APPENDIX B

Demand/Capacity and Facility Requirements

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B-1. INTRODUCTION

Signature Aviation (Signature) engaged Ricondo & Associates, Inc. (Ricondo) to prepare a demand/capacity and facility requirements analysis for two of its Fixed Based Operator (FBO) facilities at Teterboro Airport (TEB or Airport)—Signature East and Signature South. The Airport is designated as a nonprimary national general aviation (GA) reliever airport and is owned and operated by the Port Authority of New York and New Jersey (Port Authority). The Port Authority contracts operations and maintenance functions to Avports. As a reliever airport, TEB does not have any scheduled airline service; its primary function is to provide facilities for non-scheduled, general aviation aircraft desiring access to the New York City metropolitan area as an alternative to operating at the Port Authority's commercial airports.

Port Authority of New York and New Jersey (Port Authority)

The Port Authority is an interstate compact between the states of New York and New Jersey that oversees or operates many aspects of transportation in the Air Trade Area. Airports operated by the Port Authority include LaGuardia (LGA), John F. Kennedy International (JFK), Newark Liberty International (EWR), Teterboro (TEB), and New York Stewart International (SWF) airports. LGA, JFK, and EWR are slot-controlled airports. The Port Authority oversees land, rail, and sea traffic in addition to airports.

To accommodate GA activity at TEB, the Port Authority leases space to three Fixed Based Operators:[1] Atlantic Aviation, Jet Aviation, and Signature. Signature owns and operates three FBO facilities at TEB: Signature East, Signature South, and Signature West. Due to increased demand for FBO facilities at the Airport, Signature is proposing to improve its Signature East and Signature South facilities. As such, this report focuses on the facility requirements for Signature East and Signature South.

The purpose of this analysis is to determine the need for and general scope of facility expansion improvements at Signature East and Signature South facilities. Facility requirements were identified to support future aviation demand at the Signature East and South facilities, as presented in the Aviation Activity Forecast report.[2] Facility requirements provide an estimate of typical minimum space needed to efficiently accommodate forecast demand by facility component based on standard planning metrics. Facility requirements (demand) are then compared to existing facility capacity. If the analysis shows surplus area available in future years to accommodate forecast demand, it is assumed that the size of existing facilities is sufficient through the planning period. If the results of a facility requirements analysis identify a deficit in existing space available to accommodate existing and/or future demand, it indicates the need for additional space to accommodate existing and/or future demand (although relatively minor space deficits may be tolerated or addressed through reconfiguration without facility expansion). The requirements identify general needs and may be higher, in some cases, than what is feasible to construct given site limitations. In other cases, the facility requirements may be lower than what is proposed for construction due to site conditions and configuration issues as well as the configuration of facility components to meet functional needs. Actual hangar bay space, apron pavement dimensions needed for aircraft maneuvering, and terminal building program elements are influenced by topography, site constraints, and other conditions that may not exactly translate to planning-level facility requirements.

[1] A Fixed Based Operator is an organization or company that operates aircraft fueling, hangar- and apron-based aircraft parking, storage, or tie-down facilities, and provides other services for general aviation aircraft at airports.

[2] Ricondo & Associates, Inc., *Teterboro Airport Updated Aviation Activity Forecasts*, prepared for Signature Flight Support, June 2025.

B-2. OVERVIEW AND BACKGROUND

This analysis included an estimation of facility requirements to accommodate aviation activity forecast through the 2044 planning period for Signature operations at the Signature East and South facilities. The facility requirements analysis followed the process outlined in industry sources, including:

- US Department of Transportation, Federal Aviation Administration (FAA), Advisory Circular (AC) 150/5300-13B, *Airport Design*, March 31, 2022.
- Transportation Research Board, Airport Cooperative Research Program (ACRP) Report 113, *Guidebook on General Aviation Facility Planning*, May 2014.
- Transportation Research Board, Airport Cooperative Research Program (ACRP) Report 17, *Airports and the Newest Generation of General Aviation Aircraft – Volume 2: Guidebook*, 2009.

Next, facility requirements were compared to existing Signature East and South facilities to identify whether the existing facilities have the capacity to accommodate future growth or are deficient. Facility deficiencies, where demand exceeds existing capacity, indicate the need for facility expansion to accommodate forecast activity. Facility requirements were estimated for each of the primary functional areas of FBO operations:

- aircraft apron parking (tiedown) and access
- hangar facilities
- FBO terminal facilities
- automobile parking

This section summarizes the key inputs used in the facility requirements analysis, including existing facility areas, forecast aviation activity, and estimated aircraft parking capacity. These inputs support the evaluation of how well current facilities align with projected activity levels and future aircraft parking needs. Together, they provide the basis for assessing the potential need for facility expansion to accommodate future growth.

B-2.1 SUMMARY OF EXISTING FUNCTIONAL AREAS

Existing functional areas at Signature East and Signature South facilities include apron for aircraft parking and circulation, hangar facilities, FBO terminal facilities, and automobile parking. Signature serves operations by aircraft based at the East and South facilities by Signature private aviation tenants, as well as transient operations, which are flights operated by aircraft based at other airports. Signature accommodates aircraft parking by its private aviation tenants and transient operators at its various aprons and hangars. **Table B-1** summarizes the existing functional areas of the Signature East and Signature South facilities, which are shown on **Exhibit B-1**. Existing apron area is presented both as the total apron area and the apron area usable for aircraft parking, which does not include apron areas that support aircraft circulation between the airfield and aircraft parking.





SOURCE: Nearmap, July 2022 (aerial photography – for visual reference only, may not be to scale), Ricondo & Associates, June 2025.

NORTH 0 200 ft

EXHIBIT B-1

EXISTING SIGNATURE EAST AND SIGNATURE SOUTH FACILITIES

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TABLE B-1 EXISTING USABLE AREA FOR SIGNATURE EAST AND SIGNATURE SOUTH FACILITIES, BY FUNCTIONAL AREA

FUNCTIONAL AREA	EXISTING AREA [1] (SQ FT)		
	SIGNATURE EAST	SIGNATURE SOUTH [2]	TOTAL
Usable Apron for Aircraft Parking [3]	192,500	340,300	532,800
Aircraft Hangars	84,500	131,000	215,500
FBO Terminal [4]	6,400	16,000	22,400
Automobile Parking	71,600	76,400	148,000
Total Usable Area [5]	**355,000**	**563,700**	**918,700**

NOTES:
FBO – Fixed Based Operator
SQ FT – Square Feet
GSE – Ground Support Equipment
1 Area calculations were rounded to the nearest hundred.
2 Signature South facilities also include 16,000 SQ FT of area for fueling; however, fueling facility needs were not included in this analysis.
3 The calculation of usable apron area is limited to area usable for and supporting aircraft parking; areas for aircraft circulation between the airfield and parking positions on the apron or in hangars are tracked separately.
4 FBO terminal area reflects only the dedicated terminal area operated by Signature.
5 The total usable area excludes the apron area supporting circulation, which is a function of apron and hangar layout.
SOURCE: Ricondo & Associates, Inc., May 2025, area takeoff estimates in Nearmap, July 2022.

B-2.2 AVIATION ACTIVITY FORECASTS

Facility requirements were estimated for the forecast period through 2044 and specifically considered baseline (2024) conditions, interim future conditions in the years 2029, 2034, and 2039, and conditions at the end of the forecast period in 2044. This section summarizes historic and forecasted operations defined in the Aviation Activity Forecasts. This data is used to estimate the anticipated demand for Signature East and South facilities throughout the forecast period.

Table B-2 presents existing and future Signature operations, as defined in the Aviation Activity Forecasts report for Signature East and South. The methodology used to forecast total Signature operations was based on recent trends in Signature operations by aircraft type. General aviation jet aircraft were grouped by size into small, medium, and large.[3] Between 2022 and 2024, total Signature large jet and medium jet operations increased at 18.0 percent and 15.6 percent compound annual growth rates, respectively. This forecast assumes that these growth rate trends will continue in 2025 and 2026, with large jet and medium jet operations growing at a faster rate than other aircraft categories. Other aircraft categories are forecast to grow in line with the FAA 2024 Terminal Area Forecast[4] (TAF) for total TEB operations. Year-over-year growth rates for 2025 through 2044 for all categories of aircraft are based on the FAA 2024 TAF for TEB and are the same as the forecast year-over-year growth rates for total TEB operations.

The forecast of tenant aircraft operations was based on the same approach used to forecast total Signature operations, with operations grouped by aircraft size into small, medium, and large[5] categories, with higher rates of

[3] Small, medium, and large jet categories are based on the fleet mix identified in the TEB Part 150 Study (HMMH, Teterboro Airport, *Title 14 Code of Federal Regulations [CFR] Part 150, Final Noise Exposure Map Report*, May 2017.

[4] US Department of Transportation, Federal Aviation Administration, *2024 Terminal Area Forecast*, January 2025.

[5] Small, medium, and large jet categories are based on the fleet mix identified in the TEB Part 150 Study (HMMH, Teterboro Airport, *Title 14 Code of Federal Regulations [CFR] Part 150, Final Noise Exposure Map Report*, May 2017.

growth assumed for medium and large jets than other aircraft categories in 2025 and 2026 based on recent historical growth rate trends at TEB. Other aircraft categories are forecast to grow in line with the FAA 2024 TAF for total TEB operations. Year-over-year growth rates for 2025 through 2044 for all categories of aircraft are based on the FAA 2024 TAF for TEB and are the same as the forecast year-over-year growth rates for total TEB operations. Tenant aircraft were forecast by facility (including Signature East, South, and West) and by fleet type grouping (including large, medium, and small jets, as well as piston, turboprop, helicopter, and other aircraft). For purposes of facility requirements calculations, the table also presents the allocation of operations between itinerant and Signature tenant operations at each facility. Itinerant operations are operations by those aircraft landing at or departing from TEB that are based at another airport. FAA defines based aircraft for an airport as those aircraft that are stored at that airport.[6] For purposes of this analysis, Signature's definition of based aircraft (referred to herein as tenant aircraft) was used and includes any aircraft associated with a tenant-based aircraft at the Signature East and South facilities.[7]

TABLE B-2 OPERATIONS FORECAST FOR SIGNATURE EAST AND SIGNATURE SOUTH

FACILITY	OPERATION TYPE [1, 2]	2024 (EXISTING)	FORECAST			
			2029	2034	2039	2044
Signature East	Tenant Aircraft	13,412	16,314	17,679	19,052	20,432
	Itinerant	10,962	13,913	15,078	16,249	17,426
	Total	**24,374**	**30,227**	**32,757**	**35,301**	**37,858**
Signature South	Tenant Aircraft	35,894	43,658	47,313	50,986	54,680
	Itinerant	19,098	24,540	26,593	28,658	30,734
	Total	**54,992**	**68,198**	**73,906**	**79,644**	**85,414**

NOTES:

1 Itinerant are operations by those aircraft landing at or departing from TEB that are based at another airport. Tenant Aircraft includes any aircraft associated with a tenant-based aircraft at the Signature East and South facilities.

2 The number of itinerant operations was determined using data from Tables 16 and 18 in the *Teterboro Airport Updated Aviation Activity Forecasts* report developed by Ricondo & Associates, Inc., in June 2025. Specifically, Total Tenant Operations by facility in Table 18, "Historical and Forecast Operations – Signature Tenant Aircraft by Facility," were subtracted from the Total Annual Operations by facility in Table 16, "Total Signature Operations Forecast" to obtain the Itinerant Operations.

SOURCES: Ricondo & Associates, Inc., *Teterboro Airport Updated Aviation Activity Forecasts*, Table 16, "Total Signature Operations Forecast" and Table 18, "Historical and Forecast Operations – Signature Tenant Aircraft by Facility," June 2025.

Table B-2 shows that total operations at both Signature East and Signature South are forecast to increase steadily through 2044. At Signature East, operations are expected to grow from 24,374 in 2024 to 37,858 by 2044. Similarly, operations at Signature South are projected to rise from 54,992 in 2024 to 85,414 in 2044. This reflects a compound annual growth rate of 2.2 percent for each facility over the 20-year period. The projected increase in operations is

[6] US Department of Transportation, Federal Aviation Administration, *General Aviation Airports: A National Asset*, May 2012.

[7] Signature's definition of based aircraft includes (1) based aircraft as defined by the FAA and (2) all aircraft associated with fractional ownership, membership, and on-demand entities, particularly NetJets and FlexJet. The NetJets and FlexJet aircraft are not necessarily based at TEB and may flow over a number of facilities in the same way large network airlines flow their fleets over multiple hubs without necessarily basing aircraft at a specific hub. For the purposes of this report, based aircraft include NetJets and FlextJet aircraft that have an established tenant arrangement with Signature at TEB.

anticipated to place additional demand on apron space and the hangar capacity required to accommodate parked aircraft.

As indicated in the Aviation Activity Forecast, jet aircraft are projected to remain the dominant aircraft type operating at Signature's TEB facilities with steady growth throughout the forecast period. **Table B-3** depicts the fleet mix and anticipated operations by jet aircraft type for Signature East and Signature South. The increase in operations is largely driven by increased activity among large and medium jets, reflecting broader trends within the GA fleet. As larger aircraft types continue to use Signature facilities, the demand for space on aprons and within hangars will intensify. Larger aircraft occupy more space due to their greater physical footprint and require wider taxiing clearances, which collectively reduce the number of aircraft that can be parked or maneuvered within a given area. This shift has significant implications for facility planning and operations, as it will constrain available parking capacity and may necessitate infrastructure adjustments or operational changes to maintain efficiency.

TABLE B-3 OPERATIONS FLEET MIX FOR SIGNATURE EAST AND SIGNATURE SOUTH

			FORECAST			
FACILITY	JET AIRCRAFT	2024 (EXISTING)	2029	2034	2039	2044
Signature East	Large	7,084	8,926	9,673	10,424	11,179
	Medium	13,414	16,711	18,110	19,516	20,930
	Small	641	774	839	904	970
	Other	3,235	3,816	4,135	4,456	4,779
	Total	**24,374**	**30,227**	**32,757**	**35,301**	**37,858**
Signature South	Large	11,244	14,167	15,353	16,545	17,744
	Medium	34,014	42,375	45,922	49,487	53,072
	Small	1,052	1,270	1,377	1,484	1,591
	Other	8,682	10,385	11,254	12,128	13,007
	Total	**54,992**	**68,198**	**73,906**	**79,644**	**85,414**

SOURCE: Ricondo & Associates, Inc., *Teterboro Airport Updated Aviation Activity Forecasts*, Table 3, "Historical and Forecast Operations – Signature East Fleet Mix" and Table 5, "Historical and Forecast Operations – Signature South Fleet Mix," June 2025.

The functional space available for aircraft is influenced by several factors, including the size and type of aircraft as well as the total number of aircraft expected to operate within a given area. Accordingly, the forecasted fleet mix for the Signature South and Signature East facilities was used to estimate the aircraft parking capacity at each location.

B-2.3 AIRCRAFT PARKING CAPACITY

To evaluate the potential demands for apron and hangar space at TEB, the existing parking capacity was estimated for each of Signature's TEB facilities based on the methodology detailed in Section 2.4.1, *Aircraft Parking Capacity*, of the Aviation Activity Forecast report.[8] This included assuming full use of apron space while allowing for aircraft maneuvering, estimating available linear frontage, and categorizing aircraft by size (large, medium, small) using average wingspans. The maximum number of large, medium, and small aircraft that could be parked at each facility

[8] Ricondo & Associates, Inc., *Teterboro Airport Updated Aviation Activity Forecasts*, June 2025.

was first determined to understand how many aircraft of a single category could be accommodated at Signature East and South. Since it is unlikely that a single aircraft type would be parked at each facility at one time, the proportion of large, medium, and small aircraft were determined based on the aircraft fleet recorded in the 2024 Signature operational data to produce a weighted average maximum number of parked aircraft. The estimated average maximum number of parked aircraft for the Signature East and Signature South facilities at TEB was determined to be 87 aircraft parked on the facility aprons, with 34 aircraft on the Signature East apron and 53 aircraft on the Signature South apron. **Table B-4** presents the calculation of the estimated parking capacity for jet aircraft (large, medium, and small) at Signature East and Signature South.

TABLE B-4 ESTIMATED PARKED AIRCRAFT CAPACITY OF SIGNATURE FACILITIES

GA AIRCRAFT CATEGORY	MAXIMUM NUMBER OF PARKED AIRCRAFT [1]		PERCENTAGE OF OPERATIONS [2]	WEIGHTED AVERAGE MAXIMUM PARKED AIRCRAFT [3]		
	EAST	SOUTH		EAST	SOUTH	TOTAL
Large	28	45	30%	8	13	21
Medium	35	55	64%	22	35	57
Small	45	72	6%	3	4	7
Total	--	--	**100%**	**34**	**53**	**87**
		Percentage of Total Signature Capacity [4]		**23.0%**	**36.4%**	**59.4%**

NOTES:

-- – Not Applicable (The numbers of aircraft by category for a facility are not additive.)

Totals may not sum due to rounding.

GA – General Aviation

1 The Maximum Number of Parked Aircraft was calculated individually for each aircraft category; these numbers are not additive for a single facility. For example, the Signature East facility is estimated to be able to accommodate 28 large aircraft or 35 medium aircraft or 45 small aircraft.

2 The Percentage of Operations by aircraft category, also referred to as *aircraft fleet mix*, is calculated based on actual operations accommodated at all Signature facilities in 2024.

3 The Weighted Average Maximum Parked Aircraft is the result of multiplying the Maximum Number of Parked Aircraft by the Percentage of Operations for each aircraft category.

4 Signature West accounts for approximately 40.6 percent.

SOURCES: Ricondo & Associates, Inc., April 2025 (based on Signature 2024 Operations Data, FAA Aircraft Registration Database, FAA Aircraft Characteristics Database, and Google Earth Pro, 2025).

In addition to estimating overall aircraft parking capacity, an analysis of 2024 aircraft operations at Signature East and South facilities was conducted to better understand daily parking demand at apron and hangar facilities. Specifically, the analysis focused on identifying the daily maximum number of aircraft parked at both Signature East and Signature South apron and hangar areas. Signature provided detailed flight operations data for 2024, including daily records of both itinerant and based aircraft parked at each facility. From this dataset, the daily maximum number of aircraft parked at one time in 2024 was identified and organized by aircraft category. The daily maximum of parked aircraft in the baseline year was escalated according to the anticipated growth forecasted for each aircraft type over the planning horizon. **Table B-5** presents the estimated daily maximum number of aircraft parked at Signature's apron and hangar facilities through the planning horizon. Existing data and observations indicate approximately 80 percent of these aircraft use apron tiedown positions and 20 percent park in hangars at Signature East. For Signature South facilities, approximately 75 percent use apron tiedown positions and 25 percent use hangars.

TABLE B-5 DAILY MAXIMUM NUMBER OF PARKED AIRCRAFT AT SIGNATURE EAST AND SOUTH HANGAR AND APRON FACILITIES

	SIGNATURE EAST					SIGNATURE SOUTH				
AIRCRAFT TYPE	2024	2029	2034	2039	2044	2024	2029	2034	2039	2044
Hangar [1]										
Large Jet	4	4	5	5	5	5	6	6	6	7
Medium Jet	6	7	7	8	8	12	15	16	18	19
Small Jet	1	1	1	1	1	1	1	1	1	1
Other	2	3	3	3	3	4	5	5	5	6
Subtotal	**13**	**15**	**16**	**17**	**17**	**22**	**27**	**28**	**30**	**33**
Apron [2]										
Large Jet	9	12	12	14	15	10	13	15	16	17
Medium Jet	18	23	26	27	30	34	42	46	49	52
Small Jet	0	1	1	1	1	0	1	1	1	1
Other	4	4	5	5	6	8	9	10	11	12
Subtotal	**31**	**40**	**44**	**47**	**52**	**52**	**65**	**72**	**77**	**82**
Total	**44**	**55**	**60**	**64**	**69**	**74**	**92**	**100**	**107**	**115**

NOTES:
1 Represents approximately 20 percent of parked aircraft at Signature East and 25 percent at Signature South.
2 Represents approximately 80 percent of parked aircraft at Signature East and 75 percent at Signature South.
SOURCE: Ricondo & Associates, Inc., May 2025.

A comparison of the results presented in Table B-5 with the estimated parked aircraft capacity outlined in Table B-4 indicates that the Signature East and Signature South facilities are operating above their intended capacity during days of peak parking demand. This suggests that these areas may experience congestion or operational inefficiencies when aircraft parking demand is at its highest, highlighting a potential need for expanded parking capacity and facilities.

B-3. DEMAND/CAPACITY ANALYSIS

A demand/capacity analysis was prepared for each functional area of Signature East and South facilities—the aircraft apron, hangar facilities, FBO terminal facilities, and automobile parking.[9] The analysis included defining facility requirements for each facility type, which were then compared to the existing functional areas to identify whether existing and future demand can be accommodated within existing facilities or if existing facilities are deficient in space.

Area requirements for aircraft aprons and hangars are defined to accommodate aircraft operations, including the demand for parking and the need for circulation. Parking demand for apron parking positions (also referred to as tiedowns) and hangar parking positions was estimated for Signature tenant and itinerant operations. Signature tenant operations primarily comprise large jets, medium jets, and helicopters. Existing data and observations indicate approximately 80 percent of these aircraft use apron tiedown positions and 20 percent park in hangars at Signature East. For Signature South facilities, approximately 75 percent use apron tiedown positions and 25 percent use hangars. Itinerant aircraft are assumed to be large jets primarily using apron tiedown positions, but the apron and hangar parking split identified for tenant aircraft was maintained for itinerant aircraft at both Signature East and South facilities. This tiedown/hangar split was held constant through the 2044 forecast period.

B-3.1 AIRCRAFT PARKING APRON AND HANGAR REQUIREMENTS

The space requirements for aircraft parking aprons and storage hangars typically differ, as the space associated with hangar facilities is commonly utilized more efficiently. This is because aircraft parked in hangars are typically arranged in a more efficient manner and do not require consideration for taxilanes and other ramp-related functions like ground service equipment storage and fuel farms. Ideally, it is desirable to configure aircraft parking on the ramp in a manner so that aircraft can power into and out of each dedicated aircraft parking area. At space-constrained airports such as TEB, aircraft may be nested on the parking apron to optimize its capacity. Nesting is the process of parking aircraft so that their wings overlap. Doing so, however, requires additional manpower and equipment to facilitate the repositioning of these aircraft. It also inhibits the ability for aircraft to power in and out of parking areas during peak demand periods.

Due to the space constraints associated with the aircraft parking areas within Signature's East and South leaseholds, the aircraft parking requirements described herein focus on the space requirement associated with aircraft parking positions exclusively. Consideration of the portions of the apron dedicated to aircraft maneuvering was not factored into the calculations. Therefore, the analysis provides a comparison of the needs for aircraft storage with those portions of the ramp that are available for aircraft storage, including consideration for the potential nesting of aircraft parking positions.

Table B-6 presents the unit parking area requirements for each aircraft type/size that were used to determine the apron area requirements. As shown, separate aircraft parking area requirements were established for small, medium, and large jets in accordance with the wingspan and overall length of each jet size. This results in a unit parking area requirement ranging from 3,600 square feet to 12,100 square feet per parking position. For all other aircraft, including helicopters, a metric of 2,500 square feet per parking position was utilized. These unit parking area requirements were applied for establishing both the gross requirements for aircraft storage hangars and aircraft parking apron areas.

[9] The fuel farm at Signature South is not included in the demand/capacity analysis.

TABLE B-6 AIRCRAFT PARKING AREA REQUIREMENTS[1]

AIRCRAFT TYPE	ASSUMPTIONS	AREA REQUIREMENT ASSUMPTION (SQ FT)
Large Jet [2]	The area is defined to accommodate maximum aircraft wingspan for the large jet aircraft type (100 feet wide) and aircraft length (100 feet) plus ten feet of separation to adjacent parked aircraft.	12,100
Medium Jet	The area is defined to accommodate maximum aircraft wingspan for the medium jet aircraft type (70 feet wide) and aircraft length (65 feet) plus ten feet of separation to adjacent parked aircraft.	6,000
Small Jet [3]	The area is defined to accommodate maximum aircraft wingspan for the small jet aircraft type (50 feet wide) and aircraft length (50 feet) plus 10 feet of separation to adjacent parked aircraft.	3,600
Other [4]	The area is defined to accommodate space for other non-jet aircraft, including piston, turboprop, and helicopters.	2,500

NOTES:
ACRP – Airport Cooperative Research Program
Max. – Maximum
SQ FT – Square Feet
1 Parking requirements do not provide consideration for access taxilanes and other ramp support.
2 Ricondo & Associates, Inc. (May 2025), estimate of the maximum number of parked large jets on each of Signature's aprons using a representative of the existing fleet mix and existing apron layouts.
3 Parking requirements were identified in Transportation Research Board, Airport Cooperative Research Program Report 113, *Guidebook on General Aviation Facility Planning*, May 2014.
SOURCES: As noted in Notes 1, 2, and 3.

B-3.1.1 AIRCRAFT PARKING APRON REQUIREMENTS

The area requirements by aircraft type, as shown in Table B-6, were applied to the estimated daily maximum number of parked aircraft from Table B-5 for each forecast year using apron tiedown positions (i.e., 80 percent for Signature East and 75 percent for Signature South) to estimate apron facility requirements for Signature East and South facilities. The area requirements were then compared to the existing square footage available at Signature facilities (i.e., 192,500 square feet of usable apron at Signature East and 340,300 square feet of usable apron at Signature South) to identify if the existing apron areas are sufficient to support existing and forecast demand:

- A **Surplus** in area indicates that existing apron area **is sufficient** to support existing/forecast demand.
- A **Deficit** in area indicates that existing apron area **is not sufficient** to support existing/forecast demand.

Tables B-7 and **B-8** identify the Signature East and South apron area requirements and the area surpluses or deficiencies identified in the analysis of apron demand/capacity. As shown, the apron area at both Signature facilities is deficient under existing conditions and the deficiencies are estimated to worsen over time given the forecast increase in aviation activity at the Signature East and South facilities.

TABLE B-7 APRON AREA REQUIREMENTS – SIGNATURE EAST

AIRCRAFT TYPE	AREA REQUIREMENT (SQ FT)				
	2024 (EXISTING)	2029	2034	2039	2044
Large Jet	108,900	145,200	145,200	169,400	181,500
Medium Jet	108,000	138,000	156,000	162,000	180,000
Small Jet	0	3,600	3,600	3,600	3,600
Other [1]	10,000	10,000	12,500	12,500	15,000
Total Apron Demand	**226,900**	**296,800**	**317,300**	**347,500**	**380,100**
Existing Useable Apron Area			192,500		
Surplus/(Deficit)	**(34,400)**	**(104,300)**	**(124,800)**	**(155,000)**	**(187,600)**

NOTES:
SQ FT – Square Feet
Number of aircraft parked on the apron is obtained from Table B-5.
Area requirements for each aircraft type obtained from Table B-6.
Area calculations are rounded to the nearest hundred.
1 Other includes consideration for helicopters, piston, and turboprop aircraft.
SOURCE: Ricondo & Associates, Inc., May 2025.

TABLE B-8 APRON AREA REQUIREMENTS – SIGNATURE SOUTH

AIRCRAFT TYPE	AREA REQUIREMENT (SQ FT)				
	2024 (EXISTING)	2029	2034	2039	2044
Large Jet	121,000	157,300	181,500	193,600	205,700
Medium Jet	204,000	252,000	276,000	294,000	312,000
Small Jet	0	3,600	3,600	3,600	3,600
Other [1]	20,000	22,500	25,000	27,500	30,000
Total Apron Demand	**345,000**	**435,400**	**486,100**	**518,700**	**551,300**
Existing Useable Apron Area			340,300		
Surplus/(Deficit)	**(4,700)**	**(95,100)**	**(145,800)**	**(178,400)**	**(211,000)**

NOTES:
SQ FT – Square Feet
Number of aircraft parked on the apron is obtained from Table B-5.
Area requirements for each aircraft type obtained from Table B-6.
Area calculations are rounded to the nearest hundred.
1 Other includes consideration for helicopters, piston, and turboprop aircraft.
SOURCE: Ricondo & Associates, Inc., May 2025.

B-3.1.2 AIRCRAFT STORAGE HANGAR REQUIREMENTS

The aircraft storage hangar area requirements, by aircraft type, were applied to the estimated maximum number of aircraft to be parked in hangars dedicated to based aircraft operators and tenant operators to estimate hangar facility requirements for Signature East and South facilities. The area requirements were then compared to the existing square footage available at Signature facilities to identify if the existing hangar areas are sufficient to support existing and forecast demand. Existing hangar facilities at Signature East and South include:

- Signature East: three hangars with 84,500 square feet of area dedicated to aircraft storage

- Signature South: three hangars with 131,000 square feet of area dedicated to aircraft storage

Tables B-9 and **B-10** present the Signature East and South hangar area requirements and identified area surpluses and deficiencies. As shown, the demand for hangar facilities currently exceeds the existing capacity, which will increase through the end of the forecast period.

TABLE B-9 AIRCRAFT STORAGE HANGAR AREA REQUIREMENTS – SIGNATURE EAST

	AREA REQUIREMENT (SQ FT)				
AIRCRAFT TYPE	2024 (EXISTING)	2029	2034	2039	2044
Large Jet	48,400	48,400	60,500	60,500	60,500
Medium Jet	36,000	42,000	42,000	48,000	48,000
Small Jet	3,600	3,600	3,600	3,600	3,600
Other [1]	5,000	7,500	7,500	7,500	7,500
Total Hangar Demand	**93,000**	**101,500**	**113,600**	**119,600**	**119,600**
Existing Area			84,500		
Surplus/(Deficit)	**(8,500)**	**(17,000)**	**(29,100)**	**(35,100)**	**(35,100)**

NOTES:
SQ FT – Square Feet
Number of aircraft parked in hangars is obtained from Table B-5.
Area requirements for each aircraft type obtained from Table B-6.
Area calculations are rounded to the nearest hundred.
1 Other includes consideration for helicopters, piston, and turboprop aircraft.
SOURCE: Ricondo & Associates, Inc., May 2025.

TABLE B-10 AIRCRAFT STORAGE HANGAR AREA REQUIREMENTS – SIGNATURE SOUTH

	AREA REQUIREMENT (SQ FT)				
AIRCRAFT TYPE	2024 (EXISTING)	2029	2034	2039	2044
Large Jet	60,500	72,600	72,600	72,600	84,700
Medium Jet	72,000	90,000	96,000	108,000	114,000
Small Jet	3,600	3,600	3,600	3,600	3,600
Other [1]	10,000	12,500	12,500	12,500	15,000
Total Hangar Demand	**146,100**	**178,700**	**184,700**	**196,700**	**217,300**
Existing Area			131,000		
Surplus/(Deficit)	**(15,100)**	**(47,700)**	**(53,700)**	**(65,700)**	**(86,300)**

NOTES:
SQ FT – Square Feet
Number of aircraft parked in hangars is obtained from Table B-5.
Area requirements for each aircraft type obtained from Table B-6.
Area calculations are rounded to the nearest hundred.
1 Other includes consideration for helicopters, piston, and turboprop aircraft.
SOURCE: Ricondo & Associates, Inc., May 2025.

B-3.2 FIXED BASED OPERATOR TERMINAL

ACRP Report 113, *Guidebook on General Aviation Facility Planning,* May 2014, defines an approach and industry assumptions that can be used to determine the facility requirements for GA FBO terminal facilities based on peak-hour operations. In accordance with these guidelines, the assumptions outlined in **Table B-11** were applied to estimate terminal facility requirements for both traditional based aircraft operators and fractional aircraft operators at Signature South and East.

TABLE B-11 FIXED BASED OPERATOR TERMINAL AREA REQUIREMENTS

METRIC	ASSUMPTIONS	AREA REQUIREMENT ASSUMPTION
Peak hour operations	The number of operations conducted during the peak hour of the average day during the peak month was calculated using data from the forecast review. Both local and itinerant operations are assumed to require terminal space for each ramp, respectively.	See Tables B-12 and B-13
Terminal square footage per person	An area of 125 SQ FT was used for each peak hour pilot/passenger to determine the terminal space requirements. This value accommodates all functions of a full-service GA terminal building, including FBO counter space, waiting area, snack rooms, office space, pilots' lounges, restrooms, training area, circulation space, etc.	125 SQ FT
Terminal occupancy per peak-hour operation	The adjusted peak hour operations (arriving or departing) were estimated to have an average of 4 people on board (pilots and passengers). It was assumed that both arriving and departing GA pilots/passengers could use the FBO terminal simultaneously.	4 persons
FBO personnel	Assumes that the Signature East FBO has a staff of 10 per peak hour shift, while the Signature South FBO has a staff of 15 personnel. This includes considerations for customer service representatives, flightline support staff, and other administrative functions.	East FBO staff = 10/shift; South FBO staff = 15/shift

NOTES:
SQ FT – Square Feet
FBO – Fixed Based Operator
SOURCES: Transportation Research Board, Airport Cooperative Research Program Report 113, *Guidebook on General Aviation Facility Planning*, May 2014.

The terminal requirements developed using ACRP guidance were compared to the existing square footage available at Signature East and South facilities to identify if the current terminal facilities are sufficient to support existing and forecast demand. Signature East currently has two FBO facilities which provide an approximate total area of 6,400 square feet. Signature South has one GA FBO terminal that provides approximately 16,000 square feet of space.

Tables B-12 and **B-13** present the terminal building space requirements for the Signature East and South facilities, along with the identified area surpluses and deficiencies through the year 2044. The existing terminal facilities at Signature East lack sufficient space to support current levels of Airport activity. In contrast, Signature South currently has a surplus of terminal space by about 1,000 square feet. However, as airport operations continue to grow in line with forecasted projections, both areas are anticipated to experience space deficiencies of approximately 4,300 square feet at Signature East and 6,600 square feet at Signature South by 2044. To accommodate both current and future demand efficiently, additional terminal space will be required at both locations.

TABLE B-12 GENERAL AVIATION/FIXED BASED OPERATOR TERMINAL BUILDING SPACE REQUIREMENTS – SIGNATURE EAST

REQUIREMENT	2024 (ACTUAL)	2029	2034	2039	2044
Total Operations	24,374	30,227	32,757	35,301	37,858
Peak Month Average Day Operations [1]	81	101	109	118	126
Peak Hour Operations [2]	12	15	16	18	19
Occupancy (Pilots/ Passengers + Staff)	59	70	76	81	86
Total Terminal Space Demand (SQ FT)	7,300	8,800	9,400	10,100	10,700
Existing Terminal Space [3] (SQ FT)			6,400		
Surplus/(Deficit) (SQ FT)	**(900)**	**(2,400)**	**(3,000)**	**(3,700)**	**(4,300)**

NOTES:
SQ FT – Square Feet
Area calculations are rounded to the nearest hundred.
1 Determined by dividing Total Operations by 300 days, which is a standard planning practice to account for low activity periods throughout the year.
2 Determined by multiplying the Peak Month Average Day (PMAD) Operations by 0.15 as peak hour demand can run between 12 and 15 percent of PMAD.
3 Existing areas are based on aerial imagery.
SOURCE: Ricondo & Associates, Inc., May 2025.

TABLE B-13 GENERAL AVIATION/FIXED BASED OPERATOR TERMINAL BUILDING SPACE REQUIREMENTS – SIGNATURE SOUTH

REQUIREMENT	2024 (ACTUAL)	2029	2034	2039	2044
Total Operations	54,992	68,198	73,906	79,644	85,414
Peak Month Average Day Operations [1]	183	227	246	265	285
Peak Hour Operations [2]	27	34	37	40	43
Occupancy (Pilots/ Passengers + Staff)	120	146	158	169	181
Total Terminal Space Demand (SQ FT)	15,000	18,300	19,700	21,200	22,600
Existing Terminal Space [3] (SQ FT)			16,000		
Surplus/(Deficit) (SQ FT)	**1,000**	**(2,300)**	**(3,700)**	**(5,200)**	**(6,600)**

NOTES:
SQ FT – Square Feet
Area calculations are rounded to the nearest hundred.
1 Determined by dividing Total Operations by 300 days, which is a standard planning practice to account for low activity periods throughout the year.
2 Determined by multiplying the Peak Month Average Day Operations by 0.15 as peak hour demand can run between 12 and 15 percent of PMAD.
3 Existing areas are based on aerial imagery.
SOURCE: Ricondo & Associates, Inc., May 2025.

B-3.3 AUTOMOBILE PARKING

ACRP Report 113 provides a methodology for determining automobile parking requirements at various types of GA facilities, including terminal buildings, hangars, and based aircraft aprons. The report outlines general guidelines that can be applied to estimate parking needs for each facility type. These guidelines were used in combination with the facility area requirements for aprons, hangars, and terminal buildings to project the number of parking spaces needed to accommodate future demand at the Signature East and South facilities.

Table B-14 presents the growing deficiencies of existing automobile parking space for both Signature East and Signature South through the year 2044. Parking space at Signature South is insufficient for current demand, and these deficits in space will continue to grow throughout the planning horizon. An additional 53,800 square feet (154 parking spaces) would be required to meet demand at Signature South in 2044. Signature East has a current surplus of 3,300 square feet (9 parking spaces); however, demand is projected to surpass the existing space and will create a deficit of 15,600 square feet (45 parking spaces) by 2044.

TABLE B-14 AUTOMOBILE PARKING REQUIREMENTS

	SIGNATURE EAST					SIGNATURE SOUTH				
REQUIREMENT	2024	2029	2034	2039	2044	2024	2029	2034	2039	2044
Conventional Hangar Auto Parking Space [1]	93	102	114	120	120	147	179	185	197	218
Apron Auto Parking Spaces [2]	16	20	22	24	26	26	33	36	39	41
FBO/Terminal Auto Parking Spaces [3]	86	93	96	100	103	75	92	99	106	113
Total Auto Parking Spaces Required	195	215	232	244	249	248	304	320	342	372
Total Parking Area Demand [4] (SQ FT)	68,300	75,300	81,200	85,400	87,200	86,800	106,400	112,000	119,700	130,200
Existing Auto Parking Area [5] (SQ FT)			71,600					76,400		
Surplus/(Deficit) (SQ FT)	**3,300**	**(3,700)**	**(9,600)**	**(13,800)**	**(15,600)**	**(10,400)**	**(30,000)**	**(35,600)**	**(43,300)**	**(53,800)**

NOTES:
FBO – Fixed Based Operator
SQ FT – Square Feet

1 Using the ACRP Report 113 guideline of one parking space per 1,000 SQ FT of hangar floor area, the number of required parking spaces was determined for the Total Hangar Area Requirements shown in Tables B-9 and B-10.

2 Using the ACRP Report 113 guideline of one parking space for every two aircraft tiedown spaces identified in Table B-5, the number of required parking spaces was determined for the Total Apron Demand shown in Tables B-7 and B-8.

3 Using the ACRP Report 113 guideline of one parking space per 200 SQ FT of office space, the number of parking spaces was determined for the Total Terminal Space Demand in Tables B-12 and B-13.

4 Determined by multiplying the Total Auto Parking Spaces Required by the total area per parking space (350 SQ FT per parking stall) and rounding up to the nearest hundred.

5 Existing areas are based on aerial imagery.

SOURCES: Bohler Engineering, *Alternative Concept Plan – Teterboro Airport,* June 2023; Ricondo & Associates, Inc., March 2024; Transportation Research Board, Airport Cooperative Research Program Report 113, *Guidebook on General Aviation Facility Planning*, May 2014.

B-4. SUMMARY OF GENERAL AVIATION FACILITY REQUIREMENTS

The demand/capacity and facility requirements analysis determined that the existing facilities at both Signature East and Signature South are currently deficient to meet existing and projected operational needs. These deficiencies are expected to increase over the planning horizon, resulting in a significant shortfall in available GA infrastructure by 2044. To meet the future demand, which is summarized in **Table B-15**, the Airport would need to expand key facilities, including:

- Usable apron space for aircraft parking,
- Hangar space for both based and tenant operators,
- FBO/Terminal facilities, and
- Automobile parking.

By 2044, the combined facility deficit across both Signature East and Signature South areas is projected to reach approximately 600,300 square feet (13.7 acres). This reflects cumulative deficits in apron area, hangar space, terminal capacity, and parking facilities, and emphasizes the need for phased infrastructure development to sustain future aviation activity.

B-4.1 APRON PARKING REQUIREMENTS

Apron space is among the most deficient areas, with projected shortfalls increasing steadily over time. At Signature East, the current apron shortfall of 34,400 square feet is expected to grow to 187,600 square feet by 2044. Signature South faces an even larger deficiency, growing from 4,700 square feet at baseline to 211,000 square feet by 2044. These results indicate a combined apron parking deficit of over 398,600 square feet by 2044, which is driven by rising aircraft operations and projected parking demand.

B-4.2 HANGAR FACILITIES

Hangar space for aircraft is currently deficient at Signature East and Signature South. At Signature East, aircraft hangar space is projected to fall short by more than 35,100 square feet by 2044. At Signature South, aircraft hangar capacity is anticipated to reach a deficit exceeding 86,000 square feet by 2044. These findings highlight the need for substantial expansion of aircraft hangar facilities at both locations throughout the planning horizon.

B-4.3 FIXED BASED OPERATOR/TERMINAL FACILITIES

Terminal and FBO facilities at both Signature East and Signature South will require expansion to meet projected passenger and operator demand. At Signature East, the existing 6,400 square feet of terminal space is projected to be deficient by approximately 4,300 square feet by 2044. Although Signature South currently has a surplus of 1,000 square feet, the facility is projected to have a deficiency of approximately 6,600 square feet by 2044, representing about a 40 percent shortfall relative to the current facility size. These trends indicate that there is a need for expanded terminal and FBO facilities to support future GA activity at the Airport.

TABLE B-15 SIGNATURE EAST AND SOUTH FACILITIES – SUMMARY OF SURPLUS/(DEFICIT) BY FACILITY COMPONENT

FACILITY COMPONENT	EXISTING AREA (SQ FT)	AREA SURPLUS / (DEFICIT) (SQ FT)				TOTAL 2044 AREA REQUIREMENT (SQ FT)
		2024	2029	2034	2044	
Signature East						
Usable Apron for Aircraft Parking[1]	192,500	(34,400)	(104,300)	(124,800)	(187,600)	380,100
Aircraft Hangars[2]	84,500	(8,500)	(17,000)	(29,100)	(35,100)	119,600
FBO Terminal	6,400	(900)	(2,400)	(3,000)	(4,300)	10,700
Automobile Parking	71,600	3,300	(3,700)	(9,600)	(15,600)	87,200
Total[3]	**355,000**	**(43,800)**	**(127,400)**	**(166,500)**	**(242,600)**	**597,600**
Signature South						
Usable Apron for Aircraft Parking[1]	340,300	(4,700)	(95,100)	(145,800)	(211,000)	551,300
Aircraft Hangars[2]	131,000	(15,100)	(47,700)	(53,700)	(86,300)	217,300
FBO Terminal	16,000	1,000	(2,300)	(3,700)	(6,600)	22,600
Automobile Parking	76,400	(10,400)	(30,000)	(35,600)	(53,800)	130,200
Total[3]	**563,700**	**(30,200)**	**(175,100)**	**(238,800)**	**(357,700)**	**921,400**
Total Surplus/(Deficiency)	--	**(74,000)**	**(302,500)**	**(405,300)**	**(600,300)**	--
Total Area	**918,700**	--	--	--	--	**1,519,000**

NOTES:
-- Not Applicable
SQ FT – Square Feet
1 Usable apron for aircraft parking (excludes taxilanes to provide access to hangars and aircraft parking positions).
2 Includes hangar space for based aircraft and tenant aircraft.
3 Surplus is not included in total deficit.
SOURCE: Ricondo & Associates, Inc., May 2025.

B-4.4 AUTOMOBILE PARKING

Ground access and vehicle parking infrastructure must also be addressed to meet projected parking demands. By 2044, Signature East and Signature South are expected to face automobile parking deficits of 15,600 square feet and 53,800 square feet, respectively. This is indicative of increasing staff, tenant, and visitor volumes associated with forecasted aviation growth.

B-4.5 RECOMMENDATION FOR FUTURE DEVELOPMENT

To meet the forecasted facility requirements, the results in this document indicate the need for expanded GA facilities at TEB that address both current deficiencies and future needs in apron parking, hangar space, terminal facilities, and automobile parking at Signature East and Signature South. This could include constructing additional aircraft parking areas, expanding FBO terminals, improving vehicle parking capacity, and accounting for site constraints to ensure efficient land use. The projected deficiency of 600,300 square feet, or 13.7 acres, by 2044 establishes a clear target for infrastructure planning and investment. Proactively addressing these needs will be essential to sustaining the operational capacity while ensuring the safety of aircraft in the future at Signature East and Signature South.