CHAPTER FOUR – FACILITY REQUIREMENTS

INTRODUCTION

The facility needs and direction for the future of Knox County Regional Airport are based on the existing facilities, forecast aviation activity, and Knox County's strategic vision and goals for the future of the Airport. It should be noted that the facility recommendations in this section are not an absolute design requirement, but are rather options to resolve various types of facility or operational inadequacies, or to make improvements as demand warrants.

The airside and landside capacity needs are determined by comparing the capacity of existing facilities to forecasted demand. Additional facilities are recommended in cases where demand exceeds capacity. The timeframe for assessing development needs are broken down into three periods addressed earlier in Chapter 3; these are the short-term (0 to 5 years); intermediate term (6-10) years; and long-term (11-20 years). Critical capacity and safety issues are addressed first, followed by other less critical development needs.

The airport's geometric standards are addressed first, followed by the airside, the landside, and then other general requirements not directly related to the first three.

GEOMETRIC STANDARDS

The existing airport design is based on Airport Design Group (ADG) III, which as noted in Chapter 2 was the standard up until about 3-4 years ago when it reverted to ADG-II. However, as noted in Chapter 3, the ADG will change back to Group III sometime in the next 5-10 years. This back and forth change is somewhat problematic because getting the design group right is essential when planning future infrastructure.

After much discussion between the airport, its planning and advisory committees, Stantec and the FAA, it was determined that the best approach is to leave the existing infrastructure in place because current historic trend does not support investing in Category C or higher design standards. However, historic data indicates it is plausible that the airport can experience more than 500 ops of C & D aircraft as there are years in which activity had exceeded 500 operations. Plausible forecast scenarios were developed in Chapter 3 that support C&D operations exceeding the 500 ops standard sometime in the next 5-10 years. Therefore, designs therefore incorporate C&D standards that eliminate the need for expensive demolition and reconstruction of facilities that would not conform to the current C&D design standards. However, future design does not include C&D standards that can be added as incremental improvements to a reconstructed runway, e.g.

an EMAS bed for Runway 13 overruns. However, the location of any such incremental improvements should be shown as the ultimate ALP.

Table 4.1 lists the geometric standards based on forecasted changes.

Table 4.1 – RKD Design Standards

STANDARD	RUNWAY 3-21	RUNWAY 13-31
Airport Reference Code	B-II	B-II
Visibility Minimums	Not lower than 1 mile	Lower than ¾ mile
Runway Design		
Design Aircraft	Beech King Air 200/350	Citation Excel
Runway Design Code (RDC)	B-II-4000	B-II-2400
Length	4,000	6,000
Width	75’	100’
Runway Separation		
Parallel Taxiway / Taxilane centerline	240’	400’
Aircraft parking area	250’	500’
Runway Safety Area (RSA)		
Length beyond departure end	300’	1,000’
Length prior to threshold	300’	600’
Width	150’	500’
Runway Object Free Area (ROFA)		
Length beyond departure end	300’	1,000’
Length prior to threshold	300’	600’
Width	500’	800’
Runway Obstacle Free Zone (ROFZ)		
Length beyond end of runway	200’	200’
Width	250’	400’
Runway Protection Zone (RPZ)		
Length	1,000’	2,500’
Inner Width	500’	1,000’
Outer Width	700’	1,750’
Area	13.8 acres	78.9 acres
Aircraft Parking Apron Design	Aircraft Design Group I, II, and III	

Source: Stantec Analysis (October 2014). FAA AC 5300-13A, *Airport Design*

AIRSIDE

This section discusses capacity and facility requirements of the airport's airside.

RUNWAY REQUIREMENTS

By design, the critical aircraft corresponds with primary runway length, runway width, pavement strength, geometric separation distances, and airspace/instrument approach minimums.

Primary Runway (13-31)

Because of its length, wind alignment and lower approach visibility minimums, the primary runway at RKD is Runway 13-31. The runway is 5,007 feet long and 100 feet wide and is designed to Aircraft Design Group (ADG) III standards in terms of width and separation from the parallel taxiway (400 feet). For the short-term, however, safety standards, such as the RSA will remain within the ADG II scenario.

Secondary Runway (3-21)

The secondary runway at RKD is 3-21. At 4,000 feet in length and 100 feet wide, the runway serves as the airport's crosswind runway. Its width exceeds ADG II standards of 75 feet.

RUNWAY LENGTH RATIONALE

The length of runway required to accommodate the most demanding airplanes anticipated to use an airport is a fundamental airfield design factor. Runway length requirements for specific aircraft are dependent upon airfield elevation and design temperature (the average high temperature for the hottest month). The FAA has established formulas indicating the desirable runway length for various classes of aircraft. If a particular aircraft is especially key to an airport's role, this data is available in performance charts provided by aircraft manufacturers.

Runway length is determined from the greater of the takeoff or landing performance characteristics of the existing and future critical aircraft operating at RKD, or composite family of airplanes as represented by the critical aircraft's Airport Reference Code.[1] The takeoff length, including takeoff run, takeoff distance, and accelerate-stop distance, is the more demanding of the runway length requirements.

RUNWAY LENGTH DESIGN PARAMETERS

As described below, there are two primary means for determining the Airport's recommended runway lengths. The first is a general analysis using a standard FAA design tool that considers a

[1] Runway performance length factors are used for the development of the recommended runway length and ultimate design of airport runways, and not as a substitute for calculations required by airplane operating rules. For planning purposes, only an "unrestricted" runway length is contemplated, which does not invoke declared distances (displaced landing or takeoff threshold).

wide-range of aircraft by weight class and size. This analysis, which is presented in Analysis A does not consider specific aircraft operating at RKD, but rather takes into account all possible aircraft within the weight class and size noted. The second analysis, presented in Analysis B considers only those aircraft that are known to operate at RKD, and more specifically, only considers the larger/faster aircraft with a longer runway demand. These aircraft are critical because they are the specific aircraft that must carefully consider available runway based on operating conditions at the time of takeoff and/or landing. In both cases (A and B), specific conditions at RKD are considered. These include mean high summer temperature, field elevation and the most severe runway gradient; conditions that impact takeoff and landing length requirements for every aircraft.

Runway Length Guidance A

This analysis considers all small aircraft (those with an operating weight of 12,500 pounds or less) and places them into broad classes based on approach speed and passenger capacity. FAA Recommended Runway Length: General runway length guidance based on FAA computer modeling software for various aircraft weight and capacity groups, as adjusted for the Knox County mean maximum temperature of 78° F, field elevation of 56 feet above mean sea level, and difference in runway end elevations (Runway 13-31) of 9.3 feet.[2] **Table 4.2** lists the results of this calculation.

Table 4.2 – Runway Length Requirements (FAA Design Software)

AIRCRAFT CONDITIONS	RUNWAY LENGTH
Small airplanes with approach speed of less than 30 knots	310
Small airplanes with approach speed of less than 50 knots	820
Small airplanes with less than 10 passenger seats	
75% of these small airplanes	2,380
95% of these small airplanes	2,910
100% of these small airplanes	3,470
Small airplanes with 10 or more passenger seats	3,970

Source: FAA Design Software using following input: field elevation = 55' MSL; mean daily maximum temperature = 80°F, and a maximum difference of runway centerline elevation = 9.3 feet.

Runway Length Analysis B

This assessment uses specific aircraft operating at RKD, and include a wide range of jet and turboprop aircraft[3]. This data was further broken out by aircraft categories, specifically Categories A and B and then C and D. The rationale for this division is because FAA design standards[4] change considerably when evaluating Category A and B as compared to C and D, where the latter requires a wider and larger surfaces.

[2] FAA Airport Design Microcomputer Program 4.2D
[3] Data obtained from FAA Traffic Flow Management Systems Count (TFMSC), October 2014.
[4] FAA AC 5300-13A, Airport Design.

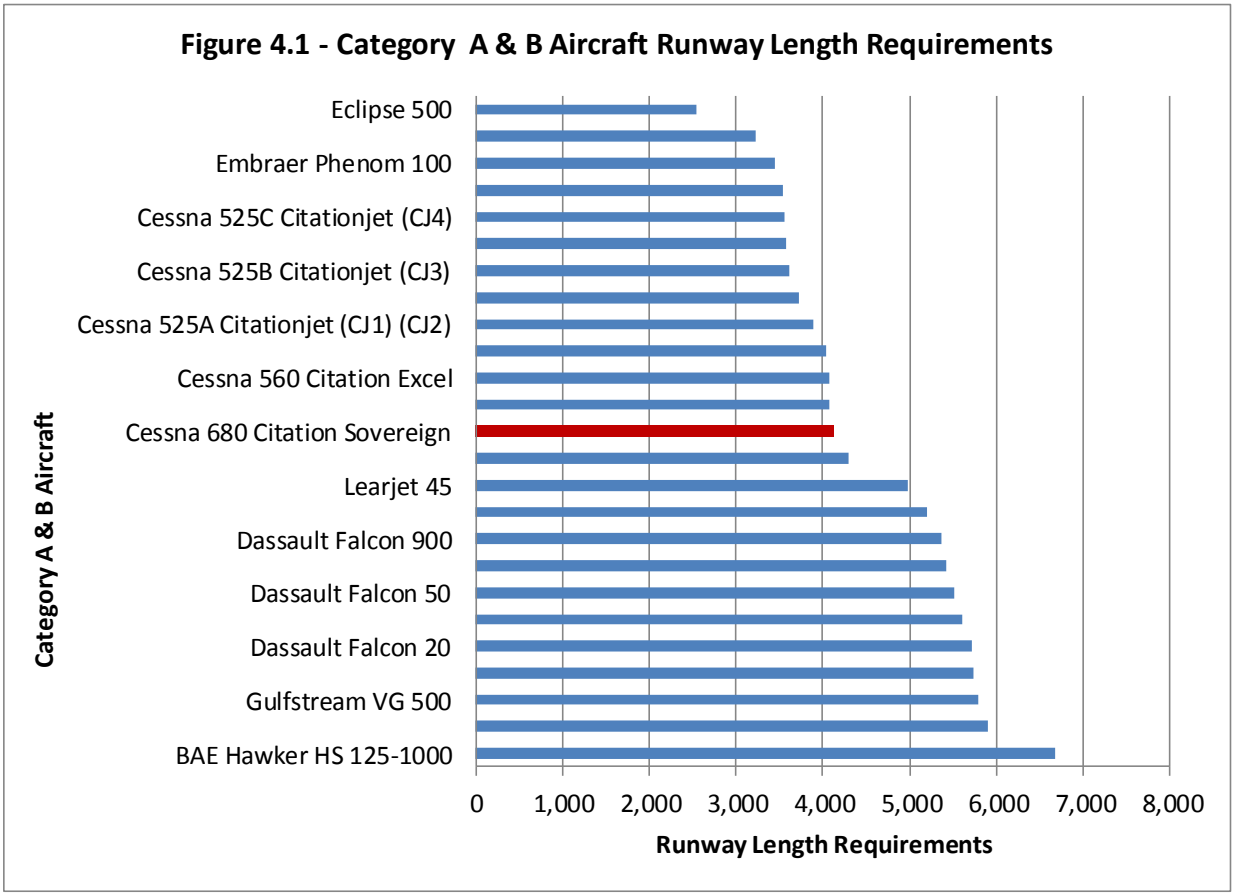
Category A & B jet aircraft are shown in Table 4.3 and Figure 4.1 (next page). The data is sorted by total annual operations and summed to indicate the aircraft where 500 or more total operations is reached. In this case it is the Cessna 680 Citation Sovereign. This assessment was done to help determine the airport's overall reference code, a critical evaluation that will help determine existing and future design criteria, which is discussed later in this chapter.

Table 4.3 – Runway Length Requirements (Category A&B Aircraft)

MAKE & MODEL	OPS	SUM	ADG		RUNWAY
Cessna 501 Citation I/SP	2	2	B	I	3,231
Cessna 510 Citation Mustang	4	6	A	I	3,541
Embraer Phenom 100	4	10	B	I	3,447
Dassault Falcon 10 & 20	12	22	B	II	5,726
Learjet 40	8	30	B	I	5,601
Dassault Falcon 50	10	40	B	II	5,510
Embraer Phenom 300	14	54	B	II	3,572
Cessna 550 Citation Bravo	20	74	B	II	4,083
Eclipse 500	22	96	A	I	2,534
Learjet 31A	26	122	B	I	3,729
Learjet 45	28	150	B	I	4,979
Raytheon Premire 1/390	28	178	B	I	4,295
Cessna 525A Citationjet (CJ1) (CJ2)	30	208	B	I	3,884
Hawker Beechcraft Horizon 4000	34	242	B	II	5,729
Cessna 525C Citationjet (CJ4)	38	280	B	II	3,563
Gulfstream VG 500	40	320	B	III	5,798
Cessna 525B Citationjet (CJ3)	42	362	B	II	3,618
Bombardier Challenger 300	44	406	B	II	5,421
BAE Hawker HS 125-1000	46	452	B	II	6,683
Cessna 680 Citation Sovereign	54	506	B	II	4,127
Dassault Falcon 900	94	600	B	II	5,360
Dassault Falcon 2000	100	700	B	III	5,897
Cessna 560 Citation Encore	116	816	B	II	4,039
Cessna 560 Citation Excel	210	1026	B	II	4,072

Source: FAA Traffic Flow Management System Counts (TFMSC) (October 2014)

Figure 4.1 on the next page presents the same data but in graphic form.



Category C & D aircraft data is presented in Table 4.4 on the next page and Figure 4.2 on the following page. In this case the sum of aircraft operations is reached at the Cessna 750 Citation X.

Table 4.4 - Runway Length Requirements (Category C&D Aircraft)

MAKE & MODEL	OPS	SUM	ADG	RUNWAY
Cessna 650 Citation III/VI	4	4	C II	5,798
Gulfstream III	4	8	C II	5,759
Embraer ERJ-135	8	16	C II	6,085
Israel Astra 1125	12	28	C II	5,908
Bombardier BD-700 Global Express	14	42	C III	7,070
Gulfstream IV	16	58	D II	6,129
Learjet 55	16	74	C I	5,576
Learjet 35/36	20	94	D I	5,601
Gulfstream II	28	122	D II	4,603
Learjet 60	32	154	C I	6,129
Bombardier Challenger CL-600/601/604	68	222	C II	6,406
Beechjet 400-A	92	314	C I	4,712
BAE Hawker HS 125-400/600/700	114	428	C I	6,849
Cessna 750 Citation X	114	542	C II	5,787

Source: FAA Traffic Flow Management System Counts (TFMSC) (October 2014)

As presented in Tables 4.2, 4.3 and 4.4 and illustrated above in Figure 4.1 and Figure 4.2, RKD can accommodate a large variety of aircraft of various weight classifications, speed and wingspan. Our analysis indicates that like many airports, RKD does present some operating restrictions to a portion of the existing fleet. While the airport can accommodate most aircraft, there are some that cannot operate at RKD during extreme operating conditions; conditions that exist during warm summer days or wet conditions and when aircraft operate at or close to maximum gross takeoff weight. During these conditions the pilot must either operate at a lower gross weight by reducing payload (passengers, baggage/cargo, and/or fuel), and/or takeoff during cooler temperatures. Our observations include:

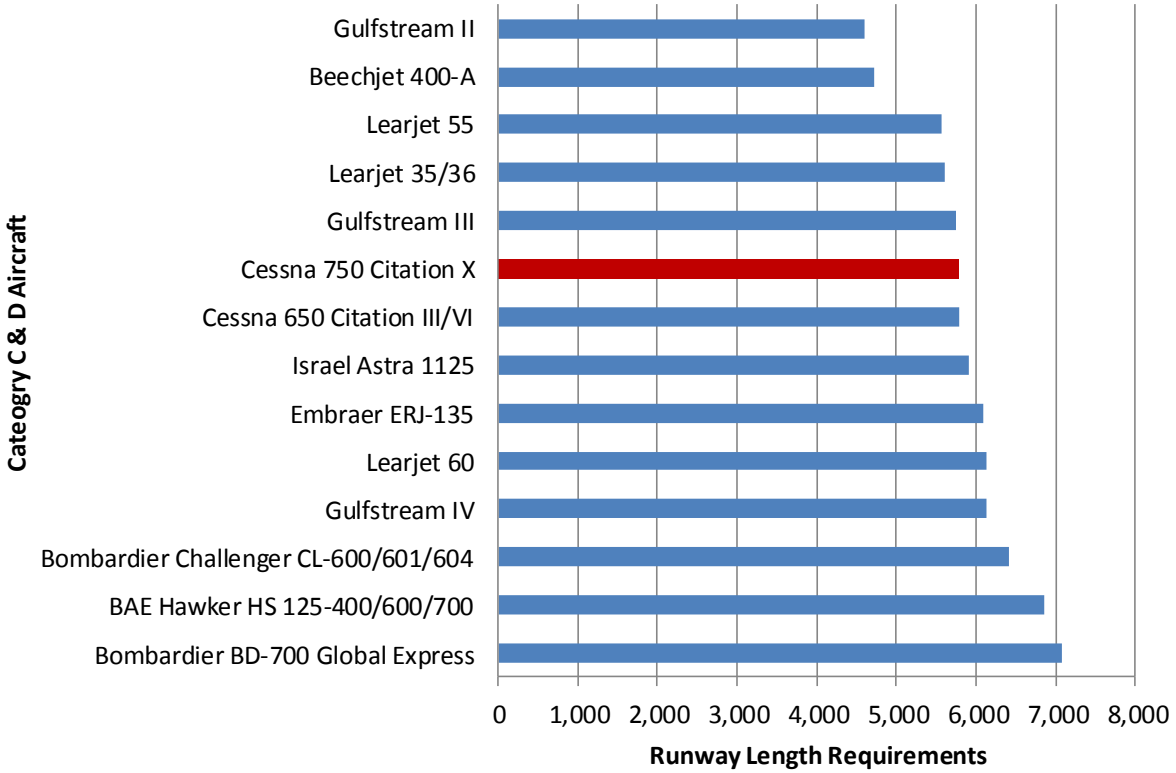
- As illustrated in Table 4.2, with a 5,007 and 4,000 foot long runway, RKD can accommodate 100% of the small aircraft fleet, meaning those aircraft that have a maximum gross takeoff weight of 12,500 pounds or less.

- As presented in Table 4.3, RKD can accommodate about 60% of the Category A & B jet fleet that are known to operate at the airport.

- Similarly, and as shown in Table 4.4, RKD can accommodate very few of the Category C & D fleet listed during maximum operating conditions (primarily weight and temperature). Of the 14 aircraft listed, only 2 (14% can safety operate at RKD at maximum gross takeoff weight during a warm summer day).

- The Cessna 750 Citation X requires just less than 5,800 feet of takeoff runway at maximum gross takeoff weight.

Figure 4.2 - Category C & D Aircraft Runway Length Requirements



RECOMMENDED PRIMARY RUNWAY LENGTH

Based on the data presented in the previous sections, RKD can support most operations typically found at the airport with the existing runway infrastructure. A longer runway would support larger aircraft, particularly those typically flown by corporate operators; however the existing runway length supports the airport's design aircraft with some weight penalty, as well as the majority of operations typically flown at RKD. However, given the location of the airport and the sparseness of other airports with longer runways in the airport's service area a longer runway is justified. The quantitative data presented supports a longer runway in the 5,800 to 6,000 foot range. However the current infrastructure and airport layout may not support a runway this long without considerable adjustments to on and off airport infrastructure, particularly approach lighting, runway safety areas, and public roads. This assessment will be analyzed and options addressed

in the Alternatives chapter of this report, while the financial and environmental issues will be further studied and analyzed before a preferred alternative is selected.

RECOMMENDED SECONDARY RUNWAY LENGTH

Runway 3-21 is 4,000 feet long, or 80% of the primary runway's length, which is optimum under FAA guidelines. This crosswind runway serves its purpose at RKD and no further assessment is considered necessary at this time.

RUNWAY PAVEMENT STRENGTH

The current runway pavement strength is rated as follows:

Runway	Single Wheel	Dual Wheel
13-31	65,000 lbs.	80,000 lbs.
3-21	65,000 lbs.	80,000 lbs.

This rating is satisfactory given the current airport standards and usage. If Runway 13-31 is extended, then the runway weight bearing capacity requirements should be evaluated in more detail. For now, both runways serve their purposes in terms of weight bearing capacity.

TAXIWAY REQUIREMENTS

The taxiway system at RKD supports most operations with no capacity issues noted. The primary runway is served by a full-length parallel taxiway that connects both runway ends with a stub taxiway serving the main aircraft parking apron. The Runway 13-31 parallel taxiway (identified as "D") is 50 feet wide and separated from the runway by 400 feet (both within ADG III standards).

Runway 3-21 does not have a parallel taxiway, but is instead served by a single stub taxiway to the main aircraft-parking apron. The current AMPU recommends a full length parallel taxiway, which is shown on the current ALP (see page 103). Given the level of operations at RKD and usage of the crosswind runway, this design recommendation is considered valid today and should be pursued in the short to intermediate terms (next 5-10 years).

VISUAL NAVIGATION AIDS

Lighting and other aids are listed in Section 2 (see *Visual Aids*, page 18). The condition of the runway lights and other aids are in excellent condition.

Runway 13-31 is equipped with high intensity runway edge lights (HIRL) and Runway 3-21 has medium intensity runway lights (MIRL). Both systems are adequate.

Runway ends 3, 13, and 31 are all served by a 4-light PAPI system set at 3.0 degrees, PAPI is considered current state of the art in design and purpose and at the optimum angle. Runway 21 is

not served by any visual glideslope system, however given the low frequency of use on this runway end, no lighting system is recommended.

Runway 13 has a 1,400 foot medium intensity approach lighting system (ALS) with runway alignment indicator lights (MALSR), this system serves the ILS instrument approach procedure to that runway end by allowing a slightly lower approach minimums (½ versus ¾ statute mile). Runway ends 3 and 31 are served by Runway End Identifier Lights (REILS). The combined MALSR and REILS provide adequate runway end lighting coverage. No additional ALS is recommended.

LANDSIDE CAPACITY & REQUIREMENTS

This section addresses issues related to landside capacity and recommended changes. This includes aircraft parking (aprons and hangars), terminal building space, automobile parking, and miscellaneous storage and facilities. In addition, the last part of this section addresses the seaplane base and its requirements.

AIRCRAFT PARKING

Aircraft parking includes open tie-downs spaces on the airport ramp, short-term parking during fueling and passenger drop-off/pick up operations. As discussed in Section 2 (see *Aircraft Parking Apron,* page 16 and *Hangars,* page 17) the airport's existing capacity allows for approximately 63 hangared aircraft and 71 aircraft in anchored tie-downs (134 total).

As discussed in Chapter 2 (see *Based Aircraft*, page 10) the current demand for planning purposes in 2013 indicates that there are 75 aircraft on airport property, of which 50 are in hangars and the remaining 25 aircraft in open tie-down spaces. This is an approximate 33% to 67% ratio (tie down to hangar). For planning purposes, it is assumed that this ratio will remain about the same.

APRON AND TIE-DOWNS

The airport has a two apron areas for both based and itinerant aircraft. The primary apron is located in the central part of the airport across from the terminal building and is used primarily for itinerant aircraft, but with space for based aircraft as well. This apron measures 35,000 square yards (315,000^{2FT}) including three wide taxilanes. This apron has 65 marked spots, which include two for Aircraft Design Group III airplanes, 9 for ADG II, and 54 for ADG I airplanes.

The second apron is locate on the airport's south side and consists of a 7,500 square yard (67,500^{2SF}) paved area. This apron includes a 25 foot wide taxilane down the center of the pavement and has 11 spots marked for ADG I size aircraft.

Combined the two aprons have marked space for 76 total aircraft. Nine for large aircraft (Aircraft Design Group II), 2 for ADG III aircraft, and the remaining 65 are marked for ADG I aircraft.

Forecasts indicate that the airport will realize an increase in based aircraft from the current 87 to 137 in the next 20 years. Of the 137 aircraft, 12 will be in the Owls Head Museum, with the remaining 125 on airport property, and parked in either hangars or on an apron. Assuming the apron to hangar ration remains stable at 33/67%, then 41 will require open tie-down space on aprons and the remaining 67% (84) will require hangar space.

In determining apron space, an area (apron size) assessment is required, where a square foot or yardage measurement is calculated. This process would take into account both based and itinerant aircraft needs. And the standards process is to calculate the area using two different methods; one for itinerant aircraft and the other for based aircraft.

General aviation aircraft typically require approximately 300 square yards per based aircraft and 360 square yards for itinerant aircraft; dimensions that are adjusted based on the size of aircraft expected to use the airport. Itinerant aircraft requirements are based on operations, while based aircraft needs are calculated using aircraft numbers.

Table 4.5 presents standard calculations used for planning itinerant parking space. Table 4.6 (next page) presents similar calculations for based aircraft, and Table 4.7 (next page) list the total requirements.

Table 4.5 - Itinerant Aircraft Apron Space

PARAMETER	PLANNING YEARS			
	2015	2019	2024	2033
Total Itinerant Operations (see Table 3.7, pg. 41)	26,484	28,949	30,867	33,952
Busiest Month Operations (20% of annual)	5,297	5,790	6,173	6,790
Average Day Busy Month Operations	177	193	206	226
Busiest Day 10%> average Day	194	212	226	249
Itinerant Aircraft Parking Demand	97	106	113	124
Square Yards Per Aircraft	360	360	360	360
Itinerant Parking Demand Space Requirements (SY)	**34,958**	**38,213**	**40,745**	**44,816**

Table 4.6 - Based Aircraft Apron Space				
PARAMETER	**PLANNING YEARS**			
	2015	**2019**	**2024**	**2033**
Based Aircraft[5]	75	89	102	125
Percent Aircraft in Tie-Downs	33%	33%	33%	33%
Based Aircraft on Apron Space	25	29	34	41
Square Yards Per Aircraft	300	300	300	300
Based Aircraft Parking Demand (SY)	**7,500**	**8,700**	**10,200**	**12,300**

Table 4.7 - Total Aircraft Apron Space				
PARAMETER	**PLANNING YEARS**			
	2015	**2019**	**2024**	**2033**
Transient Aircraft Space (from Table 4.5)	34,958	38,213	40,745	44,816
Based Aircraft (from Table 4.6)	7,500	8,700	10,200	12,300
Total Space Required (SY)	42,458	46,913	50,945	57,116
Existing Space (SY)	73,000	73,000	73,000	73,000
Surplus (Deficit) in SY	**30,542**	**26,087**	**22,055**	**15,884**

As listed in Tables 4.5, 4.6 and 4.7, the airport has a current apron deficit of 30,500 square yards. With planned growth, the surplus will shrink in half to about 16,000 s.y. over the course of the next 20 years.

HANGARS

Knox County has 63 available hangar slots located in 13 privately owned hangars (on leased airport land). Currently the existing hangars are filled to capacity with the remaining 52 based aircraft parked primarily on one of two aprons[6]. As noted earlier, the existing apron to hangar ratio is 40-60 respectively, but with the availability of affordable hangar space, this ratio could reverse itself, resulting in a higher demand for hangars than open tie-down space. If this does occur, then demand for hangar space will increase from the existing 35 aircraft to 82 aircraft in the next 20 years.

[5] Based aircraft forecasts less the 12 aircraft currently parked in the Owls Head Transportation Museum, which for planning purposes will remain constant throughout the 20-year planning cycle.
[6] A few aircraft are occasionally parked on the grass and adjacent to hangars. In addition, these calculations do not include the Owls Head Transportation Museum, which has its own space for display aircraft and occasional visiting pilots and during museum events.

Table 4.8 lists the estimate for hangar space through the three planning periods. This assessment indicates the airport would need approximately 25 additional hangar spots in the next 20 years. It is recommended however, that the airport plan for much more by reserving space to accommodate hangar development as demand dictates, keeping in mind that hangar land leases are the primary source of revenue for general aviation airports.

Table 4.8 - Hangar Space Requirements

PARAMETER	PLANNING YEAR			
	2015	2019	2024	2033
Based Aircraft	87	101	114	137
Percent Aircraft in Hangars	60%	60%	60%	60%
Based Aircraft Hangar Needs	52	61	68	82
Itinerant Hangar Needs (10% of Based Aircraft)	3	3	3	4
Total Requirement	55	64	72	86
Existing Hangar Space	63	63	63	63
Surplus (Deficit)	**8**	**(1)**	**(9)**	**(23)**

AUTOMOBILE PARKING REQUIREMENTS

Automobile parking space is based on peak hour needs, a product of flight operations by itinerant, including air carrier operations, and based aircraft. The industry rule-of-thumb is 1.3 parking spaces, or 50 square feet for one-half of each peak-hour pilot/passenger, plus employees.

Table 4.9 – Automobile Parking Requirements

PARAMETER	PLANNING YEARS			
	2015	2019	2024	2033
Itinerant Aircraft Parking Demand	36	40	42	47
Parking Space Per PH Demand	1.3	1.3	1.3	1.3
Number of Parking Spaces	47	52	55	60
Air Carrier Demand	15	17	19	26
Employee Parking	10	10	10	10
Total Parking Demand (spaces)	62	69	74	86
Existing Spaces	65	65	65	65
Surplus (Deficit)	**(7)**	**(14)**	**(19)**	**(31)**

Table 4.9 shows the results of the auto parking demand calculations. The actual number of existing parking spaces is difficult to assess because many spots are not marked or clearly delineated, such as space around buildings and hangars. However, the best planning assumption at this time is the airport has an existing deficit of about seven spaces, which will increase to 31 spaces in the next 20 years.

SUMMARY OF AIRPORT FACILITY REQUIREMENTS

This section summarizes facility requirements for the 20 year planning period. First, those facilities that are considered adequate are addressed following by those that need upgrading or construction during the same period.

ADEQUATE FACILITIES

- Aircraft parking apron space is adequate throughout the planning cycle.
- Terminal Building. The terminal building is new and meets existing and future needs.
- Airfield lighting is adequate. Other than upgrades during normal runway reconstruction projects, no changes are required.

FACILITIES REQUIRING IMPROVEMENTS OR UPGRADES

- Runway 13-31 might require an extension by as much as 1,000 feet in the near term.
- Additional hangar space is in surplus today, but as demand increases, hangar demand will exceed current capacity in the next five years.
- Automobile parking space is showing an existing deficit during peak days/hours.
- Taxiway system is inadequate. At minimum, a full-length parallel taxiway should be considered for Runway 3-21.

Table 4.10 summarizes existing conditions, and facility requirements for the next 20 years in the three planning phases.

Table 4.9 – Recommended Facility Requirements

OBJECTIVE	CURRENT (2014)	REQUIRED (2015)	SHORT-TERM (2015-2019)	INTERMEDIATE-TERM (2020-2024)	LONG-TERM (2025-2034)
Runway 13-31					
Design Aircraft / RDC	Falcon 900 / B-II-2400	Falcon 900 / B-II-2400	Cessna 750 Citation X / C-II-2400	Cessna 750 Citation X / C-II-2400	Cessna 750 Citation X / C-II-2400
Length x Width	5,007 x 100	5,007 x 100	6,000 x 100	6,000 x 100	6,000 x 100
RSA (Width / Length Beyond Runway End)	300 / 600	300 / 600	300 / 600	300 / 600	300 / 600
OFA (Width / Length Beyond Runway End)	800 / 600	800 / 600	800 / 600	800 / 600	800 / 600
OFZ (Width / Length Beyond Runway End)	400 / 200	400 / 200	400 / 200	400 / 200	400 / 200
Edge Lighting	HIRL	HIRL	HIRL	HIRL	HIRL
Approach Light / REILS	RWY 31 – MALSR RWY 13 - REIL	RWY 31 – MALSR RWY 13 - REIL	RWY 31 – MALSR RWY 13 - REIL	RWY 31 – MALSR RWY 13 - REIL	RWY 31 – MALSR RWY 13 - REIL
PAPI	RWY 31 – Yes / RWY 3 – Yes	RWY 31 – Yes / RWY 3 – Yes	RWY 31 – Yes / RWY 3 – Yes	RWY 31 – Yes / RWY 3 – Yes	RWY 31 – Yes / RWY 3 – Yes
Instrument Approach Procedures (Visibility)	Less than ¾ mile	Less than ¾ mile	Less than ¾ mile	Less than ¾ mile	Less than ¾ mile
Taxiway	Full length 50’ wide	Full length 50’ wide	Full length 50’ wide	Full length 50’ wide	Full length @ 50’ wide
Runway 3-21					
Design Aircraft / RDC	Falcon 900 B-II-4000	Falcon 900 B-II-4000	Falcon 900 B-II-4000	Falcon 900 B-II-4000	Falcon 900 B-II-4000
Length x Width	4,000 x 100	4,000 x 75	4,000 x 75	4,000 x 75	4,000 x 75
RSA (Width / Length Beyond Runway End)	150 / 300	150 / 300	150 / 300	150 / 300	150 / 300
OFA (Width / Length Beyond Runway End)	500 / 300	500 / 300	500 / 300	500 / 300	500 / 300
OFZ (Width / Length Beyond Runway End)	400 / 200	400 / 200	400 / 200	400 / 200	400 / 200
Edge Lighting	MIRL	MIRL	MIRL	MIRL	MIRL
Approach Light / REILS	RWY 3 – REIL	RWY 3 – REIL	RWY 3 & 21 – REIL	RWY 3 & 21 – REIL	RWY 3 & 21 – REIL
PAPI	RWY 3	RWY 3	RWY 3 & 21	RWY 3 & 21	RWY 3 & 21
Instrument Approach Visibility	Not less than 1 mile	Not less than 1 mile	Not less than 1 mile	Not less than 1 mile	Not less than 1 mile
Taxiway	None	None	None	None	Partial parallel @ 35’ wide
Apron Area – Required / Surplus (deficit) in square yards	43,458 / 30,542	43,458 / 30,542	46,913 / 26,087	50,945 / 22,055	57,116 / 15,884
Hangars – Demand / Surplus (deficit) in number of spaces	55 / 8	64 / (1)	72 / (9)	86 / (23)	
Auto Parking Spaces – Demand (deficit) in spaces	72 (7)	72 (7)	79 (14)	84 (19)	96 (37)