- 1 -

INVENTORY

1.1 INTRODUCTION

The primary purpose of the inventory chapter within the Airport Master Plan is to provide an understanding of the framework in which the Santa Barbara Municipal Airport (hereafter "SBA" or "the Airport") functions. The chapter will provide an overview of the Airport's history, a description of the Airport's location in comparison to other airports, and a review of the Airport's facilities. It will be used as a baseline for future facility requirements analysis and serve as the canvas upon which improvement alternatives are prepared and evaluated. **Chapter 1** focuses on an inventory of infrastructure. Environmental considerations are inventoried in **Chapter 2** and airport activity is inventoried in **Chapter 3**.

1.2 AIRPORT OVERVIEW

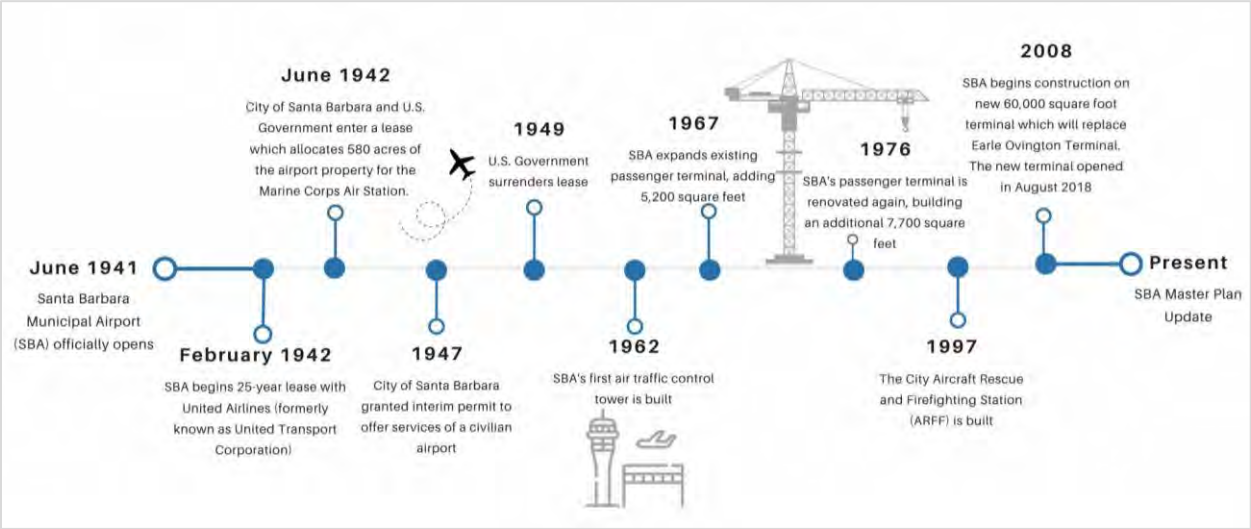
1.2.1.1 Airport History

Santa Barbara Municipal Airport (SBA) opened in June 1941. The following year, the Airport began a twenty-five-year lease with United Airlines that included the construction of a 7,000-square-foot passenger terminal. In June 1942, the City of Santa Barbara, and the U.S. Government entered a lease which allocated 580 acres of the Airport property for the Marine Corps Air Station. By the time the Marine Corps Air Station was completed, 5.5 million square-feet of asphalt runways, taxiways, aircraft parking aprons, and thirteen miles of paved roads were constructed. In 1947, the City was granted an interim permit to offer the services of a civilian airport. Two years later, the U.S. Government surrendered its lease, allowing the City of Santa Barbara to officially reclaim the airport.

Commercial air travel increased significantly in the 1960s due to increasingly affordable airline tickets, encouraging more emphasis on developing infrastructure at the Airport. As a result, SBA built its first air

traffic control tower (ACTC) in 1962 and expanded their passenger terminal in 1967. Air travel continued to grow until a recession in the early 1990s.

Figure 1-1: Timeline of Santa Barbara Airport



Source: 2017 Santa Barbara Airport Master Plan

By the mid-2000s, it was determined that the original terminal building had outgrown its infrastructure once again, and a new 60,000 square foot terminal facility was built as a replacement. The new terminal was completed in August 2018 and features a classic Spanish colonial revival design and amenities on two main levels. Since the opening of the new terminal, SBA has experienced a 40% growth in passengers. In 2022, SBA is served by Alaska, American, Southwest, and United Airlines and hosts a wide array of general aviation and military users.

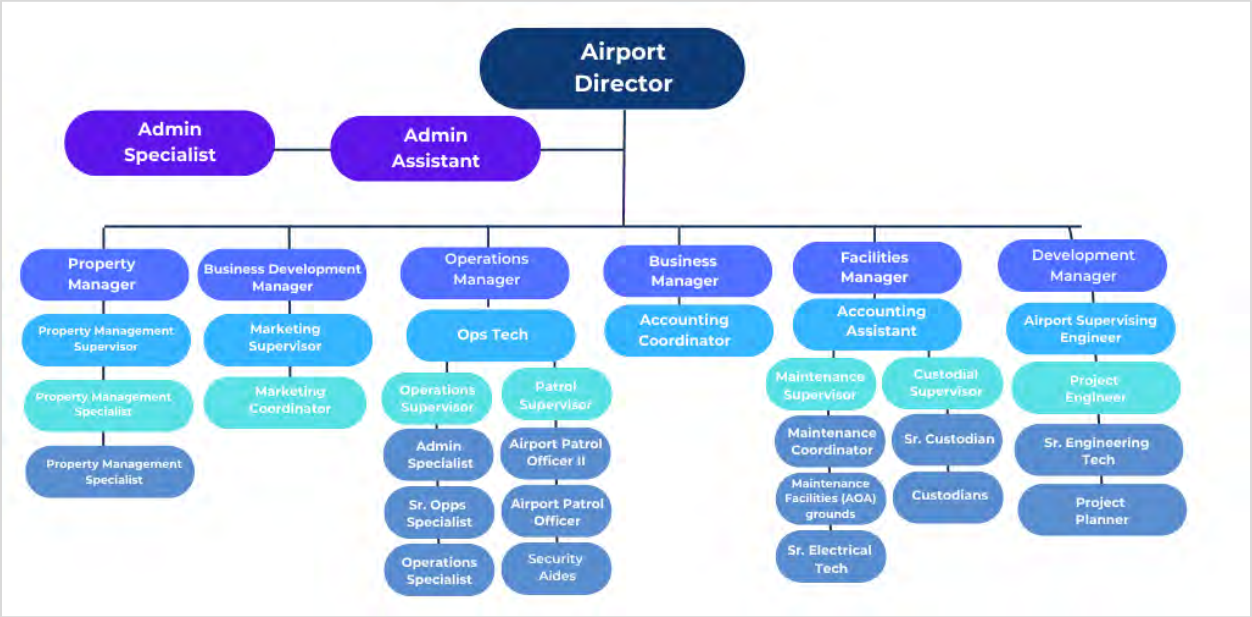
1.2.2 Operational Overview

The Federal Aviation Administration (FAA) categorizes airports with scheduled passenger airline service into five categories: Large Hub, Medium Hub, Small Hub, Non-Hub, and nonprimary commercial service. The criterion for each designation depends on the percentage of annual U.S. commercial enplanements, or passengers boarding a plane. Santa Barbara Airport is classified as a “Small Hub” airport, which is defined as an airport which receives between 0.25 percent - 1.0 percent of total annual U.S. commercial enplanements.

This classification, which is recorded in the FAA’s *National Plan of Integrated Airport Systems* (NPIAS) makes the Airport eligible for federal funding under the Airport Improvement Program (AIP).

The Airport is owned and operated by the City of Santa Barbara. The airport director oversees the management of six operating divisions within the Airport Department. The operating divisions include: Property Management, Business Development, Business, Operations, Facilities, and Development.

Figure 1-2: **Santa Barbara Airport Organizational Chart**



Source: Santa Barbara Airport

In addition to the six Airport Divisions, there is a seven-member airport commission which advises the City Council on issues such as selection and appointment of an airport director, terms and conditions of leases, contracts, and agreements, pertaining to operation of the airport, rules and regulations related to operation and maintenance of the airport, and preparation of development plans, financial plans, and budget. The Commission consists of four members who must be electors of the City and three members who may be City or County residents.

1.2.3 Airport Location

While SBA is owned and operated by the City of Santa Barbara, it is immediately surrounded by the City of Goleta, University of California, Santa Barbara (UCSB) and unincorporated Santa Barbara County. The Airport is located on the coast, towards the southern end of Santa Barbara County. Santa Barbara Airport is ten miles north of downtown Santa Barbara, 100 miles north of Los Angeles, and 350 miles south of San Francisco.

1.2.4 Airport Property

The Airport occupies 952 acres and resides between the Santa Ynez Mountains and Pacific Ocean. The Goleta Slough is an ecological reserve that spans 430 acres inside the airport property boundary. It is an area of tidal marsh and wetlands, which drains into the Pacific Ocean. The Airport property includes 400 acres designated for aviation use and 100 acres designated for commercial / industrial use. The 60,000 square foot passenger terminal, which was completed in 2018, is in the southwest quadrant of the Airport.

Figure 1-3: **Airport Property Map**

Source: Mead & Hunt, Inc.

1.2.5 Airport Terminal

The Airport's original 7,000 square foot passenger terminal was completed in 1942. In 1967, this terminal was renamed to honor Earle Ovington, a local aviator. When the new terminal was completed, the original terminal was relocated to the east side of the Airport. The original terminal was also raised two feet in order to be above the 100-year floodplain. Currently, the terminal is 60,000 square feet and the Airport is pursuing Leadership in Energy and Environmental Design (LEED) certification.

The passenger terminal building consists of five gates with adjoining passenger holding areas, a 4,082 square foot ticketing and baggage screening area, a 3,900 square foot security checkpoint area, a 3,300 square foot baggage claim area with a 2,400 square foot inbound baggage room, three post-security concessions, two pairs of public restrooms, and a car rental counter. Gates 1 and 2 are located in the south departure holding area, which spans 2,800 square feet. The north departure holding area, which is 2,700 square feet, provides seating for gates 3, 4, and 5.

The passenger ticketing area is located immediately to the north of the terminal main entrance. Airline offices are located immediately behind the passenger ticketing area. Checked bags are transported on conveyor belts from the passenger ticketing area to the baggage screening rooms, which are located to the west of the ticketing counter. The security checkpoint is on the second floor of the airport, located directly in front of the escalators. There are three post-security concessions: the Costa Terraza Restaurant and Tapas Bar, The Coffee Bean, and Santa Barbara News and Gifts.

Baggage claim is located on the first floor in the southeast corner of the Airport. The rental car counter is also in the southeast corner of the first floor, offering 50 square feet of counter space. Currently the Airport is served by Hertz, Budget, Avis, National, Alamo, Advantage, and Enterprise.

1.2.6 Area Airports

Figure 1-4 shows all major airports within 100 miles of Santa Barbara Airport. Los Angeles International Airport (LAX) is the largest airport in the vicinity and is classified by the FAA as a Large Hub Airport. Other airports within 40 nautical miles of Santa Barbara Airport include Oxnard Airport (OXR), Santa Maria Airport (SMX), and Vandenberg Space Force Base (VBG).

The closest airport which is comparable to SBA in terms of size and annual enplanements is San Louis Obispo Regional Airport, which is over 60 nautical miles away.

Figure 1-4: **Airports within 100 Miles of SBA**

APPROXIMATE DISTANCE (MILES*) TO LOCAL AREA AIRPORTS

Code	Airport Name	Drive	Fly
OXR	Oxnard Airport	47	39
CMA	Camarillo Airport	52	45
VBG	Vandenberg Air Force Base	56	47
SMX	Santa Maria Airport	65	48
VNY	Van Nuys Airport	89	79
SBP	San Luis Obispo County Regional Airport	94	72
WHP	Whiteman Airport	101	82
LAX	Los Angeles International Airport	106	89
BUR	Hollywood Burbank Airport	106	86
WJF	General William J. Fox Airfield	120	95
LGB	Long Beach Airport	125	106
PRB	Paso Robles Municipal Airport	132	97
L45	Bakersfield Municipal Airport	154	78
MHV	Mojave Air and Space Port	160	106
BFL	Meadows Field Airport	162	82

*Driving and flying miles are shown as statute miles

Source: Mead & Hunt, Inc.

1.3 AIRFIELD AND AIRSPACE

1.3.1 Runway System

Santa Barbara has three runways: one primary runway (7/25) and two crosswind runways (15R/33L and 15L/33R). Runway, 7/25 is the primary runway, measuring 6,052 feet long and 150 feet wide. It runs east to west. The primary runway has a 20-foot-wide paved shoulder and a 200-foot blast pad on the western end of the runway. In 2008, this runway was shifted 800 feet to the west in order to take Fairview Avenue out of the Runway Safety Area (RSA) and Object Free Area (OFA). The crosswind runways, 15L/33R and 15R/33L, are oriented northwest to southeast. Runway 15L/33R measures 4,180 feet long and 75 feet wide, and runway 15R/33L measures 4,184 feet wide and 100 feet long. Runway attributes are shown in **Table 1-2** and **Figure 1-5.**

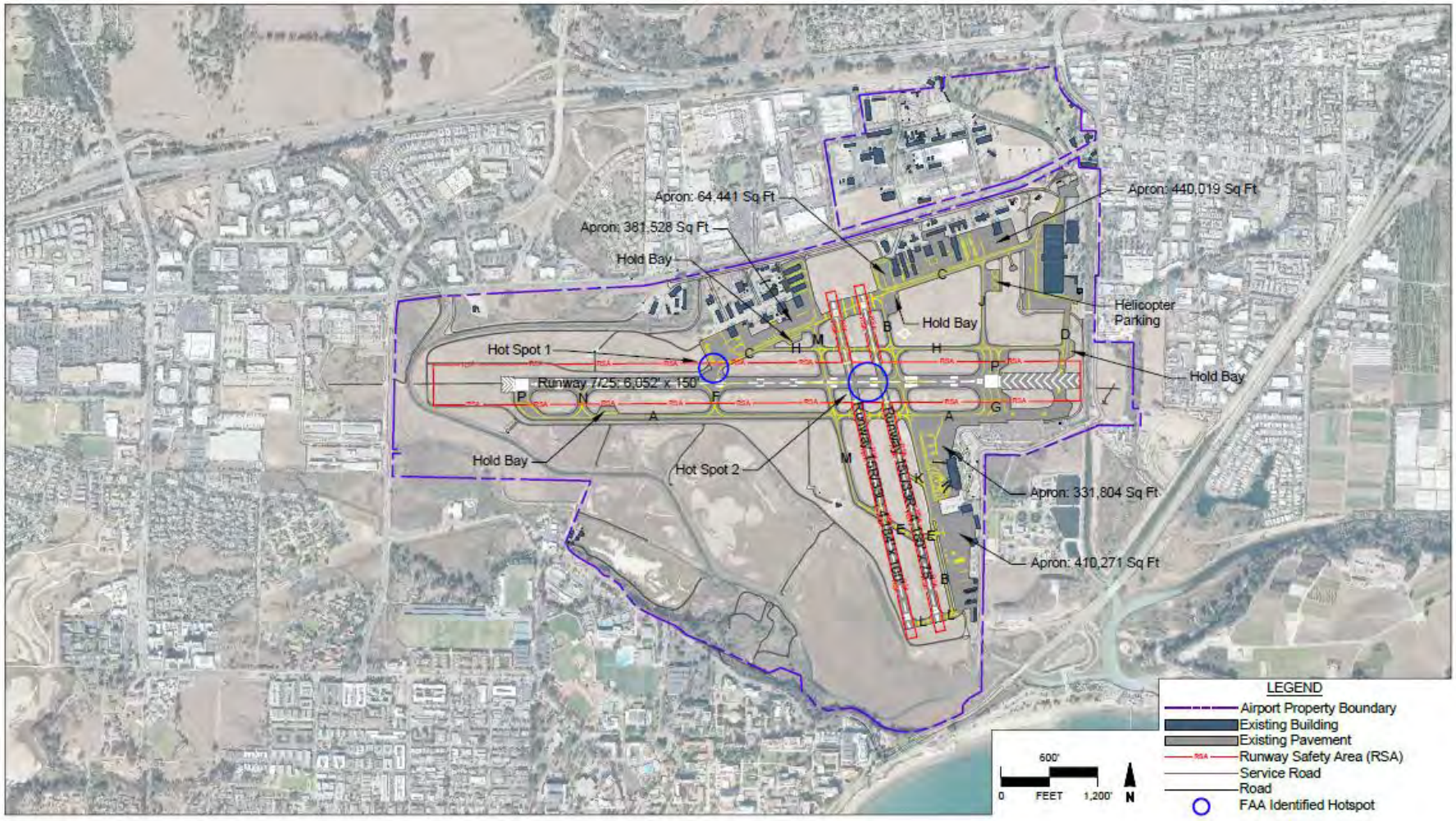
1.3.2 Runway Attributes

Table 1-2: **Runway Attributes**

	RUNWAY 7/25		RUNWAY 15L/33R		RUNWAY 15R/33L	
Dimensions	6052 ft. x 150 ft.		4180 ft. x 75 ft.		4184 ft. x 100 ft.	
	RUNWAY 7	**RUNWAY 25**	**RUNWAY 15L**	**RUNWAY 33R**	**RUNWAY 15R**	**RUNWAY 33L**
Pavement Type	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt
Orientation	89°	269°	166°	346°	166°	346°
Latitude	34° 25' 38.9964" N	34° 25' 40.5035" N	34° 25' 50.8102" N	34° 25' 10.7491" N	34° 25' 49.9454" N	34° 25' 9.846" N
Longitude	119° 51' 16.7098" W	119° 50' 4.4836" W	119° 50' 25.3281" W	119° 50' 12.9814" W	119° 50' 29.533" W	119° 50' 17.1654" W

Source: ADIP

Figure 1-5: Airfield Runways and Taxiways



Source: Mead & Hunt, Inc

1.3.3 Pavement Conditions

In July 2021, The City of Santa Barbara conducted a pavement condition analysis of SBA's airside pavement. The inspection involved a visual assessment and a rating scale of 0 to 100. Conditions are rated according to the US Army Corps of Engineers Pavement Condition Index (PCI) methods described in the FAA Advisory Circular, AC 150/5380-6B, Guidelines and Procedures for Maintenance of Airport Pavements. A PCI of 100 represents new pavement in excellent condition. Numeric deductions are then made for measure pavement distress, with a failing PCI rating eventually at 0.

The airfield is divided into branches (taxiways, runways, vehicle lanes and aprons). Each branch is then divided into sections, those sections are then reviewed as part of the detailed PCI inspection every 36 months per FAA Part 139 requirements. Monthly inspections of the airfield operations area (AOA) are also conducted, and reports are filed to fulfill FAA requirements.

Runway 7/25, along with the NE Apron, AC Term Apron, and PCC Term Apron are in excellent condition. While Taxiway M, portions of Taxiway D, a segment of the North Ramp Road Apron and the PCC South GA apron are showing pavement distress and are under monitoring for maintenance and repair.

1.3.4 Taxiway System

Taxiways on the airfield are currently identified with a single letter A through H or with a letter and number, such as A1. Taxiway naming reflects the 2024 AMSL project.

Table 1-3: Taxiway Attributes

Taxiway Name	Taxiway Length	Location
Taxiway A	75 ft	Parallel taxiway to runway 7-25
Taxiway A1	250 ft	Exit / connecting taxiway from taxiway A to runway 25 threshold
Taxiway A3	90 ft	Exit / connecting taxiway from taxiway A to runway 7- 25
Taxiway A4	100 ft	Exit / connecting taxiway 800 feet east on runway 7 threshold
Taxiway A5	225 ft	Exit / connecting taxiway from taxiway A to runway 7 threshold
Taxiway B	50 ft	Partial parallel taxiway on north side on runway 7-25
Taxiway B1	90 ft	Exit / connecting taxiway from taxiway B to runway 25 threshold
Taxiway C	50 - 227 ft	Connecting taxiway for north general aviation ramp to runway 15R – 15L thresholds and taxiway A3
Taxiway D	50 - 90 ft	Partial – parallel taxiway on west side of runway 15R – 33L and connecting taxiway between crosswind runways connecting taxiway D to taxiway E
Taxiway E	40 - 90 ft	Parallel to runway 15L – 33R
Taxiway E1	75 ft	Exit / connecting taxiway from taxiway E to runway 33R threshold
Taxiway E2	60 ft	Connecting taxiway connecting taxiway E to taxiway D at runway 15L/33R
Taxiway E3	40 ft	Exit taxiway from runway 15L-33R to taxiway E
Taxiway F	50 ft	Connecting taxiway connecting taxiway C to taxiway B
Taxiway G	50 ft	Connecting taxiway connecting cargo apron to taxiway

Taxiway H	75 ft	Exit / connecting taxiway between runway ends 33L and 33R

Source: Santa Barbara 2024 AMSL Project

1.3.5 Hot Spots

A hot spot is a location on an airport movement area with a history or potential risk of collision or runway incursion. These areas require heightened attention by pilots and airport personnel who may be on the airfield.

At SBA, there are two hot spots. The first is the intersection between Taxiway C and Runway 7 and the second hot spot is where runway 7/25 and both crosswind runways intersect. Hot spots are displayed in **Figure 1-5: Airfield Runways and Taxiways**.

1.4 NAVIGATIONAL AIDS, LIGHTING SYSTEMS, AND SHELTERS

Airfield lighting helps pilots locate the runway and airport environment at night and in situations with low visibility. At SBA, the airfield lighting is categorized by their function.

1.4.1 Runway and Taxiway Lighting

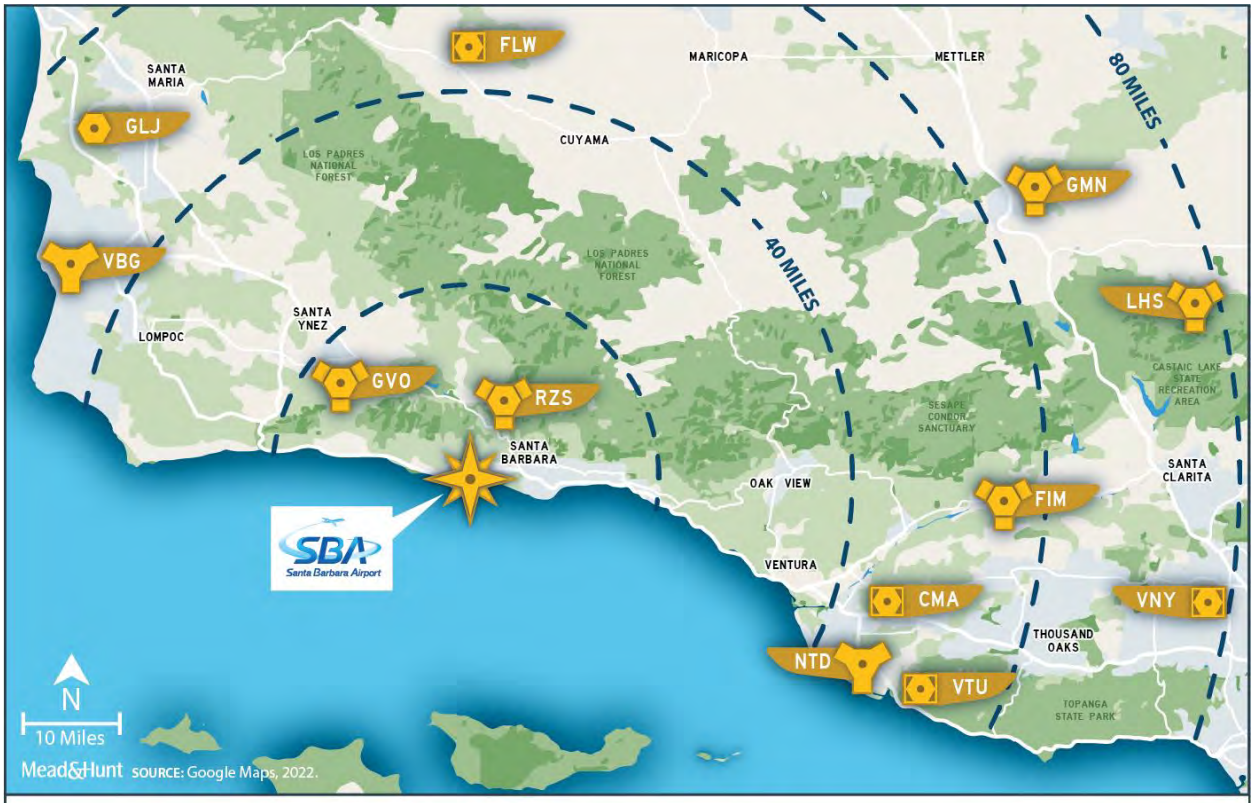
Runway 7 is equipped with Medium Intensity Approach Lights with Runway Alignment Indicators (MALSR). The approach lighting system begins at the runway end and extends into the approach for 1,400 feet, with lights every 200 feet along the runway centerline. No other runway ends have approach lighting systems. The crosswind runways do not have lighting. In addition to MALSR, the primary and crosswind runways all have Runway End Identifier Lights (REIL) and Precision Approach Path Indicator (PAPI) lights.

1.4.2 Navigational Aids (NAVAIDS)

Navigational Aids (NAVAIDS) are electronic or visual devices that provide guidance and positional information to aircraft. Pilots are able to translate those radio frequencies to point-to-point guidance and position information. NAVAIDs include ground-based electronic and visual systems and space-based global positioning system (GPS) satellites.

Electronic NAVAIDs can transmit information to aircraft systems and allow pilots to navigate and operate in weather that has reduced visibility. Visual NAVAIDS assist pilots with airport location, runway orientation, approach, and navigating in the terminal environment under visual conditions. At SBA, the available navigational aids are VOR and GPS (global positioning system). See **Figure 1-6** for specific information on NAVAIDS in the area around the Airport.

Figure 1-6: **Location of NAVAIDS near SBA**



NAVAID LOCATIONS NEAR SBA

ID	Name	Type	Distance*	Bearing	Frequency
RZS	San Marcos	VORTAC	06.1 nm	214.9°	114.90 MHz
GVO	Gaviota	VORTAC	13.9 nm	117.0°	113.80 MHz
CMA	Camarillo	VOR/DME	39.3 nm	289.3°	115.80 MHz
FLW	Fellows	VOR/DME	40.0 nm	178.3°	117.50 MHz
NTD	Point Mugu	TACAN	40.1 nm	297.2°	110.60 MHz
VGB	Vandenberg	TACAN	41.1 nm	116.4°	112.25 MHz
VTU	Ventura	VOR/DME	43.6 nm	295.6°	108.20 MHz
GLJ	Guadalupe	VOR	46.1 nm	133.1°	113.05 MHz
FIM	Fillmore	VORTAC	47.9 nm	275.3°	112.50 MHz
GMN	Gorman	VORTAC	53.6 nm	245.2°	116.10 MHz

*Map distancess are shown as statute miles, nautical miles (nm) are used in the table

KEY

VOR, TACAN, VOR/DME, VORTAC

Source: Mead & Hunt, Inc

1.4.3 Instrument Procedures on Airport Equipment

Instrument Approach Procedures (IAP) are a series of predetermined maneuvers by reference to flight instruments with specified protection from obstacles from the initial approach point to landing. IAP charts provide information to enable pilots to safely fly approaches in low visibility or otherwise challenging circumstances.

Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) are the two sets of rules for flying aircraft. Pilots typically decide whether to use IFR or VFR based on weather conditions. Under VFR, an aircraft is flown similarly to driving a car – the pilot can visually see where they are going. Pilots using VFR are not able to fly though conditions with limited visibility, such as clouds or fog, and will need to divert if necessary. Under

IFR rules, pilots are authorized to fly in low visibility and zero visibility, however additional time is required when preparing a flight plan.

Table 1-4 summarizes the runway approach procedures at Santa Barbara Airport.

Table 1-4: Approach Instrument Procedures

Runway End	Procedure	Procedure Type	Aircraft Categories	Minimum Descent Altitude in ft. AGL (Above Ground Level)	Visibility Minimums
7	ILS	Precision	A, B, C, D	200	½ mi
	SLOC	Non-Precision	A, B	487	½ mi
			C	487	¾ mi
			D	487	1 mi
	CIRCLING	Non-Precision	A	787	1 mi
			B	787	1 ¼ mi
			C	787	2 ¼ mi
			D	987	3 mi
7 (RNAV)	LPV DA	Non-Precision	A, B, C, D	367	¾ mi
	LNAV/ VNAV DA	Non-Precision	A, B	853	2 mi
			C	547	1 mi
			D	547	1 ¼ mi
	LNAV MDA	Non-Precision	A, B	547	½ mi
			C	547	1 mi
			D	547	1 ¼ mi
	CIRCLING	Non - Precision	A	800	1 mi
			B	800	1 ¼ mi
			C	800	2 ½ mi
			D	1000	3 mi
25	VOR or GPS	Non-Precision	A, B	910	1 ¼ mi
			C	910	2 ¾ mi
			D	910	3 mi

Source: Mead & Hunt, Inc.

1.5 CARGO FACILITIES

1.5.1 Air Cargo

Air cargo describes the combined activities of air mail and air freight operations. The term includes a range of businesses which provide services that support the movement of air freight. Currently, Ameriflight (on behalf of UPS) and FedEx conduct operations out of SBA.

1.5.2 Cargo Facilities

Ameriflight and FedEx operate out of cargo facilities located in the northeastern quadrant of the airport, indicated in **figure 1-5**. FedEx uses the 10,000 square foot facility on the eastern side while Ameriflight uses the 83,000 square foot facility directly west of FedEx. Upon arrival, aircraft's cargo is off loaded on the north general aviation ramp. Ameriflight's cargo is then loaded into delivery trucks and send off for distribution. FedEx operates an on-site cargo handling facility. Cargo facilities are displayed in **Figure 1-5.**

1.6 SUPPORT FACILITIES

1.6.1 Air Traffic Control Tower

Air Traffic Control Towers (ACTC) coordinate takeoffs, landings, ground traffic and aircrafts in flight within five miles of the airport. Santa Barbara's first ACTC was built in 1962 as a response to the growing air traffic at SBA and was renovated in 1998. The new facility is now a combined ATCT and Terminal Radar Approach Control (TRACON) facility. A TRACON contains radar operations from which air traffic controllers direct aircraft during descent, departure, and approach phases of flight.

At SBA, the ACTC/TRACON is located on the north side of the airport (south of Hollister Ave.) and is approximately 9,500 square feet. It is operated daily from 6:00am – 11:00pm. The ATCT controls the class C airspace surrounding the Airport. Location of Air Traffic Control Tower is displayed in **Figure 1-5.**

1.6.2 Fuel Storage

The Airport has identified the need for fuel storage facilities. Currently Atlantic Aviation owns two 20,000-gallon Jet A fuel storage tanks and one (100LL) 12,000-gallon storage tank. Atlantic Aviation owns two 20,000-gallon Jet A fuel storage tanks and one (100LL) 12,000-gallon storage tank. The Airport noted two separate occasions in the past five years where the airport ran out of fuel due to road conditions. The amount of fuel on site would last the airport "a few days" before running out. See **Figure 1-5** for the locations of the on-site fuel farm and 100LL self-fueling station.

1.6.3 Aircraft Rescue and Firefighting (ARFF)

Aircraft Rescue and Firefighting (ARFF) is available for emergency response, mitigation, evacuation, and rescue of passengers and crew of aircraft in the case one is involved in an aviation accident. Airports with scheduled passenger flights (referred to as a Part 139 airport by the FAA) are required to have firefighters and firefighting apparatus on site and ready any time an aircraft operates. The ARFF was built in 1997 and is 8,000 square feet. Prior to the ARFF Santa Barbara County maintained firefighting infrastructure for the airport.

1.6.4 Airport Administrative Office

The SBA visitor center, and administrative building is located at 601 Firestone Road on the eastern side of the Airport, by general aviation facilities and FBOs.

1.7 ACCESS & CIRCULATION

The purpose of the preliminary traffic analysis is to evaluate potential circulation deficiencies in the immediate vicinity of SBA that may result from the growth in commercial and general aviation projected over the next twenty years and recommend potential improvements that may be needed.

The initial memorandum documents existing conditions in the preliminary traffic analysis study area, analyzing traditional level-of-service metrics often used in local traffic operations assessments, as opposed to vehicle miles traveled (VMT) based analysis which is necessary for environmental analysis of traffic impacts. The memorandum covers Task 5.6 Access and Circulation of the scope of work for the engagement between Walker Consultants and Mead & Hunt.

Based on the preliminary level of service analysis for existing conditions, the study intersections are operating at an acceptable level of service with plenty of intersection and roadway capacity to spare for existing conditions. **See Appendix A for full Access and Circulation Report.**

1.8 UTILITIES

Table 1-5: Utilities

UTILITY	PROVIDER
GAS	PACIFIC GAS & ELECTRIC
WATER	GOLETA WATER UTILITY
ELECTRIC	PACIFIC GAS & ELECTRIC
SEWAGE	GOLETA SANITARY DISTRICT
TRASH / RECYCLING	INTERNAL

Figure 1-7: **Figure 1: Santa Barbara Airport Water and Sewage Lines**

Source: Mead & Hunt, Inc.

1.9 NON-AERONAUTICAL PROPERTIES

1.9.1 Land Use & Zoning

The Non-Aeronautical Property is zoned as SP6-AIA (Airport Industrial Area Specific Plan) by the City of Santa Barbara (City of Santa Barbara 2022). The Santa Barbara Airport Industrial Area Specific Plan (City of Santa Barbara 2017) includes six zoning/land use districts. The Non-Aeronautical Property includes the following zoning/land use districts: A-C (Airport Commercial), (A-C-R (Airport Commercial Recreational Zone), and A-I-1 and A-I-2 (Airport Industrial 1 and 2).

Existing land uses within the Non-Aeronautical Property include commercial, industrial, and recreational (i.e., Twin Lakes Golf Course) uses, as well as a surface parking lot for airport use. San Pedro Creek traverses the Non-Aeronautical Property along of the eastern and southern boundaries of Twin Lakes Golf Course, and Las Vegas Creek flows through the middle of the Twin Lakes Golf Course. The Non-Aeronautical Property is composed of approximately 85.6 acres of land outside of public rights-of-way (i.e., roadways) that could be developed pursuant to the City's development standards.

The City of Santa Barbara General Plan directs readers to the City of Santa Barbara Coastal Plan for land use designations within the Non-Aeronautical Property. Pursuant to the City of Santa Barbara Coastal Plan: Airport and Goleta Slough (City of Santa Barbara 1982), the Non-Aeronautical Property is designated as "Major Public and Institution." The land use designations within the Non-Aeronautical Property pursuant to the Santa Barbara Airport Industrial Area Specific Plan are previously discussed under "Existing Zoning,"

as the zoning designations are synonymous with land use designations within the Specific Plan (City of Santa Barbara 2017).

See Appendix B for full Non-Aeronautical Properties Report.

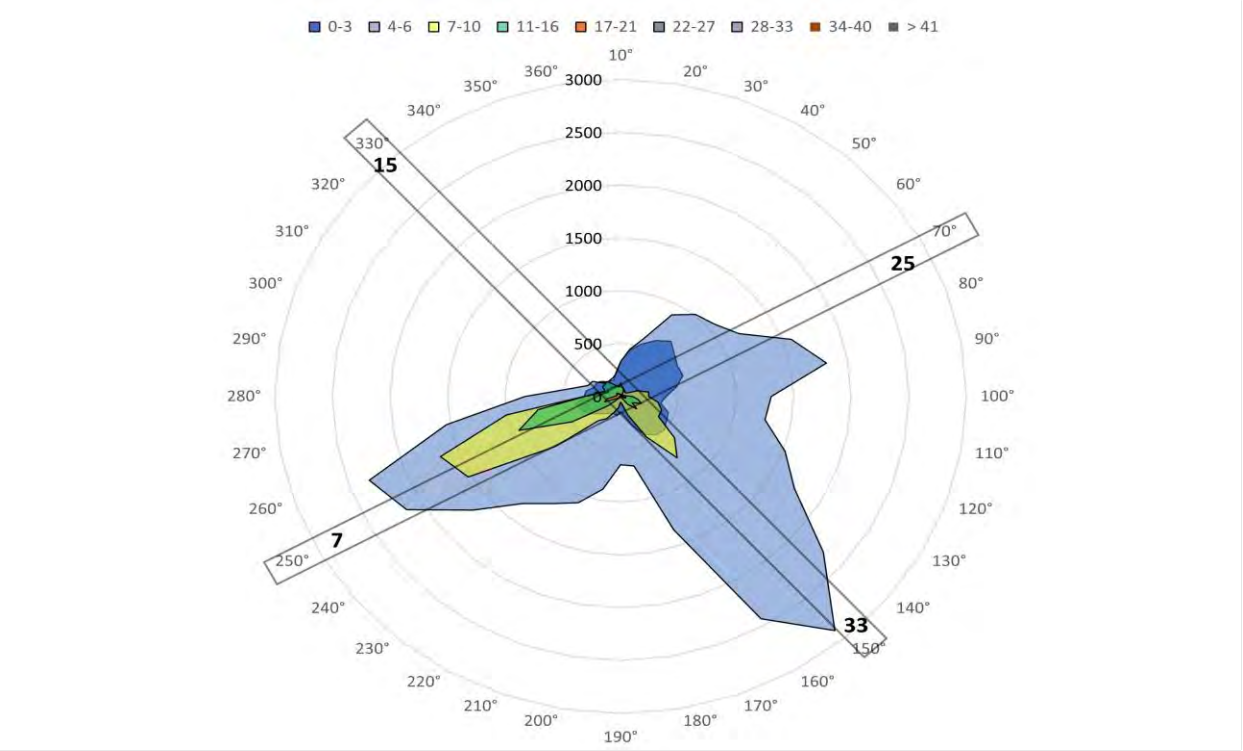
1.10 CLIMATE DATA

Wind direction and speed determine which runways are used at airports. Aircraft takeoff and land into the wind whenever possible. Understanding wind patterns at airports is instrumental in order to maintain runways and ensure efficiency of flights.

Santa Barbara has an average daily high temperature of 75 degrees Fahrenheit and an average low temperature of 40 degrees Fahrenheit. On average, the area accumulates 4 inches of precipitation annually, with an average of .34 inches per month. December through April tend to produce the most precipitation throughout the year. The average wind speed in Santa Barbara is four miles per hour, with April being the windiest month averaging wind speeds at five miles per hour. The velocity and direction of wind is important in aviation – particularly during takeoff and landing.

The following graphics, **Figure 1-14, Figure 1-15,** and **Figure 1-16,** display reported wind speeds on the primary and crosswind runways over the past year. Graphics are divided into three categories: All Weather, Visual Flight Rules (VFR), and Instrument Flight Rules (IFR). The FAA requires crosswind utilization of at minimum 95 percent to be eligible for ACI funding, as noted in **Table 1 -6 through 1-8,** all runways meet this requirement.

Figure 1-8: **All Weather Wind Rose**

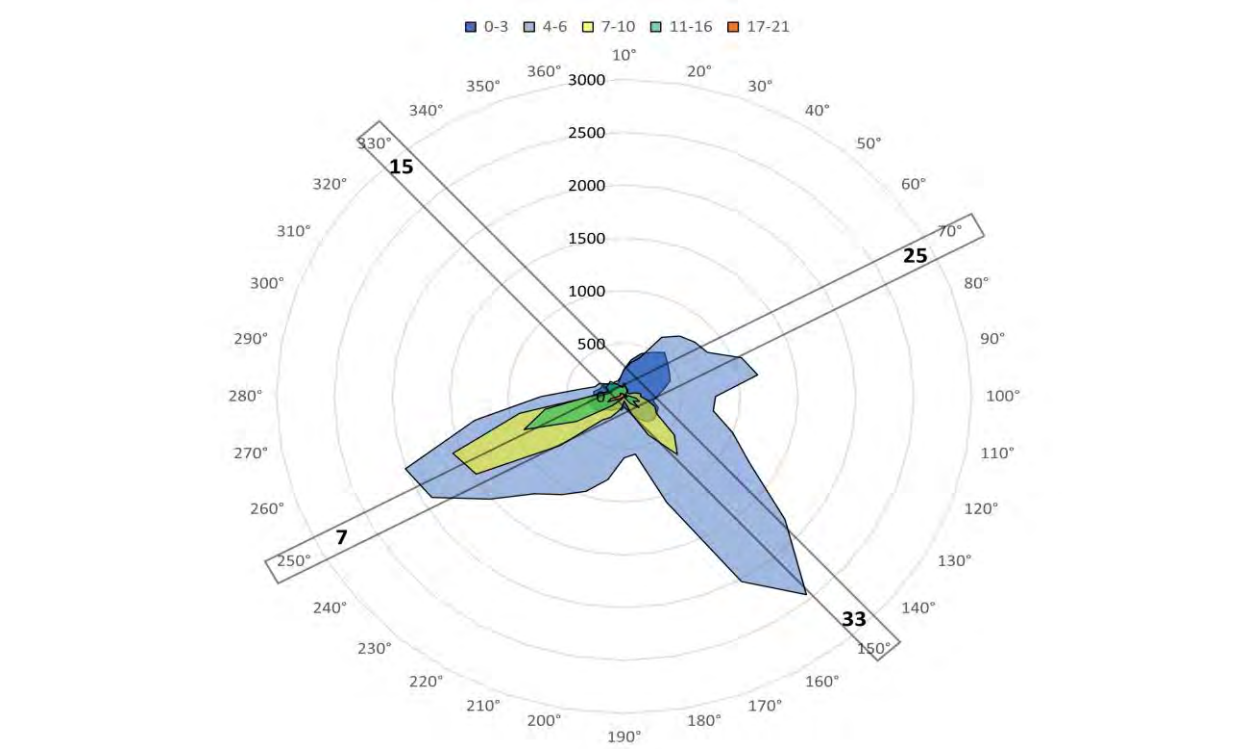


Source: Mead & Hunt

Table 1 – 6: All Weather Wind Utilization

All Weather				
Runway	**Crosswind Component (knots)**			
	10.5	**13**	**16**	**20**
15/33	96.17%	97.70%	99.38%	99.87%
7/25	98.55%	99.28%	99.82%	99.97%
Combined	99.84%	99.98%	100.00%	100.00%

Figure 1-9: **VFR Wind Patterns**

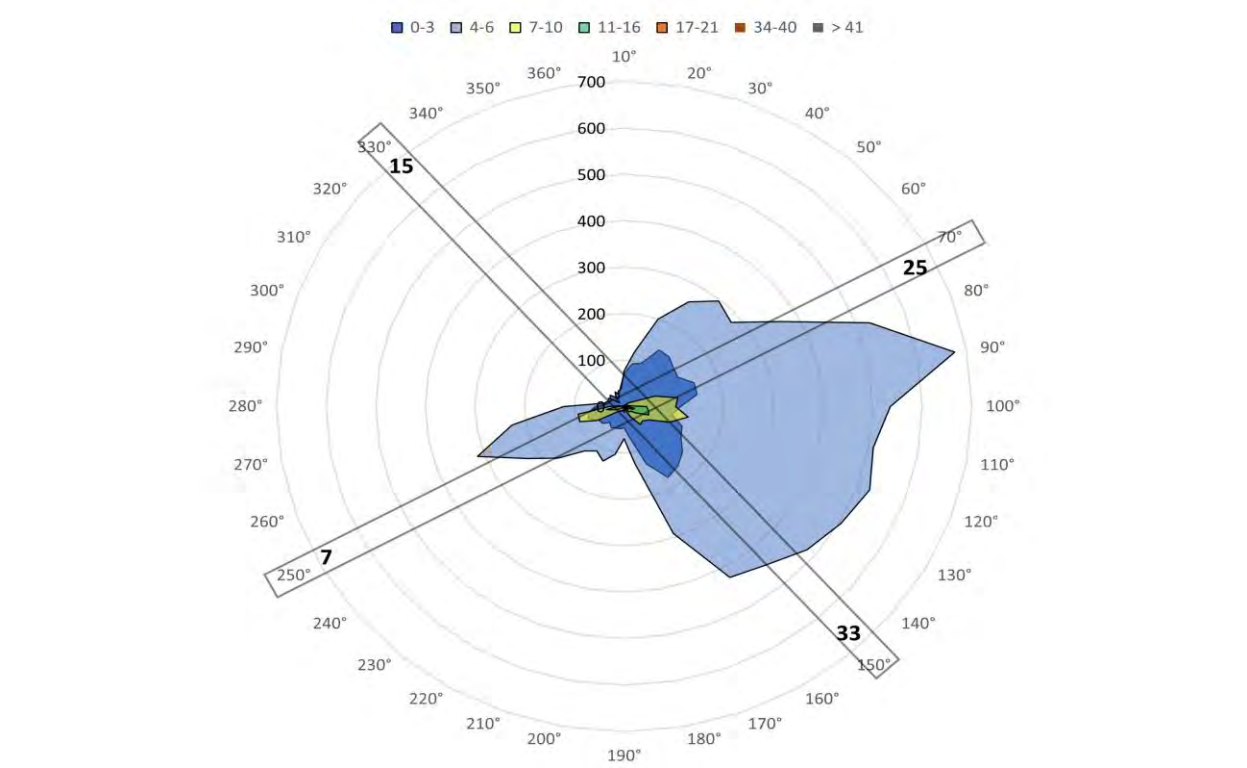


Source: Mead & Hunt

Table 1 – 7: VFR Weather Wind Utilization

VFR				
Runway	**Crosswind Component (knots)**			
	10.5	**13**	**16**	**20**
15/33	95.66%	97.37%	99.29%	99.85%
7/25	98.33%	99.17%	99.79%	99.97%
Combined	99.83%	99.98%	100.00%	100.00%

Figure 1-10: **IFR Wind Rose**



Source: Mead & Hunt

Table 1 – 8: IFR Weather Wind Utilization

IFR				
Runway	**Crosswind Component (knots)**			
	10.5	**13**	**16**	**20**
15/33	98.51%	99.18%	99.80%	99.97%
7/25	99.57%	99.80%	99.95%	99.99%
Combined	99.90%	99.98%	100.00%	100.00%