 2024 - 2028	Non-MP	Maintenance	$-	$-	$-	$-	$1,238,060	$1,275,201	$1,313,458	$1,352,861	$1,393,447	$-	$-	$-	$-	$-	$-	$-	$-	$-	$6,573,027
142	Future CIP - 2024 - 2028	Non-MP	Public Safety	$-	$-	$-	$-	$112,551	$115,927	$119,405	$122,987	$126,677	$-	$-	$-	$-	$-	$-	$-	$-	$-	$597,548
143	Future CIP - 2024 - 2028	Non-MP	Aviation	$-	$-	$-	$-	$112,551	$115,927	$119,405	$122,987	$126,677	$-	$-	$-	$-	$-	$-	$-	$-	$-	$597,548
144	Future CIP - 2024 - 2028	Non-MP	Non-aviation	$-	$-	$-	$-	$56,275	$57,964	$59,703	$61,494	$63,339	$-	$-	$-	$-	$-	$-	$-	$-	$-	$298,774
84	Future CIP - 2029 - 2033	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,691,312	$1,742,052	$1,794,313	$1,848,143	$1,903,587	$-	$-	$-	$-	$8,979,406
85	Future CIP - 2029 - 2033	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$4,697,183	$4,838,099	$4,983,242	$5,132,739	$5,286,721	$-	$-	$-	$-	$24,937,985
145	Future CIP - 2029 - 2033	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$443,623	$456,932	$470,640	$484,759	$499,301	$-	$-	$-	$-	$2,355,254
146	Future CIP - 2029 - 2033	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,304,773	$1,343,916	$1,384,234	$1,425,761	$1,468,534	$-	$-	$-	$-	$6,927,218
147	Future CIP - 2029 - 2033	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$326,193	$335,979	$346,058	$356,440	$367,133	$-	$-	$-	$-	$1,731,805
148	Future CIP - 2029 - 2033	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$130,477	$134,392	$138,423	$142,576	$146,853	$-	$-	$-	$-	$692,722
149	Future CIP - 2029 - 2033	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$39,143	$40,317	$41,527	$42,773	$44,056	$-	$-	$-	$-	$207,817
150	Future CIP - 2029 - 2033	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$65,239	$67,196	$69,212	$71,288	$73,427	$-	$-	$-	$-	$346,361
151	Future CIP - 2029 - 2033	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$404,480	$416,614	$429,112	$441,986	$455,245	$-	$-	$-	$-	$2,147,438
152	Future CIP - 2029 - 2033	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,435,251	$1,478,308	$1,522,657	$1,568,337	$1,615,387	$-	$-	$-	$-	$7,619,940
153	Future CIP - 2029 - 2033	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$130,477	$134,392	$138,423	$142,576	$146,853	$-	$-	$-	$-	$692,722
154	Future CIP - 2029 - 2033	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$130,477	$134,392	$138,423	$142,576	$146,853	$-	$-	$-	$-	$692,722
155	Future CIP - 2029 - 2033	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$65,239	$67,196	$69,212	$71,288	$73,427	$-	$-	$-	$-	$346,361
86	Future CIP - 2034 - 2037	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
87	Future CIP - 2034 - 2037	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
156	Future CIP - 2034 - 2037	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$514,281	$529,709	$545,600	$561,968	$2,151,558
157	Future CIP - 2034 - 2037	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,512,590	$1,557,967	$1,604,706	$1,652,848	$6,328,111
158	Future CIP - 2034 - 2037	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$189,074	$194,746	$200,588	$206,606	$791,014
159	Future CIP - 2034 - 2037	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$75,629	$77,898	$80,235	$82,642	$316,406
160	Future CIP - 2034 - 2037	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$22,689	$23,370	$24,071	$24,793	$94,922
161	Future CIP - 2034 - 2037	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$18,907	$19,475	$20,059	$20,661	$79,101
162	Future CIP - 2034 - 2037	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$117,226	$120,742	$124,365	$128,096	$490,429
163	Future CIP - 2034 - 2037	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$1,663,849	$1,713,764	$1,765,177	$1,818,132	$6,960,922
164	Future CIP - 2034 - 2037	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$151,259	$155,797	$160,471	$165,285	$632,811
165	Future CIP - 2034 - 2037	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$37,815	$38,949	$40,118	$41,321	$158,203
166	Future CIP - 2034 - 2037	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$75,629	$77,898	$80,235	$82,642	$316,406
Total Local Funds - PAYGO Project Costs				$24,080,175	$15,687,879	$6,330,603	$2,756,671	$13,517,107	$15,420,655	$16,898,219	$23,791,081	$23,350,455	$24,129,062	$16,778,236	$17,281,583	$11,871,242	$12,227,379	$4,378,947	$4,510,316	$4,645,625	$4,784,994	$242,440,228
Local Share - Bank Note Funded																						
1	Customs and Border Protection General Aviation Facility	MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
4	Concourse B Replacement	MP	Terminal	$-	$28,183,375	$29,028,876	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$57,212,251
5	Concourse B Ramp Rehabilitation	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (22 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
6	Future ADG-V Taxiway - Parallel to Taxiway V	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
2	Parking Garage Expansion	MP	Parking	$-	$-	$-	$-	$-	$30,913,975	$31,841,395	$32,796,636	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$95,552,006
7	Runway 14-32 Shoulders and Blast Pad Expansion	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
8	Taxiway Fillet Modifications	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
9	Taxiway B Extension and Realignment	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
10	Taxiway G1 Reconstruction	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
11	New ADG-V Taxiway - Parallel to Taxiway N	MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
14	Security Screening Checkpoint Expansion	MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
21	Questica Upgrade	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
22	GIS Improvements	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
23	PA System Upgrade or Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
24	EASE hardware replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
25	IT Infrastructure Refresh (2021)	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
26	Courtyard Column Light Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
27	Field Maintenance Bulldozer Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
28	Elgin Runway Sweeper	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
29	Generator # 4 Replacement (Parking Plaza)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
30	ARFF Vehicle Replacement (Crash 18)	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
31	Phase 1 and 2 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
32	Economy 1 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
33	Economy 2 Signage Update	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
34	Roadway and Garage Light Pole Ph 2	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
35	Slope Mower	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
36	CAT 330 Excavator Track Hoe with Cutting Head	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
37	JAX Canopy and Steel Support Replacement and Refurbishment	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
38	Administrative Building AC Replacement	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
39	Garage Structure Rehab (Ph 3 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
40	Design & Construct Wildlife Fence	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
41	Bypass for A & C Concourse Terrazzo Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
43	Airside/Landside Bathroom Rehabilitation Phase 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
45	Admin Building Bathroom Rehabilitation	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
46	JAX Roof Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
50	Flex Warehouse Roof Refurbishment	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
51	FEDEX Roof Replacement	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
52	ARFF Station Roof Replacement	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
54	Garage Structure Rehabilitation (Ph 4 of 4)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (23 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
55	Replace Loading Dock Freight Elevators (2 Units)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
56	Common Use Terminal Equipment Acquisition and Installation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
57	Departures Curbside Kiosk Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
58	Escalator 3 & 4 Ticketing Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
59	Replace Airfield Large Dump-truck	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
61	Airfield Wetland Mitigation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
62	Replace Ticketing Escalators 1 & 2	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
63	Phase 3 and 4 of 4 Variable Air Volume (VAV) and Fan Terminal Units (FTU)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
64	PC Units (16)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
70	South Air Cargo Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
72	North Air Cargo 1 Taxiway (southern half) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
73	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
74	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
75	Taxiway H Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
76	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
77	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
78	Taxiway B South Shoulder (Runway 26 End) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
79	Taxiway C Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
80	Terminal Ramp Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
81	Taxiway A (between F and C) Concrete Restoration	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
89	Employee Parking Relocation (Economy 3)	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
91	Cargo Apron Expansion	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
92	Surface Lot Rehabilitation Phase I	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
94	Twy H&R Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
95	Bag Claim Ceiling Rehabilitation	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
96	Parking Canopies	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
97	Landside Air Handler Replacement	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
98	Air Cargo 4 Access Road Rehab	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
99	Elevator Replacement (ADO, 1-hour garage, 2 ticketing)	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
100	IT Infrastructure Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
101	FIDS Upgrade	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
102	Airport Drainage Rehabilitation	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
103	Rocket Motor Test Facility	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
104	Design and Construct Wildlife Fence	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
105	Communication Fiber and Cameras	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
106	Southside Access Road	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-

TABLE F-1 (24 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
107	Airfield Ramp Security Lighting (East/West FBO)	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
82	Future CIP - 2024 - 2028	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
83	Future CIP - 2024 - 2028	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
134	Future CIP - 2024 - 2028	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
135	Future CIP - 2024 - 2028	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
136	Future CIP - 2024 - 2028	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
137	Future CIP - 2024 - 2028	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
138	Future CIP - 2024 - 2028	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
139	Future CIP - 2024 - 2028	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
140	Future CIP - 2024 - 2028	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
141	Future CIP - 2024 - 2028	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
142	Future CIP - 2024 - 2028	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
143	Future CIP - 2024 - 2028	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
144	Future CIP - 2024 - 2028	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
84	Future CIP - 2029 - 2033	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
85	Future CIP - 2029 - 2033	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
145	Future CIP - 2029 - 2033	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
146	Future CIP - 2029 - 2033	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
147	Future CIP - 2029 - 2033	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
148	Future CIP - 2029 - 2033	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
149	Future CIP - 2029 - 2033	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
150	Future CIP - 2029 - 2033	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
151	Future CIP - 2029 - 2033	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
152	Future CIP - 2029 - 2033	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
153	Future CIP - 2029 - 2033	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
154	Future CIP - 2029 - 2033	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
155	Future CIP - 2029 - 2033	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
86	Future CIP - 2034 - 2037	Non-MP	Airfield	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
87	Future CIP - 2034 - 2037	Non-MP	Terminal	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
156	Future CIP - 2034 - 2037	Non-MP	Administration	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
157	Future CIP - 2034 - 2037	Non-MP	Parking	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
158	Future CIP - 2034 - 2037	Non-MP	Cecil Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
159	Future CIP - 2034 - 2037	Non-MP	Jax Ex at Craig Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
160	Future CIP - 2034 - 2037	Non-MP	Herlong Recreational Airport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
161	Future CIP - 2034 - 2037	Non-MP	Spaceport	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
162	Future CIP - 2034 - 2037	Non-MP	ARFF	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
163	Future CIP - 2034 - 2037	Non-MP	Maintenance	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
164	Future CIP - 2034 - 2037	Non-MP	Public Safety	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
165	Future CIP - 2034 - 2037	Non-MP	Aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
166	Future CIP - 2034 - 2037	Non-MP	Non-aviation	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total Local Share - Bank Note Funded Project Costs				$-	$28,183,375	$29,028,876	$-	$-	$30,913,975	$31,841,395	$32,796,636	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$152,764,258

TABLE F-1 (25 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
Capital Projects by Funding Source and Cost Center																						
Gross Projects by Cost Center																						
Administration				$-	$1,333,850	$-	$-	$382,673	$394,153	$405,978	$418,157	$430,702	$443,623	$456,932	$470,640	$484,759	$499,301	$514,281	$529,709	$545,600	$561,968	$7,872,325
Parking				$9,500,000	$2,456,550	$2,121,800	$-	$1,125,509	$32,073,249	$33,035,447	$34,026,510	$1,266,770	$1,304,773	$1,343,916	$1,384,234	$1,425,761	$1,468,534	$1,512,590	$1,557,967	$1,604,706	$1,652,848	$128,861,165
Cecil Airport				$-	$-	$-	$-	$562,754	$579,637	$597,026	$614,937	$633,385	$652,387	$671,958	$692,117	$712,880	$734,267	$756,295	$778,984	$802,353	$826,424	$9,615,404
Jax Ex at Craig Airport				$2,736,974	$-	$-	$-	$225,102	$231,855	$238,810	$245,975	$253,354	$260,955	$268,783	$276,847	$285,152	$293,707	$302,518	$311,593	$320,941	$330,570	$6,583,136
Herlong Recreational Airport				$250,000	$-	$-	$-	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	$83,054	$85,546	$88,112	$90,755	$93,478	$96,282	$99,171	$1,403,849
Spaceport				$1,000,000	$-	$-	$-	$56,275	$57,964	$59,703	$61,494	$63,339	$65,239	$67,196	$69,212	$71,288	$73,427	$75,629	$77,898	$80,235	$82,642	$1,961,540
ARFF				$-	$2,008,500	$-	$-	$348,908	$359,375	$370,156	$381,261	$392,699	$404,480	$416,614	$429,112	$441,986	$455,245	$468,903	$482,970	$497,459	$512,383	$7,970,051
Maintenance				$-	$2,121,800	$238,703	$-	$1,238,060	$1,275,201	$1,313,458	$1,352,861	$1,393,447	$1,435,251	$1,478,308	$1,522,657	$1,568,337	$1,615,387	$1,663,849	$1,713,764	$1,765,177	$1,818,132	$23,514,392
Public Safety				$-	$-	$-	$-	$112,551	$115,927	$119,405	$122,987	$126,677	$130,477	$134,392	$138,423	$142,576	$146,853	$151,259	$155,797	$160,471	$165,285	$1,923,081
Airport Ops				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airfield				$13,847,206	$23,104,143	$17,219,687	$5,106,200	$11,563,286	$16,111,556	$18,624,791	$26,033,112	$24,350,184	$31,327,604	$16,633,205	$17,132,201	$9,281,703	$9,560,154	$9,846,959	$10,142,368	$10,446,639	$10,760,038	$281,091,037
Terminal				$1,900,000	$115,591,750	$105,204,149	$655,636	$4,850,943	$4,300,907	$4,429,934	$4,562,832	$4,699,717	$4,840,709	$8,547,308	$8,803,727	$5,289,573	$5,448,260	$5,611,708	$5,780,059	$5,953,461	$6,132,065	$302,602,737
Aviation				$2,650,000	$2,317,500	$-	$-	$112,551	$115,927	$119,405	$122,987	$126,677	$130,477	$134,392	$138,423	$142,576	$146,853	$151,259	$155,797	$160,471	$165,285	$6,890,581
Non-aviation				$-	$-	$-	$-	$56,275	$57,964	$59,703	$61,494	$63,339	$65,239	$67,196	$69,212	$71,288	$73,427	$75,629	$77,898	$80,235	$82,642	$961,540
Total Gross Project Costs				$31,884,180	$148,934,093	$124,784,338	$5,761,836	$20,702,417	$55,743,272	$59,445,459	$68,078,400	$33,876,295	$41,139,498	$30,300,835	$31,209,860	$20,003,425	$20,603,528	$21,221,634	$21,858,283	$22,514,031	$23,189,452	$781,250,837
AIP - Entitlements by Cost Center																						
Administration				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Parking				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Cecil Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Jax Ex at Craig Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Herlong Recreational Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Spaceport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
ARFF				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Maintenance				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Public Safety				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport Ops				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airfield				$1,716,506	$1,768,001	$229,691	$1,967,075	$1,971,734	$1,951,965	$2,010,524	$628,197	$414,234	$2,522,561	$2,598,238	$2,676,185	$570,304	$587,413	$2,457,958	$2,531,697	$2,607,648	$2,685,877	$31,895,809
Terminal				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Aviation				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Non-aviation				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total AIP - Entitlements Project Costs				$1,716,506	$1,768,001	$229,691	$1,967,075	$1,971,734	$1,951,965	$2,010,524	$628,197	$414,234	$2,522,561	$2,598,238	$2,676,185	$570,304	$587,413	$2,457,958	$2,531,697	$2,607,648	$2,685,877	$31,895,809

TABLE F-1 (26 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

	MODEL ID	PROJECT	SOURCE	COST CENTER	PAL1							PAL 2						PAL 3					TOTAL
					2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
AIP - Discretionary by Cost Center																							
Administration					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Parking					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Cecil Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Jax Ex at Craig Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Herlong Recreational Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Spaceport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
ARFF					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Maintenance					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Public Safety					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport Ops					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airfield					$3,000,000	$12,939,375	$10,144,856	$-	$3,243,936	$3,341,254	$3,441,492	$3,544,737	$3,651,079	$3,392,410	$3,494,183	$3,599,008	$3,706,978	$3,818,188	$3,781,474	$3,894,919	$4,011,766	$4,132,119	$77,137,774
Terminal					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Aviation					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Non-aviation					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total AIP - Discretionary Project Costs					$3,000,000	$12,939,375	$10,144,856	$-	$3,243,936	$3,341,254	$3,441,492	$3,544,737	$3,651,079	$3,392,410	$3,494,183	$3,599,008	$3,706,978	$3,818,188	$3,781,474	$3,894,919	$4,011,766	$4,132,119	$77,137,774
FDOT and Space Florida by Cost Center																							
Administration					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Parking					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Cecil Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Jax Ex at Craig Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Herlong Recreational Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Spaceport					$500,000	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$500,000
ARFF					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Maintenance					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Public Safety					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport Ops					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airfield					$-	$-	$-	$-	$-	$2,608,367	$3,701,562	$3,874,103	$2,913,571	$4,062,738	$1,093,612	$1,126,420	$1,160,213	$1,195,019	$1,230,870	$1,267,796	$1,305,830	$1,345,005	$26,885,105
Terminal					$-	$7,055,500	$7,267,165	$-	$-	$-	$-	$-	$-	$-	$1,780,689	$1,834,110	$-	$-	$2,805,854	$2,890,030	$2,976,730	$3,066,032	$29,676,110
Aviation					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Non-aviation					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total FDOT and Space Florida Project Costs					$500,000	$7,055,500	$7,267,165	$-	$-	$2,608,367	$3,701,562	$3,874,103	$2,913,571	$4,062,738	$2,874,301	$2,960,530	$1,160,213	$1,195,019	$4,036,724	$4,157,826	$4,282,560	$4,411,037	$57,061,216

TABLE F-1 (27 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

				PAL1							PAL 2						PAL 3					TOTAL
MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
PFC PAYGO Projects by Cost Center																						
Administration				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Parking				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Cecil Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$326,193	$335,979	$346,058	$356,440	$367,133	$567,221	$584,238	$601,765	$619,818	$4,104,846
Jax Ex at Craig Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$130,477	$134,392	$138,423	$142,576	$146,853	$226,888	$233,695	$240,706	$247,927	$1,641,938
Herlong Recreational Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$39,143	$40,317	$41,527	$42,773	$44,056	$68,067	$70,109	$72,212	$74,378	$492,582
Spaceport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$56,722	$58,424	$60,176	$61,982	$237,304
ARFF				$-	$2,008,500	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$351,677	$362,227	$373,094	$384,287	$3,479,786
Maintenance				$-	$127,463	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$127,463
Public Safety				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport Ops				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airfield				$1,500,000	$1,545,000	$-	$546,364	$1,463,161	$1,507,056	$1,552,268	$3,443,647	$3,546,956	$6,393,389	$3,897,358	$4,014,278	$1,996,065	$2,055,947	$2,376,657	$2,447,956	$2,521,395	$2,597,037	$43,404,534
Terminal				$1,087,500	$10,892,250	$994,594	$491,727	$506,479	$-	$-	$-	$-	$143,525	$147,831	$152,266	$156,834	$161,539	$2,805,854	$2,890,030	$2,976,730	$3,066,032	$26,473,190
Aviation				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$113,444	$116,848	$120,353	$123,964	$474,608
Non-aviation				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total PFC PAYGO Project Costs				2,587,500	14,573,213	994,594	1,038,091	1,969,640	1,507,056	1,552,268	3,443,647	3,546,956	7,032,727	4,555,877	4,692,553	2,694,688	2,775,529	6,566,530	6,763,526	6,966,432	7,175,425	$80,436,251
PFC-Backed Notes Projects by Cost Center																						
Administration				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Parking				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Cecil Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Jax Ex at Craig Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Herlong Recreational Airport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Spaceport				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
ARFF				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Maintenance				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Public Safety				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport Ops				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airfield				$-	$3,283,125	$3,381,619	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$6,664,744
Terminal				$-	$65,443,625	$67,406,934	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$132,850,559
Aviation				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Non-aviation				$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total PFC-Backed Notes Project Costs				$-	$68,726,750	$70,788,553	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$139,515,303

TABLE F-1 (28 OF 28) CAPITAL PROJECTS - ALL - BY FUNDING SOURCE

FISCAL YEARS ENDING SEPTEMBER 30

					PAL1							PAL 2						PAL 3					TOTAL
	MODEL ID	PROJECT	SOURCE	COST CENTER	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2020-2037
Local Funds - PAYGO by Cost Center																							
Administration					$-	$1,333,850	$-	$-	$382,673	$394,153	$405,978	$418,157	$430,702	$443,623	$456,932	$470,640	$484,759	$499,301	$514,281	$529,709	$545,600	$561,968	$7,872,325
Parking					$9,500,000	$2,456,550	$2,121,800	$-	$1,125,509	$1,159,274	$1,194,052	$1,229,874	$1,266,770	$1,304,773	$1,343,916	$1,384,234	$1,425,761	$1,468,534	$1,512,590	$1,557,967	$1,604,706	$1,652,848	$33,309,158
Cecil Airport					$-	$-	$-	$-	$562,754	$579,637	$597,026	$614,937	$633,385	$326,193	$335,979	$346,058	$356,440	$367,133	$189,074	$194,746	$200,588	$206,606	$5,510,558
Jax Ex at Craig Airport					$2,736,974	$-	$-	$-	$225,102	$231,855	$238,810	$245,975	$253,354	$130,477	$134,392	$138,423	$142,576	$146,853	$75,629	$77,898	$80,235	$82,642	$4,941,197
Herlong Recreational Airport					$250,000	$-	$-	$-	$67,531	$69,556	$71,643	$73,792	$76,006	$39,143	$40,317	$41,527	$42,773	$44,056	$22,689	$23,370	$24,071	$24,793	$911,267
Spaceport					$500,000	$-	$-	$-	$56,275	$57,964	$59,703	$61,494	$63,339	$65,239	$67,196	$69,212	$71,288	$73,427	$18,907	$19,475	$20,059	$20,661	$1,224,236
ARFF					$-	$-	$-	$-	$348,908	$359,375	$370,156	$381,261	$392,699	$404,480	$416,614	$429,112	$441,986	$455,245	$117,226	$120,742	$124,365	$128,096	$4,490,265
Maintenance					$-	$1,994,338	$238,703	$-	$1,238,060	$1,275,201	$1,313,458	$1,352,861	$1,393,447	$1,435,251	$1,478,308	$1,522,657	$1,568,337	$1,615,387	$1,663,849	$1,713,764	$1,765,177	$1,818,132	$23,386,929
Public Safety					$-	$-	$-	$-	$112,551	$115,927	$119,405	$122,987	$126,677	$130,477	$134,392	$138,423	$142,576	$146,853	$151,259	$155,797	$160,471	$165,285	$1,923,081
Airport Ops					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airfield					$7,630,701	$3,568,642	$3,463,521	$2,592,762	$4,884,454	$6,702,914	$7,918,946	$14,542,429	$13,824,344	$14,956,506	$5,549,815	$5,716,309	$1,848,143	$1,903,587	$-	$-	$-	$-	$95,103,072
Terminal					$812,500	$4,017,000	$506,580	$163,909	$4,344,464	$4,300,907	$4,429,934	$4,562,832	$4,699,717	$4,697,183	$6,618,788	$6,817,352	$5,132,739	$5,286,721	$-	$-	$-	$-	$56,390,627
Aviation					$2,650,000	$2,317,500	$-	$-	$112,551	$115,927	$119,405	$122,987	$126,677	$130,477	$134,392	$138,423	$142,576	$146,853	$37,815	$38,949	$40,118	$41,321	$6,415,972
Non-aviation					$-	$-	$-	$-	$56,275	$57,964	$59,703	$61,494	$63,339	$65,239	$67,196	$69,212	$71,288	$73,427	$75,629	$77,898	$80,235	$82,642	$961,540
Total Local Funds - PAYGO Project Costs					$24,080,175	$15,687,879	$6,330,603	$2,756,671	$13,517,107	$15,420,655	$16,898,219	$23,791,081	$23,350,455	$24,129,062	$16,778,236	$17,281,583	$11,871,242	$12,227,379	$4,378,947	$4,510,316	$4,645,625	$4,784,994	$242,440,228
Local Funds - Notes Projects by Cost Center																							
Administration					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Parking					$-	$-	$-	$-	$-	$30,913,975	$31,841,395	$32,796,636	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$95,552,006
Cecil Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Jax Ex at Craig Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Herlong Recreational Airport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Spaceport					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
ARFF					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Maintenance					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Public Safety					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airport Ops					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Airfield					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Terminal					$-	$28,183,375	$29,028,876	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$57,212,251
Aviation					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Non-aviation					$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Total Local Funds - Notes Project Costs					$-	$28,183,375	$29,028,876	$-	$-	$30,913,975	$31,841,395	$32,796,636	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$152,764,258

SOURCES: Jacksonville Aviation Authority, September 2019 (2020 budget); Ricondo & Associates, Inc., March 2020 (projections).

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