Working Paper #2

DeKalb Peachtree Airport

2020-2040 Airport Master Plan

Chapter 4 – Facility Requirements

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Facility Requirements

4.1 Introduction

This chapter establishes the general facility requirements to ensure that the Dekalb Peachtree Airport (PDK) will be able to adequately accommodate forecasted aviation demand over the 20-year planning period. The identification of future facility requirements with respect to capacity, safety standards, security, efficiency, and demand for services determines the starting point for the creation of airport development alternatives. Some requirements are driven by regulations and FAA guidance documents, where other requirements are defined by the future airport development vision and goals of the airport owner, as well as the role of the airport in the community and in the Georgia Statewide Aviation System Plan.

This facility requirements chapter includes an assessment of the aviation and non-aviation components of PDK including the runway and taxiway system, navigational aids and approaches, Fixed Base Operator (FBO) facilities and services, aircraft storage facilities and supporting infrastructure. PDK is included in the FAA NPIAS, therefore, it is necessary for the airport to comply with FAA design standards and current Advisory Circulars such as FAA No. 150/5300-13A, *Airport Design*. With the changing FAA design standards and changes in activity levels since the previous ALP Update was completed in 2011, it was necessary to conduct a comprehensive evaluation of the airport's needs over the course of the 20-year planning period for this Master Plan Update that extends to 2040. An analysis of the following airport components is presented herein:

- Georgia Aviation System Plan Requirements,
- Planning Horizon,
- Critical Aircraft Assessment,
- Wind Coverage Analysis,
- Airfield Capacity Analysis,
- Airfield Design Standards,
- General Aviation Facilities, and
- Airport Support Facilities.

4.2 Georgia Aviation System Plan Requirements

The Georgia Aviation System Plan was published by the Georgia Department of Transportation Aviation Programs in 2019. The plan provides the state with a top down analysis of its airports and provides recommendations to improve the overall state system. The plan recommends facility improvements at each public airport in Georgia, including PDK, which is classified by GDOT as a Level III airport, a Business Airport of Regional Impact and of significant importance to the state's aviation needs. **Table 4-1** displays the Georgia Aviation System Plan objectives for a Level III airport and the existing conditions at PDK. These objectives will be further evaluated in later sections of this chapter.

Table 4-1: Georgia Aviation System Plan - Level III Objectives

Facility Requirement	Actual	Minimum Objective	Objective Met
Runway Length	6,001 feet	5,500 feet	Yes
Runway Width	100 feet	100 feet	Yes
Taxiway	Full Parallel	Full Parallel	Yes
Primary Runway PCI	73	70 or Greater	Yes
Primary Runway Safety Area	1,000 feet x 500 feet	1,000 feet x 500 feet	Yes
Runway to Taxiway Separation	300 feet	300 feet	Yes
Lighting System			
-Runway	HIRL	HIRL (for precision approaches or MIRL)	Yes
-Taxiway	HITL	MITL	Yes
-Approach Lighting System	MALSF	ALS	Yes
Approach Type	Precision (ILS)	Near-Precision	Yes
Weather Reporting	ASOS	AWOS or ASOS	Yes
Navigation Aids			
-Rotating Beacon	Rotating Beacon	Rotating Beacon	Yes
-VGSI	VASIs/PAPIs	PAPIs	No
--Segmented Circle	None	Segmented Circle	No
-Wind Cone	Wind Conde	Wind Cone	Yes
Airfield Signage	Hold Position, Location, Guidance	Hold Position, Location, Guidance	Yes
Fencing	Full Perimeter	Full Perimeter	Yes
Hangared Aircraft Storage	232	70% of Based Aircraft Fleet	No
Apron Parking/Storage	177	30% of Based Aircraft Fleet Plus and Add'l 75% for Transient Aircraft	No
General Aviation Terminal/Administration	20,000 SF w/ Restrooms, Conference Area, Pilot's Lounge	2,500 SF of Public Use Space including Restrooms, Conference Area, and Pilot's Lounge	Yes
Fuel	AvGas and Jet A	AvGas and/or Jet Fuel	Yes
FBO	Full Service	Full Service	Yes
Maintenance	Full Service	Full Service	Yes
Rental	On-site	Available	Yes
Source: *2009 Georgia Aviation System Plan*.			

4.3 Planning Horizon

Specific components of the airfield and landside system can be evaluated to determine their capacity to accommodate future demand using the updated aviation demand forecast established for PDK. This is determined by establishing planning horizon milestones to consider across the planning period. The time frame for addressing development needs usually involves short-term (five years), medium-term (10 years), and long-term (20 year) planning periods. The short-term analysis focuses on the immediate action items, the medium term focuses on the more detailed analysis and the long term primarily focuses on the ultimate role of the airport.

As presented previously in the Aeronautical Demand Forecasts Chapter, actual activity at the airport will vary over time and may be higher or lower than what the demand forecast predicts. Using the time frames as milestones allows the Airport the flexibility to make decisions and develop facilities according to need generated by actual demand levels. **Table 4-2** displays the planning horizon activity levels for PDK.

Table 4-2: Planning Horizon Activity Levels

Item	Base Year 2018	5 Year Short-term 2025	10 Year Mid-term 2030	20 Year Long-term 2040
Total Based Aircraft	355	392	422	487
Annual Operations (Combined Local & Itinerant)				
General Aviation	159,007	175,885	189,024	218,311
Military	486	486	486	486
Total Operations	159,493	176,371	189,510	218,797
Source: Michael Baker International, 2019.				

4.3.1 Critical Aircraft Assessment

In addition to understanding the trends within the industry, it is also important to understand the significance of the Critical Aircraft when planning an airport. According to FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, the critical aircraft is 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, including both itinerant and local operations but excluding touch-and-go operations. An operation is either a takeoff or landing of an aircraft.

The current and conditionally approved Airport Layout Plan (ALP) identifies the existing and ultimate critical aircraft for PDK as the Gulfstream III. This aircraft is classified in FAA AC 150/5300-13 as Airplane Design Group (ADG) II Aircraft Approach Category (AAC) C, and Taxiway Design Group (TDG) 2.

Table 4-3 shows aircraft types with more than 500 total operations in the calendar year 2018 that logged IFR operations at PDK as reported by the FAA Traffic Flow Management System Counts (TFMSC) database for the calendar year 2018. The table also lists corresponding AAC, ADG, and TDG for each aircraft which is listed in FAA AC 150/5300-13. Note that the information in the table is not an exhaustive list of all jet or turboprops operations at PDK but represents a sample.

Table 4-3: Aircraft with More Than 500 Annual Operations Calendar Year 2018

ID	Aircraft	AAC	ADG	TDG	Total Operations
BE36	Beech Bonanza	A	I	1A	971
C172	Cessna Skyhawk 172/Cutlass	A	I	1A	785
EA50	Eclipse 500	A	I	2A	955
P28A	Piper Cherokee	A	I	1A	1,953
SR22	Cirrus SR 22	A	I	--	2,361
PC12	Pilatus PC-12	A	II	1A	5,637
BE40	Raytheon/Beech Beechjet 400/T-1	B	I	1A	2,218
BE58	Beech 58	B	I	1A	1,174
BE9L	Beech King Air 90	B	I	1A	1,526
C25A	Cessna Citation CJ2	B	I	2	640
C525	Cessna CitationJet/CJ1	B	I	1A	1,381
B350	Beech Super King Air 350	B	II	2	1,989
BE20	Beech 200 Super King	B	II	2	1,863
C208	Cessna 208 Caravan	B	II	1A	611
C25B	Cessna Citation CJ3	B	II	2	913
C550	Cessna Citation II/Bravo	B	II	2	741
C560	Cessna Citation V/Ultra/Encore	B	II	1A	1,792
C56X	Cessna Excel/XLS	B	II	1B	4,444
C680	Cessna Citation Sovereign	B	II	1B	1,219
C68A	Cessna Citation Latitude	B	II	1B	849
C750	Cessna Citation X	B	II	1B	657
E55P	Embraer Phenom 300	B	II	1B	2,384
F2TH	Dassault Falcon 2000	B	II	1B	781
F900	Dassault Falcon 900	B	II	1B	572
H25B	BAe HS 125/700-800/Hawker 800	C	I	1B	1,494
LJ45	Bombardier Learjet 45	C	I	--	504
LJ60	Bombardier Learjet 60	C	I	--	777
CL30	Bombardier (Canadair) Challenger 300	C	II	1B	1,406
CL35	CL35 - Bombardier Challenger 300	C	II	--	1,126
CL60	Bombardier Challenger 600/601/604	C	II	1B	997
G280	Gulfstream G280	C	II	1B	665
LJ75	Learjet 75	C	II	--	778
LJ35	Bombardier Learjet 35/36	D	I	--	745
GLF	Gulfstream IV/G400	D	II	2	1,121
GLF5	Gulfstream V/G500/550	D	III	2	726

Source: FAA Traffic Flow Management System Counts (TFMSC) calendar year 2018..

Based on 2018 operations and from the airfield design perspective, the most demanding aircraft shown in the table is the Gulfstream Model G550. Compared to the other aircraft listed, this aircraft is the most demanding in terms of approach speed, tail height, and wing span characteristics. The Gulfstream 550 is identical to the Gulfstream 500 and is considered an ultra-long-range corporate jet. This aircraft is comparable to the types of corporate jets that the General Aviation Manufacturers Association (GAMA) in their *2019 GAMA Annual Report* expect to experience demand growth in the coming years based on current aircraft orders and deliveries. Other aircraft include the Gulfstream 400, Challenger 300, Citation X and the Learjet 35. The Gulfstream G550 and the family of similar aircraft are expected to remain at or above the minimum Regular Use thresholds. These aircraft fall in the same family aircraft grouping of aircraft with similar characterics the Gulfstream 550 or less demanding. This aircraft is classified in FAA AC 150/5300-13 as a D-III aircraft with a TDG2 wheel configuration and is the representative critical aircraft for primary Runway 3R-21L. A small turboprop ARC B-I category King Air 90 was selected for the secondary parallel Runway 3L-21R and Runway 16-34. **Table 4-4** displays a comparison of the previous and existing critical aircraft.

Table 4-4: Primary Runway - Previous vs. Existing/Future Critical Aircraft

Item	Old ALP	Current/Future
Critical Aircraft	Gulfstream III 	Gulfstream G550 
Aircraft Type	Two jet engine business aircraft	Two jet engine business aircraft
Aircraft Approach Category (AAC)	C	D
Airplane Design Group (ADG)	II	III
Taxiway Design Group (TDG)	2	2
Wingspan	77.83’	99.58’
Tail Height	24.50’	25.67’
Length	83.08’	99.75’
Cockpit to Main Gear (CMG) Distance	37.39’	45’
Wheelbase	37.39’	45’
Main Gear Width (MGW) Outer to Outer	15.57’	16’
Approach Speed (V_{REF})	125 Knots	145 Knots
Max Takeoff Weight (MTOW)	69,700 lbs.	99,600 lbs.
Main Gear Type	Dual	Dual
Wake Category	Medium	Medium

Sources: FAA AC 150/5300-13A, Airport Design, Boeing Aircraft Performance Manual, and Michael Baker International, Inc., 2019. Photo:

4.4 Wind Coverage Analysis

Runway orientation is a key factor for airport safety and efficiency. Wind speed and direction influences runway orientation and the number of runways. Wind conditions also affect the aircraft in varying degrees (i.e. small aircraft are more sensitive to crosswind conditions).

Historical wind conditions have been evaluated to determine the percentage of wind coverage for runways at PDK. Ample wind coverage of the runway is important because aircraft takeoff and land into the wind, and extensive crosswinds are not conducive to safe or optimum flight operations. The FAA AC 150/5300-13A, *Airport Design,* recommends that 95% wind coverage across runways be achieved.

The 95% wind coverage is computed based on the crosswind not exceeding 10.5 knots (kts) (12 miles per hour (mph)) for the aircraft designed for Runway Design Codes (RDC) of A-I and B-I; 13 kts (15 mph) for ARCs A-II and B-II; 16 kts (18 mph) for ARCs A-III, B-III, C-I through D-III; and 20 kts (23 mph) for ARCs A-IV through D-VI; these velocities are termed the maximum aircraft crosswind component. If 95% wind coverage is not provided at an airport for the maximum crosswind component, then the addition of a crosswind runway should be considered.

The FAA suggests that a period of at least 10 consecutive years of onsite wind data should be examined when evaluating airfield wind coverage. For this analysis, wind data for the Atlanta area for years 2008-2017 was obtained from the National Oceanic and Atmosphere Administration's National Climatic Data Center. Wind coverage percentages take into account the approach and visibility minimums associated with each runway. This information is presented in **Table 4-5**, *Wind Coverage*. Wind coverage is only included for the crosswind speed that corresponds to the approach category and airplane design group that would utilize that runway. In the case of DeKalb Peachtree Airport, the RDC is D-III for the primary runway and B-I for the secondary runways; therefore, 10.5 knots (kts), 13 kts, and 16 kts crosswind components were analyzed. A review of prevailing winds shows that the parallel runways, Runway 3L-21R and 3R-21L, do not provide adequate crosswind coverage for aircraft having a 10.5 kts maximum crosswind component (93.57%). Therefore, Runway 16-34 is necessary as a crosswind runway for these aircraft. Aircraft having a maximum crosswind component of 10.5 kts are generally smaller aircraft that fall into the A and B AAC design groups. When wind data is analyzed by combining both the parallel runways and Runway 16-34, greater than 95% wind coverage is achieved.

Table 4-5: Wind Coverage

Flight Rules	Runway Direction	Wind Coverage Percentage (%)		
		Allowable Crosswind Component (Knots)		
		10.5 KTS	13 KTS	16 KTS
All Weather	3-21 (L/R)	93.57	96.35	99.12
	16-34	96.71	98.47	99.70
	Both	**98.09**	**99.33**	**99.86**
VFR	3-21 (L/R)	92.96	96.02	99.08
	16-34	96.59	98.46	99.74
	Both	**97.99**	**99.33**	**99.88**
IFR	3-21 (L/R)	96.59	97.97	99.34
	16-34	97.40	98.57	99.53
	Both	**98.63**	**99.40**	**99.79**

Sources: National Climatic Data Center, 2008-2017; Michael Baker International, 2018.
Notes:
IMC – Ceiling less than 1,000 ft AGL and visibility less than three miles
VMC – Ceiling greater than 1,000 ft AGL and visibility greater than three miles

4.5 Airfield Capacity Analysis

This section evaluates whether the existing airfield configuration can accommodate forecasted levels of demand over the planning period. According to the FAA, airfield capacity is defined by the number of aircraft operations conducted at the airfield over a defined period at an acceptable level of delay. An acceptable level of delay is essentially a policy decision about the tolerability of delay being longer than some specified amount, considering the technical feasibility and economic practicality of available remedies.

Estimates of airfield capacity were developed in accordance with the methods presented in FAA AC 150/5060-5, *Airport Capacity and Delay*. This methodology, generally known as the "handbook methodology" does not account for every possible situation at an airport, but rather the most common situations observed at U.S. airports at the time the advisory circular was adopted. FAA AC 150/5060-5 provides a methodology for determining the hourly capacity, Annual Service Volume (ASV), and aircraft delay. According to FAA Order 5090.3C *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, recommends that the handbook methodology should be used where capacity is not a constraining factor. The hourly capacity and ASV was calculated for existing conditions and for the last year of planning period at PDK. The results are used for planning purposes to determine if airfield capacity improvements are needed.

- **Hourly Airfield Capacity** – An airport's hourly airfield capacity represents the maximum number of aircraft that can be accommodated under conditions of continuous demand during a one-hour period. Using peak hour forecasts, the hourly airfield capacity is determined for both Visual Flight Rules (VFR) and Instrument Flight Rules (IFR) activity.
- **Annual Service Volume (ASV)** – The ASV estimates the annual number of operations that the airfield configuration should be capable of handling with minimal delays. Consistent with FAA

Order 5090.3C *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS)*, delay may be considered minimal when the average delay per operation is four minutes or less. The ASV accounts for peaking characteristics in its calculation of 12-month demand as well as periods of low-volume activity.

- **Delay** – The average anticipated delay is based on a ratio of forecast demand to the calculated ASV. According to the FAA AC 150/5060-5, "as demand approaches capacity, individual aircraft delay is increased. Successive hourly demands exceeding the hourly capacity result in unacceptable delays."

4.5.1 Capacity Factors

Fundamental to any airfield, capacity analysis entails the following eight factors:

Characteristics

The configuration and number of runways, parallel taxiways, and exit taxiways have a direct influence on an airfield's ability to accommodate various types of aircraft in a given time frame. The type of navigational aids, lighting, radar, and other instrumentation is extremely important to runway capacity, particularly during inclement weather.

Runway Use - Configuration

At airports equipped with two or more runways, it is not uncommon for more than one configuration to be used under normal operating conditions. Inadequate runway instrumentation and poor visibility may also require changes in runway use. Ultimately, the airfield should use a configuration that affords the highest hourly capacity, however, due to varying conditions, this configuration cannot be used 100 percent of the time. The airport's estimated Annual Service Volume (ASV) becomes a function of the time period is used on an average annual basis.

Meteorological Conditions

Runway capacity is highest during good weather when visibility is at its best and visual flight rules (VFR) are in effect. When visibility and ceilings are below specific minimums (3 miles visibility and 1,000-foot ceiling), instrument flight rules are imposed resulting in greater separations between aircraft and longer runway occupancy times. Meteorological factors such as fog, intense storms, strong crosswinds, and excessive water on the runways have a major impact on runway capacity and may even cause a closure of the airfield at times.

Aircraft Fleet Mix Index

The fleet mix affects airfield capacity because an aircraft's size, weight, approach speed, and braking ability affect the length of time the aircraft occupies the runway and the manner in which air traffic control personnel direct activity. Individual aircraft operating at the airport are differentiated into categories based on weight (A, B, C and D), which in turn are utilized to estimate the overall "mix index" for the airport. Larger aircraft (C and D) require more airspace, thus decreasing capacity to some degree.

Taxiway configuration

Similar to runways, taxiways can restrict the level of traffic and airfield may accommodate. Proper placement of exit taxiways based on the airport's fleet mix can reduce runway occupancy times and preserve optimum capacity levels

“Touch and Go” Operations

Practice landings and takeoffs are normally associated with pilot training and may significantly affect runway capacity. A runway will typically be able to accommodate more of these type operations is a given time period than the normal landing and takeoff activity.

Arrival/Departures

The percentage of the time that a runway is used for landings will also have a significant impact on capacity. Since departures can be handled typically at a faster rate than landings, runway capacity will be reduced when arrival demand increases.

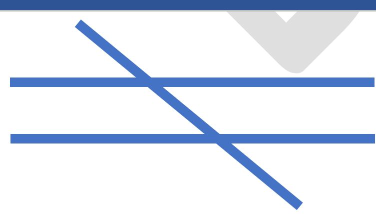
Airspace

The location of the airport with respect to neighboring airports and various natural and made-made obstructions (trees, towers, buildings, etc.) may restrict the way in which aircraft arrive and depart from an airport. Operations at one airport can conflict with operations at another, thereby causing the capacity of both airports to suffer.

4.5.2 Annual Service Volume (ASV)

The determination of the ASV is simplified by identifying one of the several runway configurations applicable to the airport. Utilizing the airport’s estimated aircraft mix index, which is the percentage of the airport’s Class C aircraft plus three times the percentage of Class D aircraft, it is possible to identify an approximate optimal operational limit for the airfield. Class C aircrafts are defined as large aircraft over 12,500 lbs but less than 300,000 lbs while Class D aircrafts exceed over 300,000 lbs. As the weight category of the aircraft increases, particularly as the mix between large and heavy aircraft increases, the wake turbulence separation standards increase. Therefore, the capacity of the airfield decreases. The purpose of this preliminary analysis, PDK typically operates as a “parallels plus crosswind runway” configuration. The calculated aircraft mix index using 2018 operational estimates, is approximately 21 percent. **Table 4-6** shows the hourly capacity and the annual serve volume for a “parallels plus crosswind runway” configuration. The row highlighted in blue shoes the hourly capacity. PDK’s theoretical ASV is 275,000 operations.

Table 4-6: Mix Index vs. Annual Capacity

Runway Configuration	Mix Index	Hourly Capacity Operations/Hour		Annual Service Volume (ASV)
		VFR	IFR	
	0 to 20	197	59	355,000
	21 to 50	145	57	275,000
	51 to 80	121	56	260,000
	81 to 120	105	59	285,000
	121 to 180	94	60	340,000

Source: Adapted from AC 150/5060-5 Change 2

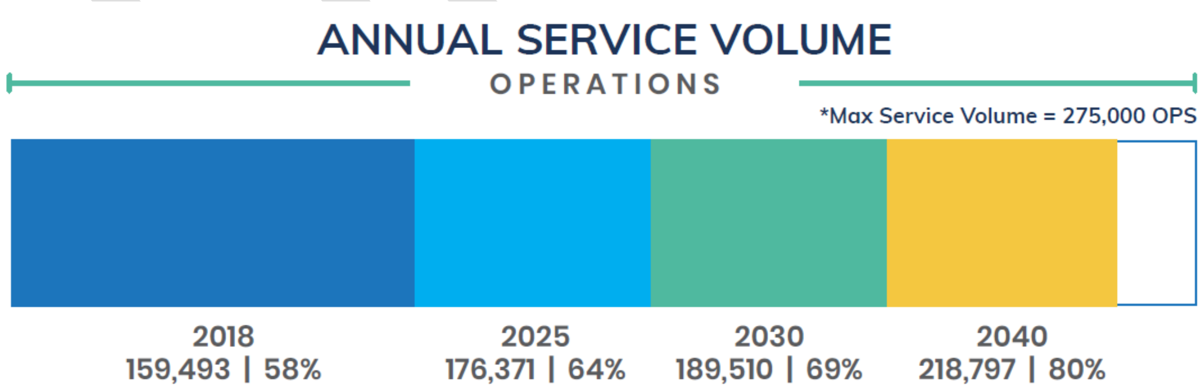
According to Chapter 3, *Aeronautical Forecast*, PDK may see approximately 218,797 annual operations by the end of the 20-year study period. The ASV of an airport is used primarily as a tool in the airport planning process to identify the need for advanced planning of airfield capacity relief. Airport capacity may be affected by the following factors: runway configuration, aircraft mix index, taxiway configuration, airfield operational characteristics, and prevailing meteorological conditions. By comparing existing and projected annual operations (demand) to the ASV (capacity), the planning, design, and construction of the new facilities may by timed more effectively. Towards, this effort, the following guidelines are typically utilized during master planning:

- 60 percent ASV – This level of activity is considered the threshold at which planning for capacity improvements should begin.
- 80 percent ASV – This level of activity is considered the threshold at which planning for capacity improvements should be complete and construction of these capacity enhancing improvements should be initiated.
- 100 percent ASV – This constitutes the total number of operations that the facility is capable of accommodating. In order to avoid extensive delays, capacity-enhancing improvements should be completed prior to this point.

Based on the forecast versus the calculated ASV, an ASV is highly dependent on current aviation activity and layout of the airfield. PDK is already nearing the 60% threshold of operational capacity in 2018 and will reach the 80% threshold by 2040. PDK's ASV should be used only as a benchmark for operational characteristics and should be recalculated and examined periodically. In practice, PDK would never experience round-the-clock peak hourly demand. In the Alternative Chapter, potential improvements to address operation capacity should be considered.

- Figure 4-1, graphically illustrated the airport's ASV.

Figure 4-1: Annual Service Volume



4.5.3 Aircraft Delay

It should be noted that actual capacity enhancements should not be implemented prior to a detailed examination of aircraft delay, which normally becomes a factor when the airfield reached 80 percent of its estimated ASV. Which equates to roughly one min of delay incurred per aircraft operation. As the demand/capacity ratio approached and exceeds 1.0, delay per aircraft increases exponentially. By comparing the existing and projected annual operations which the theoretical ASV for PDK, it is evident that a more detailed analysis of capacity enhancing improvements to the runway/taxiway system will be needed during the 20-year planning period.

4.5.4 Hourly Capacity

Utilizing similar planning guidelines, long-range hourly VFR and IFR capacities where determined for PDK. Depending on the runway use configuration, “parallels plus crosswind runway”, the hourly capacity is estimated to be 145 and 57 operations under VFR and IFR weather minima, respectively. These long-range estimates assume: arrivals equal departures, full length parallel taxiway capability is provided, no airspace conflicts exist, and the airport is equipped with at least one precision instrument approach. A more detailed analysis of hourly VFR and IFR capacities may reveal marginally different capacities, either higher or lower; however, the percent variation should not exceed ±5 percent.

4.6 Airfield Design Standards

FAA airfield design standards (e.g., required separations and safety area dimensions) are determined based on the approach speed, tail height and wingspan of the identified critical aircraft. As shown in **Table 4-7**, each runway is assigned a Runway Design Code (RDC) that is a function of the critical aircraft’s Aircraft Approach Category (AAC), the Airplane Design Group (ADG), and the visibility minimums expressed in Runway Visibility Range (RVR). The RDC provides the information required to determine the applicable standards. The Aircraft Approach Category (AAC) is based on the reference landing speed (VREF) when specified, or in cases where a V_{REF} is not specified, the AAC is determined based on 1.3 times the stall speed (V_{SO}) at the maximum certificated landing weight. The ADG is a design parameter based on the wingspan and tail height of the aircraft. The first portion of **Table 4-7** summarizes the parameters that define the AAC and the ADG and highlights the AAC and ADG corresponding to the forecasted critical aircraft.

Table 4-7 also describes the RVR visibility minimums and the associated instrument visibility category. The details of the available instrument procedures were provided in the Inventory Chapter. Runway 3R-21L currently has RVR 4,000 minimums however RVR 2,400 minimums are desired. All other runways have RVR 5,000 minimums.

Table 4-7: Aircraft Approach Categories and Airplane Design Groups

Aircraft Approach Category (AAC) (knots)			
Category	Approach Speed		
A	< 91		
B	91 to 120		
C	121 to 140		
D	141 to 165		
E	> 166		
Aircraft Design Group (ADG) (feet)			
Category	Wing Span	Tail Height	
I	< 48	< 20	
II	49 to 78	20 to 29.9	**Runway Design Code**
III	79 to 117	30 to 44.9	
IV	118 to 170	45 to 59.9	
V	171 to 213	60 to 65.9	
VI	> 214	> 66	
Visibility Minimums			
Runway Visual Range RVR (feet)	Instrumental Flight Visibility Category (statute miles)		
5,000	Not Lower than 1 mile		
4,000	Lower than 1 mile but not lower than ¾ mile		
2,400	Lower than ¾ mile but not lower than ½ mile		
1,600	Lower than ½ mile but not lower than ¼ mile		
1,200	Lower than ¼ mile		

Source: FAA AC 150/5300-13A, Airport Design, 2019

Therefore, based upon these criteria, the RDCs for PDK are as follows:

- Runway 3R-21L – D-III 4000 (Existing) D-III 2400 (Proposed),
- Runway 3L-21R – B-I 5000 Small Aircraft (Existing and Proposed), and
- Runway 16-34 – B-I 5000 Small Aircraft (Existing and Proposed).

4.6.1 Runway Safety and Object Free Areas

Within the airfield environment, certain areas must graded and/or free of non-essential non-frangible objects for safety purposes. These areas are described below.

Runway Safety Area (RSA)

The RSA is defined in FAA AC 150/5300-13A, as a "surface surrounding the runway prepared or suitable for reducing risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway and it provides greater accessibility for fire-fighting and rescue equipment during such incidents." The RSA is centered on the runway, dimensioned in accordance to the Runway Design Code and visibility minimums. It is necessary for the RSA to be cleared and graded, and free of obstacles not fixed by navigational reasons. Necessary objects within the RSA that measure greater than 3 inches above grade must be mounted on frangible (break-away) structure.

RSAs for PDK's runway system are depicted on **Figure 4-2**.

3R-21L RSA. The standard RSA dimensions for Runway 3R-21L measure 500 feet width either side of runway centerline and extend 1,000 feet beyond each runway end. The current RSA at the approach end of Runway 3R is limited to 500 feet, due to Dresden Road to the south, while the RSA at the approach end of Runway 21L is limited to 410 feet beyond the displaced threshold due to Chamblee Tucker Road to the north. In 2019, an Engineered Materials Arresting System (EMAS) was installed to mitigate the inadequate RSA to the south. The northern extent of the RSA has been mitigated using the application of Declared Distances: the Take Off Run Available (TORA), Accelerate Stop Distance Available (ASDA) and the Landing Distance Available (LDA) have all been reduced 5,411 feet. In addition to the limitation of Chamblee Tucker Road to the north, a County Sanitation Storage Facility resides within a portion of the RSA and OFA and should be considered for relocation.

In terms of width, the previous ALP RDC for Runway 3R-21L is C-II which required an RSA width of 500-feet. However, according to the AC design standards, for ARC C-II aircraft an RSA width of 400-feet is permissible. Today, the ARC for Runway 3R-21L is D-III, and the 400-ft width exception is not allowed: a 500-foot width is required.

3L-21R and 16-34 RSAs. For ARC B-I Small runways, the FAA design guidelines call for the RSA to be 120 feet wide and extend 240 feet beyond the runway ends. The existing RSA width for Runway 3L-21R and Runway 16-34 meets requirements. The existing runway pavement width for each runway is in fact wider than the required RSA width. For the approach end of Runway 34, the RSA prior to the threshold is limited to 220' feet due to unsuitable grading. The airport plans on addressing Runway 34 runway safety area within the short-term planning period.

Runway Object Free Area (ROFA)

The purpose of the ROFA is to clear above-ground objects protruding above the nearest point of the RSA. Except where precluded by other clearing standards, it is acceptable for objects that need to be located in the ROFA for air navigation or aircraft ground maneuvering purposes to protrude above the nearest point of the RSA, and to taxi and hold aircraft in the ROFA. To the extent practicable, objects in the ROFA should meet the same frangibility requirements as the RSA. Objects non-essential for air navigation or aircraft ground maneuvering purposes must not be placed in the ROFA. This includes parked aircraft.

As depicted in **Figure 4-2** the current ROFA dimensions for a D-III runway, Runway 3R-21L call for an area 800 feet wide and extending 1,000 feet beyond the runway end. For RDC B-I Small the ROFA should be 250 feet wide and extends 240 feet past the runway end. The ROFA for Runway 3R-21L has similar constraints as the RSA and extends over Chamblee Tucker Road to the north and Dresden Drive to the South. The existing Runway 3L-21R ROFA as depicted on the previous ALP spans wider than the required standard of 400 feet wide. The airport meets current and future ROFA standards for Runway 3R-21L and Runway 16-34.

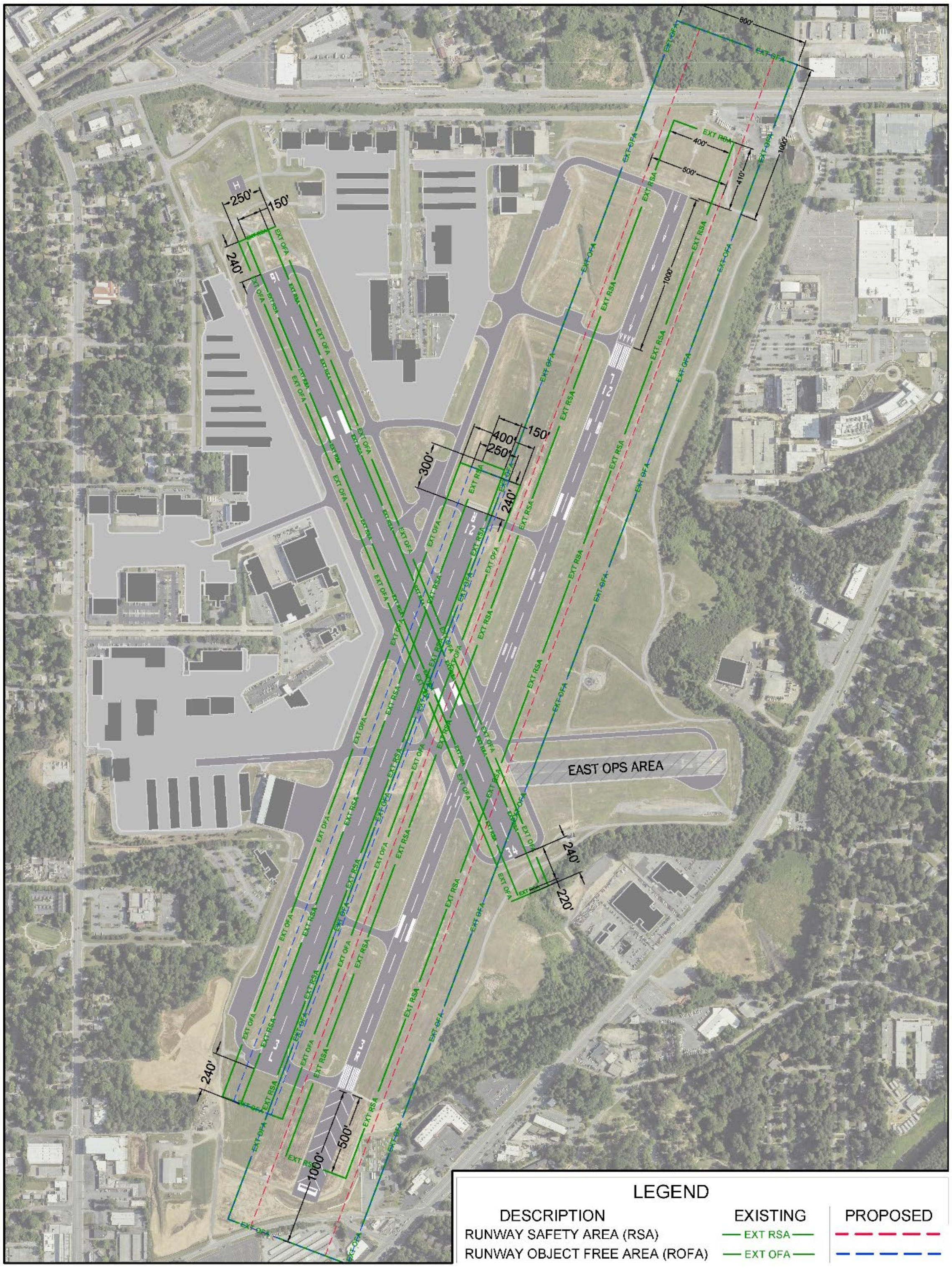
Taxiway Safety Area (TSA)

Taxiway safety areas are similar to the RSAs in that they are designed for the unintended extrusion of aircraft from the taxiway pavement. Taxiway safety areas must be clear and graded, capable of supporting aircraft, drained, and ultimately must be free of object except those necessary because of their purpose. The length of the taxiway safety area is the same length as the taxiway while the width is based on the ADG of the most demanding aircraft designed to use the surface. Presently the TSA at PDK is designed as TDG II.

Taxiway Object Free Area (TOFA)

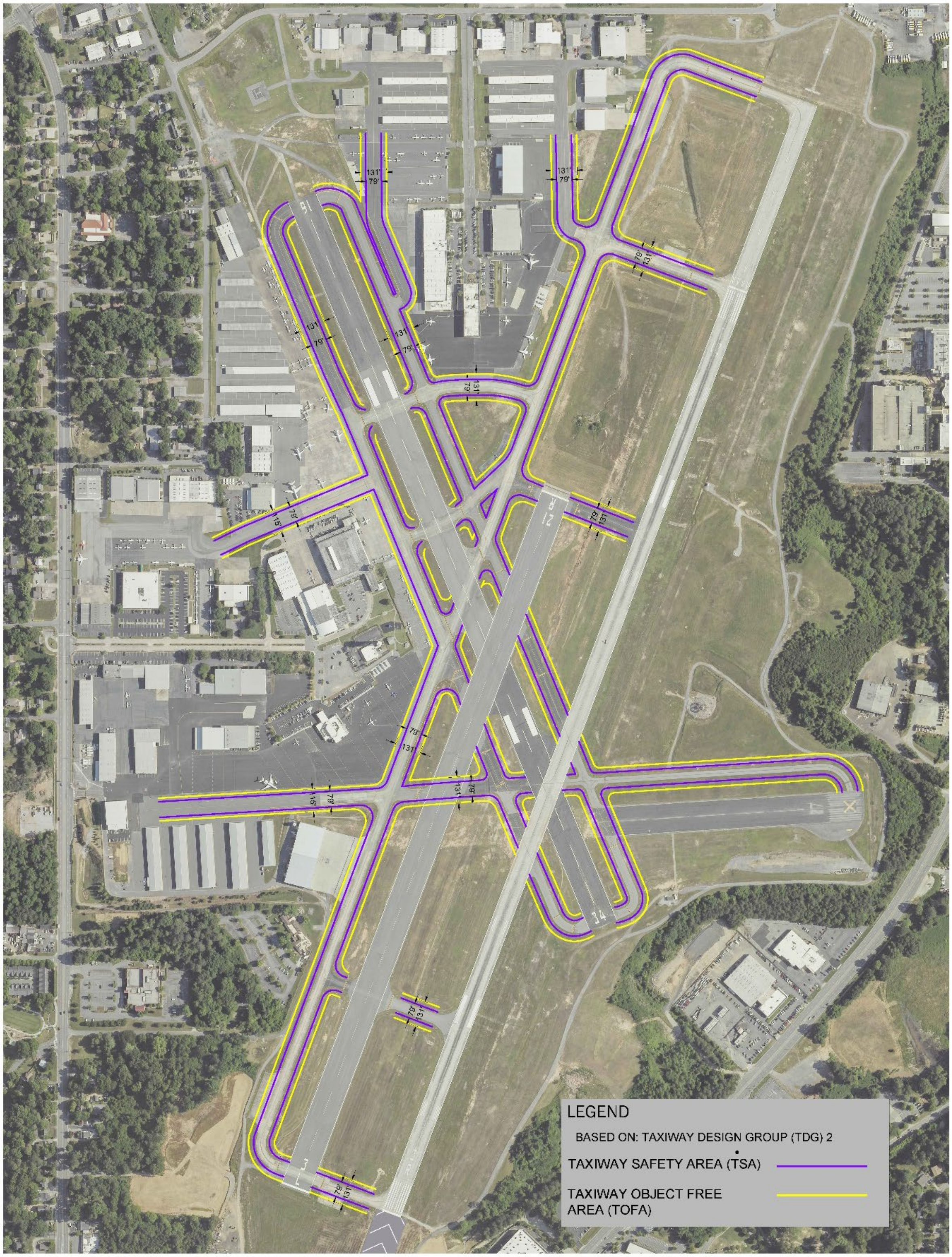
The taxiway object free area encompasses the taxiway safety area and increases safety to taxiing aircraft by restricting objects above ground. Service roads, parked aircraft, and all above ground objects except those necessary for aircraft taking off/landing or ground maneuvering purposes cannot be located in a taxiway object free area. Like the TSA the TOFA length runs along the taxiway length. The width of the TOFA is based on the most demanding aircraft designed to use the designed to use the surface. Presently the TOFA at PDK is designed as TDG II. **Figure 4-3**, visually shows the taxiway safety and object free areas.

Figure 4-2: Runway Safety and Object Free Areas



Source: Michael Baker International, 2019.

Figure 4-3: Taxiway Safety and Object Free Areas



Source: Michael Baker International, 2019.

4.6.2 Runway Protection Zones (RPZs)

RPZs are trapezoidal-shaped areas centered on the extended runway centerline and beginning 200 feet beyond the physical ends of the runway or displaced threshold. The RPZ has been established by the FAA to provide an area clear of obstructions and incompatible land uses, in order to enhance the protection of people and property on the ground. Although development within the RPZ is not prohibited, the FAA provides guidelines for introduction of new or modified uses within the RPZ. In FAA's September 27, 2012 Memorandum *Interim Guidance on Land Uses Within a Runway Protection Zone,* the following land uses are discouraged within RPZ's:

- Buildings and structures (Examples include, but are not limited to: residences, schools, churches, hospitals or other medical care facilities, commercial/industrial buildings, etc.),
- Recreational land use (Examples include, but are not limited to: golf courses, sports fields, amusement parks, other places of public assembly, etc.),
- Transportation facilities. (Examples include, but are not limited to: Rail facilities - light or heavy, passenger or freight),
- Public roads/highways,
- Vehicular parking facilities,
- Fuel storage facilities (above and below ground),
- Hazardous material storage (above and below ground),
- Wastewater treatment facilities, and
- Above-ground utility infrastructure (i.e. electrical substations), including any type of solar panel installations.

Figure 4-4 displays the existing RPZs at PDK. RPZ dimensions are prescribed in FAA AC 150/5300-13A, Airport Design. Their dimensions are a function of Aircraft Approach Category and lowest instrument approach visibility minimums.

Runway 3R-21L RPZ

Runway 3R. Runway 3R lowest instrument approach visibility minimums are 1 mile and the Aircraft Approach Category is D. The RPZ begins 200-feet prior to the pavement edge and measures 500 ft inner width, 1,010 ft outer width and is 1,700 ft in length.

Runway 3R overlies Dresden Dr., a shopping plaza, storage center and parking lot. There are no planned changes to the RPZ location or dimensions.

Runway 21L. Runway 21L lowest visibility minimums are 7/8 mile and the aircraft approach category is D. However, it is desired to lower the approach visibility minimums to ½ mile since Runway 21L has a precision ILS. Because Runway 21L has a 1,000-foot Displaced Threshold, two RPZs are required: an Approach RPZ and a Departure RPZ. The Approach RPZ begins 200-feet prior to the landing threshold and measures 1,000 ft inner width, 1,750 ft outer width and is 2,500 ft in length. The Departure RPZ begins 200 feet prior to the pavement edge and measures 500 ft inner width, 1,010 ft outer width and 1,700 ft in length.

The previous ALP for PDK did not depict separate Approach and Departure RPZs for Runway 21L. Rather one RPZ was depicted based upon aircraft approach category C and ½ mile lowest visibility minimums measured from 200 feet beyond pavement edge. These dimensions are the same as the current Approach RPZ for category D; however, the location of the RPZ in the previous ALP was based upon the assumption that the 1,000-foot Displaced Threshold would one day be reduced to zero displacement. Also, since the construction of the Displaced Threshold, the FAA created separate Approach and Departure RPZ standards as described in FAA AC 150/5300-13A. In order to reduce the Displaced Threshold, Chamblee Tucker Road would have to be relocated, which is not feasible. The Displaced Threshold will always be in place and thus the Approach RPZ location begins at 200 feet prior to the current landing threshold rather (1,000 feet south) than at the pavement edge.

As a result of efforts in the 1990's to relocate residential land uses, the airport owns major portions of the 21L RPZ. Certain commercial and industrial land uses remain within today's RPZ boundaries as well as Chamblee Tucker Road and West Hospital Avenue. Current zoning is in place by City of Chamblee to prevent future incompatible land uses.

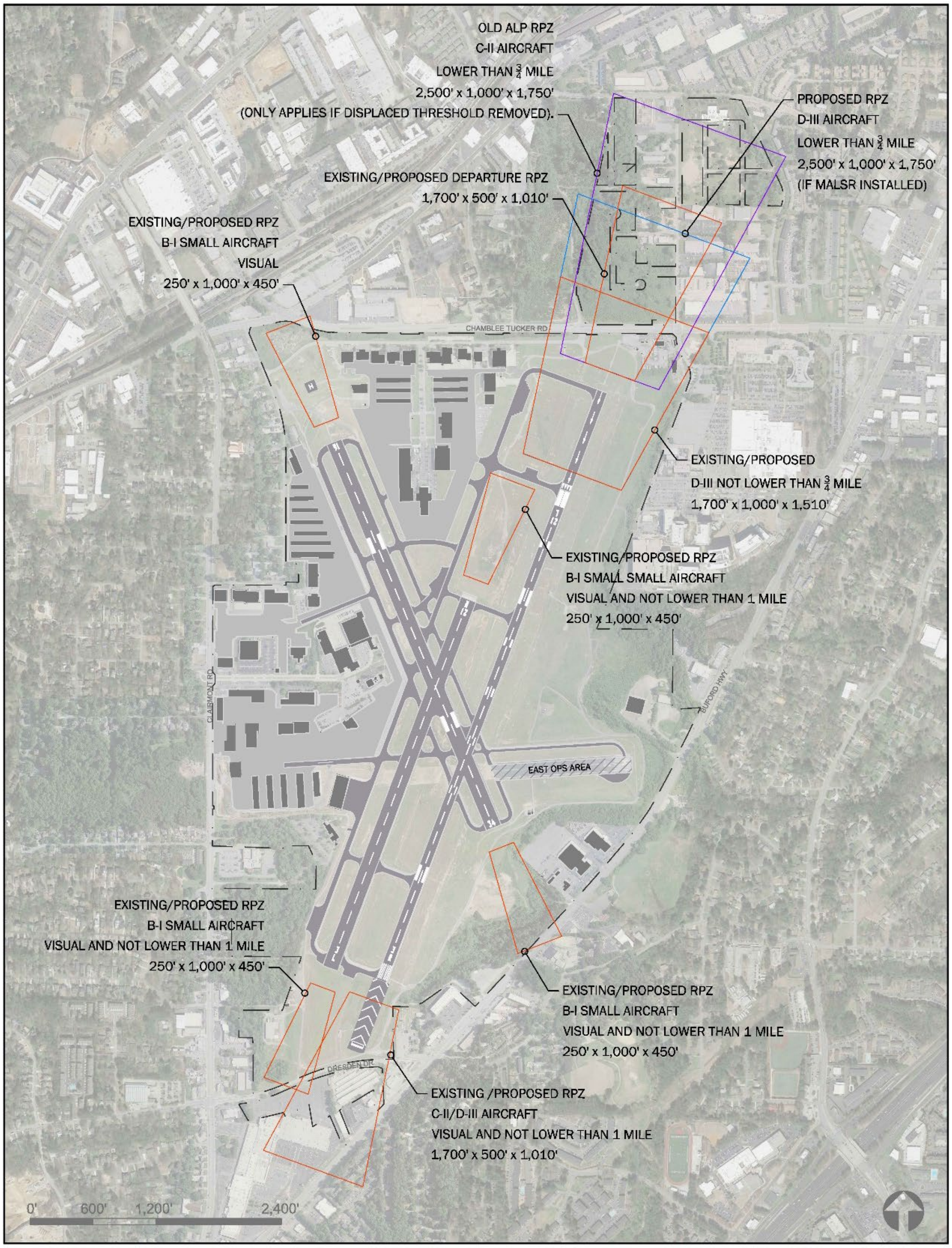
Runway 3L-21R RPZ

Runway 3L-21R has only visual approaches to either end of the runway, so the size of both RPZs are the same. Each RPZs begins 200 feet beyond the end of the runway pavement and extends to a length of 1,000 feet. The inner width of the RPZs are 250 feet, while the outer width is 450 feet. The size of the RPZs meet standards for ARC approach category B-I Small aircraft with the current runway having an approach visibility minimum of visual and ultimately not lower than 1 mile.

Runway 16-34

Runway 16-34 is the crosswind runway designed for aircraft ranging up to the ARC B-I Small category and are also identical at each runway end. The RPZs began 200 feet past the end of the runway pavement and extends to a length of 1,000 feet. The inner width of both RPZs are 250 feet with an outer width of 450 feet. Runway 16 includes a small portion of Chamblee Tucker Rd. to the north while Runway 34 crosses Buford Highway to the east. Both runway ends do not have any incompatible land uses such as places of assembly or residence since majority of the RPZ is owned by the airport.

Figure 4-4: Runway Protection Zone (RPZ)



Source: Michael Baker International, 2019.

4.6.3 Facility Requirements

To recognize facility needs, it is critical to understand and interoperate the forecast aviation demand into specific components. This section taps into current facility condition and addresses improvements to existing facilities needed to effectively accommodate the projected demand at the Airport. This section explores two analysis: (1) dealing with airfield infrastructure and (2) those dealing with landside facilities. The analysis of airfield requirements focuses on the on the determination of needed facilities and spatial consideration to the current and future operations at PDK.

Airfield Design Standards

The types of aircraft that presently operate at PDK, and those expected to use the Airport in the future influences the planning and design of Airport infrastructure. This information aids in the selection of FAA specified design standards for PDK, which consist of runway and taxiway dimensional requirements, protection surfaces and runway separation standards. These standards are based on the existing and future critical aircraft. According FAA AC 150/5300-13A, the initial phase is defining a runway's design configuration to determine the RDC. Depending on the type of aircrafts being served at the Airport, each runway may have its own RDC. **Table 4-8** illustrates the key design standards for PDK presently and throughout the planning period for each runway.

Table 4-8: Airfield Design Standards

Design Requirements	FAA Standards		Existing		
	D-III	**B-I Small**	D-III Runway 3R-21L	B-I Small Runway 3L-21R	B-I Small Runway 16-34
Runway Approach Visibility Minimums			RW 3R: > 1 MILE RW 21L: > ¾ MILE	RW3L: VIS RW 21R: VIS	RW 16: VIS RW 34: VIS
Runway Width (feet)	**150'**	**60'**	100'	150'	150'
Runway Safety Area (RSA)					
RSA Width	**500'**	**120'**	400'	150'	150'
RSA Length Beyond Departure End	**1,000'**	**240'**	RW 3R: 500' RW 21L: 410'	RW 3L: 240' RW 21R: 300'	RW 16: 240' RW 34: 220'
Runway Object Free Area (ROFA)					
ROFA Width	**800'**	**250'**	800'	400'	250'
ROFA Length Beyond Departure End	**1,000'**	**240'**	1,000'	240'	240'
Runway Protection Zone (RPZ)					
RPZ Length	**1,700'**	**1,000'**	1,700'	1,000'	1,000'
RPZ Inner Width	**Visual: 500' > ¾ Mi: 1,000'**	**250'**	RW 3R: 500' RW 21L: 1,000'	250'	250'
RPZ Outer Width	**Visual: 1,010' > ¾ Mi: 1,510'**	**450'**	RW 3R: 1,010' RW 21L: 1,510'	450'	450'
Runway Centerline to:					
Holding Position	**250'**	**125'**	250'	130'	150'
Parallel Taxiway Centerline	**400'**	**150'**	745'	250'	200'
Parallel Runway Centerline	**700'**	**700'**	500'	500'	N/A

Source: Michael Baker International, Inc., 2019.

4.6.1 Runway Length Analysis

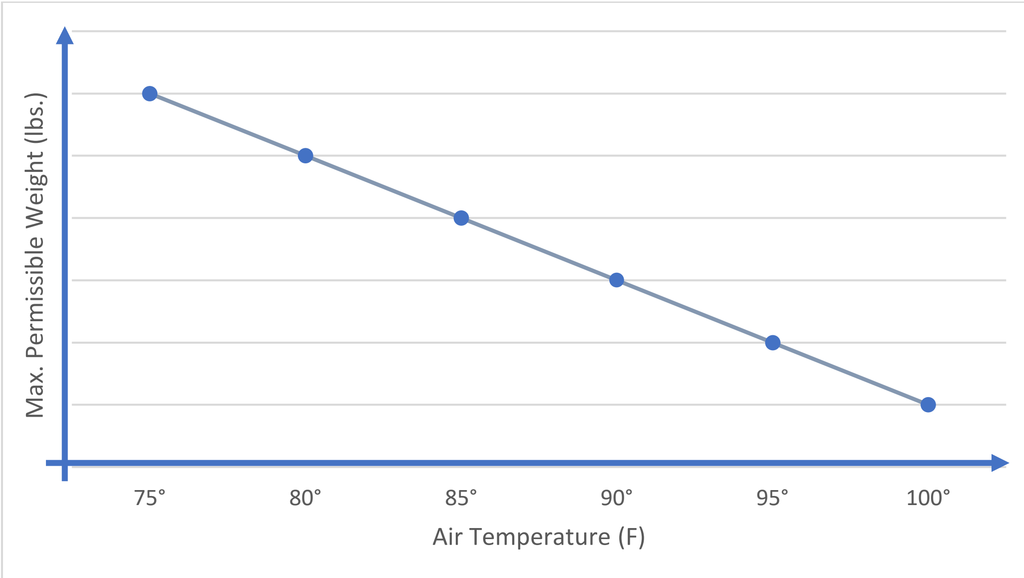
Runway length requirements were evaluated in accordance with FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design* (Runway Length AC). The required runway length was estimated according to Chapter 2 and Chapter 3 of FAA AC 150/5325-4. The data provided in this document provided runway length requirements for typical engines and operating conditions. The runway length calculations are based on the mean daily maximum temperature of the hottest month, and the field elevation. The airport's service level and role within the NPIAS is key to establishing the type of aircraft the facility will most likely accommodate. Within the NPIAS (2019-2023), the airport's service level is established as nonprimary General Aviation – Reliever airport, which are typically high capacity general aviation airports designed by the FAA to relieve congestion at the primary commercial airport.

The critical aircraft (or family of aircraft) conducting at least 500 itinerant operations establishes the runway length requirements at an airport, as per FAA AC 150/5325-4A, Runway Length Requirements for Airport Design. The forecast operational fleet mix indicates the Gulfstream 550 aircraft is the design aircraft for the primary runway. Since the Gulfstream 550 has a Maximum Takeoff Weight (MTOW) of greater than 60,000 lbs, the runway length calculation is based upon the individual aircraft rather than a family grouping of aircraft, per the guidance stated in Table 1-1 of FAA AC 150/5325-4A.

Presently, the existing length of the primary runway 3R-21L is 6,001 feet. The runway length calculations are based on the mean daily maximum temperature of the hottest month which is 95° F and the field elevation of 998.4 feet mean sea level (MSL) and max takeoff weight (MTOW) of the Gulfstream 550.

Based upon runway length takeoff charts provided by the manufacture, the maximum design takeoff weight and the mean maximum temperature of the hottest day, the required takeoff runway length for the Gulfstream 550 is approximately 7,220 feet. Seeing that air temperature closely affects the max permissible weight, as air temperatures increase the allowable payload weight for takeoff also increases. Being that PDK, does not offer a 7,220-foot runway, the critical aircraft's maximum takeoff weight is reduced due to runway length. The primary runway, Runway 3L has a takeoff run available of 6,001 feet and in the opposite direction, 3R has a takeoff run available of 5,411 feet (reduced due to runway safety area requirements). At 95° F, per flight manuals, the G550 would be limited to a max takeoff weight of approximately 75,000 lbs. Accordingly, the airport requires prior permission of aircraft having a MTOW of more than 75,000 lbs.

Figure 4-5: Aircraft Weight vs. Air Temperature



Source: Michael Baker International, 2019

The secondary runway, Runway 3L-21R is 3,746 feet in length while the crosswind Runway 16-34 is 3,967 feet by 150 feet in length. The runways are primarily utilized by light aircraft in crosswind conditions and flight training (i.e., touch and go operations). The most demanding (critical) aircraft for Runway 3L-21R and Runway 16-34 is the King Air 90 turboprop which has a MTOW of 10,950 lbs. Based upon the guidance in FAA AC 150/5325-4A, Table 1-1, the runway length calculation should be based upon a family grouping of small aircraft with approach speeds greater than 50 knots and cabins with less than 10 passengers. Therefore Chapter 2, Paragraph 205, Figure 2-1 of FAA AC 150/5325-4A should be utilized for runway length calculations. The result of this computation for the mean maximum temperature is a minimum runway length of 3,200 ft to support 75% of the small family grouping of aircraft, up to 4,200 ft to support 100% of the small family grouping of aircraft. Therefore, Runway 3L-21R and Runway 16-34 both provide adequate runway length for 75% of the small airplane fleet and are deficient by 354 ft and 133 ft respectively for 100% of the small airplane fleet. This deficiency does not need to be addressed since there will be few instances where the primary runway could not be utilized by small airplanes with more demanding runway lengths.

Table 4-9 summarizes the existing runway lengths at PDK versus the maximum length required to support the needs of the critical aircraft. There are no plans to lengthen any runways at PDK.

Table 4-9: Maximum Runway Length Requirements

Runway	Existing Runway Length (Feet)	Required Runway Length (Feet)	
	Total Length	Maximum Length	Deficiency
3R-21L	6,001	7,220	1,120
3L-21R	3,746	3,200 - 4,100	0-354
16-34	3,967	3,200 - 4,100	0-133
Source: FAA AC 150/5325-4A, *Runway Length Requirements for Airport Design*; Gulfstream 550 Takeoff Chart			

4.6.2 Runway Width

The primary Runway 3R-21L is currently 100 feet wide and both the parallel Runway 3L-21R and crosswind Runway 16-34 are 150 feet wide. FAA design standards call for a runway width of at least 150 feet to serve aircraft up to ARC D-III and 60 feet for aircraft serve B-I Small aircraft. Since the airport's current critical aircraft, Gulfstream 550, maximum certificated takeoff weight falls below 150,000 lbs, FAA standards allow 100-foot runway width for Runway 3R-21L. Although secondary Runways 3L-21R and 16-34 exceed the standard width of 60-feet, potential modifications will only be made to runway width once both runways have reached their useful lifespan. Reducing runway width requires major investments in adjusting taxiway geometry, drainage, signage and lighting.

4.6.3 Pavement Condition and Strength

An important feature of airfield pavement is its ability to withstand repeated use by the most weight-demanding aircraft operating at the airport. The Pavement Condition Index (PCI) is based on a visual inspection of pavement condition. The Georgia Department of Transportation recently completed a statewide inventory of airport pavements. The findings of the study were illustrated in Chapter 2. The current published weight bearing capacity for Runway 3L-21R and Runway 16-34 is 20,000 lbs. for aircraft with single-wheel configuration. While Runway 3R-21L is 46,000 lbs. single wheel, 75,000 lbs dual wheel. All published pavement strengths are within the parameters of the critical aircrafts designated for each runway. With an exception of Runway 3R-21L which constructed with concrete, both Runway 3L-21R and Runway 16-34 are built of asphalt. According to FAA Form 5010, all three runway surfaces are in good condition however routine maintenance and rehabilitation is necessary and will. Certain rehab projects are planned in the near term as summarized in **Table 4-10.**

Table 4-10: Near Term Pavement Rehabilitation Projects

Year	Project
2020	Rehabilitate Runway 16-34, including Connecting Taxiways & Taxiway B Design.
2021	Rehabilitate Runway 16-34, including Connecting Taxiways & Taxiway B Design.
2022	Rehabilitate Taxiway K including Drainage Improvements.
2022	Rehabilitate Interior Airport Roads

Source: Michael Baker International, 2019.

4.6.4 Taxiways

Taxiways are paths established for the taxiing of airplanes from one part of the airfield to another. The layout of the taxiway system should be designed so that it efficiently supports the volume of taxiing airplanes without impacting airfield capacity. The system should also be designed to provide safe taxi route that minimize runway crossings, limits the distance between ramp and runways to decrease the amount of fuel used to arrive at the end of a runway, and are spaced according to design standards that provide wingtip and wingspan clearances from other aircrafts and surfaces.

Previous FAA taxiway design guidance was based only on the Airplane Design Group (ADG) and did not take into consideration the size of the aircraft undercarriage. The current guidance described in FAA AC 150/5300-13A is based on the Taxiway Design Group (TDG) which takes into account the aircraft Main Gear Width (MGW) and the Cockpit to Main Gear Distance (CMG). Taxiways should be designed for "cockpit over centerline" taxiing with sufficient pavement to provide a small amount of error. The error allowance is considered by providing a Taxiway Edge Safety Margin (TESM), which is measured from the outside of the landing gear to the taxiway edge. Taxiway design that required "judgmental oversteering," where the pilot must internally steer the cockpit outside the marker centerline, should be eliminated whenever feasible.

In order to meet the requirements of the critical aircraft, all non-compliant taxiways should be designed to TDG 2 dimensional standards. Taxiways should be designed according to the following general design considerations:

- Judgmental oversteering should be eliminated whenever feasible.
- The aircraft nose gear steering angle should not be more than 50 degrees.
- Taxiway intersection should follow the three-node design concept, where the pilot of the aircraft is presented with no more than three choices. The three-node concept increases situational awareness.
- Taxiway intersection angles should be 90 degrees wherever possible. Where 90 degrees intersections are not possible, standard angles should be used.
- Wide expanses of pavement, particularly near the intersection with a runway or other taxiway should be avoided.
- The number of runway crossing should be minimized.
- Taxiway/Runway intersections should be located in the outer thirds of the runway.
- Right angle intersections should be used to increase visibility. Acute angle runway may be used to increase the efficiency of the runway, however, they should not be used as runway entrance of crossing points.
- Dual purpose pavements where runways are used as taxiways should be avoided. Runways should be clearly marked as runways.
- Taxiway designs should not lead directly from an apron to a runway without requiring a turn.

4.6.5 Taxiway Design Considerations

As mentioned, the design standards associated with taxiways are determined by the Taxiway Design Group (TDG) and the ADG of the critical aircraft. As determined earlier, the applicable ADG for the airport is ADG III. **Table 4-11** displays the various taxiway design standards related to ADG III. The table also highlights taxiway design standards are based on the Cockpit to Main Gear (CMG) distance of the critical aircraft anticipated to use those taxiways and Main Gear Width (MGW). The current TDG of the most demanding aircraft falls under category 2. Taxiways and taxilane pavements should be designed to the most appropriate TDG design standards.

Taxiway A. Full-length parallel taxiway for Runway 3R-21L and Runway 3L-21R. Taxiway A is constructed at 50 feet and has a runway to taxiway centerline spacing of 250 feet of Runway 3L-21R and approximate 750 feet from Runway 3L-21R, which exceed FAA separation requirements for airplanes of both ARC B-I Small and D-III. Based on GDOT Pavement Condition Report done in 2019, south and northern portions of Taxiway A are in fair condition and may require rehabilitation, while the mid segment of Taxiway A, which is in front of the ATCT is in good condition.

Taxiway B. Full-length parallel taxiway for west side of Runway 16-34 and has a width of 50 feet. The runway centerline to taxiway centerline spacing is approximately 200 feet. Therefore, this taxiway also exceeds FAA standards for ARC B-I Small aircrafts. Over the course of x years there has been inconsistent improvements to Taxiway B. Nonetheless, the pavement is considered to be in fair to good condition for majority of the taxiway length. A northern portion of Taxiway B adjacent to the county's t-hangars along with some areas of the node where Taxiway B intersects with Runway 3R-21L and Taxiway A should be recommended

Taxiway C. Previously served as the full-length parallel taxiway for Runway 9-27. Since the removal of Runway 9-27, Taxiway C connects the West Ramp with the East Ops Area. Taxiway C also serves as a runway exit taxiway. Taxiway C is 40 feet wide north of decommissioned Runway 27 and expands to approximately 50 feet wide within the central area of the airfield.

Taxiway D. Full-length parallel taxiway for the east side of Runway 16-34 and crosses both Runway 3L-21R and Runway 3R-21L. This taxiway, which is 40 feet wide has a runway centerline to taxiway centerline spacing of 200 feet. At 200 feet, this taxiway provides more than necessary separation for small airplanes of ARC B-I. Although, the pavement on the northern and southern portion of the taxiway are in excellent to good condition, the middle segment spanning between Runway 3R-21L and Runway 3L-21R needs major rehabilitation.

Taxiway E. Serves as an exit taxiway for Runway 16-34. Taxiway E commences at Taxiway B, intersects Taxiway D and ends at Taxiway A. This small taxiway is in excellent pavement condition.

Taxiway F. Taxiway F is constructed at a width of 50 feet and serves as an exit taxiway for both parallel runways.

Taxiway G. Taxiway G is located in the central area of the airfield and provides access to both Runway end 21R and 21L.

Taxiway H. Taxiway H is located north on the airfield between Taxiway D and Taxiway A. Taxiway H, spans 50 feet wide and provides access to the north ramp.

Taxiway J. Taxiway J is located north of the airfield and act as a connector taxiway from Taxiway A and Runway end 21L.

Taxiway K. Provides access to the Northwest Ramp and the Clairmont Ramp. Taxiway K is defined as a non-movement area.

Taxiway L. Provides access to the West Ramp and the West Hangars. Taxiway L is defined as a non-movement area.

Table 4-11: Taxiway Requirements

Taxiway	Requirement		Required Taxiway Dimensions (feet)				Taxiway Protection (feet)		Required Taxiway Separation (feet)		Meets Standards
									Taxiway Centerline to:		
	ADG	TDG	Taxiway Width	Taxiway Edge Safety Margin	Taxiway Shoulder Width	Taxiway Fillet*	Taxiway Safety Area	Taxiway Object Free Area	Parallel Taxiway/Taxilane Centerline	Fixed or Movable Object	
A	III	2	35’	7.5’	15’	Varies	118’	186’	152’	93’	Exceeds
B	III	2	35’	7.5’	15’	Varies	118’	186’	152’	93’	Exceeds
C	III	2	35’	7.5	15’	Varies	118’	186’	152’	93’	Meets
D	III	2	35’	7.5’’	15’	Varies	118’	186’	152’	93’	Meets
E	III	2	35’	7.5’	15’	Varies	118’	186’	152’	93’	Exceeds
F	III	2	35’	7.5’	15’	Varies	118’	186’	152’	93’	Exceeds
G	III	2	35’	7.5	15’	Varies	118’	186’	152’	93’	Exceeds
H	III	2	35’	7.5’’	15’	Varies	118’	186’	152’	93’	Exceeds
J	III	2	35’	7.5’	15’	Varies	118’	186’	152’	93’	Exceeds
K	III	2	35’	7.5’	15’	Varies	118’	162’	152’	93’	Exceeds
L	III	2	35’	7.5’	15’	Varies	118’	162’	152’	93’	Exceeds

Source: Michael Baker International, 2019

4.6.6 Airfield Marking and Lighting

The lighting and pavement marking play a significant role on an airfield. Airfield lights and pavement markings provide pilots with visual reference to obstruction, pavement edges, and aids pilots at night or in poor visibility conditions. They also assist in the ground movement of aircrafts. The current inventory of these systems is mentioned in Chapter 2 of this report.

Runway Lighting

Runway lighting provides pilots with a rapid and positive identification of the runway and its alignment. According to FAA AC 150/5340-30J, Design and Installation Details for Airport Visual Aids, MIRLs are recommended for runway with either visual or non-precision instrument approaches, whereas High Intensity Runway Lights (HIRLs) are generally recommended for runways with precision instrument approaches.[1] Presently, the primary Runway 3R-21L has high intensity runway lighting system (HIRL) along the runway edges while both Runway 3L-21R and Runway 16-34 are equipped with medium intensity runway lights (MIRL).

Medium intensity taxiway lighting (MITL) are provided at airports where runway lighting systems are used. PDK, is equipped with MITL on all taxiways. This system is vital for the safe and efficient ground movement of aircraft to and from the runway. Any future taxiways constructed on the airfield should also be provided with MITL. The Airport anticipates replacing all incandescent lights and upgrading the airfield lighting to a LED light system within the short term planning period.

Markings

PDK, the second busiest airport in Georgia has experienced intense runway and taxiway utilization which in turn, amounted to deprivation of the airfield markings. In 2018, the Airport has undergone airfield pavement re-marking for both all taxiways and runways. Runway markings are designated according to the type of instrument approach available on the runway. FAA AC 150-5340-1M, Standards for Airport Markings, provides guidance necessary to design airport markings. Runway 3R-21L is equipped with precision runway markings. The threshold on the end of Runway 21L is displaced, with white arrows serving as the runway centerline leading to the displaced threshold. Both the crosswind and training runways are equipped with basic markings. Should a GPS instrument approach be installed on Runway 16-34, nonprecison runway marking should be implemented.

Taxiway and apron areas also require markings to assure that aircraft assure that pilots maintain a property clearance from pavement edges and objects near the taxiways. Yellow centerline stripes and taxiway edge markings are currently painted on all taxiway and apron surfaces the Airport. Taxiway markings also include hold lines, found at the entrances and exits taxiways serving the runways. The location of the hold line markings are in direct relationship to the RDC of that specific runway that it serves.

4.6.7 Navigational Aids (NAVAIDS) and Visual Aids (VISAIDS)

The term NAVAIDS generally refers to ground- or satellite-based equipment that is able to communicate position information, approach guidance, and surface weather conditions to aircraft while in-flight. This includes all non-precision and precision instrument approach procedures to runways, as well as weather equipment such as an Automated Surface Observation System (ASOS). The term VISAIDS generally refers

[1] FAA AC 150/5340-30J, Design and Installation Details for Airport Visual Aids.

to ground-based equipment that the pilot can see while in-flight to determine the correct approach slope to a runway and also wind conditions. This section will address the potential need for enhanced facilities in the future. The key objective is to enhance operational flexibility and safety at the Airport during all weather conditions, while being cognizant of the cost/benefit relationship of each potential improvement option.

Navigational Aids (NAVAIDs)

As mentioned in Chapter 2, the following instrument approaches are provided at PDK.

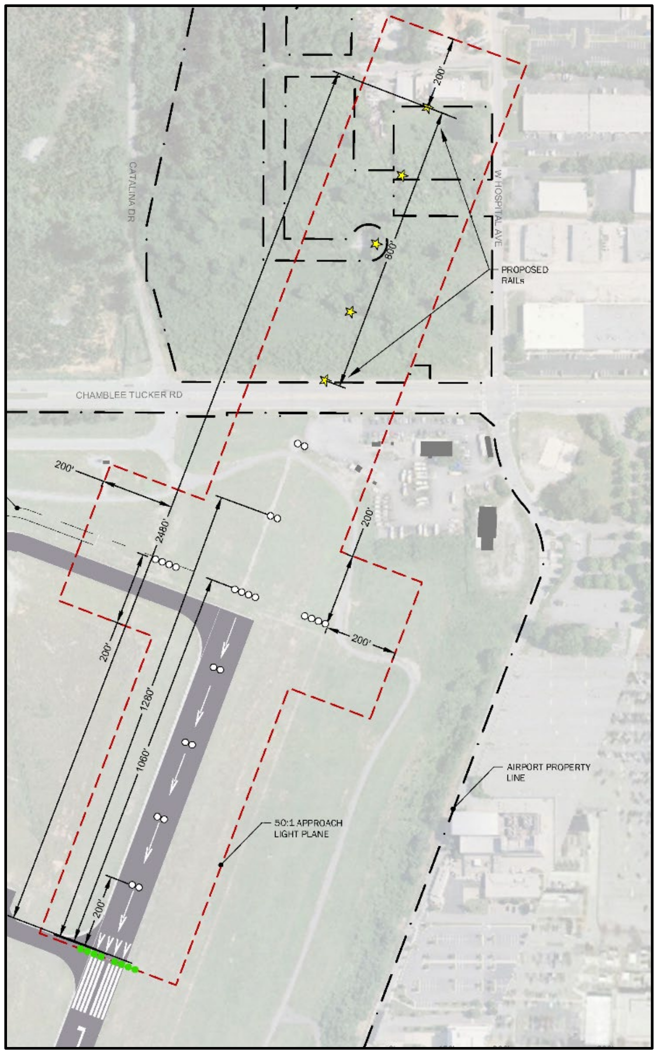
- **Runway 21L**
  - Precision ILS approach (3/4-mile visibility)
  - Non-precision RNAV/GPS Y (>1-mile visibility)
  - Non-precision RNAV (RNP) Z (>1-mile visibility)
- **Runway 3R**
  - Non-precision RNAV (RNP) (1-mile visibility)
- **Runway 3L-21R**
  - Visual Approach
- **Runway 16-34**
  - Visual Approach

There are currently no published instrument approaches to secondary Runway 3L-21R, and no procedure is recommended for the runway at the time due to the runway's design characteristics coupled with the available approach to the primary runway. Further, the Airport along with airport users have expressed desire for improved landing minimums at the airport. It should also be noted that the feasibility of implementing a future instrument approach procedure and a determination of the visibility minimums that can be achieved for each desired runway end will be based on several factors but dictated primarily by the surrounding terrain in the area.

Runway 21L currently utilizes a Medium Intensity ALS with Sequenced Flashing Lights (MALSF) approach light system which allows a minimum of ¾-mile however, due to obstructions within the approach the approach minimum is artificially higher at 7/8-mile with a 400-feet ceiling heights. Installing a Medium Intensity ALS with Runway Alignment Indicator Lights (MALSR) could not only improve the visibility but also the minimums. A MALSR consists of a configuration of light signals (RAILS) extending into the approach area from the runway threshold to aid pilots transitioning from instrument flight to visual flight and landing. The MALSR, in conjunction with the localizer and glideslope antennas, comprise the Instrument Landing System (ILS), which provides for approaches when visibility conditions are as low as ½-mile and cloud ceiling heights as low as 200 feet. As displayed in **Figure 4-6**, the Sequenced Flashing Runway Alignment Indicator Lights (RAILS) which are a part of the proposed MALSR system and extends to the north side of Chamblee Tucker Road on airport property.

During this master plan process, an obstruction survey will be sent to the FAA to evaluate Runway 3R approach. Runway 3R, currently has an instrument approach of 1-mile visibility but proves to be a difficult curved approach for pilots to maneuver due to Atlanta Hartsfield Jackson Airport's airspace to south. Because very few aircraft are able to land on Runway 3R, this study will examine the feasibility of adding a GPS approach to Runway 3R. The Airport and its users have also, shown interest in installing an instrument approach to Runway 34 which will also be examined in the next chapter.

Figure 4-6: MALSR Approach Lighting System



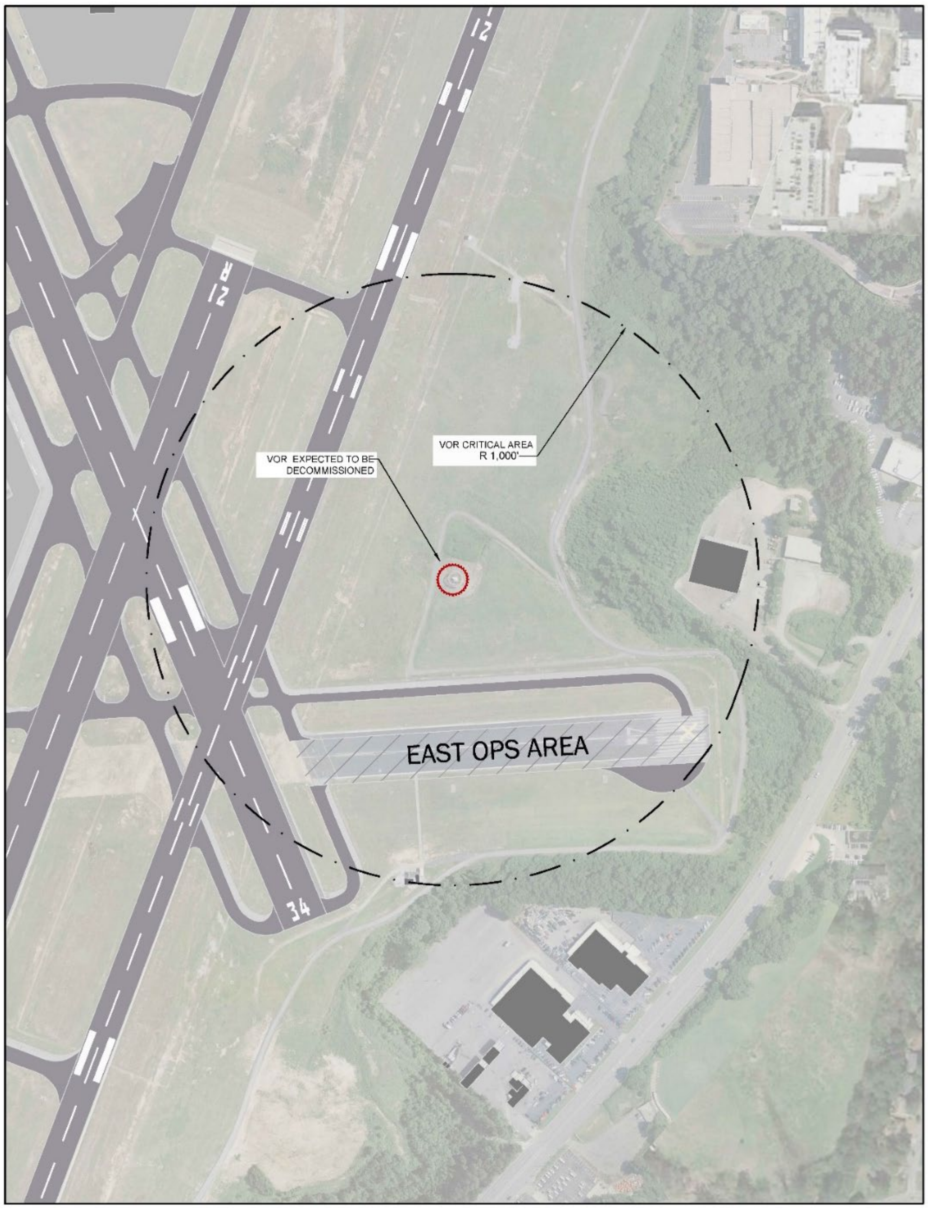
Source: Michael Baker International, 2020.

VOR/DME

The PDK VOR/DME antenna is located on the airport on the east of Runway 3R-21L and north of the East Ops Area shown in **Figure 4-7**. The VOR station broadcasts a VHF radio composite signal including the navigation signal and station's identifier. The navigational signal allows for pilots to navigate to and from PDK. The Airport VOR/DME is on a radio frequency 116.6 MHz with a variance of 05W. However, as part of the FAA's NEXTGEN (Next Generation), the FAA is moving opposite of ground-based navigation systems (VOR) to a satellite-based system. For this reason, PDK VOR is on the FAA list to be decommissioned, or removed from service within the short-term planning period; however the DME equipment will remain in place.

In compliance with Order 6860.1, *VOR, VOR/DME, AND VORTAC SITING CRITERIA*, to avoid the facility from interfering with airfield operations, the siting requirements call for the VOR to be at minimum 500-feet from any runway and/or minimum of 250-feet from taxiways. Furthermore, the VOR includes a 1,000-foot critical area that prevents any possible obstruction i.e. trees, fencing, powerlines or structures from being within 500-feet from the facility. Once the VOR is removed from airport grounds, a large area of airport property east of Runway 3R-21L becomes available for potential airport development. It is assumed the existing DME equipment housed within the VOR can be relocated to the ILS glideslope shelter.

Figure 4-7: PDK VOR Site



Source: Michael Baker International, 2020.

4.6.8 Visual Aids

An evaluation of the existing visual aids was conducted for the following categories at PDK: rotating beacon, wind cone and precision approach path indicators.

Rotating Beacon

PDK is equipped with a rotating beacon, located west of Runway 3R-21L. The airport's rotating beacon projects a beam of light in two directions, 180 degrees apart. The optical lens system consists of one green and one clear lens. The main purpose of the airport rotating beacon is to indicate the location of the airport at night and during less than optimal visibility conditions. The rotating beacon at PDK is in good working condition and therefore requires no modification or upgrades at this time. However, due to proposed construction on the east side of the airfield, the location of the beacon would need to change.

Wind Cone

According to FAA AC 150/5340-4, *Design and Installation Details for Airport Visual Aids*, there are "Primary" and "Supplemental" wind cones that can be provided at airports. A "Primary" wind cone is typically located near the center of an airfield within a segmented circle, whereas several "Supplemental" wind cones may be located near each runway end. The primary lighted wind corn is located just north of Taxiway D, while supplemental wind cones are located near Runway 3L, 21R and on top of a helicopter hangar adjacent to Helipad Charlie. The functionality of wind cones is to provide visual surface wind information to pilots. Since PDK operates under an ATCT, installing a segmented circle is not necessary. The wind cones are in good condition.

Visual Glide Slope Indicators (VGSI)

To provide pilots with visual indication of above or below glideslope during landings to the runway, Visual Glide Slope Indicator (VGSI) are commonly provided at airports. Runway 3L-21R is utilizes two-light PAPIs, located on the left side of both thresholds. Runway 16-34 is equipped with four-light Visual Approach Slope Indicator (VASIs), located also on the left side of both threshold. According to FAA AC 150-5300-13A, *Airport Design*, VASIs have limiting capabilities; only providing guidance to heights of 200-feet and are now obsolete. Runway 3R-21L operates a two-light PAPI located on the right of Runway 21 threshold while Runway 3R uses four-light VASI found on the left side of Runway 3R. The existing VASIs at PDK have reached the end of their useful life and will be replaced during the year 2020.

4.7 General Aviation Facilities

The general aviation (GA) area accommodates a wide range of facilities and businesses. GA facilities are necessary to accommodate airport activity by all aviation segments except commercial passenger and air cargo service. GA facilities support operations for recreational flying, corporate aviation, military, law enforcement operations, and some portions of cargo activity. The requirements for the GA area are based on data presented in the inventory, activity forecasts, and information obtained during meetings with PDK airport staff. The primary components associated with general aviation needs include:

- Aircraft Parking (Hangar & Aircraft Tie-down Facilities)
- General Aviation Terminal
- Fixed Base Operator (FBO)

FAA AC 150/5300-13A states that: effective apron design tends to segregate based and itinerant aircraft so that maximum capacity can be prioritized in the configuration of the based aircraft apron, while flexibility can be prioritized in the configuration of the itinerant aircraft apron. In addition, Airport Cooperative Research Program (ACRP) General Aviation Facility Planning guidance suggests that the based aircraft apron requires minimal interaction with other facilities.

4.7.1 Based Aircraft Storage Preferences

There are three types of hangar facilities found at most airports – conventional hangars, T-hangars, and tie-downs/shade structures. Small single-engine aircraft can be accommodated in T-Hangars, which are generally designed to accommodate 5 to 20 aircraft in a single building. A lower cost option is the apron tie-down. However, apron tie-down parking positions do not protect aircraft from the environment. Multi-engine and turbo-prop aircraft are more expensive, and users generally prefer the protection provided by a T-Hangar or, in the case of larger aircraft, a conventional hangar. The general preference is to store jet aircraft in conventional hangars. Helicopters, depending on their use, are generally stored in conventional hangars or on the tie-down apron. Smaller helicopters may be accommodated with tie-down or in a conventional hangar.

To determine hangar and other storage requirements, an analysis of the existing facilities was conducted. The analysis of storage needs is depicted in **Table 4-12**. It was assumed that approximately 80 percent of all single-engine would be stored in T-hangars and 20 percent of single-engine will be subjected to tie-downs. It is ideal that 100 percent of multi-engine aircraft be sheltered, 30 percent of multi-engine will be placed in T-hangars while 70 percent of multi-engine will be placed in conventional hangars. It expected that 100 percent of jets will be stored in conventional hangars. Of the rotorcraft, it was assumed 50 percent of rotorcraft will be sheltered while the remaining 50 percent will be located on the ramp area.

Table 4-12: Aircraft Storage Type Preference Distribution

Storage Type	Single-Engine	Multi-Engine	Jet	Helicopter
Apron Tie-Down	20%	0%	0%	50%
T-Hangars	80%	30%	0%	0%
Conventional Hangar	0%	70%	100%	50%
Total	100%	100%	100%	100%
Source: Michael Baker International, 2019				

The aircraft storage percentages were applied to the based aircraft forecasts for the 20-year planning period to identify the storage needs at the five-year benchmarks. **Table 4-13**, identifies the based aircraft requirements for each aircraft type. The number of based aircraft is forecasted to increase from 355 in 2018 to 487 by 2038.

4.7.2 Hangar Storage Requirements

The demand for hangar facilities is directly linked to the number and type of aircraft expected to be based at the airport, local climate conditions, security, and availability. Hangar facilities are typically grouped as conventional hangars or T-hangars. Conventional hangars are structures that can accommodate individual hangar units or multi-aircraft unit. These types of hangars provide a vast level of privacy, protection and security from the elements. T-Hangar is a series of smaller individual units within one structure. The percentage of based aircraft stored in hangars differs from airport to airport but is generally the highest in regions subject to extreme weather. Another significant component is the type of based aircraft anticipated to base at PDK. Pilots of smaller single-engine aircraft typically prefer T-hangars, while pilots of larger, more expensive and technologically advanced aircraft prefer conventional hangars. Some degree of based aircraft tiedown/apron storage is still desired for the airport to accommodate potential demand from recreational pilots or flight training organizations.

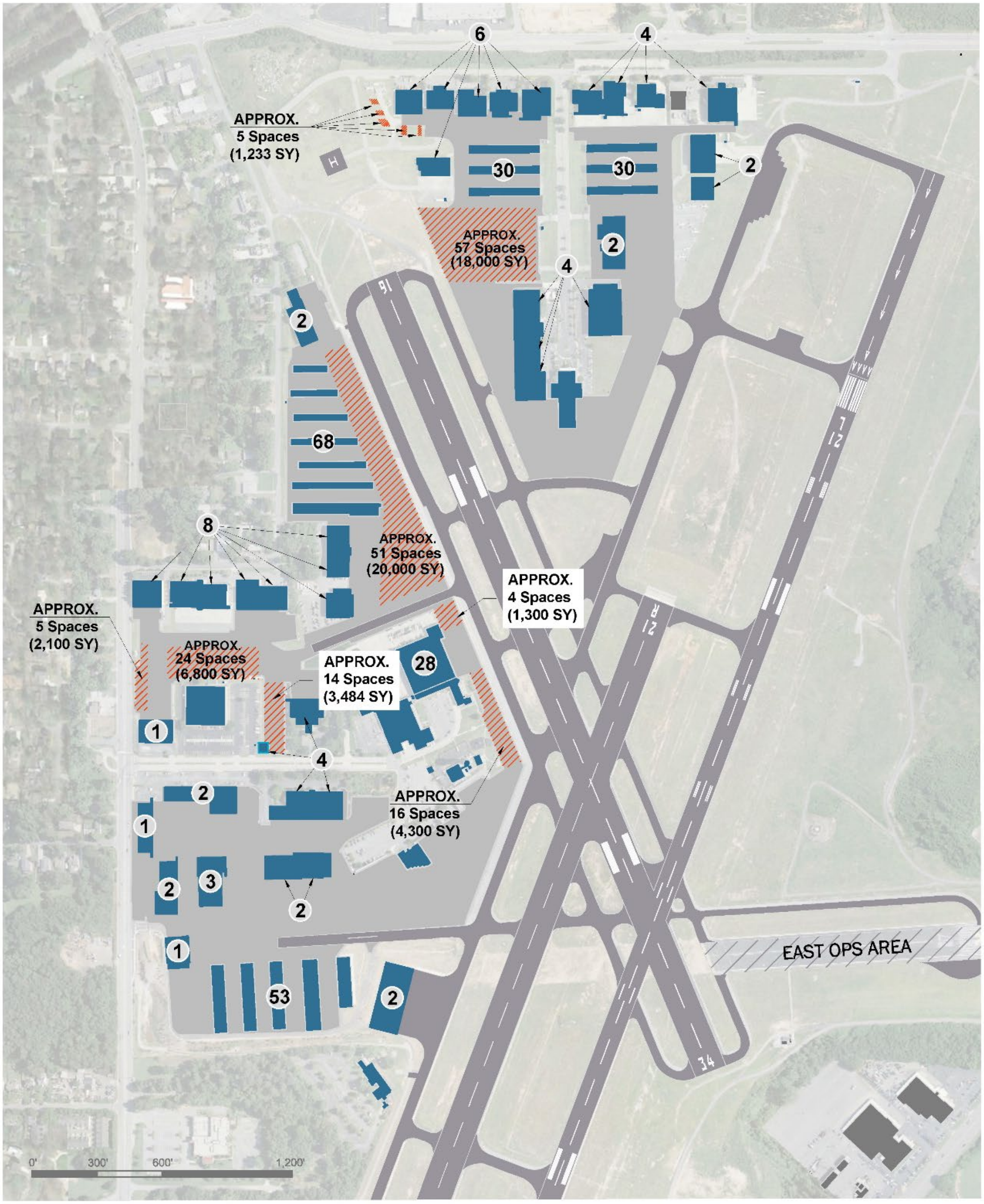
The aircraft storage preferences were applied to the based aircraft forecasts for the 20-year planning period to identify the storage needs during the five-year and ten-year benchmarks. **Table 4-13** displays the based aircraft storage requirements by aircraft type in addition to illustrating 2040 based aircraft capacity requirements. These include the addition of 109 T-hangar bays and 46 conventional box hangar spaces. Although, additional tie-down parking was not required, several apron tie-downs were included to provide supplementary space

Table 4-13: Aircraft Storage Demand

Storage Type	Single-Engine	Multi-Engine	Jet	Helicopter	Total	Existing Capacity	Demand
				2018			
Apron (Tie-Down)	51.6	0	0	6	**57.6**	176	**-118.4**
T-Hangar	206.4	11.7	0	0	**218.1**	181	**37.1**
Conventional Hangar	0	27.3	46	6	**79.3**	74	**5.3**
Total Spaces	258	39	46	12	**355**	431	**42.4**
				2025			
Apron (Tie-Down)	56.6	0	0	7	**63.6**	176	**-112.4**
T-Hangar	226.4	12.9	0	0	**239.3**	181	**58.3**
Conventional Hangar	0	30.1	54	7	**91.1**	74	**17.1**
Total Spaces	283	43	54	14	**394**	431	**75.4**
				2030			
Apron (Tie-Down)	60.2	0	0	7.5	**67.7**	176	**-108.3**
T-Hangar	240.8	13.8	0	0	**254.6**	181	**73.6**
Conventional Hangar	0	32.2	60	7.5	**99.7**	74	**25.7**
Total Spaces	301	46	60	15	**422**	431	**99.3**
				2040			
Apron (Tie-Down)	68.6	0	0	9	**77.6**	176	**-98.4**
T-Hangar	274.4	15.6	0	0	**290**	181	**109**
Conventional Hangar	0	36.4	74	9	**119.4**	74	**45.4**
Total	343	52	74	18	**487**	431	**154.4**

Source: Michael Baker International, 2019

Figure 4-8: Existing Aircraft Storage Count



Source: Michael Baker International, 2019.
Note: the aircraft storage count is based on an assumption of aircrafts that can fit within hangar.

Hangar storage needs are determined by developing a set of assumptions about storage preferences by aircraft type shown in **Figure 4-8**. As can be seen at PDK, hangar storage is generally preferred compared to apron tiedown storage because aircraft owners want to protect their expensive airplanes from weather conditions. Some degree of based aircraft tiedown/apron storage is still desired for the airport to accommodate potential demand from recreational pilots or flight training organizations. **Table 4-13** presents the assumptions used to establish based aircraft storage requirements for PDKs forecast of additional based. As shown, the construction of 26 T-hangar bays and 25,000 square feet of corporate hangar space would be needed to accommodate the forecast of 34 additional based aircraft by 2029. Presently, only a small portion (approximately 900 square yards) of the existing 22,500 square yard tie-down apron is currently occupied by based aircraft. Thus, the apron tie-down area for based aircraft is more than sufficient to accommodate long-term anticipated demand. The calculated requirements are used as minimum evaluation thresholds in the alternatives analysis so that a variety of flexible development options can be presented.

4.8 Airport Support Facilities

As described in AC 150/5070-6B, *Airport Master Plans*, support facilities include a wide range of functions intended to ensure the smooth, efficient, and safe operation of the airport. The FAA also provides design guidelines for these facilities in a variety of Advisory Circulars reports. Support facilities are those airport features that are not necessarily specific to aircraft operations, movement, and storage, but which are vital to ensuring the efficiency, safety, and persistency of aircraft activity. For PDK, the existing support facilities consist of the FBO terminal areas, airport fueling facilities, airport maintenance facility, automobile parking and access, and ATCT. In addition, the requirements for these facilities were also based on interviews with airport staff, airport tenants, and users which facilitated a better understanding of the existing and future facility requirements.

4.8.1 Airport Administration

Airport administration area typically includes offices for management, reception space, meeting rooms, storage, security monitoring and support space such as rest rooms. The administration building at PDK is centrally located between the West Ramp and Clairmont Ramp as illustrated on **Figure 4-9**. This building, which was constructed during WWII, was originally used for military offices and since 1959 has provided administrative space for DeKalb County, leased office space and the Downwind Restaurant. The administration building also adjoins Epps Air Service FBO.

The Administration Building, originally constructed in 1941, has seen renovations and updates over its lifespan; however, a number of nagging issues have raised the prospect of conducting a major rehabilitation or replacement of the current building The most critical issues include the following:

- Not Americans with Disabilities Act (ADA) friendly – no elevators with a restaurant and public spaces on the second floor,
- Asbestos in parts of the building,
- Antiquated fire suppression – no fire sprinklers within the building,
- Lack of central HVAC,
- Inadequate administration amenities/public spaces,

- Limited vehicular parking.

With a combination of the age structure along with its condition, a detailed analysis of this building will be conducted in a separate study.

Figure 4-9: Airport Administration Building

Source: Michael Baker International, 2019.

4.8.2 Fixed Based Operator (FBO)

Atlantic Aviation, Epps Aviation and Signature Flight Support are the three FBOs at PDK, providing traditional FBO services including a terminal, maintenance, car rentals and a variety of pilot and aircraft amenities. Requirements for individual airport businesses such as FBO's are determined by the leaseholder themselves.

4.8.3 Maintenance Requirements

The airport maintenance facility is located along Bragg Street and is used for the storage and maintenance of county-owned vehicles and equipment. Because airport maintenance facilities do not generate revenues, they are often located in remote areas that are unlikely to be attractive to a potential leaseholder. Interviews with airport management staff indicated the location of the existing airport maintenance facilities is the desired location and can be expanded to meet future needs.

4.8.4 Airport Rescue and Firefighting Requirements

Airport Rescue and Fire Fighting (ARFF) equipment is not required at airports that do not have scheduled passenger service with 10 or more passenger seats. However, Dekalb County Fire-Rescue Services Station 15 is located on the north end of Airport property along Flightway Drive. The most likely emergency situations at general aviation airports are an aircraft accident, fuel or aircraft fire, or a hazardous material (fuel) spill.

Station 15 houses the office of the Battalion Chief; Engine 15, a structural fire response truck and a Rosenbauer Panther 4X4 Aircraft Rescue and Firefighting (ARFF) fire truck. Station 15 is housed in a converted aircraft hangar that is structurally more than 40 years old. Station's 15's location provides direct access to the airfield in the event of an airport emergency. Although not required for general aviation airports, 14 CFR § 139.319 - *Aircraft rescue and firefighting: Operational requirements*, lists response times that are a useful rule of thumb for ARFF ready-ness at PDK. In general, the ARFF vehicle should be capable of reaching the mid-point of the furthest runway and begin using extinguishing agent within three minutes of alarm. All other emergency vehicles should reach this point within four minutes. These response times should be considered as guidelines should the ARFF station be relocated elsewhere on the Airport.

Figure 4-10: Station 15 Emergency Vehicles

Source: Michael Baker International, 2019.

4.8.5 Airport Traffic Control Tower (ATCT)

The existing 100-foot ATCT was constructed in 1988 and is located on the west side of the airport shown in **Figure 4-11**. The ATCT is owned and operated by the FAA and acts as an important feature for managing the aircraft traffic at PDK. As discussed, the complex configuration of the adjacent airspace and airfield requires the presence of ATCT personnel at PDK. Without the presence of ATCT at PDK, the ability to manage aircraft traffic and to maintain the ability to utilize the airfield safely would be challenging. This is especially true considering the multiple taxiway intersections (nodes) that do not have right-angled turns. With the current and projected annual volume at PDK, there is a justified need for ATCT. Currently there are no known issues regarding the ATCT, and they are no plans to relocate or rebuild. Future developments on the airport should carefully consider the ATCT line of sight requirements.

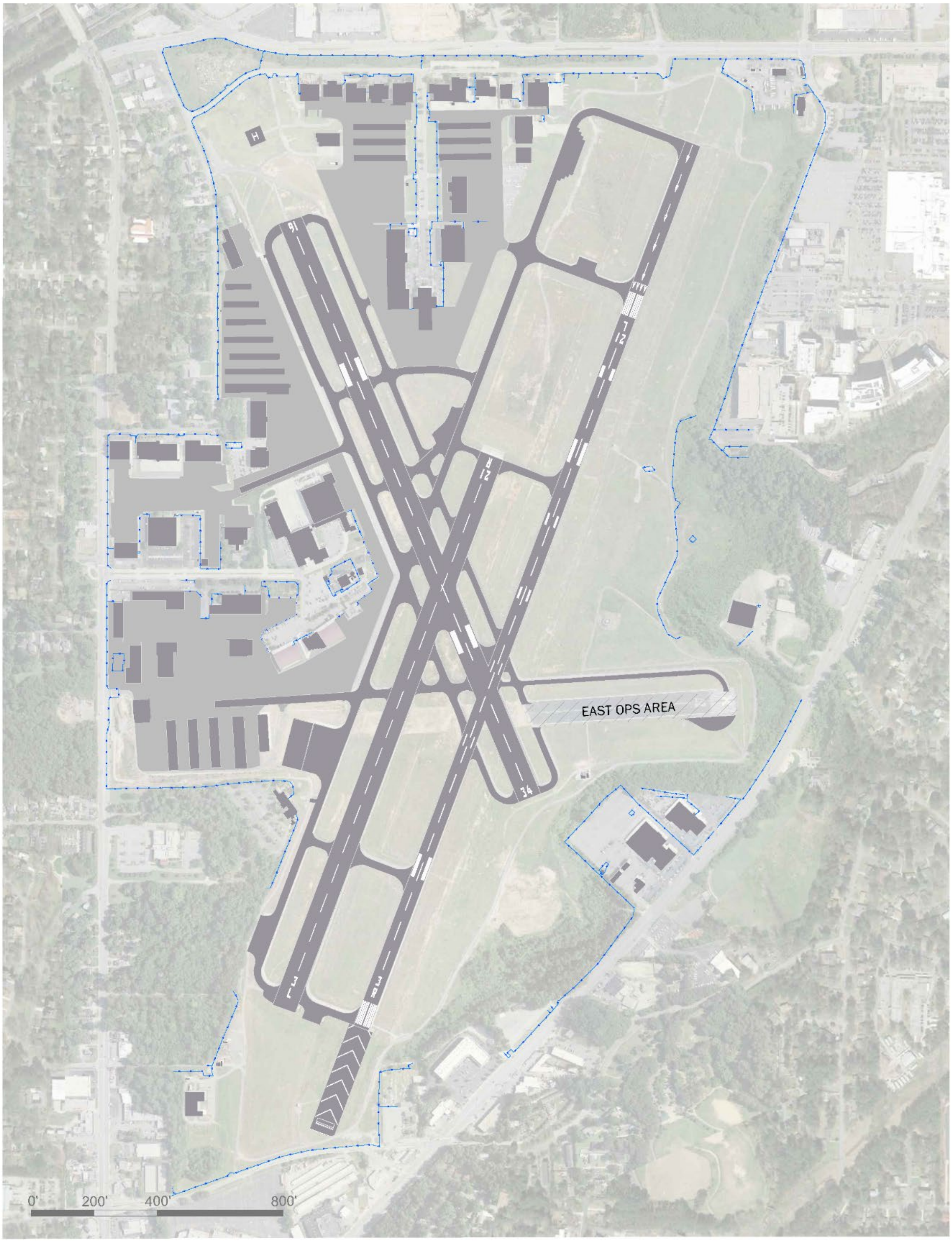
Figure 4-11: PDK Air Traffic Control Tower

Source: Michael Baker International, 2019.

4.8.6 General Aviation Fencing

PDK is protected by fencing around the perimeter of the airport, some of which follows the property line shown in **Figure 4-12**. The Airport is largely secured with 6-foot chain link fence with barbed wire. Elsewhere, mainly along Clairmont Road and some portions of Flightway Drive, consist of 6-foot coated wrought iron fencing. Currently there are points which allow unobstructed access to the ramps and taxiways. There are several gates located throughout the perimeter fence and requires either a proxy card for access. For those gates that does utilize access cards, swing gates are provided at locations along the perimeter.

Figure 4-12: PDK Security Fencing



Source: Michael Baker International, 2020.

4.8.7 Ground Access, Circulation

The access roadways in the vicinity of the airport are intended to provide adequate connection to and from the airport and the community. PDK's primary entrance is Airport Road to the west and Corsair Drive to the north. Both Interstate 85 and Interstate 285 are readily accessible from Clairmont Road and Peachtree Industrial Boulevard respectively. The City of Chamblee and City of Brookhaven have ongoing corridor studies for potential improvements to Clairmont Road and Buford Highway districts. Also, as a part of the hangar development plans in the southwest quadrant of the airport, streetscaping improvements are expected for the northern side of the Dresden Road.

All roadways within the airport property line must be maintained by the airport. The current condition of both Airport Road and Corsair Drive are considered average to poor condition. These roadways should be considered for overlay or rehabilitation within the five to ten year timeframe.

In addition to routine maintenance of existing airport roads, the intersection of Flightway Drive and Chamblee-Tucker Road should be considered for a minor modification to remove a small portion of the road that falls within the Object Free Area of Runway 3L-21R.

4.8.8 Automobile Parking

As mentioned in Chapter 2, they are two public parking lots are located adjacent to the Administration Building and ATCT, both individual lots consisting of 71 spaces, totaling 142 spaces. Users of the parking lots include, airport tenants, airport employees and neighborhood users who come to enjoy Doc Manget Memorial Park. The capacity of the public parking lots proves to be inadequate throughout parts of the day. Additional parking is recommended for this area of the airport. A separate study has considered the feasibility of constructing a parking deck within the vicinity of the air traffic control tower. Regarding other airport facilities, it is assumed that each of the FBOs as well as any private or corporate hangars will provide their own parking spaces based on their individual requirements.

4.9 Summary

Table 4-14, presents a summary of the identified facility requirements. The remaining section of this report present recommendations to satisfy these facility requirements at PDK.

Table 4-14: Summary of Facility Requirements

Project	Description
Critical Aircraft Assessment	Gulfstream 550 – Primary (D-III, TDG-2) King Air 90 – Secondary (B-I Small)
Wind Coverage	Runway 16-34 necessary to provide >95% crosswind coverage for small aircraft.
Airfield Capacity	Forecast operations reach 80% airfield capacity in 2040.
Runway Safety and Object Free Areas	Increase RSA width to Runway 3R-21L to 500’ width. Improve Runway 34 RSA to meet standards. Relocate County Sanitation and portion of Flightway Drive from OFA. Review TDG-2 Taxiway OFA standards near parking ramps for conflicts.
Runway Protection Zone	Add Departure RPZ to Runway 21L. Revise Runway 21L Approach RPZ to 200’ from landing threshold.
Runway Length and Widths	Maintain existing runway lengths and widths. Consider reduced secondary runway widths at end of pavement useful life.
Pavement Condition and Strength	Pavement rehabilitation projects for all runway pavement in accordance with guidelines of GDOT PCI Study.
Taxiway Geometry	Ongoing improvements to simplify taxiway geometry and eliminate hotspots.
Runway Lighting and Markings.	Upgrade Runway Edge Lighting to LED. Maintain existing markings.
Navigational Aids (NAVAIDs)	Upgrade Runway 21L approach lighting from MALSF to MALSR. Reduce 21L approach minimums to ½ mile when feasible.
VOR/DME	Plan for future use of decommissioned VOR critical area and move DME to glideslope equipment shelter.
Beacon	Relocate beacon as required for landside improvements.
Visual Glide Slope Indicator	Replace all VASI to PAPI (ongoing).
Airport Rescue Firefighting Station (ARFF)	Consider major facility renovation or replacement in short to intermediate term.
Airport Administration Building	Rehab or replace existing Airport Administration Building in short to intermediate term.
Aircraft Parking	Provide additional aircraft parking and storage to meet projected based aircraft demand.
Automobile Parking	Increase parking capacity adjacent to Administration Building and Manget Park.
Access Road	Overlay pavement in near to intermediate term.

Source: Michael Baker International, 2020.