



Airports

# Airport Master Plan

Brown Field  
Municipal Airport

Draft

Working Paper 1—  
Inventory, Surveys, &  
Data Collection

July 2017

Prepared by:



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# Working Paper 1 – Inventory, Surveys, and Data Collection

## 1.1 Introduction

The City of San Diego owns and operates two General Aviation (GA) airports in San Diego County (County) – the Brown Field Municipal Airport and Montgomery-Gibbs Executive Airport. The City is preparing an Airport Master Plan for each of the facilities in order to establish a long-term plan by determining the extent, type and schedule of development needed. The Federal Aviation Administration (FAA) offers a number of objectives as a guide in the preparation of a master plan:

- Understand the issues, opportunities and constraints of the airport
- Consider the impact of recent national and local aviation trends
- Identify the capacity of airport infrastructure
- Determine the need for new improvements
- Estimate costs and identify potential funding sources
- Develop a schedule for implementation of proposed projects
- Comply with federal, state, and local regulations

The Airport Master Plan will include a report of existing and future conditions, an Airport Layout Plan (ALP) and a schedule of priorities and funding sources for proposed improvements. This Working Paper documents the first step in the Airport Master Plan for Brown Field Municipal Airport (hereafter referred to by its FAA identifier of “SDM” or “the Airport”), which involves gathering and organizing information on existing conditions of the Airport and the surrounding community. The Working Paper provides a summary of existing Airport facilities, air traffic activity and the surrounding airspace environment. Additionally, general information regarding the Airport’s setting in the community and the larger aviation network is provided. This includes local economic and development characteristics, weather and environmental conditions, and the demographics of the surrounding area. The information obtained in this first step of the master planning process will provide a foundation for subsequent analysis.



## 1.2 Background

### Airport System Planning Role

Airport planning occurs at the national, state, regional, and local levels. The following section identifies Brown Field Municipal Airport's role at the national, state and regional levels based on previous reports, with the goal of the master planning process to guide planning practices at the local level.

The Airport is included in the National Plan of Integrated Airport Systems (NPIAS), which identifies airports that are significant to national air transportation and therefore eligible for grant funding under the Federal Aviation Administration's (FAA) Airport Improvement Program (AIP) funding. The NPIAS 2017–2021 Report, produced by the U.S. Department of Transportation (DOT) FAA, includes 3,332 existing and eight proposed airports eligible for funding and documents projected facility improvement needs of these facilities. The current report estimates that \$32.5 billion is eligible for federal aid and will be necessary over the next five years to meet the needs of all segments of civil aviation. In administering the AIP, the FAA uses the NPIAS, which supports the FAA's strategic goals for safety, system efficiency, and environmental compatibility by identifying the specific airport improvements that will contribute to the achievement of those goals.

Brown Field Municipal Airport is classified in the NPIAS as a national, GA, reliever airport. National airports are located in metropolitan areas near major business centers and support flying throughout the Nation and the world. National airports average about 250 total based aircraft<sup>1</sup>, including 30 jets, making Brown Field Municipal Airport small for a national airport (based aircraft numbers will be discussed later in this Working Paper). Approximately three percent, or 89 of the airports in the NPIAS are classified as national and account for 5.4 percent of the cost of the AIP. Brown Field Municipal Airport is one of 65 national airports classified as a reliever to a primary airport (San Diego International Airport [SAN]). For the first five years of the planning period (through 2021), SDM is projected to remain a national reliever. The estimated cost of developments at the Airport totals \$14,622,904<sup>2</sup> over the next five years.

In the California Aviation System Plan 2010 System Needs Assessment, Brown Field Municipal Airport was identified as a regional GA airport. This Assessment noted that the Airport could be elevated to a metropolitan GA airport with the installation of a Visual Approach Slope Indicator (VASI). Since the preparation of the document, the Airport has installed Precision Approach Path Indicators (PAPIs) on both ends of Runway 8L/26R. Presumably, in a future update to the California Aviation System Plan the Airport will be elevated to a metropolitan, GA airport.

The San Diego County Regional Airport Authority developed the Regional Aviation Strategic Plan (RASP) in 2010 and 2011 to take a comprehensive look at the civilian airports in the San Diego County region. The RASP identified Brown Field Municipal Airport as a reliever and explored three scenarios involving Brown Field Municipal Airport as opportunities to meet air service demand in the region. These scenarios were: Introducing Commercial Passenger Service at Brown Field Municipal Airport, Enhancing Brown Field Municipal Airport for High-end/Corporate General Aviation, and Introducing Air Cargo Services at Brown Field Municipal Airport. The introduction of commercial passenger service was deemed “fatally flawed” per the FAA's determination that precision instrument approaches are infeasible at the Airport due to terrain and airfield complications; making commercial service highly unlikely. The introduction of air cargo services was also deemed “fatally flawed” due

<sup>1</sup> Based aircraft are defined as those stored at an airport and not transient.

<sup>2</sup> United States of America. U.S. Department of Transportation. Federal Aviation Administration. National Plan of Integrated Airport Systems (NPIAS) Report Airports 2017–2021. N.p., n.d. Web. 14 Mar. 2017.

to the infeasibility of precision instrument approaches at SDM, an unwillingness by air cargo carriers to operate facilities south of SAN, and anticipated public and political opposition. The enhancement of high-end/corporate GA would provide facilities and amenities necessary to shift aviation activity from SAN to SDM. This scenario was assessed and the resulting redistribution of GA operations would delay the capacity constraint at SAN by approximately two years at an estimated cost of \$63 million<sup>3</sup>.

## **Airport History**

Brown Field Municipal Airport was opened by the U.S. Army in 1918. Today it continues as a busy GA airport. Some of the highlights of the Airport's history are presented on **Figure 1.1**.

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<sup>3</sup> San Diego Regional Airport Authority, (2010) Regional Aviation Strategic Plan



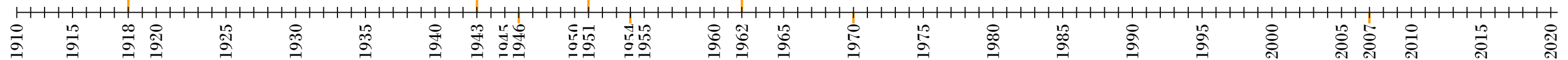
The U.S. Navy took over and renamed it Naval Auxiliary Air Station (NAAS) Otay Mesa. That same year, the name was again changed to NAAS Brown Field in honor of Navy Commander Melville S. Brown. Brown Field was used for training by the Army and Navy.



Brown Field Municipal Airport was opened by the U.S. Army, as an aerial gunnery and aerobatics school. The airport was originally named East Field in honor of Army Maj. Whitten J. East.

On sept. 1, 1962 the Navy transferred ownership of Brown Field to the City of San Diego with the condition that it remains an airport for the use and benefit of the public.

The Navy reopened Brown Field for Korean War activity.



The Navy decommissioned it and leased it to San Diego County as surplus.

Brown Field was again declared surplus in 1954, and was assigned to support fleet aircraft, missile programs, and fleet carrier landing practice.

In the mid-to-late 1960s Pacific Southwest Airlines (PSA) trained its pilots at Brown Field. PSA also had a contract to train Lufthansa pilots at Brown Field, until they moved in 1970.



The City of San Diego issued a Request For Proposal resulting in the proposed development of the Metropolitan Airpark at Brown Field Municipal Airport.

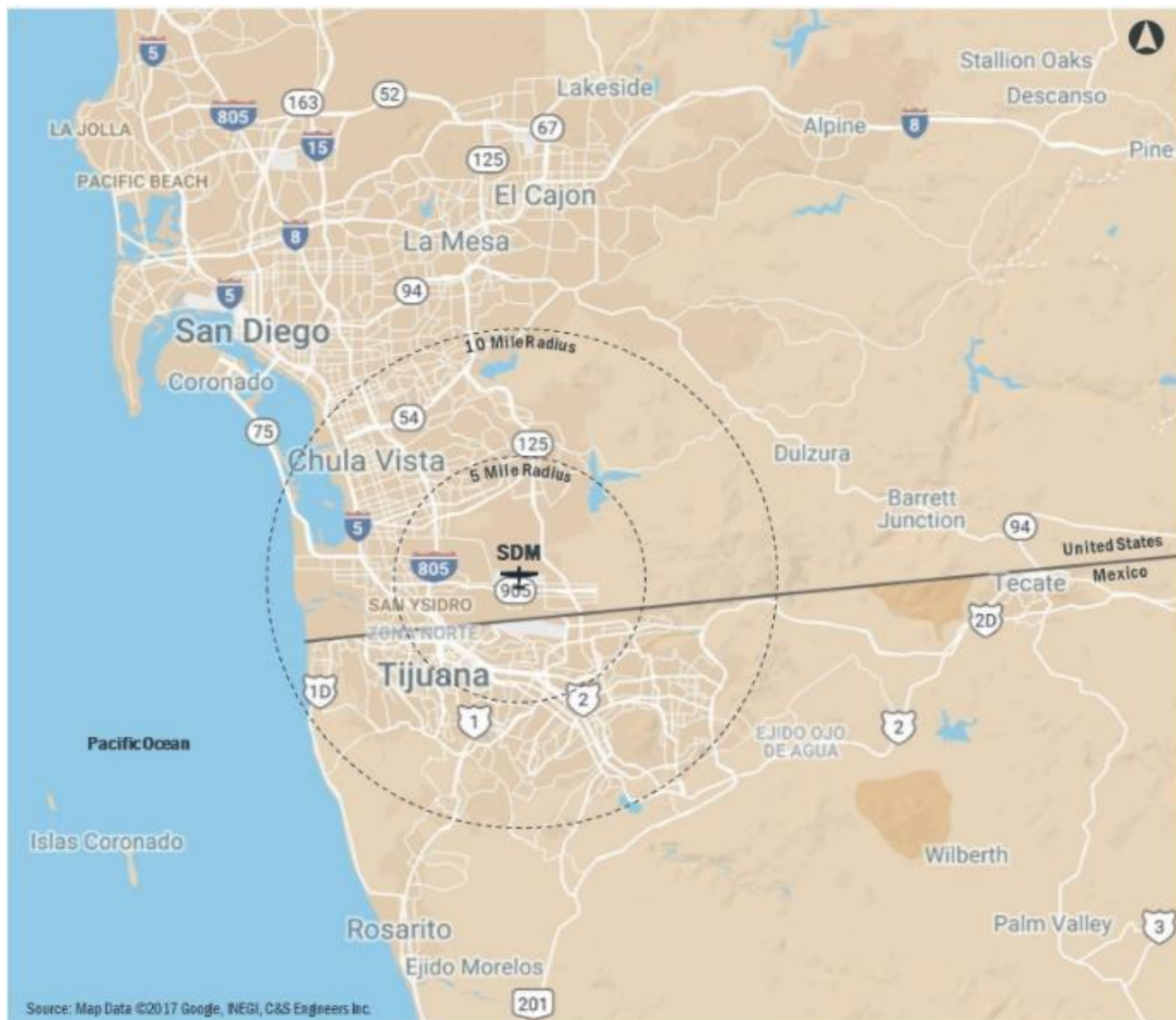




## Airport Setting

Brown Field Municipal Airport is located approximately 1.5 miles north of the Mexican border (two miles from Tijuana International Airport), five miles northeast of Tijuana, Mexico, 14 miles southeast of San Diego, California, and seven miles southeast of Chula Vista, California. The Airport is located in southwest San Diego County, in the Otay Mesa community area. The local setting is depicted on **Figure 1.2**

Figure 1.2 – Airport Local Setting



Brown Field Municipal Airport is the closest airport to the Mexican border and is accessible via the Otay Mesa Freeway (the 905) from the south and the South Bay Expressway (the 125) from the east. A few miles west of the Airport is Interstate 805. The regional access routes are depicted on **Figure 1.3**. The Airport is bound by Otay Mesa Rd. to the south, Heritage Rd. to the west, La Media Rd. to the east, and open space to the north. Otay Mesa Rd. is the main road providing access to the Airport. The main entrance is located at Cactus St. There is an additional entrance from Heritage Rd. The local access routes are depicted on **Figure 1.4**.

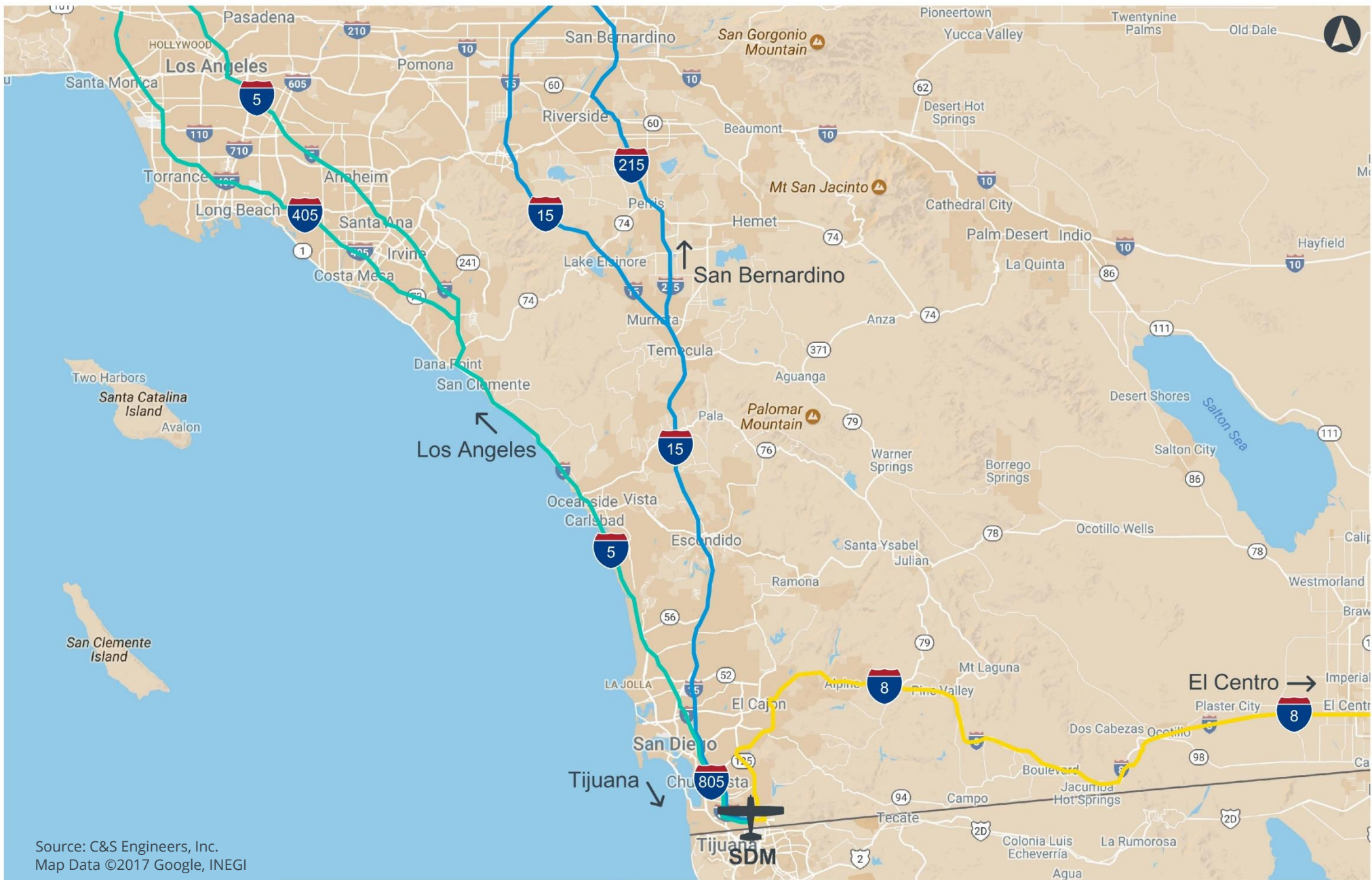
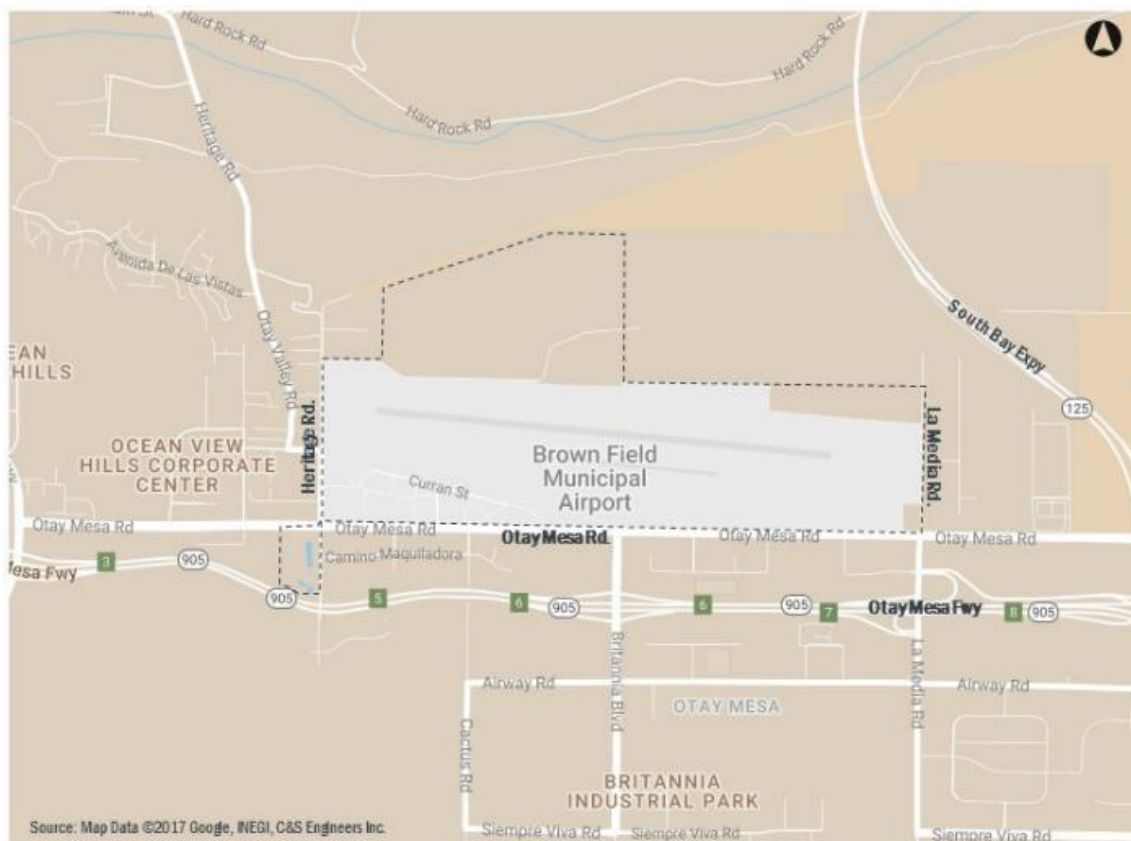




Figure 1.4 – Local Access



## Airport Overview

The Airport sits on approximately 889 acres and consists of numerous facilities that fall into the following categories:

**Airside Facilities** – The airside components consist of two, parallel runways (Runways 8L/26R and 8R/26L) and four taxiways, including a full parallel taxiway. In addition to the runways and taxiways, there are several aircraft run-up areas and various navigational aids (NAVAIDS). The airside also includes aircraft parking aprons, tie-downs, T-hangars, conventional hangars, and the Airport Traffic Control Tower (ATCT).

**Landside Facilities** – Landside facilities at Brown Field Municipal Airport include the administration building and various facilities owned and/or operated by tenants. The administration building houses offices for Airport staff, some tenants, and a restaurant. Additional information is provided in subsequent sections of this Working Paper.

**Support Facilities** – Support facilities include those relating to aircraft maintenance, refueling, and flight instruction. Most of the services are provided by the two Fixed Base Operators (FBO) at the Airport.



Administration Building

C&S Engineers, Inc. 03/07/2017

**Figure 1.5** illustrates the existing facilities that will be discussed in subsequent sections of this Working Paper.

## **Figure 1.5** Existing Facilities

To be completed  
after aerial survey  
is available



## Surrounding Airports

There are three military, one private, and five public use airports within a 30-nautical mile (NM) radius of the Airport. The locations of the surrounding airports and associated airspace are depicted on **Figure 1.6**. Descriptions of the surrounding public use and military airports are included in **Table 1.1**. The nearest medium- to large-hub commercial service airports outside of the 30-NM radius are John Wayne Airport, 79 NM to the northwest, and Los Angeles International Airport 109 NM to the northwest.

**Table 1.1 – Surrounding Public-Use and Military Airports**

Airport Name (Location Identifier) Ownership	Location Distance from SDM	NPIAS Classification	Runway Heading: Runway Dimensions (Surface Type)	Instrument Approaches
<b>Miramar MCAS (NKX)*</b> Marine Corps Air Station	<b>San Diego, CA</b> 19 NM northwest	<b>N/A (Military)</b>	<b>6L/24R:</b> 12,000' x 200' (Concrete) <b>6R/24L:</b> 8,001' x 200' (Porous European Mix)	ILS, LOC/DME, RNAV (GPS), TACAN, HI-TACAN
<b>San Diego International (SAN)</b> San Diego County Regional Airport Authority	<b>San Diego, CA</b> 14 NM northwest	<b>Primary Service/Large Hub</b>	<b>9/27:</b> 9,400' x 200' (Asphalt-Concrete)	ILS/LOC, RNAV (GPS)
<b>North Island NAS (NZY)*</b> Naval Air Station	<b>San Diego, CA</b> 14 NM northwest	<b>N/A (Military)</b>	<b>18/36:</b> 8,001' x 200' (Porous European Mix) <b>11/29:</b> 7,501' x 200' (Porous European Mix)	LOC/DME, RNAV (GPS), VOR, TACAN, HI-TACAN
<b>Gillespie Field (SEE)</b> County of San Diego	<b>El Cajon, CA</b> 15 NM northeast	<b>National/ Reliever</b>	<b>9L/27R:</b> 5,342' x 100' (Asphalt) <b>17/35:</b> 4,145' x 100' (Asphalt) <b>9R/27L:</b> 2,738' x 60' (Asphalt)	RNAV (GPS), LOC
<b>Imperial Beach NOLF (NRS)*</b> Naval Outlying Field	<b>Imperial Beach, CA</b> 7 NM west	<b>N/A (Military)</b>	<b>8/26:</b> 2,240' x 151' (Concrete) <b>9/27:</b> 4,997' x 336' (Porous European Mix)	TACAN
<b>Montgomery-Gibbs Executive (MYF)</b> City of San Diego	<b>San Diego, CA</b> 17 NM north	<b>Regional/ Reliever</b>	<b>10L/28R:</b> 4,577' x 150' (Asphalt) <b>10R/28L:</b> 3,401' x 60' (Asphalt) <b>5/23:</b> 3,400' x 75' (Asphalt)	ILS/LOC, RNAV (GPS), VOR-A
<b>Ramona (RNM)</b> County of San Diego	<b>Ramona, CA</b> 34 NM northeast	<b>Regional/ Reliever</b>	<b>9/27:</b> 5,001' x 150' (Asphalt)	RNAV (GPS), VOR/DME-A
<b>Tijuana International (TIJ)</b> Mexico	<b>Tijuana, Mexico</b> 2 NM south	<b>N/A</b>	<b>9/27:</b> 9,711' x 148' (Asphalt)	ILS, DME, LOC, VOR

\* Military facility, non-public-use

Source: FAA Airfield Facility Directory (AFD), NPIAS (2016), Approach plates





Tijuana Intl. (TIJ)	2 nm
John Nichol's Field (Pvt)	6 nm
Imperial Beach NOLF (NRS)	7 nm
North Island NAS (NZY)	14 nm
San Diego Intl. (SAN)	14 nm
Gillespie Field (SEE)	15 nm
Montgomery-Gibbs Exec. (MYF)	17 nm
On the Rocks (Pvt)	17 nm
Reider (Pvt)	18 nm
Miramar MCAS (NKX)	20 nm
Ramona (RNM)	28 nm

Figure 1.6  
 Airspace Environment  
 & Adjacent Airports

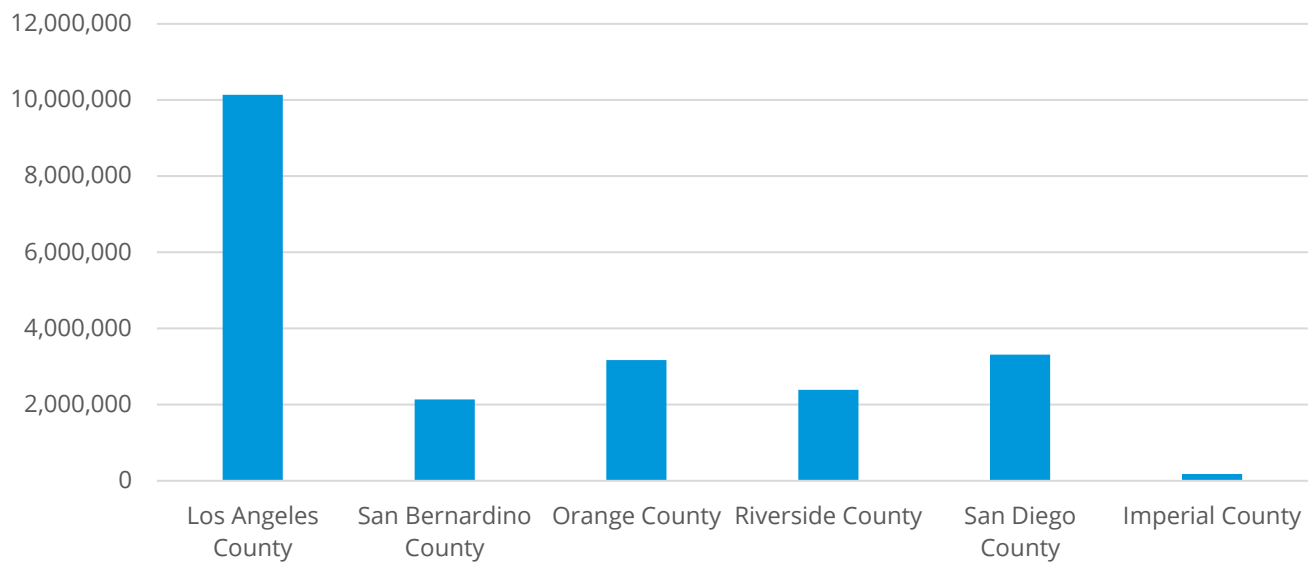


## Population Data

This section provides background on the population trends of the area surrounding the Airport. Additional information regarding the County's socioeconomic data will be provided in Working Paper 4 – Forecasts of Aviation Demand.

San Diego is the second most populous county in California, second only to Los Angeles County. Population levels in 2016, estimated by the United States Census Bureau for both San Diego County and the surrounding counties, are presented on **Figure 1.7**.

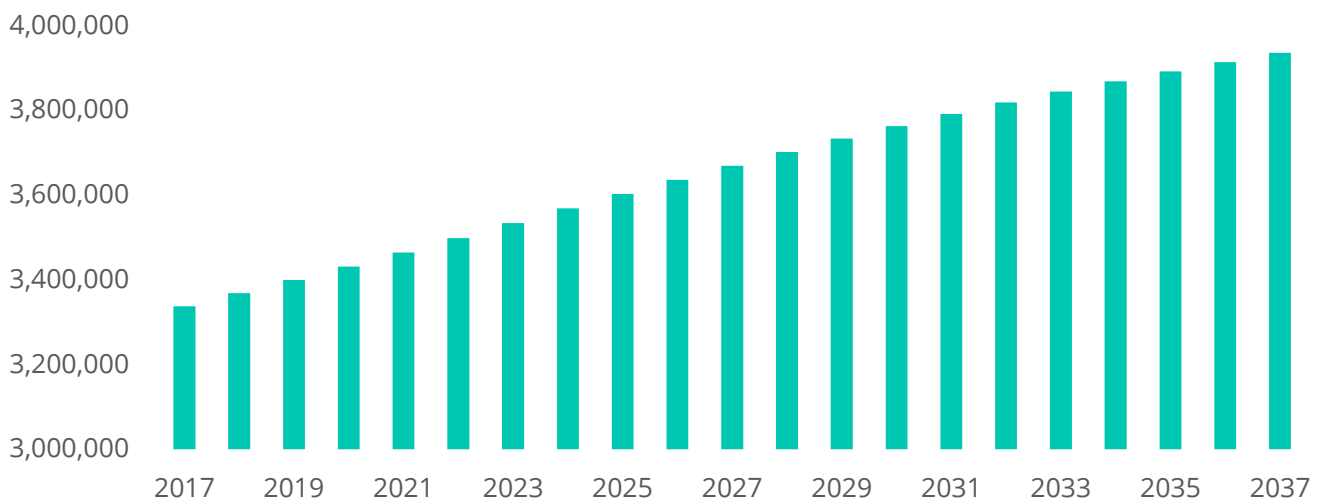
**Figure 1.7 – San Diego and Surrounding County Populations**



Source: U.S. Census Bureau (2010), C&S Engineers, Inc.

The San Diego County Economic Forecast produced by the California Department of Transportation estimates that the population of San Diego County will increase by 597,740 people in the 20-year period from 2017 to 2037. This would bring the total population to 3,936,040. The forecasted increase is presented on **Figure 1.8**.

**Figure 1.8 – San Diego County Population Forecast**



Source: California Department of Transportation, (2016) *San Diego County Economic Forecast*, C&S Engineers, Inc.

## Ownership and Operations

Brown Field Municipal Airport is a public use airport owned and operated by the City of San Diego. The Airports Division is a branch of the City's Real Estate Assets Department and oversees the operations at both Montgomery-Gibbs Executive and Brown Field Municipal Airports. A number of tenants own and lease facilities at the Airport, providing a variety of services such as fueling, aircraft maintenance, flight training, hangar rentals, customs and skydiving. **Table 1.2** lists the current tenants at the Airport as well any services they provide.

**Table 1.2 – Airport Tenants and Services Provided**

Tenant Name	Service Provided
First Flight Corp (FBO)	Fixed Base Operator, fuel, aircraft maintenance, tie-down, hangar, flight training, aircraft rental
San Diego Jet Center (FBO)	Fixed Base Operator, fuel, aircraft maintenance, tie-down, hangar, car rental, pilot lounge, crew services, cargo handling
Baja Airventures	Mexico eco-adventures, whale watching, kayaking, surfing
Experimental Aircraft Association Chapter 14	Experimental aircraft, weekly fly-in, Young Eagles Program (free flights for children), aviation safety education and library
Pacific Coast Skydive	Skydiving
Tactical Air Operations	Military skydiving activities
Altitude Helicopters	Flight training and tours
The Landing Strip	Restaurant
U.S. Customs	Customs and other federal inspection services
U.S. Border Patrol Search Trauma and Rescue (BORSTAR)	Border patrol and rescue services
City of San Diego Fire Station 43	Fire protection to City of San Diego

Source: City of San Diego

As shown above, the tenants at the Airport offer a number of valuable services. Flight instruction accounts for a large portion of the operations at SDM (flight schools at the Airport include First Flight and Altitude Helicopters). Additionally, flying clubs offer an affordable alternative to aircraft ownership that allows more pilots to stay in the air. They generally charge a monthly membership fee and an hourly rate and give members access to a fleet of aircraft to choose. Experimental Aircraft Association (EAA) is the only flying club at Brown Field Municipal Airport. A large portion of EAA's activity involves the selection, construction, and flight testing of experimental aircraft.

Several of the above tenants occupy space in the administration building including:

1. San Diego Jet Center
2. U.S. Customs
3. The Landing Strip



## Policies and Plans

To enhance operational efficiency, the Airport should develop, maintain, and implement a number of management documents. **Table 1.3** identifies the documents currently in place at Brown Field Municipal Airport as well as the date they were published.

**Table 1.3 – Airport Management Documents**

Document	Year
Master Plan Update	2012
Real Estate Assets Department Airports Division: Business Plan (FY 2017)*	2015
City of San Diego Airports: Operations, Policies, and Procedures	2015
City of San Diego Airports Division: Minimum Operating Standards (DRAFT)	2017
Hangar Policies	2017

\*Business Plan (FY 2018) in development  
Source: City of San Diego, C&S Engineers, Inc.

The following is a brief description of the purpose and content of the documents listed above.

**Master Plan:** See introduction at the beginning of this Working Paper. The previously prepared Airport Master Plan for Brown Field Municipal Airport was never brought to the City Council for approval. However, this effort did result in an FAA-approved ALP.

**Real Estate Assets Department Airports Division: Business Plan (FY 2017):** Designed to ensure that the City’s Airports System is operated safely and efficiently, is in compliance with all appropriate regulations, is financially self-sufficient, encourages airport business growth and opportunities, is customer focused both internally and externally, maximizes the City’s Return on Investment for airport property, and is managed by professional airport management staff. This plan is meant to be a “living and working” document that adapts as conditions change.

**City of San Diego Airports: Operations, Policies, and Procedures:** Intended to guide day-to-day operations of the City-owned airports. It is used by airport management to conduct the daily business of the City-owned airports in an efficient manner, consistent with the policies of the FAA, state of California, and the City.

**City of San Diego Airports Division Minimum Operating Standards (DRAFT):** To provide the threshold entry requirements (qualifications, levels of service, facilities, and insurance minimums) for those desiring to provide commercial aeronautical services to the public and to ensure that those who have undertaken to provide commodities and services as approved are not exposed to unfair or irresponsible competition. They contain the minimum levels of service, facilities, staffing, insurance, and environmental compliance that must be met by the prospective service provider. The uniform application of these standards relates primarily to the public interest by discouraging substandard entrepreneurs and mandating insurance coverage levels, thereby protecting the Airport, airport patrons, and established aeronautical activities.

**Hangar Policy:** Published responses to common hangar ownership questions including insurance requirements, waiting list rules, applicable fees, and hangar subleases.

## Airport Economic Benefits

Airports provide an economic benefit to their communities through direct and indirect impacts, in addition to serving as a vital community asset. Direct impacts include those related to on-airport businesses and government agencies and those attributed to visitor spending and tourism. Indirect impacts mainly include the re-circulation of employees spending their earnings locally and the on-

airport businesses purchasing goods and services locally.

As a whole, the air transportation sector in San Diego County was directly responsible for 1,926 jobs<sup>4</sup> in 2015. This includes a combination of scheduled air transportation, nonscheduled air transportation, and both freight and passenger transport. Countywide, air transportation generates total direct economic activity valued at about \$742.6 million in industry output. In addition, air transportation directly accounts for over \$130.8 million in labor income (both employee compensation and proprietor income). This total does not account for other jobs that are supported and facilitated by air transportation. This would include suppliers, business-to-business vendors, and industries that rely on air transportation to bring customers and products into the San Diego regional market.

Airport-specific information will be provided under a subsequent section of the Airport Master Plan.

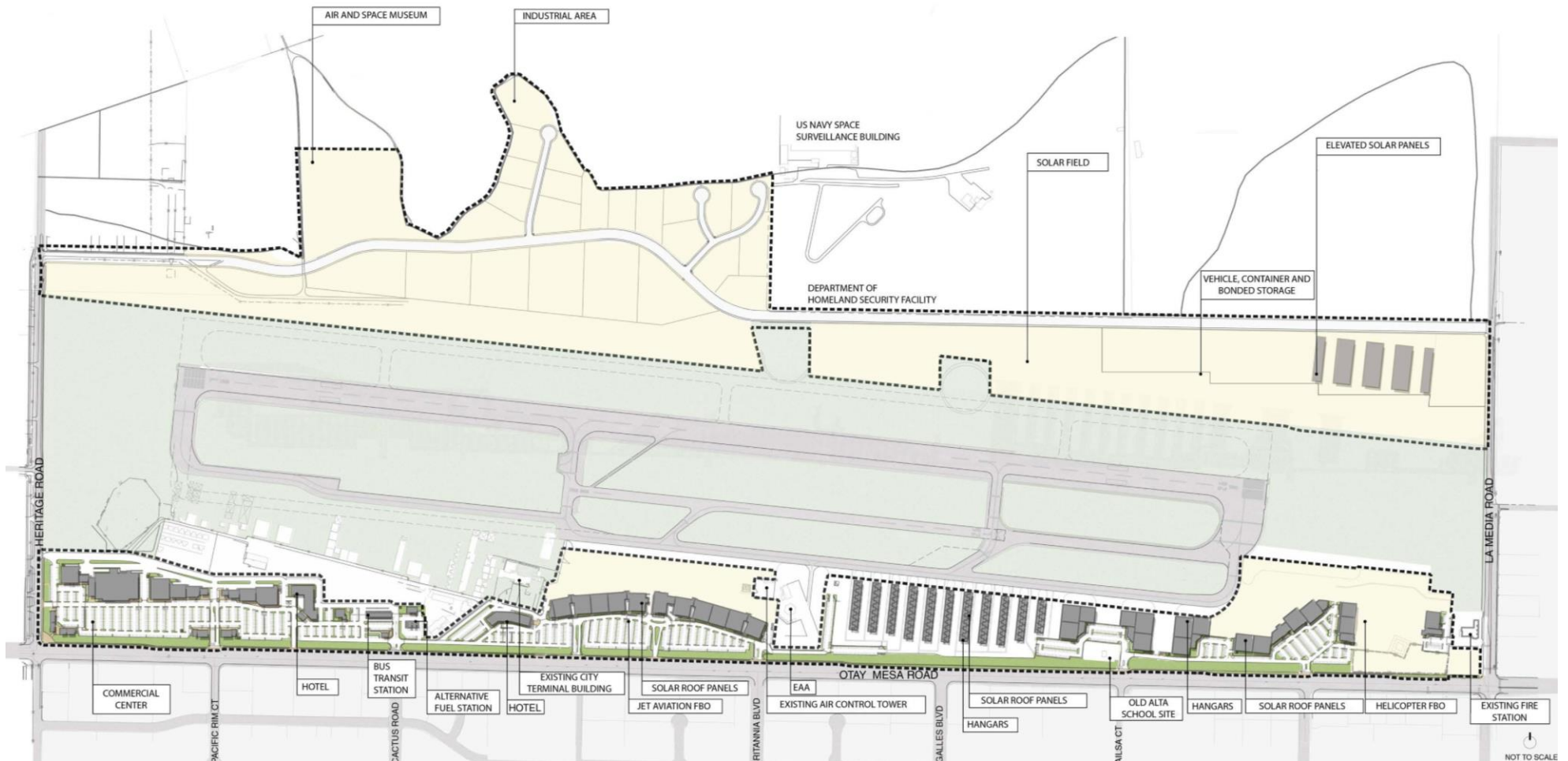
## Metropolitan Airpark

In 2007, the City of San Diego issued a Request for Proposal (RFP) for a large-scale FBO operation and support facilities development at SDM. The City selected Brown Field International Business Park (BFIBP), also known as DPC-Brown Field, for the project. The proposed development is known as the Metropolitan Airpark (MAP) (the developer has taken on the same name) and occupies most of the airport property south and north of the airfield and apron. **Figure 1.9** shows the Metropolitan Airpark master site plan. The project is divided into 16 Development Areas and four phases that will be developed over 20 years with an estimated build-out year of 2038. According to the Metropolitan Airpark Master Plan and Design Guidelines, the following key elements will be included:

1. A Jet Aviation Business Center FBO and related support facilities
2. A GA Center with hangars, tie-downs, a fuel station and maintenance area
3. A Corporate Aviation Center with hangars, offices, a fuel station and maintenance facilities
4. A rotorcraft Business Center FBO with hangars, a heliport, and potential City of San Diego Fire Department or other user aviation hub
5. A six- to eight-megawatt solar photovoltaic (PV) energy generation facility
6. A commercial center and two business hotels to serve airport patrons and the general public
7. A public transit station along Otay Mesa Road
8. An Industrial Park with an emphasis on light Industrial aviation and non-aviation (research and development) uses

The project has been unanimously approved by the City Council. The Environmental Impact Report was completed to address requirements under the California Environmental Quality Act (CEQA). Due to the potential degree of the environmental impact of the project, National Environmental Protection Agency (NEPA) documentation is also being prepared before the project moves forward and is currently under FAA review.

<sup>4</sup> ADE, Inc.; data from IMPLAN Pro input-output model, May 2017.

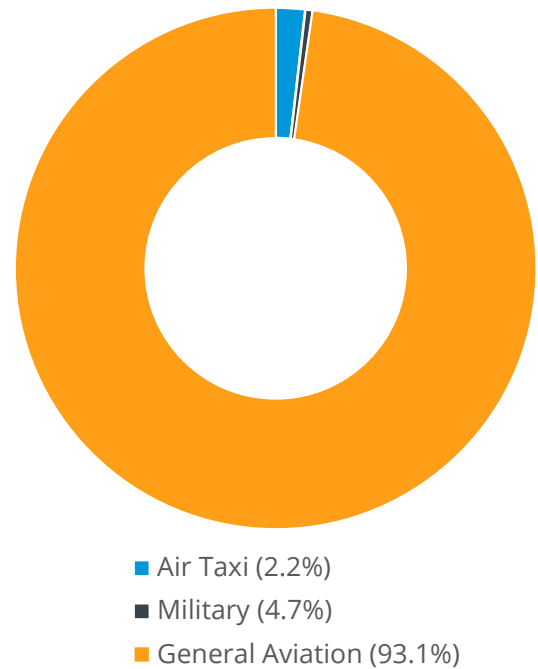


## Existing and Historical Aircraft Operations

Historical aviation activity at the Airport was gathered using the FAA's Operations Network (OPSNET). Aircraft operations, from the 2016 calendar year, are broken down by user class on **Figure 1.10**. General Aviation operations continue, by a large margin, to make up the majority of activity at 93.1 percent of the total 2016 traffic, while Military and Air Taxi operations make up a combined 6.9 percent. Blimps and additional light aircraft also periodically make use of SDM. Historical activity levels are summarized on **Figure 1.11** for GA and **Figure 1.12** for Air Taxi (which includes Air Carrier operations due to their negligible levels [less than 150 per year]) and Military. The operations indicate an overall decrease in total aviation activity since 2007. Military operations reached a 10-year peak in 2011, but have decreased every year since.

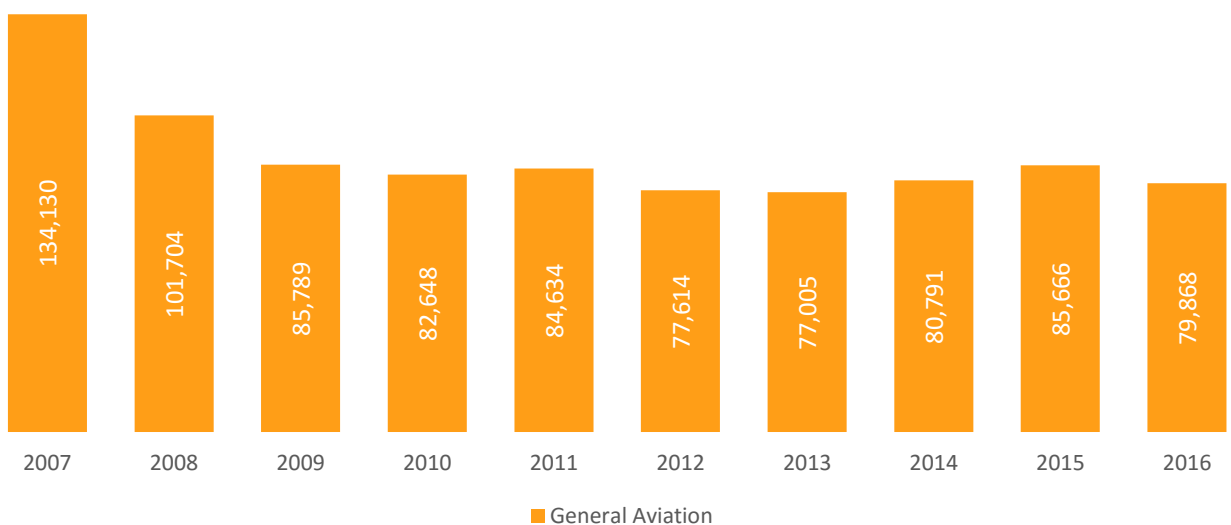
Historical aviation activity is documented in greater detail as part of the forecast of aviation demand chapter of this Master Plan.

**Figure 1.10 – 2016 Operations Split by Class**



Source: FAA OPSNET 01/01/2007 to 12/31/2016

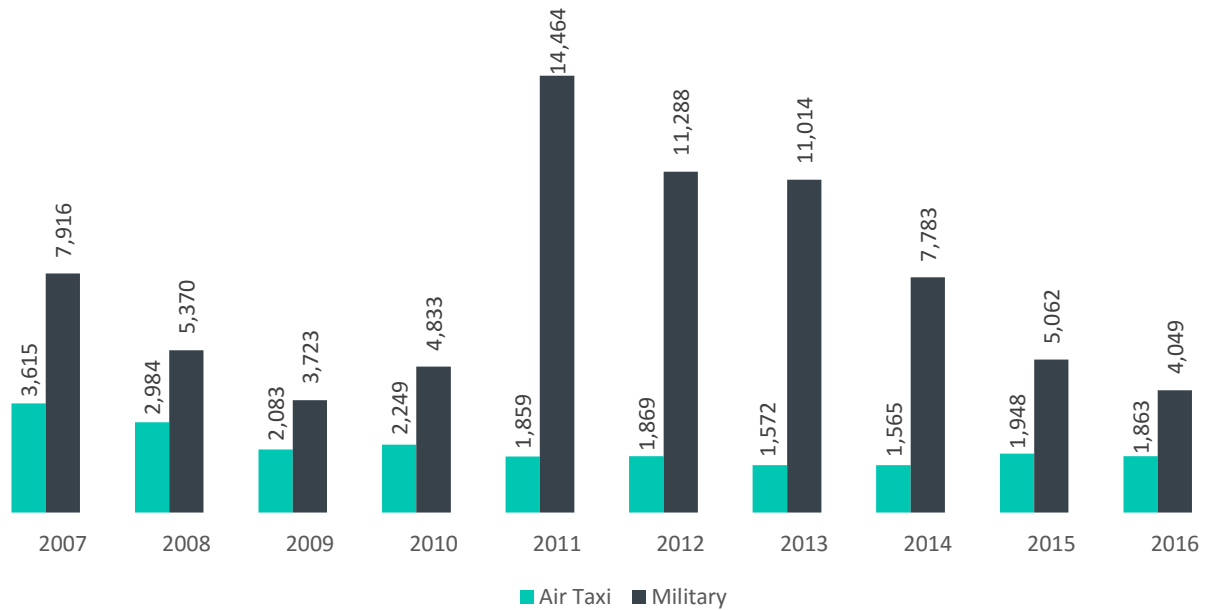
**Figure 1.11 – Historical and Existing General Aviation Operations**



Source: FAA OPSNET 01/01/2007 to 12/31/2016



Figure 1.12 – Historical and Existing Air Taxi and Military Operations

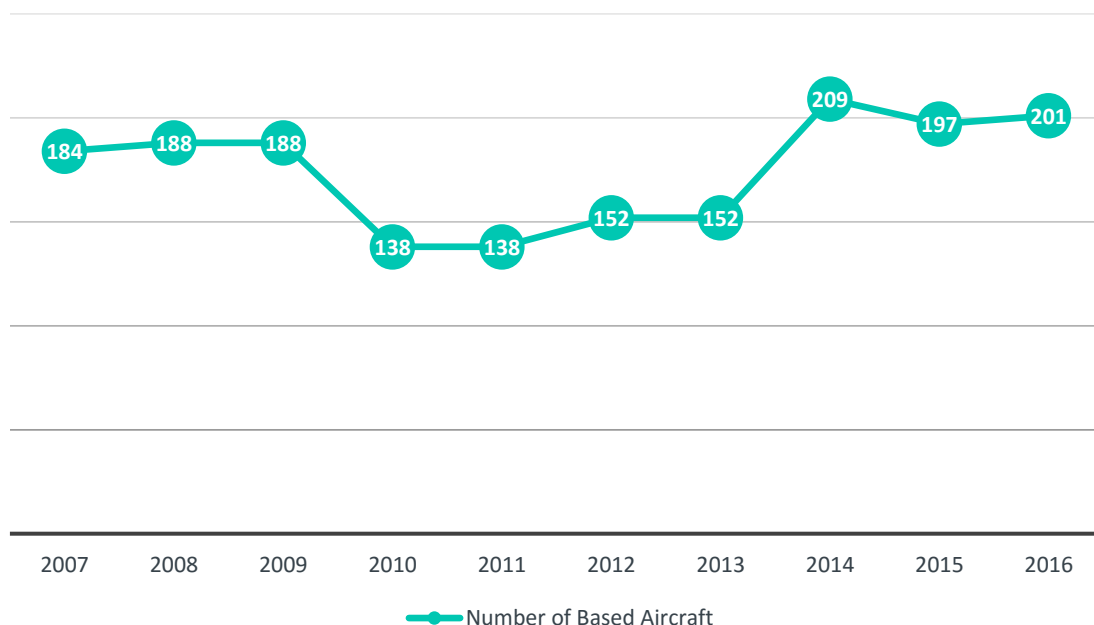


Source: FAA OPSNET 01/01/2007 to 12/31/2016

### Historical and Existing Based Aircraft

Current based aircraft information was gathered from the FAA National Based Aircraft Inventory Program, while historical based aircraft data was collected from the FAA Terminal Area Forecast (TAF). **Figure 1.13** shows the number of based aircraft at Brown Field Municipal Airport each year from 2007 to 2016. Based aircraft numbers reached a 10-year peak in 2014 with 209 aircraft. The current based aircraft number and fleet mix is presented in **Table 1.4**. As of April 27, 2017, the Airport had a total, verified aircraft count, excluding duplicates and aircraft not found in FAA Aircraft Registration data, of 197. Single-engine aircraft make up approximately 80 percent of aircraft at the Airport.

Figure 1.13 – Historical Based Aircraft



Note: 2016 data is estimated. Source: FAA TAF 01/01/2007 to 12/31/2016

## Fleet Mix and Critical Aircraft

The selection of the appropriate FAA airport design standards is based upon the critical aircraft, sometimes referred to as the design aircraft. The critical aircraft is defined by the FAA as the most demanding aircraft that performs, or is projected to perform, at least 500 annual operations at the airport facility. The previous ALP identified a composite of the characteristics of the Gulfstream 550 and the Lockheed C-130 as the critical aircraft for Runway 8L/26R. Runway 8R/26L is only 75 feet wide and not suitable for use by aircraft the size of the Gulfstream 550 or C-130. It has been assigned a separate critical aircraft, the Beechcraft Baron 58.

**Table 1.4 – Existing Based Aircraft**

Aircraft Type	Aircraft Count
Single Engine	157
Multi Engine	22
Jet	12
Helicopter	6
<b>Total</b>	<b>197</b>

Source: National Based Aircraft Inventory Program, 04/27/2017

### Aircraft Characteristics

The Gulfstream 550 has an approach speed of 145 knots, classifying it in AAC D (approach speeds 121 knots or more but less than 141 knots). The Lockheed C-130 has a wingspan of 132.6 feet, classifying it as ADG IV (aircraft with wingspans up to 118 feet but less than 171 feet). A sampling of the characteristics of both the based and itinerant aircraft fleet mix are presented below in **Table 1.5** and **Table 1.6**. Characteristics include the aircraft type, Maximum Takeoff Weight (MTOW) in pounds (lbs.), approach speed in knots (kts.), wingspan in feet (ft.), AAC and ADG.

**Table 1.5 – Based Aircraft Characteristics**

Aircraft	Type	MTOW (lbs.)	Approach Speed (kts.)	Wingspan (ft.)	AAC	ADG
Cessna 172	Single-Engine	2,450	61	36.1	A	I
Beechcraft Bonanza	Single-Engine	3,650	77	33.5	A	I
Experimental Aircraft	Single-Engine	900	90	25	A	I
De Havilland Twin Otter	Turboprop	12,500	75	65	A	II
Gulfstream III	Jet	69,700	125	77.8	C	II

Source: FAA Aircraft Characteristics Database, TFMSC (2016), C&S Engineers, Inc.

**Table 1.6 – Transient Aircraft Characteristics**

Aircraft	Type	MTOW (lbs.)	Approach Speed (kts.)	Wingspan (ft.)	Approach Category	Airplane Design Group
Lockheed C130	Turboprop	155,000	138	132.6	C	IV
Pilatus PC-12	Turboprop	10,500	86	53.3	A	II
Hawker 800	Jet	28,000	137	54.0	C	II
Gulfstream IV	Jet	74,600	149	77.1	D	II

Source: FAA Aircraft Characteristics Database, TFMSC (2016). C&S Engineers, Inc.

Although not fully reflected in the TFMSC data, military aircraft are responsible for nearly five percent of the annual operations at the Airport. The most regularly occurring military aircraft include F-18s, C-130s, and rotocraft, such as the Sikorsky SH-60 Seahawk. Additional information regarding the Airport's fleet mix will be included in Working Paper 2 – Forecasts of Aviation Demand.

## 1.3 Regional Setting and Land Use

The following sections provide information regarding land use, zoning, land use compatibility, consistency with other plans, and the Airport's climatological setting.

### Land Use

Land uses surrounding the Airport were inventoried to understand existing compatibility. **Figure 1.14** depicts the variety of land uses surrounding the Airport. Land use shape files were retrieved from the San Diego Regional Planning Association's website. Immediately to the east, west and south is primarily a mix of commercial, industrial, and open space land use. North of the Airport, there is also industrial and open space, as well as a block of military use. Residential use begins to encroach off the northwest end of the Airport.

As indicated by guidance provided in FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, public facilities within the vicinity of the Airport were identified and are presented in **Table 1.7**.

**Table 1.7 – Public Facilities within ½ Mile of SDM**

Facility	Direction from Airport
<b>Fire Station</b>	On Property
San Diego Fire-Rescue Department Station 43	(southeast corner)
<b>School</b>	South
Southwest College Higher Education Center at Otay Mesa	
<b>Place of Worship</b>	East
World Harvest Church of San Diego	

Source: San Diego Regional Planning Association

### Zoning

The City of San Diego General Plan classifies the Airport as “unzoned” indicating that it falls under a separate set of rules than other land uses. Guidance relating to off-airport land use compatibility is contained in the Airport Land Use Compatibility Plan (ALUCP). Zoning surrounding the Airport is depicted on **Figure 1.15**.

### Brown Field Municipal Airport ALUCP

Airport land use compatibility plans are established in order to promote compatibility between airports and the surrounding land uses. In San Diego County, the Board of the San Diego County Regional Airport Authority (SDCRAA) is responsible for producing these plans for all public-use and military airports. The purpose of the plan is to provide for the orderly growth of the airport, the surrounding area, and to safeguard the general welfare of the inhabitants within the vicinity of the airport as well as the public in general<sup>5</sup>. The plan identifies Airport Influence Areas (AIA) with specific requirements to be followed by local agencies when development is proposed within these areas. The plan is based on the ALP most recently approved by the FAA (in SDM's case, 2011). Any changes to the ALP occurring as a result of this master planning process will be reviewed by the Airport Land Use Commission to determine potential impacts to the ALUCP.

### Community Plans

The City of San Diego is broken up into various communities, each with their own planning group, community plans, and/or regulations. The Airport is discussed in the Otay Mesa Community Plan, but not in the plans of the adjacent San Ysidro or Otay Mesa-Nestor communities.

<sup>5</sup> 2010, *Brown Field Municipal Airport Land Use Compatibility Plan*

### **Otay Mesa Community Plan**

One of the goals of the Otay Mesa Community Plan is to ensure a land use pattern that is compatible with existing and planned airport operations. The plan recognizes the potential for the Airport to be a major economic driver for the area due to its size and proximity to both the border and downtown San Diego. It also notes the importance of the non-aviation industrial uses surrounding the Airport that economically support its continued operation. The plan therefore seeks to ensure that these industrial uses are retained as the area is developed. The plan recognizes that land use policies for the Airport Influence Areas are contained in the ALUCP and implemented by the Airport Land Use Compatibility Overlay Zone of the San Diego Municipal Code. The plan acknowledges that noise generated by the Airport is a concern of the community and emphasizes that the guidance found in the ALUCP should be followed when planning future development in order to ensure compatible land use and minimize the impact to residential areas.



**Figure 1.14**  
Surrounding  
Land Use

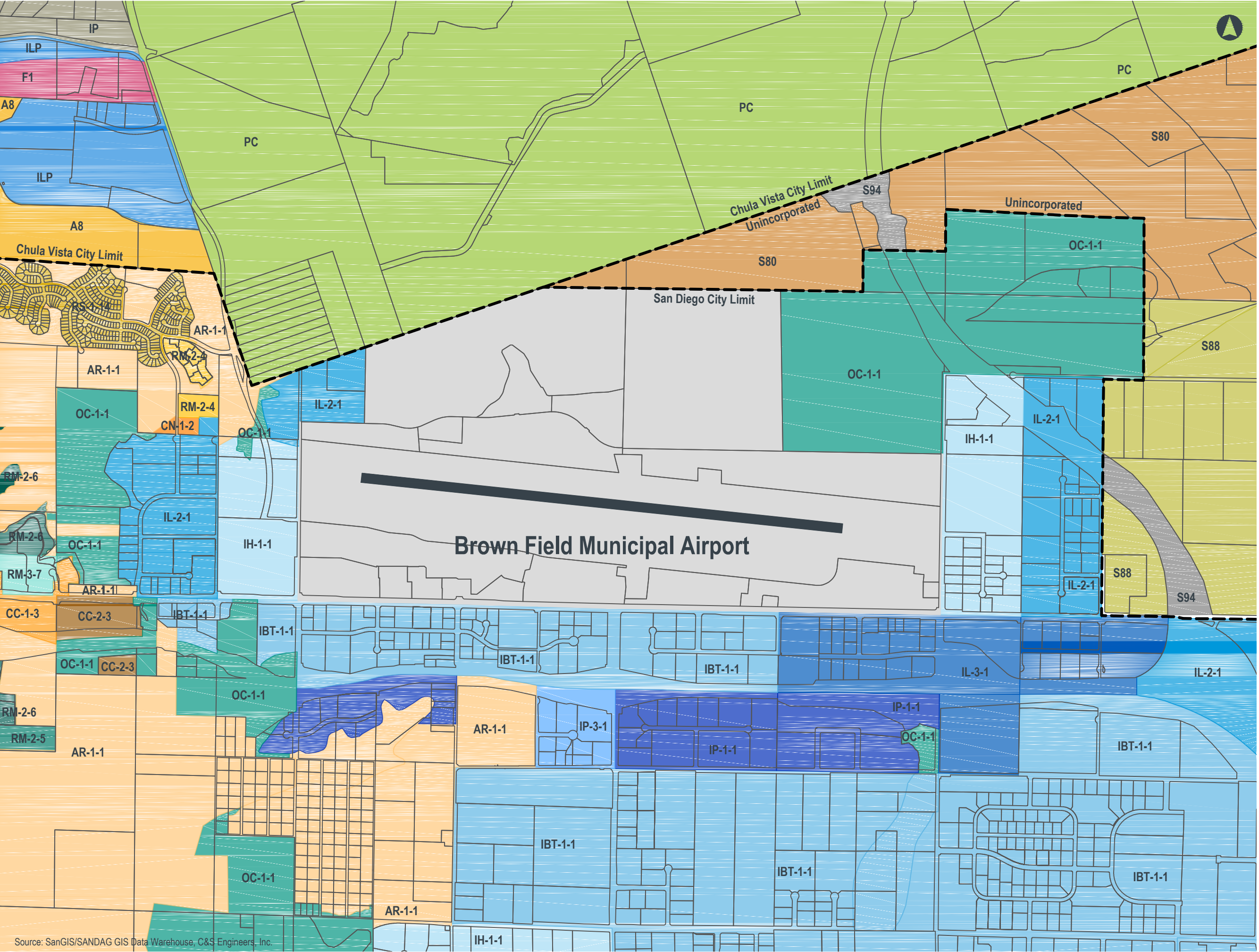
**Legend**

- Residential
- Industrial Employment
- Institutional & Public and Semi-Public Facilities
- Commercial
- Park, Open Space, & Recreation
- Street & Highway System
- Military
- Airport Property Line
- 🔥 Fire Station
- ⛪ Place of Worship
- 🎓 School

750' 0' 750' 1500'



**Figure 1.15**  
Surrounding Zoning



- San Diego<sup>1</sup>**
- AR-1-1
  - CC-1-3
  - CC-2-3
  - CN-1-2
  - IBT-1-1
  - IH-1-1
  - IL-2-1
  - IL-3-1
  - IP-1-1
  - IP-3-1
  - OC-1-1
  - RM-2-4
  - RM-2-5
  - RM-2-6
  - RM-3-7
  - RS-1-14
  - Unzoned
  - San Diego City Limit
- Chula Vista<sup>2</sup>**
- PC
  - IP
  - ILP
  - F1
  - A8
- Unincorporated<sup>3</sup>**
- S80
  - S88
  - S94

1. Refer to the City of San Diego Municipal Code, Chapter 13  
2. Refer to Chula Vista Municipal Code, Title 19  
3. Refer to San Diego County Zoning Ordinance



## Climate and Topography

The Airport is situated in the City of San Diego's Otay Mesa community, which is characterized by relatively broad, flat topography and a temperate climate. The Airport sits at an elevation of 526.3 feet above mean sea level (MSL). The landscape consists of the Otay Mesa River Valley to the north, flat areas, various canyons, and grades to the south and west, and a relatively flat mesa with the San Ysidro mountain range rising to the east. This range includes Otay Mountain, which rises to 3,566 feet.

There is an Automated Surface Observing System (ASOS) based at the Airport that gathers basic, minute-by-minute, 24-hour weather information to be used for weather reporting. According to the National Climatic Data Center's (NCDC) Summary of Monthly Normals from 1981–2010, the mean maximum temperature of the hottest month, August, is 79.9°F while the mean minimum temperature is 43.3°F in the coldest month of the year, December. January, the wettest month, sees an average of 2.48 inches of precipitation and accounts for 20 percent of the average annual precipitation of 12.51 inches. See **Table 1.8** for a summary of the temperature and precipitation averages.

**Table 1.8 – Temperature and Precipitation**

<b>Hottest Month</b>	August (79.9 °F mean maximum temperature)
<b>Coldest Month</b>	December (43.3 °F mean minimum temperature)
<b>Mean Annual Temperature</b>	61.9 °F
<b>Wettest Month</b>	January (average 2.48 inches rainfall)
<b>Mean Annual Precipitation</b>	12.37 inches

Source: NOAA NCDC Summary of Monthly Normals from 1981–2010

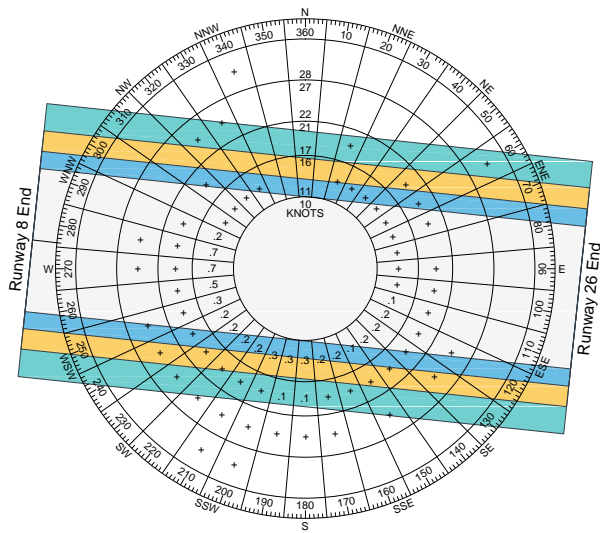
## Wind Coverage

The FAA provides guidance in FAA AC 150/5300–13A, *Airport Design*, on determining whether the existing runway orientation is sufficient for the fleet mix. The following process was completed.

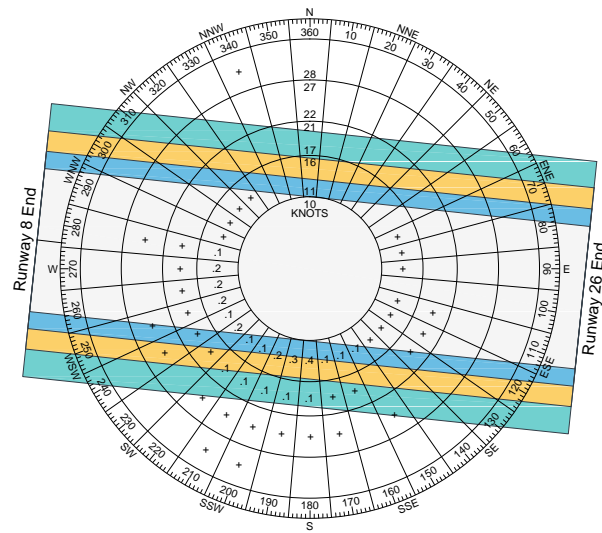
A wind analysis was conducted using historical wind data obtained from the National Oceanic and Atmospheric Administration (NOAA) NCDC. Observations for this data were taken at the Airport over the previous 10 years (2006 to 2016). Maximum crosswind components are dictated by the Airport Reference Code (ARC). The ARC signifies the design standards to which an airport is built. The ARC at the Airport is a D–IV, which has a maximum allowable crosswind component of 20 knots. The wind roses for the Airport as well as the percent coverage for each weather condition are presented on **Figure 1.16**. There is a wind rose presented for three weather conditions; All Weather, Instrument Flight Rules<sup>6</sup> (IFR), and Visual Flight Rules<sup>7</sup> (VFR). The numbers in each box indicate the number of wind readings that were registered at that speed and direction. If there is a plus sign, it indicates that less than 100 readings have been recorded at that specific speed and direction. A crosswind runway is recommended when an airport's primary runway orientation provides less than 95 percent wind coverage. As shown, the percent wind coverage is sufficient under All Weather, VFR, and IFR conditions.

<sup>6</sup> IFR apply when visibility is poor and cloud ceilings are low

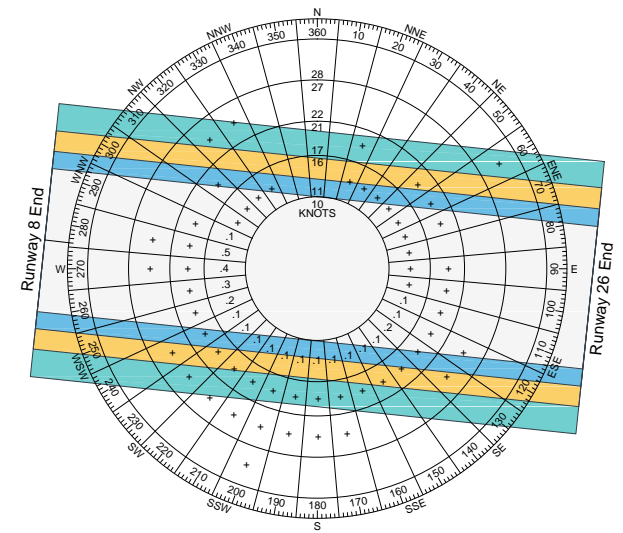
<sup>7</sup> VFR apply when weather is clear (cloud ceiling greater than 3,000 feet AGL and visibility greater than five statute miles)



All Weather Wind Coverage	
Crosswind Component	Percent Coverage
10.5 Knots	97.90%
13 Knots	98.80%
16 Knots	99.60%
20 Knots	99.86%



IFR Wind Coverage	
Crosswind Component	Percent Coverage
10.5 Knots	97.97%
13 Knots	98.67%
16 Knots	99.41%
20 Knots	99.77%



VFR Wind Coverage	
Crosswind Component	Percent Coverage
10.5 Knots	98.95%
13 Knots	99.43%
16 Knots	99.84%
20 Knots	99.95%



## 1.4 Airside Facilities

Airside facilities include those that directly support airport operations including runways, taxiways, NAVAIDs, and apron areas. A diagram of SDM's runways and taxiways is shown in **Figure 1.17**. **Table 1.9** provides a summary of the existing airside facilities that are described in the subsequent text.

### Runways

The airfield consists of two paved runways, one 7,972-foot runway and a parallel, 3,180-foot runway. The details and characteristics of each runway are described in **Table 1.9**.

**Table 1.9 – Runway System Characteristics**

Characteristics	Runway 8L/26R	Runway 8R/26L
Use	Primary	Secondary
Length x Width (feet)	7,972 x 150	3,180 x 75
Displaced Threshold (feet)	N/A	N/A
Condition	TBD*	TBD*
Pavement Strength (pounds)		
Single Wheel	80,000*	14,000*
Dual Wheel	110,000*	–
Tandem	175,000*	–
Composition	Asphalt / Concrete	Asphalt
Wind Coverage (All Weather)		
10.5 knots	97.90%	97.90%
13 knots	98.80%	98.80%
16 knots	99.60%	99.60%
20 knots	99.86%	99.86%
Markings	Non-precision / Non-precision	Visual / Visual
Edge Lighting	HIRL	MIRL
Approach Lighting	PAPI, REIL / PAPI, REIL	N/A
Instrument Approaches	GPS, RNAV / VOR	GPS / VOR

\*Pavement condition and strength will be provided/confirmed in within the Pavement Maintenance Management Plan of this Airport Master Plan. According to the Airport Master Record Form for SDM, only up to 12,000 pounds is permitted on Runway 8R/26L.

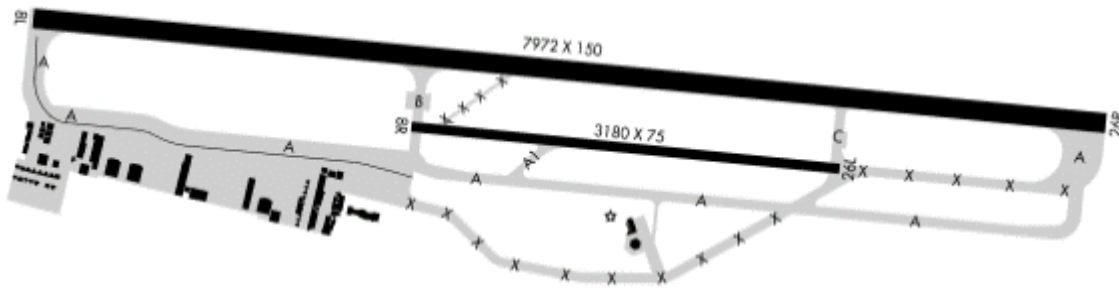
Source: FAA Airport Master Record Form 5010 (AFD EFF 03/02/2017) and C&S Engineers, Inc.

The primary runway (runway 8L/26R) provides the longest landing distance available at any public-use airport in San Diego County. A portion of this runway was recently improved as part of the Runway 8L/26R Rehabilitation Project. The project involved pavement rehabilitation of the easterly end of the runway, approximately 2,000 feet, and minor surface and joint repairs at the westerly end. The project was completed in 2016 and the project design for the rehabilitation of the rest of runway 8L/26R is approximately 100 percent complete.

## Taxiways

Runways 8L/26R and 8R/26L share a full-length, parallel taxiway, Taxiway A. Taxiways A1, B, and C, perpendicular to Taxiway A, connect the hangars and support facilities to the airfield. The current taxiway designations are non-standard and will be re-designated as part of the upcoming runway rehabilitation project. With only one parallel taxiway serving both runways, the centerline separation has to accommodate all aircraft at the Airport. The D-IV designation requires a 254-foot separation, at 329 feet, the separation between Taxiway A and Runway 8R/26L is adequate. The taxiways are equipped with Medium Intensity Taxiway Lighting (MITL). The configuration for both the taxiways and runways can be viewed on **Figure 1.17** while **Table 1.10** lists the widths of each taxiway. Information regarding the taxiway conditions will be provided within the Pavement Maintenance Management Plan of this Airport Master Plan.

Figure 1.17 – SDM Airfield



Source: FAA Airfield Facility Directory (AFD)

Table 1.10 – Taxiway Width

Taxiway	A	A1	B	C
Width (feet)	75	50	75	75

Source: Brown Field Municipal Airport Master Plan Update, 2012, and Google Earth, 2016

## Safety Areas and Object Free Areas

Runways and taxiways are surrounded by imaginary, rectangular areas known as “safety areas” and “object free areas”. The purpose of these areas is to minimize the probability of serious damage to aircraft accidentally entering the area as well as to provide greater accessibility for firefighting and rescue equipment during such incidents. These areas are required to be graded between one to five percent and remain free of obstructions to enhance the safety of aircraft that undershoot, overrun, or veer off of a runway or taxiway.

Runway design standards applicable to each runway are specified by the RDC. The RDC consists of three components related to the operational demands of aircraft:

- AAC – approach speed
- ADG – wingspan and tail height
- Runway Visibility Range (RVR) – visibility minimums

The current ALP for the Airport was last revised in 2011, prior to the update to FAA AC 150/5300-13A, which established the definitions for RDC. Therefore, the ALP presents only the first two components of the RDC for each runway. Runway 8L/26R was designated as D-IV and Runway 8R/26L as B-I (small). Combining this information with the approach visibility minimums to make up the RDC helps determine the dimensions of the Runway Safety Area (RSA) and Runway Object Free Area (ROFA). The dimensions of the Taxiway Safety Area (TSA) and Taxiway/Taxilane Object Free Areas (TOFA) are determined by the ADG of the critical aircraft, in this case, ADG IV.

**Table 1.11** lists the dimensions of the RSA, ROFA, TSA, and TOFA. The Facility Requirements chapter of this report will look at each of these areas in greater detail to determine compliance with the most up-to-date FAA standards.

**Table 1.11 – Runway and Taxiway Area Dimensions (per Standards)**

	Runway 8L/26R	Runway 8R/26L
<b>Runway Safety Area (RSA)</b>		
Length Beyond Runway End	1000'	240'
Length Prior to Threshold	600'	240'
Width	500'	120'
<b>Runway Object Free Area (ROFA)</b>		
Length Beyond Runway End	1000'	240'
Length Prior to Threshold	600'	240'
Width	800'	250'
<b>Taxiway Safety Area</b>		
Width	171'	171'
<b>Taxiway Object Free Area</b>		
Width	259'	259'
<b>Taxilane Object Free Area</b>		
Width	225'	225'

Source: FAA AC 150/5300-13A, *Airport Design*, C&S Engineers, Inc.

## Runway Protection Zones

As defined by FAA AC 150/5300-13A, the function of the Runway Protection Zone (RPZ) is to enhance the protection of people and property on the ground. This is best achieved by airport sponsor acquisition of property located within the RPZ and clearing it of incompatible land use and obstructions. The RPZ is a trapezoidal shape centered on and extending out from the runway centerline. The dimensions of an RPZ are determined by the type of aircraft that the runway accommodates as well as the approach visibility minimums. Each runway has a separate approach and departure RPZ whose dimensions are identical unless visibility minimums are lower than one mile (which is the case for SDM). RPZ dimensions for each runway end are outlined in **Table 1.12**.

**Table 1.12 – SDM Runway Protection Zones (RPZ) (per Standards)**

	Runway 8L/26R		Runway 8R/26L	
	Approach	Departure	Approach	Departure
<b>Length</b>	1,700	1,700	1,700	1,000
<b>Inner Width</b>	1,000	500	1,000	250
<b>Outer Width</b>	1,510	1,010	1,510	450

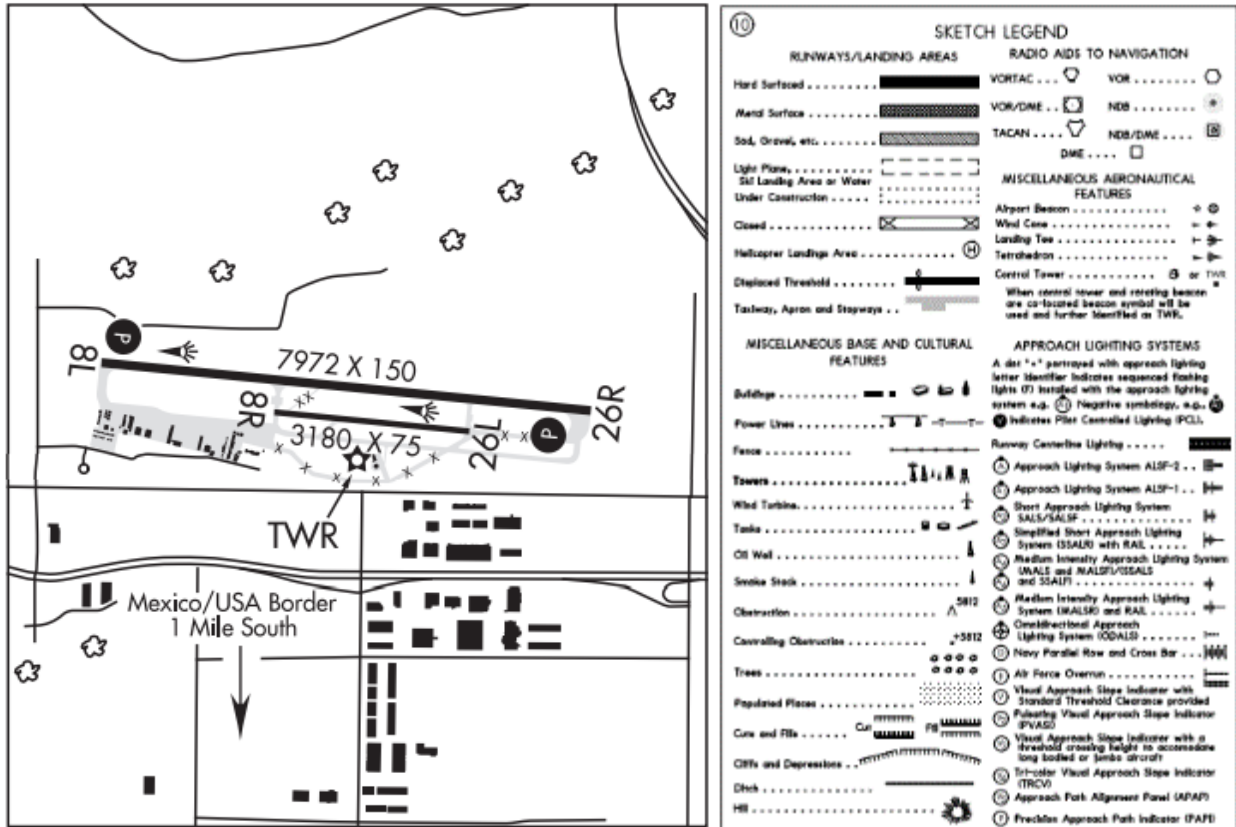
Source: FAA AC 150/5300-13A

Compliance with these standards, as well as the airfield separation standards documented in FAA AC 150/5300-13A, will be discussed under the Facility Requirements section of the Airport Master Plan.

## Lighting and Navigational Aids (NAVAIDS)

Visual navigational aids are important for aircraft operating under VFR and Instrument Flight Rules<sup>8</sup> (IFR). **Figure 1.18** is a diagram showing the location of visual aids at the Airport. The visual NAVAIDS at the Airport are documented on the following pages.

Figure 1.18 – SDM NAVAIDS



Source: FAA Airfield Facility Directory (AFD)

<sup>8</sup> The term IFR refers to a set of rules governing the conduct of flight under instrument meteorological conditions (IMC) where pilots rely on instrumentation to navigate.





**Wind Sock**

C&S Engineers, Inc. 03/07/2017

### Wind Cone

A conical textile tube that provides pilots with a visual indication of wind direction and velocity. The Airport has the following lighted wind cones:

- The primary wind cone is co-located with the segmented circle between Runways 8L/26R and 8R/26L.
- A secondary wind cone is located north of the approach end of Runway 8L.

Both wind cones are in good condition.

### Segmented Circle

A segmented circle is a visual aid designed to provide information about the traffic pattern to aircraft overhead. It is often co-located with a wind cone, as is the case at SDM where it is located between Runways

8L/26R and 8R/26L. The segmented circle at SDM is in need of repainting.

### Airport Beacon

A rotating beacon is installed to assist pilots in identifying the Airport at night. As a civilian airport, the beacon alternates between white and green flashing lights. The SDM beacon is operational and is located on the ATCT.

### Runway End Identifier Lights

Runway End Identifier Lights (REILs) are installed at an airfield to provide rapid and positive identification of the approach end of a particular runway. The system consists of a pair of synchronized, flashing lights located laterally on each side of the runway threshold. Newly installed REILs exist on both the Runway 8L and 26R ends.

### Precision Approach Path Indicators

Precision Approach Path Indicators (PAPIs) provide visual approach slope guidance during aircraft landing operations. The PAPI system consists of four light box units, located left of the runway edge and perpendicular to the runway centerline. PAPIs are installed on both the Runway 8L and 26R ends.

### Edge Lighting

Runway 8L/26R is equipped with High Intensity Runway Lighting (HIRL) while Runway 8R/26L is equipped with Medium Intensity Runway Lighting (MIRL). All taxiways are equipped with MITL.

A summary of the runway-specific, visual NAVAIDS is provided in **Table 1.13**. Additional information on the condition of airfield lighting will be provided in Working Paper 3 - Facility Requirements.



**PAPI**

C&S Engineers, Inc. 03/07/2017

Table 1.13 – Runway Lighting

	✓ = Available	* = Unavailable
	8L/26R	8R/26L
MIRL	*	✓
HIRL	✓	*
REIL	✓ / ✓	*
PAPI	✓ / ✓	*

Source: FAA Airport Master Record Form 5010 (AFD EFF 03/30/2017) and C&S Engineers, Inc.

## Instrument Procedures and Electronic Aids to Navigation

An Instrument Approach Procedure (IAP) is a flight procedure that provides an aircraft transition from the en route flight environment to a point from which a safe landing may be accomplished. When cloud ceilings are low and visibility is poor, pilots must use IAPs in order to land. Electronic NAVAIDS are those that are utilized through instrumentation in the plane as a part of en route navigation and IAPs. **Table 1.14** lists the IAPs available at the Airport and the associated minimums. The electronic NAVAIDS available to pilots operating at the Airport include the following:

### VOR

VHF (very high frequency) Omni Directional Radio Range (VOR) is an electronic, ground-based system that provides both lateral and vertical guidance to an aircraft approaching and landing on a runway during periods of low ceilings and/or reduced visibility.

### RNAV (GPS) RWY 8L

Area navigation (RNAV) was the precursor to Global Positioning System (GPS) and uses a network of satellites and land stations to create reference points that allows users with the proper receivers to determine their position in the sky. As technology advanced, GPS navigation can now provide highly accurate navigational data based on satellites alone. This is hugely beneficial to airports because it allows them to set up an instrument approach without installing any expensive instrumentation on the ground. The Airport currently has one published straight-in RNAV (GPS) approach to Runway 8L.

Table 1.14 – SDM IAPs and Minimums

		Aircraft Approach Category Altitude (feet MSL)-Visibility (statute miles)			
Procedure	Category	A	B	C	D
VOR or GPS-A	Circling	1220-2 3/4			
	SAN DIEGO INTL ALTIMETER SETTING MINIMUMS				
	Circling	1340-2 3/4			
RNAV (GPS) RWY 8L	LPV	726-3/4			
	LNAV/VNAV	776-3/4			
	LNAV	840-1	840-7/8		
	Circling	980-1	1000-1	1180-1 3/4	2260-3

Source: Approach plates valid 27 APR 2017 to 25 MAY 2017, C&S Engineers, Inc.

The Airport also has several published departure procedures as shown in Table 1.15.

Table 1.15 – SDM Departure Procedures and Minimums

Procedure	Takeoff Runway	Takeoff Minimums	Takeoff Obstacle Note	Route Description
CWARD ONE (RNAV)	8R	NA-ATC		
	26L			
	8L	Standard with minimum climb 570' per NM to 3100		Climbing left turn heading 280° to 2900, expect vectors to GYWNN, then on track 308° to PADRZ, then on track 337° to cross CWARD a or below 12000, thence on (transition), maintain ATC assigned altitude. Expect filed altitude 10 minutes
	26R			
PADRZ ONE (RNAV)	8R	NA-ATC		
	26L			
	8L	Standard with minimum climb 570' per NM to 3100		Climbing left turn heading 280° to 2900, expect vectors to GYWNN, then on track 308° to PADRZ, thence on (transition), maintain 15000. Expect filed altitude 10 minutes after departure
	26R			

Source: Approach plates valid 27 APR 2017 to 25 MAY 2017, C&S Engineers, Inc.

## Additional Equipment

The airfield is supported by the following equipment:

**Automated Surface Observing System:** The Airport is equipped with an Automated Surface Observing System (ASOS), which is designed to serve aviation and meteorological observing needs for safe and efficient aviation operations, weather forecasting and climatology.

**Airfield Electrical Vault:** The airfield electrical vault is located on the apron, west of the ATCT.

## Aircraft Hangars and Parking Areas

As documented in Section 1.2, Ownership and Operations, the Airport has several different leaseholders that offer both hangars and tie-down storage for based and transient aircraft use. The 21-acre apron contains 130 individual hangar facilities, approximately 100 tie-downs, and three helicopter parking spaces. **Table 1.15** provides a list of the different aircraft parking areas and the number of spaces available at each.



ASOS

C&S Engineers, Inc. 03/07/2017



Table 1.16 – Aircraft Hangars and Parking Areas

Lease Title / Area	Based / Transient	Tie-downs *	T-Hangars	Box Hangars	Large Box Hangars (more than 1 aircraft)	Nose Docks	Total
First Flight Corp	Both	32	2	13	0	1	47
San Diego Jet Center	Both	53	45	37	3	2	138
Experimental Aircraft Association Chapter 14	Based	8	14	5	1		28
Tactical Air Operations	Based	1	0	0	6		7
U.S. Customs	Transient	3	-	-	-		3
U.S. Border Patrol Search Trauma and Rescue (BORSTAR)	-	-	-	1	1	1	2
City of San Diego	-	-	-	2	-		2
City of San Diego Fire Station 43	Based	-	-	-	-		-
The Landing Strip	-	-	-	-	-		-
<b>Total</b>		<b>97</b>	<b>61</b>	<b>58</b>	<b>11</b>	<b>4</b>	<b>231</b>

\*Estimate based on Google Earth imagery, accurate count to be determined with updated aerial imagery.

Source: Google Earth, City of San Diego and C&S Engineers, Inc.

Information about the specific lease areas, including challenges observed, can be found in Attachment 1, Lease Parcel Inventory. **Missing or incomplete information will be updated pending the provision of updated aerial imagery.**

## Airfield Signage and Markings

Airfield signage and markings are used for navigational and safety purposes. Types of signage and markings located on the airfield include directional and informational signage.

### Directional Signage

The Airport is equipped with lighted location signs on all taxiways, runway ends and runway crossings.

### Informational Signage

Informational signage is in place to notify pilots and other users of important information such as ATCT or ground control frequencies, procedures, and hazards.

### Airfield Markings

Airfield pavement markings provide information that is useful during aircraft takeoff, landing, and taxiing. Examples of airfield markings include runway hold positions, non-movement area boundaries, and taxiway edge markings.

The airfield signage is in good condition. Some markings require repainting, in particular the markings indicating the decommissioned sections of Taxiway C. Additional information on the condition and lighting of airfield signage and markings will be provided in the Facility Requirements section of this Airport Master Plan.



**Taxiway Signage**

C&S Engineers, Inc. 03/07/2017

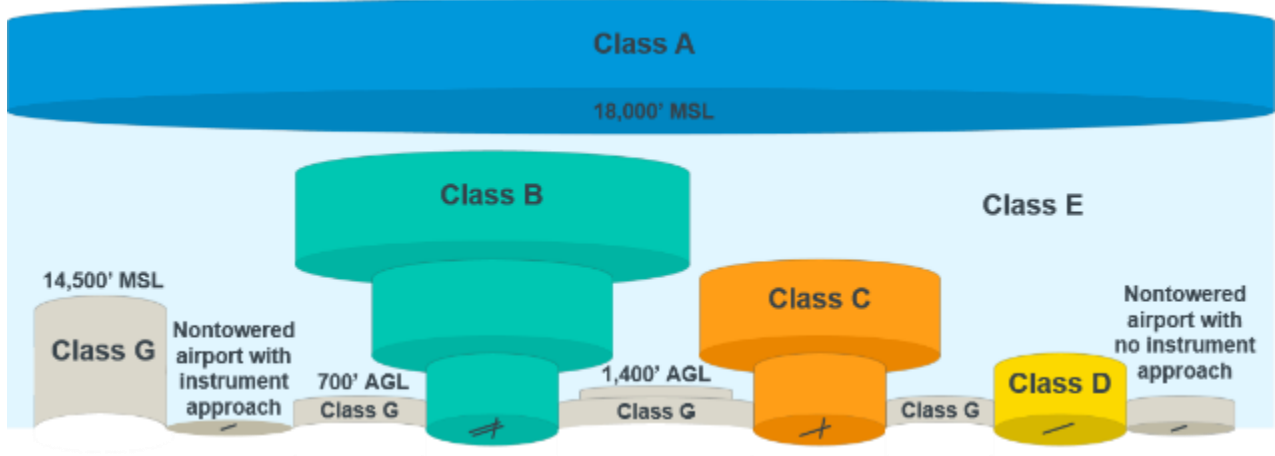
## Airspace and Air Traffic Control

The ATCT is located on the south-central side of the airfield and provides Air Traffic Control (ATC) services at the Airport. The ATCT is FAA-owned but contracted out for operation. The current ATCT is operational from 8:00 a.m. to 8:00 p.m.

Pilots navigate under either VFR or IFR. VFR refers to the rules that govern flight procedures when weather is greater than FAA specified minimums. Minimums vary depending on the area and altitude. VFR conditions occur at or above 1,000 feet and at or greater than three statute miles (SM) visibility. Flights operated under VFR navigate using a mixture of visual clues and instrumentation. VFR flights are not required to contact ATC unless they are entering controlled airspace. The term IFR refers to the set of rules governing the conduct of flight under instrument meteorological conditions (IMC) where pilots rely solely on their instrumentation to navigate and are required to be in contact with ATC. IFR conditions are at 1,000 feet or less and/or below three SM visibility.

Whether a pilot flies under VFR or IFR depends on the weather conditions at the departure and arrival airports and the class(es) of airspace the pilot will be flying through. The National Airspace System (NAS) is run and maintained by the FAA and categorizes airspace into several classes (A, B, C, D, E, and G). Each class of airspace has specific requirements, restrictions, and various dimensions to best protect the airports across the country. See **Figure 1.19** for a simplified example of the different types of airspace.

Figure 1.19 – Airspace Classification



Source: FAAafety.gov, C&S Engineers, Inc.

The airspace surrounding SDM is designated as Class D when the ATCT is in operation. Class D airspace surrounds airports that have an operational ATCT. It begins at the surface and generally extends to 2,500 feet above the airport and surrounds it with a five-SM radius. This class of airspace is referred to as being “controlled” because aircraft using it must establish and maintain two-way radio communications with the ATCT before entering. The SDM Class D airspace extends from the surface to 3,000 feet above ground level (AGL) and has a 2.5-NM radius. When the ATCT is closed, the Airport operates under Class G (uncontrolled) airspace. SDM’s airspace is very complicated. The Airport’s airspace overlaps with NOLF Imperial Beach’s to the west and abruptly stops at the United States/Mexican border to the south. Furthermore, the San Ysidro Mountains to the east rise above 3,000 feet, limiting the runway to visual approaches and instrument approaches with high landing minimums. The Airport’s Class G (uncontrolled) airspace is from the surface to 700 feet AGL. Class E (controlled) airspace extends above the 700-foot surface to the overlaying Class A airspace at 18,000 feet AGL.



## 1.5 Support Facilities

### Fixed Base Operators and Tenant Facilities

In addition to the aircraft storage facilities documented under Section 1.4, Aircraft Hangar and Parking Areas, the airport tenants and FBOs have a number of support facilities to accommodate maintenance and other aircraft-related activities at the Airport. These facilities are delineated by leasehold and described in Attachment 1, Lease Parcel Inventory. Support facilities include several nose docks, which are hangar-like facilities that only provide cover to the nose of the aircraft. Many of the nose docks at Brown Field Municipal Airport serve multiple purposes including, aircraft parking and tenant offices.

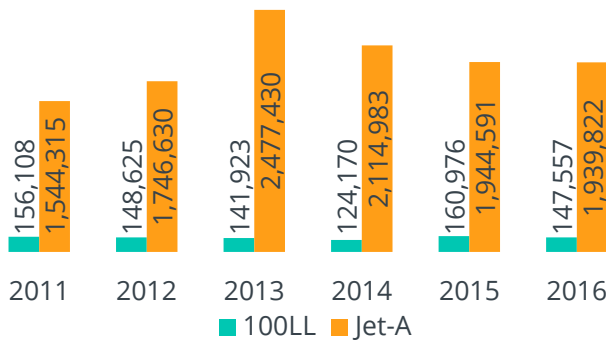


Nose Dock

C&S Engineers, Inc. 03/07/2017

### Aircraft Fueling

Figure 1.20 – Historic Fuel Sales by Type (Gallons)



Source: City of San Diego, C&S Engineers, Inc.

There are no City-owned or operated fueling stations at the Airport. These services are instead provided by the FBOs as documented in Table 1.2. Both First Flight Corp and San Diego Jet Center offer full-service Jet-A fuel; and 24/7, self-service 100-low-lead (LL) Aviation Gasoline (Avgas) fuel. San Diego Jet Center also provides full-service 100LL Avgas fuel.

San Diego Jet Center sells the greatest amount of Jet-A fuel while First Flight Corp sells the greatest amount of 100LL. Fuel flowage records were reviewed back to 2011 for each of the providers at the Airport

and the total amount of each type of fuel sold per fiscal year (July 1 – June 30) is presented on **Figure 1.20**.

### Fire Station

San Diego Fire Department, Station 43, is located on the southeast corner of the airport property. The station is not a designated Aircraft Rescue and Fire Fighting (ARFF) station for SDM, but will respond to a call at the Airport if available. The station has one large hangar and an administration building, as well as a helicopter landing area.

## 1.6 Landside Facilities

The landside portion of an airport are those areas that do not play a direct role in the operation of aircraft. This includes areas such as the administration building, offices, parking lots, entrance roads, and the restaurant. All landside facilities are located on the south side of the Airport.

### Airport Administration Building

The administration building is located at 1424 Continental St. The building houses the airport management offices, San Diego Jet Center offices, and the U.S. Customs office. It also houses the restaurant. The decommissioned ATCT, now used for storage, is part of the administration building and is considered historically significant.

### Restaurant

The Landing Strip is the restaurant located in the eastern part of the administration building. The restaurant is broken into two spaces, a café and a bar/restaurant. The hours of operation are 8:00 am to 6:00 pm on Mondays, 8:00 am to 8:00 pm on Tuesdays, 8:00 am to 10:00 pm on Wednesdays and Thursdays, 8:00 am to 1:00 am on Fridays and Sundays, and 8:00 am to 4:00 pm on Saturdays.

### Fleet Vehicles and Equipment

The fleet vehicles owned and operated by the City are listed in **Table 1.16**.

**Table 1.17 – City-Owned Vehicles and Equipment**

Year	Make	Model	Call Sign	Condition
2011	Ford	F-350 Super Duty	Ops 1	Good
2008	Ford	Explorer	Ops 2	Fair
2009	Ford	F-550	Maintenance 1	Good
2001	Ford	F-350 Super Duty	Maintenance 2	Poor
2008	Case	L740	Tractor	Good

Source: City of San Diego

## Access, Circulation and Parking

### Security

Perimeter fencing surrounds the Airport and controlled-access gates provide security.

### Vehicle Access

Local and regional vehicle access routes to the Airport are identified in Section 1.2, Airport Setting.

### Multi-modal Access

There are crosswalks along Otay Mesa Road, and a Bus stop at Otay Mesa Rd. & Gables Bl. Bus service is provided by San Diego Metropolitan Transit Service, Route 905.

### On-Airport Circulation

The primary access roads to existing facilities are Curran and Continental St. Additional access roads on the airport property include Boeing St., Sikorsky St., Fairchild St., Lockheed St., and Lycoming St. A maintenance road runs along the inside of the perimeter fence.

### Parking

The Airport has several free public parking areas available. There are two main public lots, one directly south, and one directly north of the administration building. Additional parking areas within the perimeter fence are available to tenants, their visitors, and employees.

## **Utilities**

Gas and electric services are provided by San Diego Gas and Electric (SDG&E).

## 1.7 Stakeholder Feedback

As part of the airport inventory process, steps were taken in order to solicit feedback from the surrounding airport community, users and tenants. A public advisory committee (PAC) has been assembled that includes several airport tenants as well as representatives from the surrounding community. The PAC will hold seven meetings at regular intervals throughout the master planning process, the first of which took place on April 19, 2017. The PAC will act as a sounding board in the development of the Airport Master Plan, as well as be a conduit for information between various interest groups throughout the community. This interaction between the PAC and City is essential for the review and assessment of project information. The PAC meetings are also open to the public and have a period dedicated to hearing and acknowledging public comments. Separate Public Workshops will also be held throughout the master plan process.



## 1.8 Key Considerations

This section identifies some of the key considerations that the master planning process will review and attempt to resolve. The items summarized below were identified through an inventory of existing conditions as well as coordination with airport management, users, and other stakeholders.

### Airside

- Deteriorating pavement
- Water issues on airfield
- Non-standard taxiway designations (will be resolved during upcoming project)
- ATCT provides a benefit to users
- Primary runway provides the longest landing distance available at any public-use airport in San Diego county

### Airspace

- Terrain preventing an ILS approach
- Airspace is complicated by the international border and proximity to Tijuana International Airport

### Landside

- Aging infrastructure and deteriorating condition of some facilities
- Plumbing issues

### Environmental and Land Use Compatibility

- Vernal pools
- Wildlife concerns including the potential for burrowing owls
- Need to consider surrounding land uses
- City's Multi-Habitat Planning Area (MHPA) restrictions on development

A separate environmental baseline assessment effort is ongoing and will be documented in Working Paper 5 – Environmental Overview.

### Economic Development

- Potential associated with the MAP
- Limited staff resources
- Limits created by historical significance of facilities

### Additional Considerations, Opportunities and Constraints

The first PAC meeting was held on April 19, 2017, during which, several of the above key considerations were presented. PAC members were invited to provide additional input. Comments included the following:

- Incompatible activities on surrounding land uses
- Desire was expressed for continued support of GA facilities and users, in particular flight training
- There is concern regarding the potential for incompatible development on surrounding, undeveloped parcels

**Attachment 1.**

# Lease Parcel Inventory

# San Diego Jet Center (East)



## Quick Facts

Total Lease Area	~12.9 ac.
Number of Hangars	52
SF of Hangars	TBD
Number of Tie-downs	~45



## Description

A major portion of the airfield is currently operated by the San Diego Jet Center, an FBO, catering to based and transient aircraft hangar storage and tie-downs. Services also include fuel, aircraft maintenance, car rental, pilot lounge, crew services, and cargo handling. The eastern section of the leasehold makes up most of the eastern half of the apron. It consists of a number of T-hangars, conventional box hangars, one large box hangar, the Altitude Helicopters nose dock, and three fuel tanks. There are several aircraft tie-downs among the hangars. The San Diego Jet Center offices are located in the western portion of the administration building.

## Challenges

- Hangars in poor condition



# San Diego Jet Center (West)



## Quick Facts

Total Lease Area	~8.5 ac.
Number of Hangars	33
SF of Hangars	TBD
Number of Tie-downs	~8

## Description

The western portion of the San Diego Jet Center leasehold is made up of the southwest corner and a block centered in the eastern half of the apron. It consists of a number of modular T-hangars, conventional box hangars, two large hangars, the San Diego Jet Center nose dock, and a fuel tank. There are several aircraft tie-downs and two helicopter parking spots on the apron along Taxiway A.

## Challenges

- Hangars in poor condition
- Pavement in southwest corner in poor condition



# U.S. Border Patrol Search Trauma and Rescue



### Quick Facts

Total Lease Area	~1.9 ac.
Number of Hangars	2
SF of Hangars	5,200 SF
Parking Area	68,762 SF

### Description

The U.S. Border Patrol Search Trauma and Rescue leasehold is located between San Diego Jet Center to the east and Tactical Air Operations to the west. U.S. Border Patrol parks their fleet of vehicles in the apron space marked by the blue and white box. The leasehold also encompasses two hangars and a nose dock.

### Challenges

- Poor hangar conditions

# Tactical Air Operations



## Quick Facts

Total Lease Area	~2.3 ac.
Number of Hangars	6
SF of Hangars	29,400 SF
Number of Tie-downs	~2

## Description

The Tactical Air Operations leasehold is located in the center of the apron, between U.S. Border Patrol and San Diego Jet Center. The block includes one row of large box hangars and a solitary large box hangar.



## Lease Parcel Inventory

# First Flight Corp



### Quick Facts

Total Lease Area	~3 ac.
Number of Hangars	14
SF of Hangars	38,032 SF
Number of Tie-downs	~32

### Description

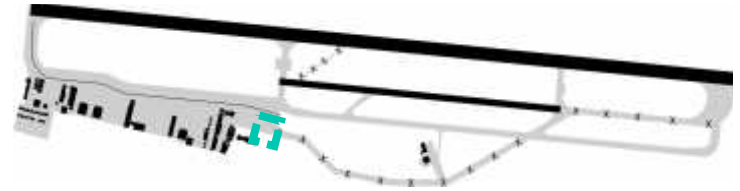
First Flight Corp. operates as an FBO in the northeastern corner of the apron, catering to based and transient aircraft hangar storage and tie-downs. Services also include fuel, aircraft maintenance, car rental, pilot lounge, crew services, and cargo handling. The First Flight Corp leasehold includes conventional box hangars, T-hangars, and Quonset huts, as well as the First Flight Corp./Pacific Coast Skydive nose dock. A number of tie-downs are interspersed. The FBO also provides two fuel tanks.

### Challenges

- Hangars in fair to poor condition
- Parking off the west end of the apron is unpaved
- Limited apron space and number of tie-downs

# Lease Parcel Inventory

## U.S. Customs



### Quick Facts

Total Lease Area	~0.4 ac.
Number of Hangars	0
Number of Tie-downs	~3

### Description

The designated Customs apron area is located on the eastern most portion of the apron, north of the administration building. The designated Customs apron area is marked by blue and white lines and includes tie-downs for aircraft arriving from Mexico. U.S. Customs also leases a small office in the administration building.

### Challenges

- Limited apron space and number of tie-downs





# Experimental Aircraft Association Chapter 14



### Quick Facts

Total Lease Area	~4.1 ac.
Number of Hangars	20
SF of Hangars	19,485
Number of Tie-downs	~8



### Description

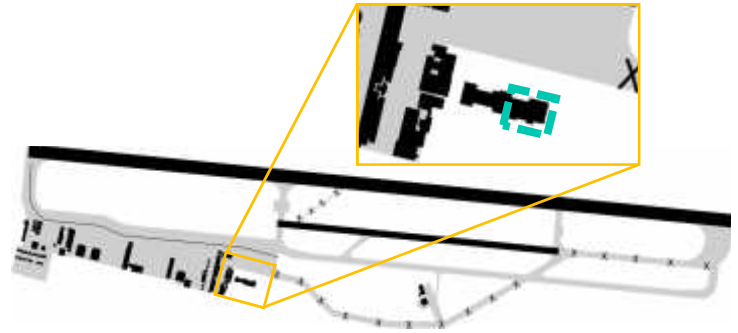
This is the only leasehold located on a separate apron adjacent to the tower. There are a combination of T-hangars and conventional box hangars and one hexagonal large hangar. Eight of the T-hangars are located on the old taxiway to the south.

### Challenges

- T-hangars are in fair to poor condition
- Pavement in poor condition



# The Landing Strip



## Quick Facts

SF of Restaurant

~6,538 SF



## Description

The restaurant occupies the eastern end of the administration building. The end of the administration building houses the bar and restaurant and the café is located next-door on the southern side.

## Challenges

- Signage in poor condition

