Chapter 2: Inventory of Existing Conditions

2.1 INTRODUCTION

Palm Springs International Airport (PSP or the Airport) is an approximately 930-acre primary commercial service airport serving approximately 1.6 million passengers in 2007[1]. Although situated completely within the City of Palm Springs, California (City), as presented in **Figure 2-1**, the Airport serves as the major commercial and general aviation air transportation center for Southern California's Coachella Valley. Much of the aviation activity in this area, commonly known as Palm Springs but involving numerous cities, is economically driven in large part by the tourism industry.

Palm Springs International Airport is owned by the City of Palm Springs and operated by the City of Palm Springs Department of Aviation. The City procured a consulting firm via a nationwide solicitation process to prepare this Master Plan Update.

Two previous Airport Master Plans have been prepared for the Airport with the most recent update completed in 2003. This Master Plan Update, funded primarily by the Federal Aviation Administration (FAA), updates the 2003 Master Plan. The FAA recommends that airports update Master Plans every five years to reflect changes in the operating environment at the Airport and within the industry as a whole. This Master Plan Update will project a framework for airport development over the ensuing 20-year period that will cost-effectively satisfy aviation demand while considering the environmental and socioeconomic implications and using the objectives set forth in the preceding chapter.

The previous Master Plan was approved by the Palm Springs International Airport Commission on May 7, 2003, approved by the City of Palm Springs Planning Commission on May 28, 2003, and adopted by the City of Palm Springs City Council on July 2nd, 2003[2]. The recommended alternative from the 2003 Master Plan included the following improvements:

- Short-term improvements to security and infrastructure maintenance
- Terminal access and loop road plans modified to allow for a security checkpoint away from the terminal
- Improvements to the terminal building and the construction of new general aviation hangars
- Taxiway improvements designed to enhance safety and improve efficiency
- A Category I precision instrument approach procedure from the south as well as the accommodating approach lighting to Runway 31L
- Replacement of the air traffic control tower (ATCT)
- Plan allowing for flexibility for an aviation-related business park on the northeast side of the Airport as an economic opportunity for the community

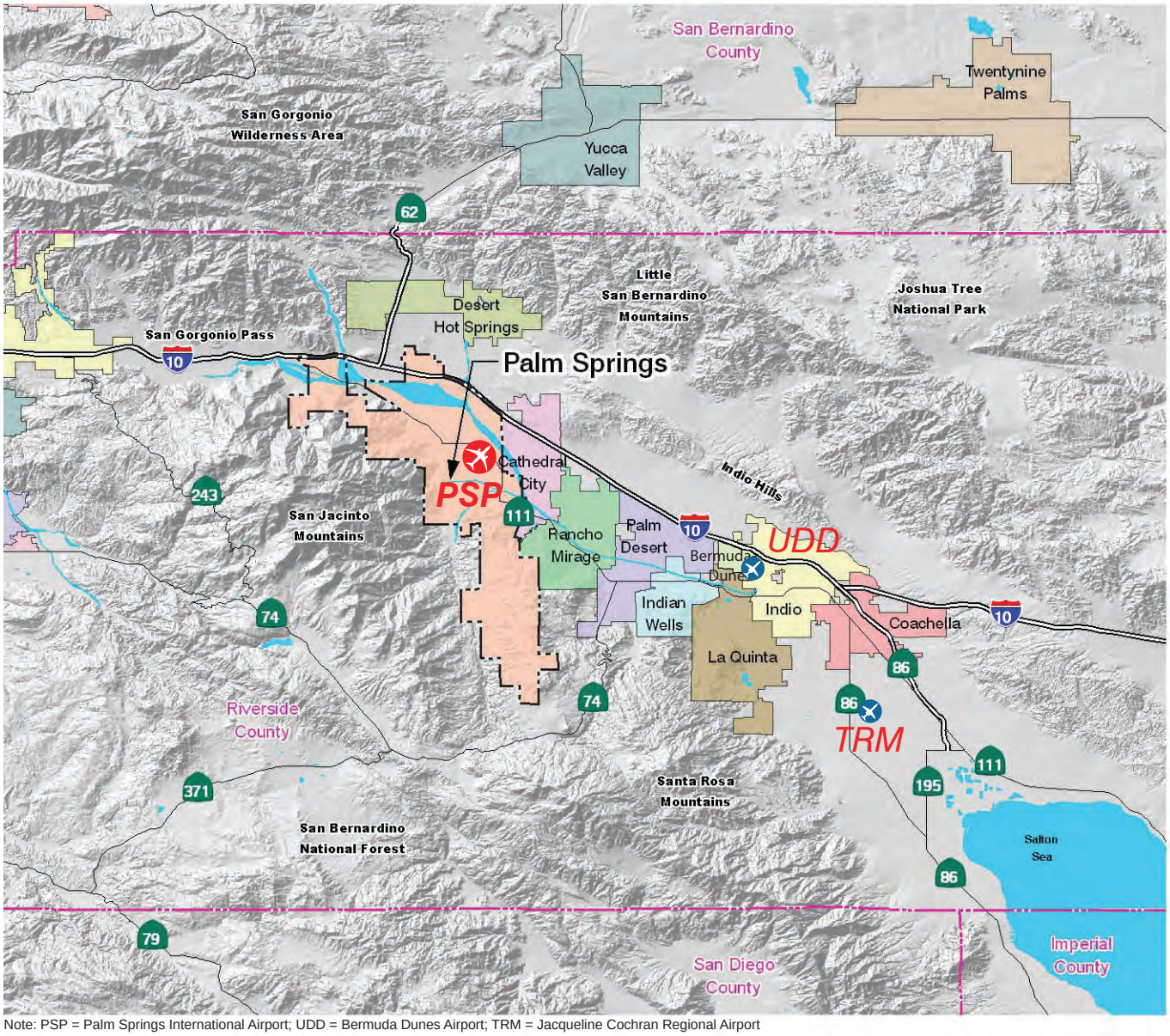
[1] PSP Airport Staff (enplaned, deplaned stats for 2007 by air carrier)

[2] City Council Meeting Minutes for 7/2/03 (note: RC ALUCP #18 says Master Plan was adopted in 2002)

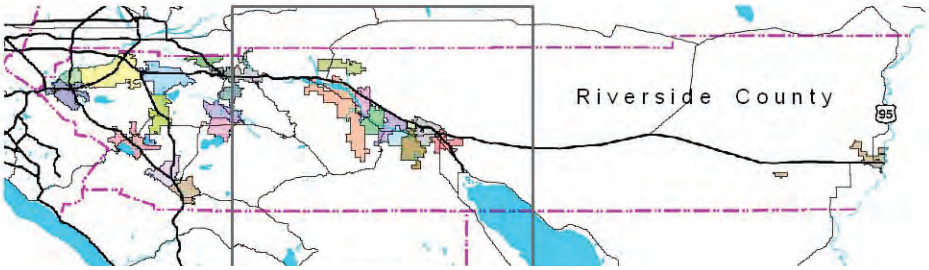
The following improvements have been made:

- Extension of the north end of Runway 13R-31L to 10,000 feet
- Land acquisition (for noise compatibility purposes)
- Development of a new Regional Concourse to accommodate airlines serving Palm Springs with turbo-prop and regional jet aircraft
- Construction of Kirk Douglas Way (formerly Mid Valley Parkway)
- Realignment of Farrell drive
- Construction of a noise berm along the south side of East Vista Chino Road at the north end of the airfield
- Extension of the noise wall located west of Runway 13R-31L
- Reconfiguration of the terminal area circulation roads and the construction of a Vehicle Inspection Plaza

This chapter provides an update of the 2003 Master Plan Update's Inventory through Summer 2009.



Note: PSP = Palm Springs International Airport; UDD = Bermuda Dunes Airport; TRM = Jacqueline Cochran Regional Airport



Legend

- Commercial Airport
- General Aviation Airport
- City
- Interstate
- State Route

Source: City of Palm Springs General Plan

PALM SPRINGS INTERNATIONAL AIRPORT

N

PSP and the Coachella Valley

Figure 2-1

Palm Springs International Airport
Master Plan

2.2 AIRPORT HISTORY

Prior to the United States' involvement in World War II, the Army Air Corps (predecessor to the Air Force) searched for a suitable location for aircraft landing fields. Instrumental in the site selection were dry weather conditions and calm winds. In 1939, the Army Corps of Engineers (Corps) constructed on the Palm Springs International Airport site the first airport in Riverside County. The land occupied by the Airport was leased to the Federal Government by the Agua Caliente Tribe of the Cahuilla Native Americans. The Corps constructed two parallel runways, a taxiway system and a large paved aircraft parking ramp. The looming threat of war necessitated the construction of additional paved aircraft parking ramps with adjoining taxiways in several parts of town. At the end of the war, the additional parking ramps and taxiways were decommissioned and relinquished to the City. The City of Palm Springs acquired the Airport land from the Agua Caliente Tribe in 1961 for $1,559,170 as a result of Congress passing the Indian Lands Equalization Bill.

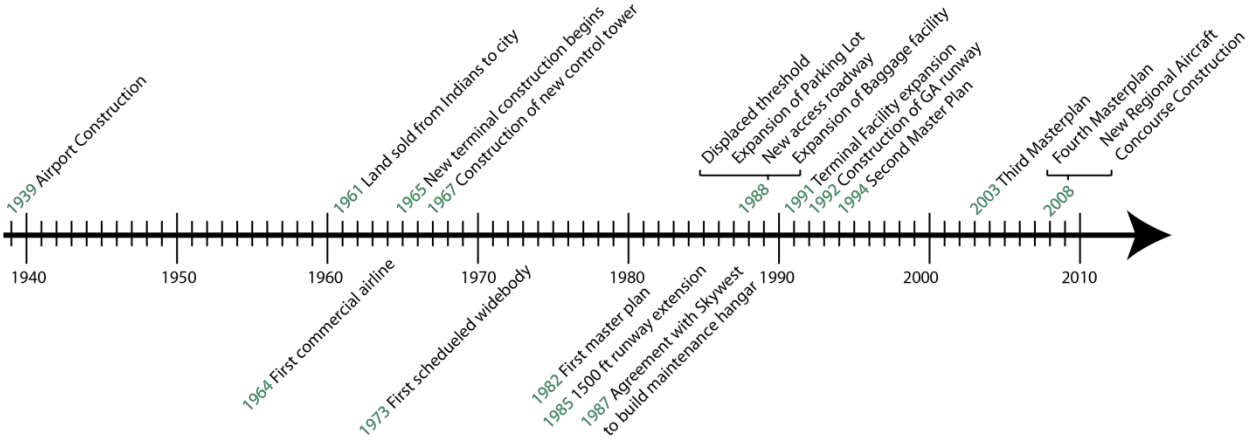
Scheduled air carrier service began at Palm Springs Municipal Airport in 1964 with Bonanza Airlines operating Fairchild F-27A turboprop aircraft. As Palm Springs and the adjacent area continued to evolve into the role of a top resort destination, the Airport quickly outgrew its original facilities. A Capital Improvement Plan proceeded in 1965 with the two-year construction of a new $1.4 million passenger terminal building.

The jet age, combined with increased passenger traffic, brought about many changes at PSP. Beginning in 1967, the Airport received an Aircraft Traffic Control Tower (ATCT) to address increased traffic. The following year, the Airport expanded the passenger terminal complex with an additional ticketing lobby. The increased demand led to an $11 million land acquisition and Capital Improvements Program. Upgrades to PSP included fencing, pavements and approach lighting, new taxiways, runway rehabilitation and an Aircraft Rescue and Fire Fighting (ARFF) station.

Until 1978, the Civil Aeronautics Board regulated air transportation. The Board regulated fares, schedules, awarded routes to airlines, and limited the introduction of new air carriers. In late 1978, however, the United States Congress passed the Airline Deregulation Act of 1978. At the completion of the implementation phase, airlines were free to choose what routes to service, how much to charge for air fares, and what new markets to expand service into. Palm Springs' reputation as a growing vacation destination minimized the negative impacts of deregulation that other small cities experienced.

Within the decade after airline deregulation, service at PSP included service to/from cities outside the United States. To that end, in 1986, the City Council voted to change the name of the Airport to Palm Springs International Airport (PSP). After the events of September 11, 2001 (9/11), PSP experienced a 19 percent drop in passenger enplanements and a 20 percent drop in air carrier operations, reflecting a national decline in air service. By 2004 PSP rebounded and exceeded its pre-9/11 passenger enplanement and operations volumes. Overall aircraft operations did not experience the degree of decline as did the air carrier operations. The historical timeline at PSP is illustrated in **Figure 2-2**.

Figure 2-2: Timeline of Airport



2.3 AIRPORT BACKGROUND AND ROLE

2.3-1 Airport Background

Palm Springs International Airport (PSP) is a 930-acre commercial service airport owned and operated by the City of Palm Springs. The Airport has two parallel asphalt paved runways with dimensions of 10,001 feet long by 150 feet wide (Runway 13R-31L) and 4,952 feet long by 75 feet wide (Runway 13L-31R). The major facilities at the Airport include a main passenger terminal complex with two passenger concourses and two fixed base operators (FBOs), each providing a wide range of general aviation services. In 2007, the Airport served approximately 1.6 million passengers and facilitated 84,677 aircraft operations. The amount of cargo transported through PSP has dramatically diminished since 1990 from 422 tons to 16 tons in 2007. This is primarily due to stricter security regulations for passenger carriers and the large presence of UPS at LA/Ontario International Airport.

The Airport is geographically located within a flat area of the Coachella Valley at 474 feet above mean sea level (MSL)[3]. The Airport is surrounded within a 10 mile radius by the Santa Rosa, Little San Bernardino and San Jacinto Mountains, with a maximum elevation approaching 11,000 feet.

The Airport is located approximately 2.5 miles from the City of Palm Springs' central business district. Nearby cities within 5 miles of Airport property include the City of Cathedral City (east and southeast of PSP), the City of Rancho Mirage (approximately 3 miles southeast of PSP). Other cities, from north to south surrounding the Airport include Desert Hot Springs, Palm Desert, Bermuda Dunes, Indian Wells, La Quinta, Indio, and Coachella. These Coachella Valley cities are illustrated on **Figure 2-1**.

Several large metropolitan regions are also located within driving distance to Palm Springs, including Los Angeles, California (100 miles to the west), San Diego, California (approximately 140 miles to the southwest), Las Vegas, Nevada (270 miles to the northeast) and Phoenix, Arizona (270 miles to the east). The proximity to these cities makes the Palm Springs region a popular resort destination. Palm Springs also enjoys a growing national and international reputation for luxury resorts and spas, golf, tennis, dining, and architectural design with one of the largest collections of mid-century modern architecture in the world. The airport is currently served with non-stop flights to about 17 cities in the United States and Canada.

Climate

Three mountain ranges (San Jacinto to the south, Little San Bernardino to the north, and Santa Rosa to the west) surround the City of Palm Springs and the Coachella Valley, creating a desert terrain and hot, dry climate. The Coachella Valley is sunny year-round. The average annual rainfall in Palm Springs is 6 inches.

[3] Mead & Hunt, *Riverside County Airport Land Use Compatibility Plan, Volume 3 – East County Airports Background Data, Chapter E7 – Palm Springs International Airport*, March 2005.

Within the Coachella Valley, the area known as Palm Springs has an annual average temperature of 88.7 degrees Fahrenheit. The average daily temperature during July, the warmest month, can reach 108.3 degrees Fahrenheit. Winter high temperatures typically fall into the mid-70 degree range and the lows into the mid-40 degree range.

2.3-2 National Airport System Role

Palm Springs International Airport is classified as a small hub in the National Plan of Integrated Airport Systems (NPIAS). NPIAS is a national airport classification system plan that identifies 3,431 airports that are significant to national air transportation and thus eligible to receive Federal grants under the Airport Improvement Program (AIP). According to the 2009 NPIAS Report, published by FAA, small hubs are defined as airports that enplane 0.05 percent to 0.25 percent of total U.S. passenger enplanements. There are 72 small hub airports in the United States that together account for 8 percent of all enplanements. Small hubs typically have less than 25 percent of runway capacity used by commercial operations, so the airports can accommodate a large percent of general aviation activity and have an average 134 based general aviation aircraft. Small hubs are typically uncongested with no significant air traffic delays.

2.3-3 Regional Airport System Role

Palm Springs International Airport is currently the primary public-use airport providing air carrier service within Riverside County and the Coachella Valley. The Airport also has a large role in providing general aviation services. There are two other general aviation airports within the Coachella Valley, Jacqueline Cochran Regional Airport in Thermal and Bermuda Dunes Airport in the City of Bermuda Dunes.

Bermuda Dunes Airport (UDD) is a non-towered private-use airport owned by the Bermuda Dunes Airport Corporation. The Airport is located approximately 13 nautical miles southeast of PSP. One runway with dimensions of 5,002 feet long by 70 feet wide (Runway 10-28) caters exclusively to general aviation aircraft. UDD accommodates some of the excess GA demand at PSP. Because of its proximity to Palm Springs International Airport, flights paths at the two airports may at times conflict.

Jacqueline Cochran Regional Airport (TRM), formerly known as Thermal Airport, is a non-towered public airport owned by Riverside County and operated by the Riverside County Economic Development Agency[4] (EDA). The Airport is located in the City of Thermal, south of the City of Coachella and approximately 21 miles southeast of PSP. The Airport has two asphalt paved runways with dimensions of 8,500 feet long by 150 feet wide (Runway 17-35) and 4,995 feet long by 100 feet wide (Runway 12-30). TRM accommodates a variety of corporate and general aviation traffic. Signature Flight Support, Thermal Self-Serve and Tradition Aviation are the three fixed-base operators providing aircraft storage, fuel, charter flights, air ambulance transports, aircraft maintenance, and ground transportation services at Jacqueline Cochran Regional Airport.

[4] http://www.rivcoeda.org/Default.aspx?tabid=535

The airports in the greater Southern California region that provide scheduled commercial service influence aviation activity at PSP. The region's airports are shown on **Figure 2-3**. The two airports closest in proximity to PSP include San Bernardino International Airport (40 nautical miles northwest of PSP) and LA/Ontario International Airport (56 nautical miles west of PSP), are described.

San Bernardino International Airport (SBD) is a 1300-acre public-use towered commercial and general aviation service airport owned and operated by the San Bernardino International Airport Authority (SBIAA), a joint powers authority comprised of the County of San Bernardino and the Cities of San Bernardino, Colton, Loma Linda and Highland. The San Bernardino International Airport is located 40 nautical miles northwest of PSP, on the site of the former Norton Air Force Base. The Airport has one concrete grooved runway with dimensions of 10,000 feet long by 200 feet wide (Runway 6-24). Despite having the infrastructure to accommodate commercial air carriers, commercial service today is limited. Instead, general aviation makes up the largest share of airport activity. The Airport has two fixed base operators (FBO). SBD FBO Services provides their customers with aircraft hangars and tie-down positions as well as various maintenance, fueling and ground support services. Million Air Interlink, Inc. FBO provides executive terminal services out of a new terminal built in 2008, and various ground support services to their customers. Million Air Interlink, Inc. also manages the Airport's fuel farm. Despite its limited commercial service, efforts are underway to construct a passenger terminal and attract scheduled and charter carriers.

LA/Ontario International Airport (ONT) is a 1,700-acre public-use towered commercial service airport owned and operated by Los Angeles World Airports (LAWA) and located 56 nautical miles west of PSP in San Bernardino County. Two parallel grooved concrete paved runways separated by 700 feet, centerline-to-centerline, have dimensions of 12,198 feet long by 150 feet wide (Runway 8L-26R) and 10,200 feet long by 150 feet wide (Runway 8R-26L). ONT served approximately 6.9 million passengers in 2007. LA/Ontario also provides general aviation services with two FBOs, Mercury and Guardian, and provides extensive air cargo services with heavy freight and express cargo carriers. The express cargo carrier, UPS, maintains its west coast aviation hub at LA/Ontario. In 2007, LA/Ontario transported approximately 533 thousand tons of air cargo. A large majority of the cargo transported to Palm Springs arrives via air cargo carriers flying into LA/Ontario and is then trucked to Palm Springs.

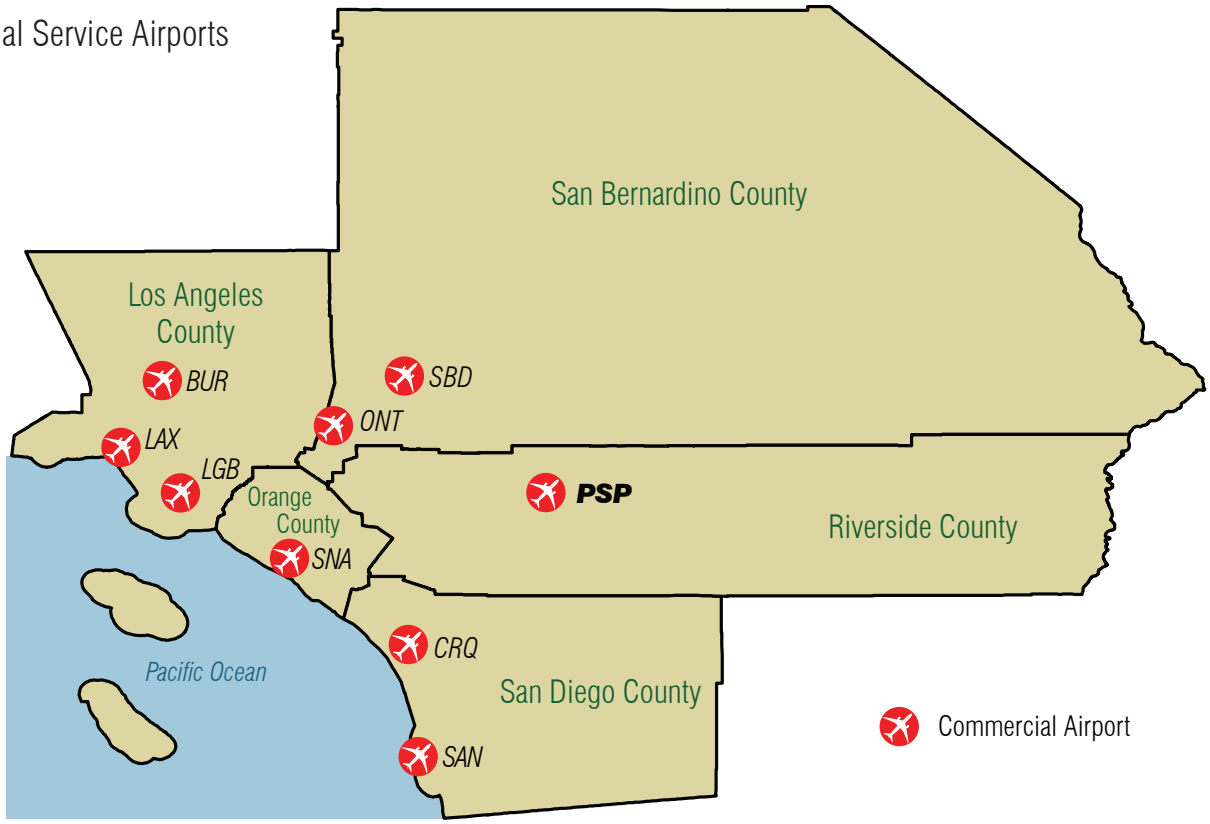
Other commercial service airports within the Southern California area, listed from closest to furthest in proximity to PSP and excluding San Bernardino International Airport and LA/Ontario International Airport, include:

- McClellan – Palomar Airport (CRQ – 57 nautical miles southwest of PSPS)
- John Wayne - Orange County International Airport (SNA – 68 nautical miles west of PSP)
- San Diego International Airport (SAN – 74 nautical miles southwest of PSP)
- Long Beach Airport (LGB – 82 nautical miles west of PSP),
- Los Angeles International Airport (LAX – 95 nautical miles west of PSP), and
- Bob Hope Airport (BUR – 95 nautical miles northwest of PSP)

All the above mentioned commercial service airports, including SBD and ONT and excluding SAN, are located within the Southern California Association of Governments Region, which services approximately 79 million annual passengers (MAP)[5].

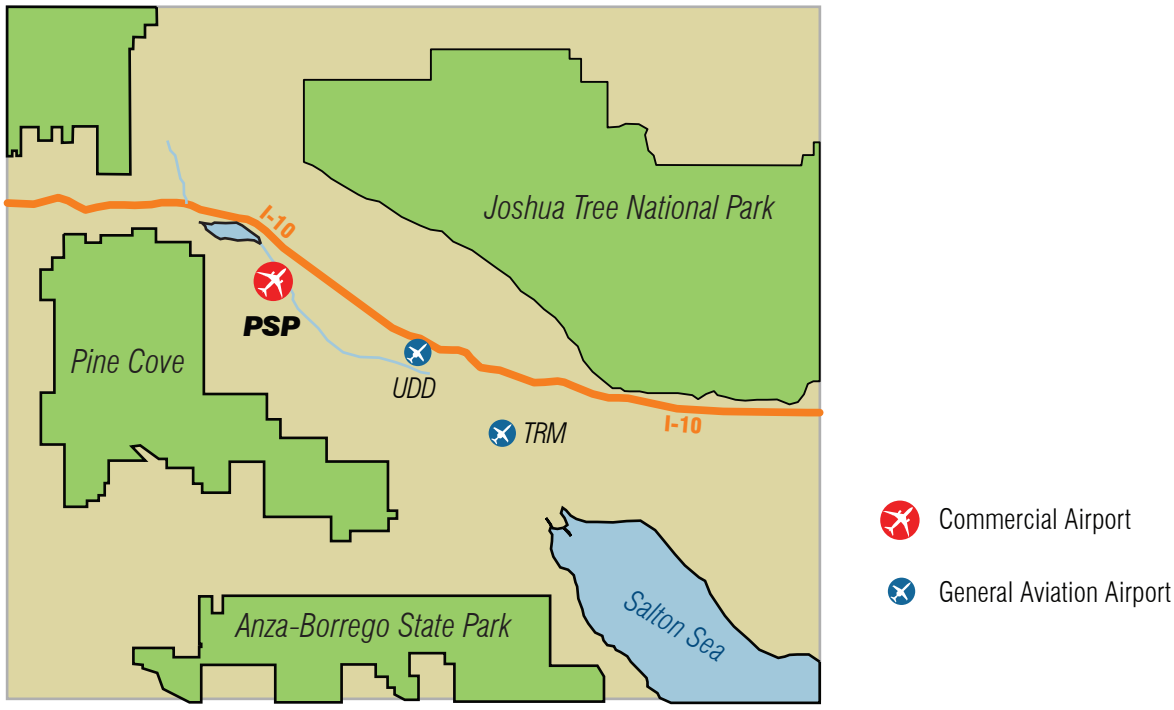
[5] SCAG 2004 RTP – 2003 data

Commercial Service Airports



Note: PSP = Palm Springs International Airport; BUR = Bob Hope Airport; CRQ = McClellan-Palomar Airport; LAX = Los Angeles International Airport; LGB = Long Beach Airport; ONT = LA / Ontario International Airport; SAN = San Diego International Airport; SBD = San Bernardino International Airport; SNA = John Wayne - Orange County International Airport

Coachella Valley Airports



Note: PSP = Palm Springs International Airport; UDD = Bermuda Dunes Airport; TRM = Jacqueline Cochran Regional Airport

Source: HNTB Corporation

PALM SPRINGS INTERNATIONAL AIRPORT

N

Regional Airports
Figure 2-3

Palm Springs International Airport
Master Plan

2.4 SURROUNDING AIRPORT LAND USE AND COMPATIBILITY

2.4-1 Land Use

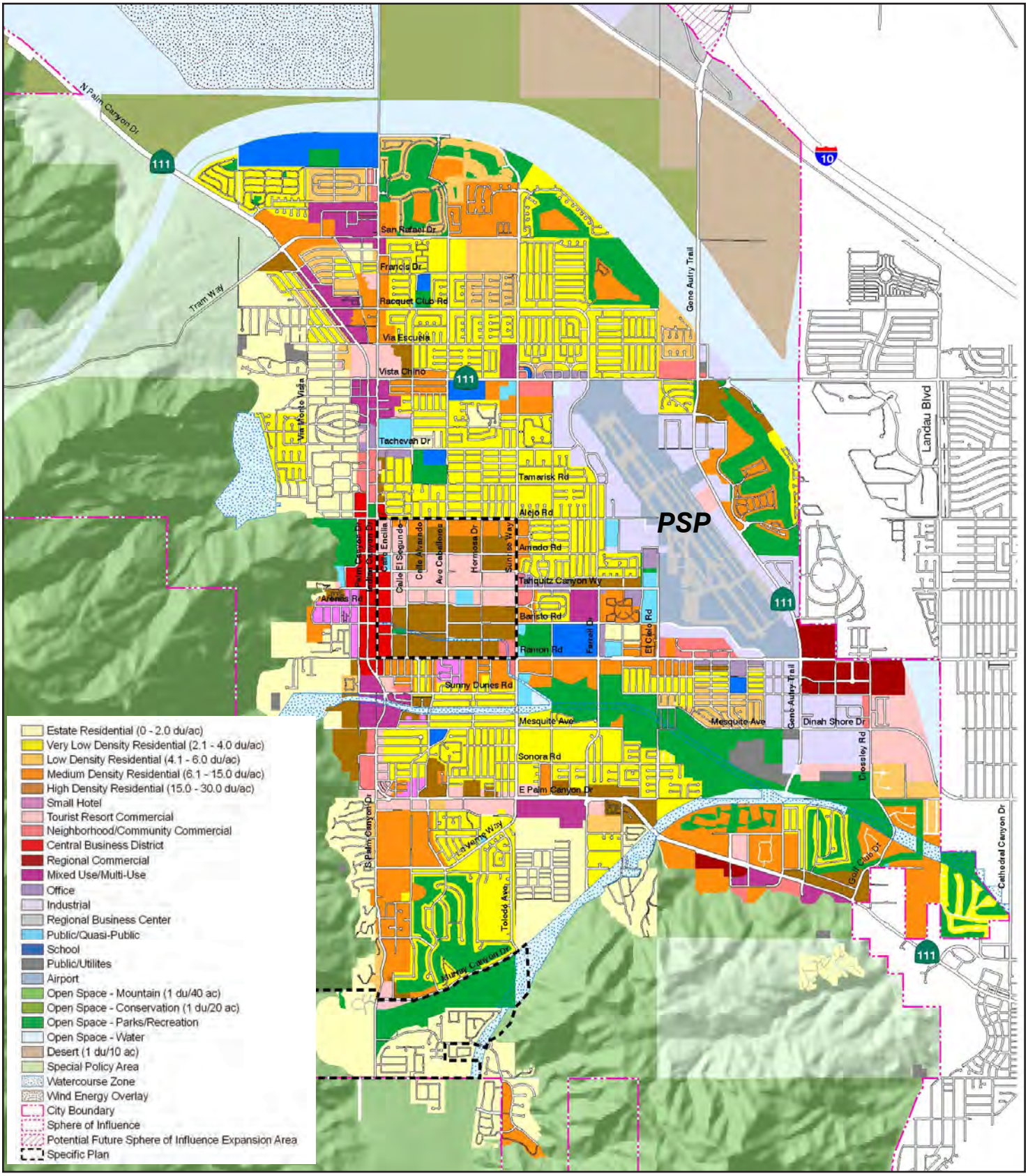
The land within the City of Palm Springs is designated as Airport Influence Area in the October 2004 Riverside County Airport Land Use Compatibility Plan as the "locations of the standard flight paths flown by aircraft approaching and departing the airport." This area covers a radius of approximately three miles from the Airport property line and is primarily zoned residential and industrial, with a small amount zoned for commercial and recreational purposes. The surrounding land uses within the City of Palm Springs are depicted on **Figure 2-4** and described below by land use classification**.**

Residential areas surround the Airport and are adjacent to the Airport property line on the northern and western sides, approximately a half mile from the arrival end of Runway 13R. The majority of this residential land is designated for very low-density housing (2.1 to 4.0 dwelling units per acre). Low (4.1 to 6.0 dwelling units per acre) and medium-density housing (6.1 to 15.0 dwelling units per acre) are located to the east of Gene Autry Trail, off the northeast end of Runway 13R, and west of the City of Palm Springs City Hall along Tahquitz Canyon Way. Higher density housing is located further than one mile from the Airport and located from north to south, along San Rafael Drive, East Vista Chino, Alejo Road, Baristo Road, Ramon Road, and East Palm Canyon Drive.

Low-intensity or light industrial land (for administrative offices, wholesaling, light manufacturing, and industrial uses typically permitted within business parks environments) surround the Airport to the east towards the Whitewater River Storm Channel and extend approximately one quarter mile southeast from the approach end of Runway 31L. A small land area adjacent to and northeast of the Airport is also designated for low-intensity industrial use.

The Central Business District (CBD) and the majority of City lands designated commercial are located approximately 2 miles west of the Airport property line. Lands designated commercial less than approximately 0.5 miles from the Airport property line are located southeast of the Airport property line off the end of Runway 31L and in areas to the north and south.

Other land uses surrounding the Airport include public facilities west of the Airport along El Cielo Road, a public school near the intersection of East Vista Chino and Gene Autry Trail, a golf course (designated open space - parks and recreation) located just east of the Airport and approximately 2 miles near the approach end of Runway 31L. Undeveloped desert land areas lie approximately 2 miles to the northeast and approximately 1.5 miles to the southeast. As illustrated in **Figure 2-4**, the City of Palm Springs boundary ends just east of the Airport property line. Part of this area is within the City of Palm Springs' Sphere of Influence (SOI). This SOI as defined in the October 2007 City of Palm Springs General Plan as "the probable physical boundaries and service area" of a city (established by the Local Agency Formation Commission (LAFCO))". This includes unincorporated Riverside County areas adjacent to city boundaries that will likely be annexed in the future.



Source: City of Palm Springs General Plan

Note: PSP = Palm Springs International Airport

N

0 5100'

City of Palm Springs Land Use Map

Figure 2-4

PALM SPRINGS INTERNATIONAL AIRPORT

Palm Springs International Airport Master Plan

2.4-2 Airport Land Use Compatibility

The City of Palm Spring has developed a policy to encourage land uses around the Airport that are supportive of Airport activities. This includes limiting the height and intensity of non-residential structures adjacent to the Airport, discouraging sensitive uses such as schools, religious institutions, and hospitals, requiring disclosures for areas under aircraft overflights and identifying open lands to be preserved for future airport expansion, noise and safety buffers[6].

In accordance with California Public Utilities Code, Section 21670-21679.5, the Riverside County Airport Land Use Commission (ALUC) has prepared and adopted in October 2004 an *Airport Land Use Compatibility Plan* (ALUCP) which sets the policy and criteria for compatibility between airport uses in Riverside County and the land surrounding the Airport. For PSP, this land comprises 87,600-acres within the City of Palm Springs and the Airport Influence Area (areas affected by airport operations approximately three miles from the Airport property line[7]).

The ALUCP is used by the Riverside County ALUC to review development plans for airports and the surrounding land uses within Riverside County. This includes airport master plans, plans for the construction of new airports and extension, realignment or construction of a new runway, and proposals for non-aviation development. Within each local municipality, general plans are written to be consistent with the ALCUP. The ALUCP is based on previously written state and local laws and the 2003 Master Plan Update for Palm Springs International Airport.

The ALUCP is a guiding document to address safety hazards (e.g. potential for aircraft accidents beyond the runway) controlled mostly by limiting types of development beyond the airport (high-occupancy land uses, hazardous materials storage, etc....), airspace protection (e.g. restricting heights of proposed structures and other objects or uses that pose hazards to flights (e.g. bird strikes and antennas)), noise impacts, and overflights.

Safety Areas

The Airport Influence Area (AIA) is a designated area surrounding the airport where non-compatible land-uses are minimized, mitigated, or removed in order to maximize safety. The AIA should be characterized by the preservation of open space under aircraft arrival and departure paths, limitations on hazardous material storage sites and critical infrastructure, and limitations on facilities with high concentrations of people (e.g. schools and houses of worship).

Designated by the Riverside County, the AIA is defined in the ALUCP as the area covered by the standard flight paths flown by approaching and departing aircraft or approximately 3 miles from the Airport

[6] City of Palm Springs General Plan, 2007

[7] City of Palm Springs General Plan, 2007; California Public Utilities Code Section 21675.1 (b) / CA public utilities code Section 21675.1 (b) designates the AIA as 2 miles / Riverside County designates as 3 miles of major general aviation, airline and military airports

property boundary[8]. The AIA is further broken out into several compatibility zones, as shown on **Figure 2-5**. Land use restrictions for each zone, except for noise, are described in detail in the Riverside County ALUCP and City of Palm Springs General Plan, and are summarized below.

Zone A is the "Airport Zone" or the area made up of the runway protection zone (RPZ) and building restriction line. Zone A is limited to light industrial / warehousing land uses at the northern edge of the Airport and other public / institutional land uses at the southern edge of the Airport. Planned residential uses are not permitted within Zone A.

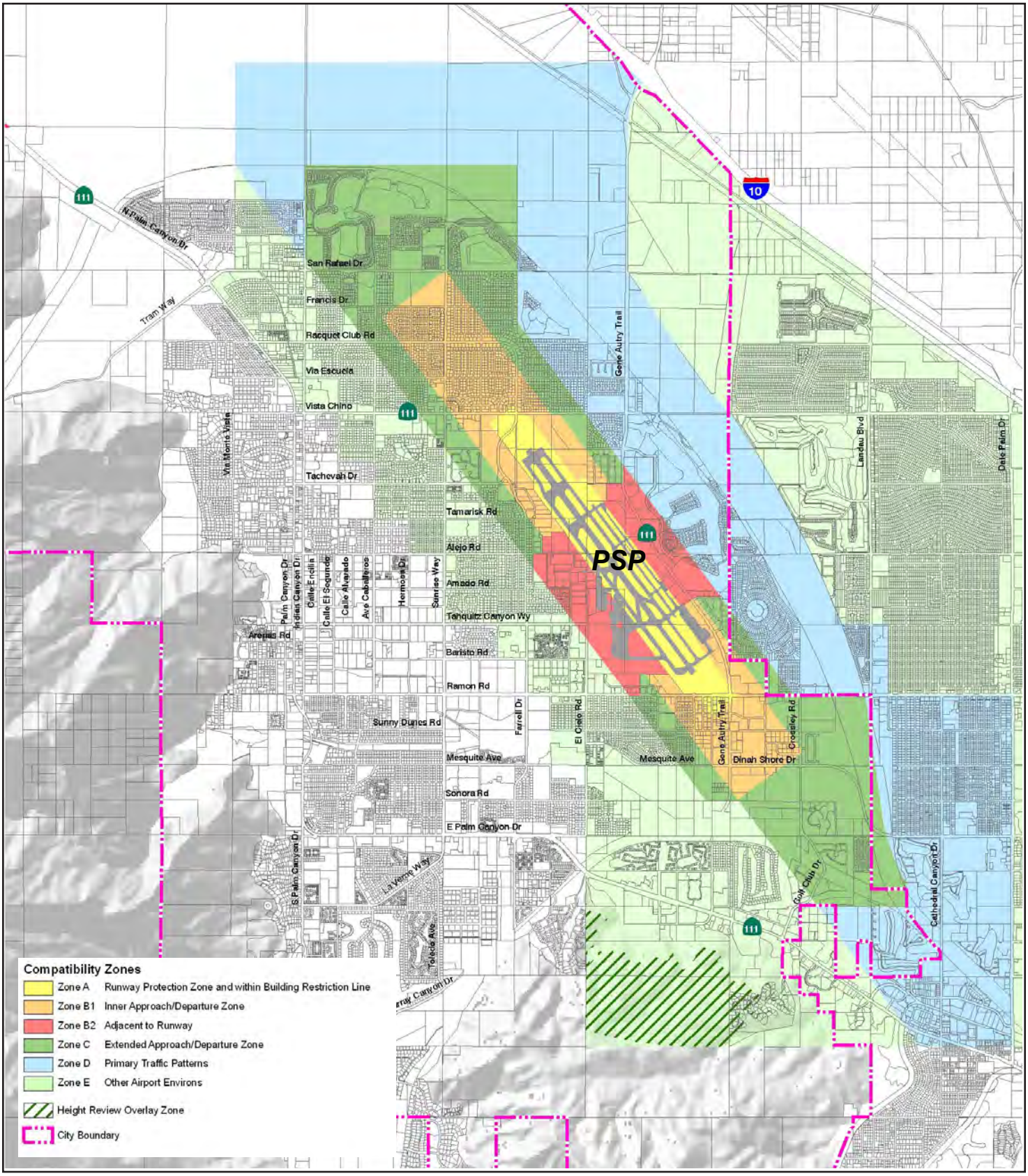
Zone B1 and B2 make up the inner approach / departure zone and land adjacent to the runway, respectively. It includes the area approximately a half mile from the boundary delineating Zone A. Residential land uses currently in Zone B are not in conflict with the ALUCP. Light industrial / warehousing uses are limited to approximately 25 people per acre at the northwestern edge of the Airport. Within Zone B1, intensities of up to approximately 50 people per acre are permitted depending on the amount of open land on the site.

Zone C is the extended approach / departure zone and includes the area approximately two miles from the boundary delineating Zone A. Planned residential developments in Zone C are generally limited to low and medium density housing (up to 15 dwelling units per acre). Light industrial / warehousing land uses are limited to approximately 75 people per acre, and up to 100 people per acre depending on the amount of open land on the site.

Zone D is the primary traffic pattern zone and includes the area approximately three miles outward from the boundary delineating Zone A. Planned residential developments in Zone C are generally limited to low density housing (2 to 5 dwelling units per acre). Planned commercial / office developments are generally limited to low intensity use (100 people per acre).

Zone E is the airport environs zone and includes the area located outside of Zone D. There are currently no incompatible uses within Zone E.

[8] RC_ALUCP_3 / CA public utilities code Section 21675.1 (b) designates the AIA as 2 miles / Riverside County designates as 3 miles of major general aviation, airline and military airports



Source: City of Palm Springs General Plan

Note: PSP = Palm Springs International Airport

N

0 5000'

Airport Land Use Compatibility Zones

Figure 2-5

PALM SPRINGS INTERNATIONAL AIRPORT

Palm Springs International Airport
Master Plan

2.4-3 Airspace Protection

Airspace protection includes the protection against hazards created by objects penetrating navigable airspace, wildlife (bird strikes), and other visual or electronic objects (e.g. lights, antennas) which may interfere with air navigation.

Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, establishes standards for determining obstructions in navigable airspace and establishes rules for notification to FAA of construction activity near the airport. FAR Part 77 does not provide the Airport or FAA with the ability to prohibit or limit construction. It does, however, establish guidelines for changing approach and departure procedures to avoid a structure determined to be a hazard to air navigation. Regulations on building and construction are controlled by the jurisdiction in which the proposed structure is located by established or proposed zoning laws and the building permitting process of a given municipality. It is incumbent to the municipal leaders to adhere to recommendations regarding structures set forth in FAR Part 77.

2.4-4 Noise

PSP has a Federal Aviation Regulation (FAR) Part 150 Airport Noise Compatibility Plan (Part 150 NCP) which was approved by the Federal Aviation Administration (FAA) in June 1994. The regulations contained in Part 150 NCP are voluntary. For Palm Springs International Airport, the June 1994 Part 150 NCP was developed for the proposed extension of Runway 13R-31L from a length of 8.500 feet to 10,000 feet and various other airport improvement projects recommended in the 1994 Master Plan.

The Part 150 Study includes the development of existing and future noise exposure maps and a noise compatibility program which identifies noise mitigation strategies and guidelines to control and mitigate incompatible land uses. Sources of aircraft noise, or unwanted sound, include sound produced during take-offs, engine run-ups, landings, and overflights. At PSP the noise impact to the community was depicted graphically as noise contours similarly displayed on topographical maps, is determined in an integrated noise model based on the ambient noise generated from the total number of and types of aircraft operations.

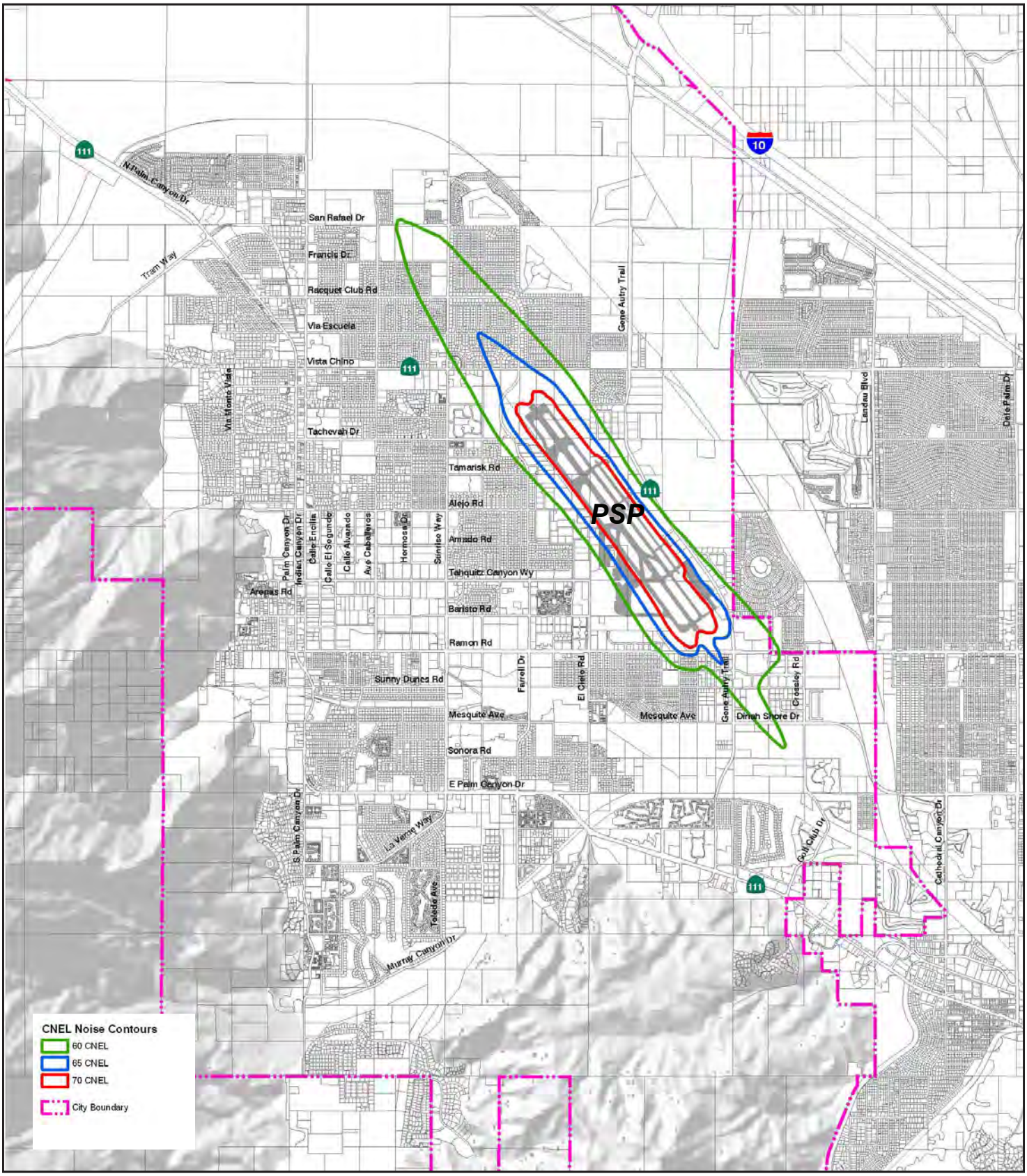
Sound exposure is typically expressed in units of decibels (dB). However, because people perceive the "loudness" of sound levels or energy differently, based on their proximity to sound, duration they are exposed, and their overall sensitivity to sound, noise generated by aircraft for California airport planning purposes are generally measured at the Community Noise Equivalent Level (CNEL). CNELs are the weighted averages of the sound levels throughout a 24-hour time period for an urban environment. Sound levels at night are penalized and given a higher rating. A 70 CNEL indicates a very noisy urban area.

The existing 2002 noise exposure map from the 2003 Master Plan showing the noise levels at the 60, 65, and 70 Community Noise Equivalent Level (CNEL) are shown as contours on **Figure 2-6**. In the City of Palm Springs, residential land uses are generally unacceptable at 70 CNEL or above. For the area immediately surrounding PSP, the threshold for new residential developments is 62 CNEL. As stated in

the ALUCP, residential structures are also recommended to be noise attenuated to no more than 45 CNEL.

From the Part 150 Study, Airport staff has identified a variety of measures to reduce noise exposure to the surrounding area. These measures included recommending takeoff and landing procedures as needed, designing the airport in consideration of noise impacts, providing sound insulation for residential homes within the 65 CNEL, purchasing land to prevent future development on land within the 65 CNEL, educating the community about aircraft noise, and adding noise barriers. Since the Part 150 Study was completed, several noise reducing projects were completed. These include:

- Adding a berm adjacent to East Vista Chino (1997)
- Extending the existing noise wall on the west side of Runway 13R-31L, which was originally built in the 1980s
- Skywest Airlines built a 9,600 square feet "hush house" for engine testing at their maintenance facility located between Runway 13L-31R and Gene Autry Trail.
- Runway displaced landing thresholds.



Source: City of Palm Springs General Plan

Note: PSP = Palm Springs International Airport

N

0 3750'

2002 Noise Exposure Map

Figure 2-6

PALM SPRINGS INTERNATIONAL AIRPORT

Palm Springs International Airport
Master Plan

2.4-5 Overflight Zone

The overflight zone refers to the area beyond the noise contours where aircraft fly based on air traffic patterns for standard arrival and departure routes. The ALUCP recommends all prospective land buyers within the Airport Influence Area be notified of the overflight zone, their proximity to the Airport and whether or not their property is covered under the 16 acres of avigation easements surrounding the Airport.

2.5 ENVIRONMENTAL SETTING

The Federal Aviation Administration's (FAA) Office of Airports (ARP) is the FAA organization responsible for major Federal actions at public-use airports. This includes, per the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), considering environmental effects of proposed actions and their reasonable alternatives. Environmental documentation typically occurs for projects that may cause "significant environmental effects[9]" following the completion of an airport master plan when airports start to implement proposed actions.

Prior to pursuing the NEPA / CEQA process, the FAA Advisory Circular (AC) 150 / 5070-6B on Airport Master Plans nor FAA's environmental procedures require an environmental review in a master plan. However, to provide initial data and analysis to help expedite environmental processing, an inventory of environmental conditions and preliminary analysis of environmental impacts is provided in this Airport Master Plan Update.

An inventory of the natural environment at the Airport and within the surrounding community is included within this Section. Sources for the environmental inventory include the 1995 Environmental Impact Report / Environmental Assessment for Implementation of Airport Master Plan and FAR Part 150 Study and the City of Palm Springs General Plan.

The impact categories addressed in an environmental inventory include:

- Air Quality
- Coastal Barriers (not applicable)
- Coastal Zone (not applicable)
- Compatible Land Use
- Construction Impacts (to be addressed in alternatives evaluation)
- Section 4(f) (not applicable)
- Farmlands (not applicable)
- Fish, Wildlife and Plants
- Floodplains
- Hazardous Materials
- Historical, architectural, and cultural

[9] Federal Aviation Administration (FAA) Order 5050.4B: National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions

- Light emissions and visual effects
- Natural resources and energy supply
- Noise Socioeconomic, Environmental Justice, and Children's Health and Safety Risks
- Solid Waste
- Water Quality
- Wetlands (not applicable)
- Wild and scenic rivers (not applicable)

In the alternatives evaluation phase of the master planning process, the alternatives will be preliminary evaluated by the CEQA and NEPA environmental impact categories. This early level of environmental consideration will help expedite subsequent environmental alternatives from the NEPA / CEQA process if those alternatives do not effectively meet the Master Plan goals and objectives or provide relative utility.

Air Quality

Federal and State ambient air quality standards are established under the Clean Air Act by the Environmental Protection Agency (EPA). National ambient air quality standards (NAAQS), defined by the EPA, consists of six "criteria" pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter (PM_{10} and $PM_{2.5}$), and sulfur dioxide, (SO_2). Per the Clean Air Act, states are required to develop a State Implementation Plan (SIP) to achieve national ambient air quality standards. In the state of California, the SIP is developed by the California Air Resources Board (CARB). In Southern California, the South Coast Air Quality Management District (SQAQMD) is the agency responsible for regulating air pollutant emissions to meet federal and state established air quality attainment levels. Some of their responsibilities include preparing an Air Quality Management Plan (AQMP) and monitoring ambient air quality of various air pollutants.

Ambient air quality is measured and collected at monitoring stations geographically located within the various air basins throughout Southern California. The City of Palm Springs is generally impacted by air contaminants within the geographical boundaries of the South Coast Air Basin (SoCAB), which comprises all of Orange County and the non-desert portions of the counties of San Bernardino, Riverside, and Los Angeles, and the Riverside County portion of the Salton Sea Air Basin (SSAB).

The City of Palm Springs is in the nonattainment area for ozone and particulate matter where ozone and particulate matter levels exceed federal and/or state established ambient air quality standards. Ozone is primarily produced from vehicular activity. For the Airport, the level of ozone emitted may be reduced by encouraging the use of mass transit, walking, shuttle services, and other alternative-fuel vehicles. It may also be reduced by encouraging the use of the existing cell phone lot for private occupancy vehicles (POVs) at the Airport.

The City of Palm Springs is also in nonattainment status for particulate matter due to its siting in the Coachella Valley Association of Governments (CVAG) "Blowsand Hazard Zone". Blowsand is a form of wind erosion that occurs when barren sand or sandy loam soils are exposed to high winds in the absence of moisture. Blowsand reduction measures are typically required on-site during construction activities.

This may be achieved through planting vegetative hedges, walls or constructing other barriers to block the effects of wind.

Fish, Wildlife and Plants

Palm Springs International Airport is surrounded by many wilderness areas and state parks, the most well known being the Joshua Tree National Monument, located approximately 9 nautical miles northeast of the Airport. Within the airport property boundary, there are no naturally occurring springs, permanent aquatic habitats or drainages.

Wildlife or fauna on Airport property include reptiles, birds, and mammals commonly found in the surrounding vicinity and typical of the Colorado Desert subdivision of the Sonoran Desert. Reptiles include the side-blotched lizard, western whiptail, desert iguana, coachwhip, and the western shovel-nosed snake. Birds include the mourning dove, house finch, common raven, Costa's hummingbird, and red-tailed hawk. Mammals include the desert cottontail, black-tailed jackrabbit, Palm Springs ground squirrel, and desert kangaroo rat. The animals present on the California Department of Fish & Game (CDFG) "Special Animal" list of 1992 include the Coachella Valley Fringe-toed Lizard (northern portion of the Airport near Vista Chino Road), burrowing owl, loggerhead shrike, and Palm Springs ground squirrel. The fringe-toed lizard is also deemed as a threatened species by the federal government.

Within the Airport property, the most pervasive native plant "community" is the Sonoran creosote bush scrub community, a perennial plant. Other vegetation includes the burrobush, Emory's dalea, sandpaper plant, and encelia. In the areas closest to the runways and taxiways, gravel has been laid on top of an area previously dominated by weed species. The only two plant species within Airport property deemed to be rare or endangered include the milk vetch and flat-seeded spurge. The milk-vetch plant is located on both sides of Taxiway C-1 closer to the terminal building. The flat-seeded spurge plant is located at the northern edge of the property 40 meters south of Vista Chino Road.

Floodplains / Flood Control

The Airport is located approximately one mile west of the Whitewater River, the primary drainage channel which flows through the Coachella Valley watershed to the Salton Sea. A 100-year floodplain extends onto airport property along Gene Autry Trail. The Atlantic Aviation FBO is located within the floodplain.

Hazardous Material Sites

Known hazardous material contamination sites existing or that existed in the past on and adjacent to Airport property includes a portion of the Signature Flight Support general aviation area. The soil in this area, formerly occupied by AMR Combs, is known to be contaminated. In the past, fuel tankers were reported to have dumped leftover fuel onto the ground after filling storage tanks. Impacted areas include the northern tank cluster of the fuel farm at approximately 25 feet below grade. Another area on the southeastern portion of the former AMR Combs contains contaminated soils to a depth of approximately 130 feet below grade. As of 1992, the contamination did not pose a risk to groundwater or surface facilities.

Another area where the soil is contaminated is within the vicinity of the Airport fire training pits. In the early 80's and possibly earlier, Jet-A fuel was used in the burn pits for fire training exercises. Although the soil is contaminated to at least 20 feet below grade, concentrations only exceed state action levels in the upper five feet of the boring samples collected during a study conducted in 1987 by Pioneer Consultants.

The Palm Springs – Ramon landfill is located on the northeast corner of Ramon Road and Gene Autry Trail. As of 1991, there were no hazardous concentrations of contaminants that would adversely affect groundwater and the quality of the soil.

Natural Resources

Natural features surrounding the Airport include the Little San Bernardino and San Andreas Fault System to the north and northeast, the Santa Rosa Mountains and San Jacinto Mountains to the south, and the Salton Sea to the southeast. The major river flowing through Palm Springs is the Whitewater River, which flows southeast towards the Salton Sea. The Airport site is comprised of eloian, alluvial (fine to coarse sands, gravels and silty sands with silt horizons), and fluvial sediments, overlaid by dune sands.

Water Quality: GroundWater and Stormwater

Water service in the Coachella Valley is provided by the Coachella Valley Water District, Mission Springs Water District, and in the City of Palm Springs, the Desert Water Agency (DW). Groundwater is obtained for the Coachella Valley from three groundwater subbasins: Whitewater River, Mission Creek, and Indio. Groundwater lies in excess of 210 feet below grade.

Due to the desert environment in Palm Springs, managing water demand is important. Groundwater demand today exceeds the amount of water that is recharged from surface run-off from the surrounding mountains and inflow from the Whitewater River. However, through a contract with the Metropolitan Water District of Southern California (MWD), additional water is obtained from the Colorado River. Water demand strategies to consider may include recycling wastewater.

Stormwater runoff generally flows to the southeast, toward the intersection of Gene Autry Trail and Ramon Road before flowing east to the Whitewater River via a storm drain. Although storms are infrequent in Palm Springs, when the top layer of the soils in the vicinity of the Airport are disturbed, surface water drainage is likely to cause erosion to unprotected areas, impacting surface water quality. Future construction activity at the Airport should include mitigation strategies to minimize erosion and impacts to the surface water quality. The Airport has a General Stormwater Pollution Prevention Plan and Permit in accordance with the National Pollution Discharge Elimination System (NPDES) program under Section 402(p) of the Clean Water Act. To prevent and contain leakage from fuel storage tanks, fuel storage tanks are also equipped with secondary containment and overfill protection devices. The Airport also has a retention basin to collect runoff from the airfield located just south of Runway 31L near the intersection of San Ramon and Gene Autry Trail.

2.6 OWNERSHIP / MANAGEMENT

Palm Springs International Airport is owned and operated by the City of Palm Springs. The City is responsible for the operation and maintenance of all Airport facilities except navigational aids owned and operated by the FAA. A City Council is advised on airport-related issues by a nineteen member Airport Commission. Airport Commissioners, composed of residents from across the Coachella Valley, advise the City Council on land acquisition and development, project financing, facility leases, and Airport budget. Commissioners meet on the second Wednesday of every month at 8:00 a.m. in the Airport Conference Room located on the second floor of the terminal building.

As stated in City Ordinance 1693, "The Director of Aviation is responsible for the operation, management, maintenance and security of the Airport and all Airport owned and operated land, improvements, facilities, vehicles and equipment." The Director of Aviation reports directly to the Palm Springs City Manager.

2.7 RECENT AIR SERVICE DEVELOPMENTS

Depending on the time of year, the Airport has as many as 100 departures and arrivals daily from about 6:00 AM to 11:00 PM on 10 airlines to 17 cities in the United States and Canada. Airlines operating out of PSP include:

- Alaska Airlines
- Allegiant Air
- American Airlines
- Delta Airlines (Northwest Airlines acquisition)
- Delta Connection
- Horizon Air
- Sun Country (seasonal)
- United Airlines (seasonal)
- United Express
- US Airways Express
- WestJet (seasonal)

Direct non-stop service is provided to the following cities:

- Bellingham, Washington (BLI)
- Calgary, Alberta, Canada (YYC)
- Dallas / Fort Worth, Texas (DFW)
- Denver, Colorado (DEN)
- Edmonton, Alberta, Canada (YEG)
- Las Vegas, Nevada (LAS)
- Los Angeles, California (LAX)
- Minneapolis / St. Paul, Minnesota (MSP)
- Chicago, Illinois (ORD)

- Phoenix, Arizona (PHX)
- Portland, Oregon (PDX)
- Sacramento, California (SMF)
- Salt Lake City, Utah (SLC)
- San Francisco, California (SFO)
- Seattle, Washington (SEA)
- Vancouver, British Columbia, Canada (YVR)

2.8 PASSENGER MARKET SURVEY

The passenger profile is an important consideration in planning for the future of Palm Springs International Airport, specifically in determining facility requirements. To determine the passenger profile, in 2007 and 2008, the Palm Springs Resort Communities Convention & Visitors Authority conducted a "Visitor Profile Study". The goal of the study was to determine and provide the City of Palm Springs with passenger trip information, retail spending preferences, and demographic profiles of passengers. Questions answered in the survey included:

- Who visits the area?
- Why do visitors choose to come to the Palm Springs area?
- What activities do visitors engage in?
- How long and how frequent do visitors stay?
- What sources do visitors use to plan their trip?
- What are the visitors' general impressions of the area?
- How likely are visitors of their return to the area and would they recommend a stay in the region to others?

The study population eligibility criteria consisted of visitors who were English-speaking, over 18 years of age, stayed anywhere from four hours to 30 days, and who did not live or work in the Coachella Valley. Of the 8,410 people who were approached with the survey, 1,730 met eligibility requirements, resulting in a completion rate of 21%. Visitors were approached at the Palm Springs International Airport as well as other area attractions.

Respondents came from all fifty states and ten foreign countries (though the majority of foreign visitors came from Canada). In general, the farther the visitor traveled, the longer their stay. However, their visits were not as frequent as those who traveled a shorter distance. Respondents from Canada were more likely to visit primarily for vacation or recreation.

Visitors to the Coachella Valley were found to be older (mean age of 53 years), have incomes greater than $100,000 (60%), married (70%), and were repeat visitors (63%). Most of these repeat visitors traveled during the winter months. In general, the winter months attracted the highest percent of retired visitors with the highest incomes whereas summer attracted single visitors with the lowest household income of the study. Most visitors had their expectations about Palm Springs area met or exceeded (96%).

2.9 AIRFIELD

Airside facilities at Palm Springs International Airport include runways, taxiways, ramp area, navigation aids, and lighting. The Airport's airside facilities are depicted on **Figure 2-7**. The designated land uses on-Airport are presented on **Figure 2-8**. The breakdown of functional land use in total acres at PSP is presented in **Table 2-1**.

Table 2-1: PSP Functional Land Use Breakdown

Functional Land Use	Total Acres
Terminal	6
Rental Car	10
Maintenance / Support	12
Commercial / Industrial Development	22
City Government / Public Use	26
General Aviation	57
Ground Transportation / Parking	63
Safety, Noise or Environmental Mitigation	80
Unleased or Vacant	194
Airfield	460
Total	**930**

Source: HNTB Analysis

Airport Facilities / Infrastructure Legend

1: Terminal Processor
2: Bono Concourse
3: Regional Concourse
4: Vehicle Inspection Plaza
5: Ground Transportation Center (GTC)
6: Palm Springs Senior Affordable Housing
7: City Boxing Club
8: City Co-Generation Facility (off-airport)
9: U.S. Customs and Border Protection Facility
10: Signature Flight Support
11: Medical Offices (Abbey Group)
12: Air Traffic Control Tower
13: Firestation #2 / Aircraft Rescue and Fire Fighting
14: Signature Flight Support Condominium Hangars
15: Signature Flight Support T- Hangars
16: Desert Springs Aviation
17: Hertz Vehicle Service / Maintenance / Storage
18: National / Alamo Service / Maintenance / Storage
19: Avis Service / Maintenance / Storage
20: Budget Service / Maintenance / Storage
21: Dollar Service / Maintenance / Storage
22: City Corporate Yard
23: Desert Aero Maintenance Center
24: Signature Flight Support Fuel Farm
25: Airport Quonset Hut
26: Palm Springs Unified School District
27: SSC Racing
28: Signature Flight Support Hangars
29: Fire Department Training Area
30: ASR-9 Radar
31: Airport Beacon
32: Palm Springs Air Museum
33: Sky West Maintenance Hangar
34: Atlantic Aviation Restaurant
35: Atlantic Aviation
36: Altantic Aviation Hangars
37: Atlantic Aviation Fuel Farm
38: Atlantic Aviation T-Hangars
39: Vacant
40: Rental Car Ready / Return Parking Lot
41: Employee Parking Lot
42: CNG / Clean Energy Station
43: Holiday Economy Parking Lot

Source: City of Palm Springs Department of Aviation

PALM SPRINGS INTERNATIONAL AIRPORT
MASTER PLAN UPDATE

0 1000'

On-Airport Facility
Airport Operations Area
Airport Property Line

Airport Facilities / Infrastructure Map

Figure 2-7

Palm Springs International Airport
Master Plan

Airport Functional Land Use Areas

- Terminal Building
- General Aviation
- Maintenance / Support
- City Government / Public Use
- Commercial / Industrial Development
- Safety, Noise or Environmental Mitigation
- Airfield
- Unleased or Vacant
- Rental Car
- Ground Transportation / Parking
- Airport Property Line

Source: HNTB Analysis

PALM SPRINGS INTERNATIONAL AIRPORT
MASTER PLAN UPDATE

0 1,000'

Existing Land Use Map

Figure 2-8

Palm Springs International Airport
Master Plan

2.9-1 Runways

Palm Springs International Airport operates two parallel runways, Runways 13R-31L and 13L-31R. Runway 13R-31L is designated for commercial air-carrier service and for large general aviation aircraft. Constructed of asphalt concrete and treated with a porous friction course, Runway 13R-31L is 10,001 feet long by 150 feet wide.

Runway 13R-31L has a 200-foot blast pad on each end of the runway to protect the runway pavement from the effects of jet blast. Each end of the runway has a displaced landing threshold in order to reduce and mitigate aircraft noise. Runway 13R has a 3,000 foot displaced threshold and Runway 31L has a 1,500 foot displaced threshold. The declared distances available for Runway 13R-31L are summarized in **Table 2-2**. Runway 13R has additional declared distance restrictions in order to provide for a standard runway safety area at the south end of the runway. Runway 13R-31L is constructed on a 0.7 percent slope. The east end has an elevation of 398 feet above mean sea level (MSL) and the west end has an elevation of 477 feet above mean sea level (MSL).

Table 2-2: Runway 13R-31L Declared Distances

Declared Distance	Runway 13R Distance	Runway 31L Distance
Take Off Distance Available (TODA)	10,000 feet	10,000 feet
Take Off Run Available (TORA)	10,000 feet	10,000 feet
Landing Distance Available (LDA)	6,857 feet	8,500 feet
Accelerate-Stop Distance Available (ASDA)	9,857 feet	10,000 feet

Source: FAA Facility Database

Runway 13L-31R dimensions 4,952 feet long by 75 feet wide, and is designated for small and medium general aviation aircraft. Each end of the asphalt constructed runway has a 150-foot blast pad. The threshold of Runway 13L is aligned with the end of the displaced threshold of Runway 13R. Runway 13L-31R is constructed on a 0.8 percent slope. The east end has an elevation of 407 feet above mean sea level (MSL) and the west end has an elevation of 449 feet above mean sea level (MSL).

Finally, the two parallel runways, separated centerline-to-centerline by 700 feet, allow for simultaneous operations on both runways in Visual Meteorological Conditions (VMC). Simultaneous operations allow the Airport to segregate slower general aviation from commercial traffic during peak periods.

Runway pavement bearing strengths define the weight limits at or below with which an aircraft may operate on the runways. Pavement bearing strengths are designed to meet the maximum operational weight of critical aircraft operating on the airfield. Bearing strengths are defined for Single Wheel (SW), Dual Wheel (DW), Dual Tandem (DT), and Double Dual Tandem (DDT) landing gear systems. A Single Wheel landing gear system, as typically found on light general aviation aircraft, refers to aircraft with a single wheel on each side of the main landing gear system. A Dual Wheel landing gear system, as found on a Boeing 737, refers to aircraft with two wheels on each side of the main landing gear. A Dual Tandem landing gear system, as found on a Boeing 757, refers to aircraft with four wheels on each side of the main landing gear. A double Dual Tandem landing gear system, as found on a Boeing 747, refers to aircraft with two sets of four wheels on each side of the main landing gear.

Pavement strengths are identified using the Pavement Classification Number (PCN) system, an ICAO rating system for identifying the load-carrying capacity of a pavement for the selected critical or most demanding airplane used. The PCN is a series of five coded numbers of the following:

- Numerical PCN value,
- Pavement type,
- Subgrade category,
- Allowable tire pressure, and
- Method used to determine the PCN.

The numerical PCN value is a relative indication of load-carrying capacity of a pavement in terms of a standard single wheel load at a tire pressure of 181 psi.

The pavement type is either flexible, "F", or rigid, "R". Flexible pavements support loads through bearing rather than flexural action and comprise several layers of selected materials to distribute loads from the surface to the layers beneath (e.g. asphalt). Rigid pavements support loads through a single layer (e.g. concrete).

The subgrade strength category is a coded strength of the pavement subgrade (what is underneath the pavement) based on pavement types. There are four standard subgrade strengths categories identified each for flexible and rigid pavements. The categories and their codes are high, "A", medium, "B", low, "C", and ultra low, "D". A high strength category would be typical for a reinforced concrete subbase. An ultra low strength category would be typical for uncompacted soil.

The allowable tire pressure is the pressure limit for the pavements. There are four tire pressure categories with a specified code and tire pressure range as shown below.

- High (W) – no pressure limit
- Medium (X) – pressure limited to 218 psi (1.6 MPa)
- Low (Y) – pressure limited to 145 psi (1.00 MPa)
- Very Low (Z) – pressure limited to 73 psi (0.50 MPa)

Two pavement evaluation methods exist that are used to determine the PCN. If the evaluation represents the results of a technical study, the evaluation method is coded. "T". If the evaluation is based on "using airplane" experience, the evaluation method is coded, "U".

Table 2-3 summarizes the runway pavement bearing strengths and pavement classification number for each runway.

Table 2-3: Runway Pavement Bearing Strengths and Pavement Classification Number

Landing Gear System	Runway 13R-31L	Runway 13L-31R
Single Wheel (SW)	105,000 lbs	12,500 lbs
Dual Wheel (DW)	200,000 lbs	60,000 lbs
Dual Tandem (DT)	330,000 lbs	N/A
Double Dual Tandem (DDT)	800,000 lbs	N/A
Pavement Classification Number (PCN)	54/F/B/W/T	5/F/B/W/T

Source: FAA Facility Database

The operating pavement bearing strength requirements of selected aircraft are presented in **Table 2-4** for comparative purposes.

Table 2-4: Selected Aircraft Pavement Bearing Strength Requirements

Aircraft	Max Gross Takeoff Weight	Landing Gear Type
Boeing 737-400	150,000 lbs	Dual Wheel
Boeing 737-700	154,500 lbs	Dual Wheel
Boeing 737-800	174,200 lbs	Dual Wheel
Airbus A320	145,505 lbs	Dual Wheel
Boeing 757-200	255,500 lbs	Dual Tandem
Boeing 767-300	350,000 lbs	Dual Tandem
Boeing 777-200	580,000 lbs	Triple Tandem
Boeing 747-400	870,000 lbs	Double Dual-Tandem
McDonald Douglas MD-11	602,500 lbs	Dual Tandem

Source: Boeing and Airbus Product Specifications

Aircraft Design Group (ADG) is a function of the wingspan of an aircraft. **Table 2-5** presents the ADG classifications for aircraft. Runway 13R-31L meets the design standards for ADG V aircraft. Runway 13L-31R meets the design standards for ADG II aircraft.

Table 2-5: Aircraft Design Group (ADG) Classification

Design Group	Wingspan Range	Example
I	< 49 feet	Cessna 152, Beechcraft A36
II	49-78 feet	ERJ 145, EMB-120, CRJ 100
III	79-117 feet	B-737, MD-80, A-320
IV	118-170 feet	B-757, B-767, A-300
V	171-213 feet	B-747, A-340, MD-11, B-787
VI	214-262 feet	A-380, B-747-8

Source: FAA Advisory Circular 150/5300-13 Airport Design

2.9-2 Runway Use Configuration

The most important consideration in determining runway use configurations is the speed and direction of the wind. Both takeoff and landing distances are affected by the speed and direction of the wind. Operationally, it is preferable for aircraft to take off and land into the wind. A headwind reduces the amount of speed required by an aircraft to take off and reduces the groundspeed upon touchdown. When

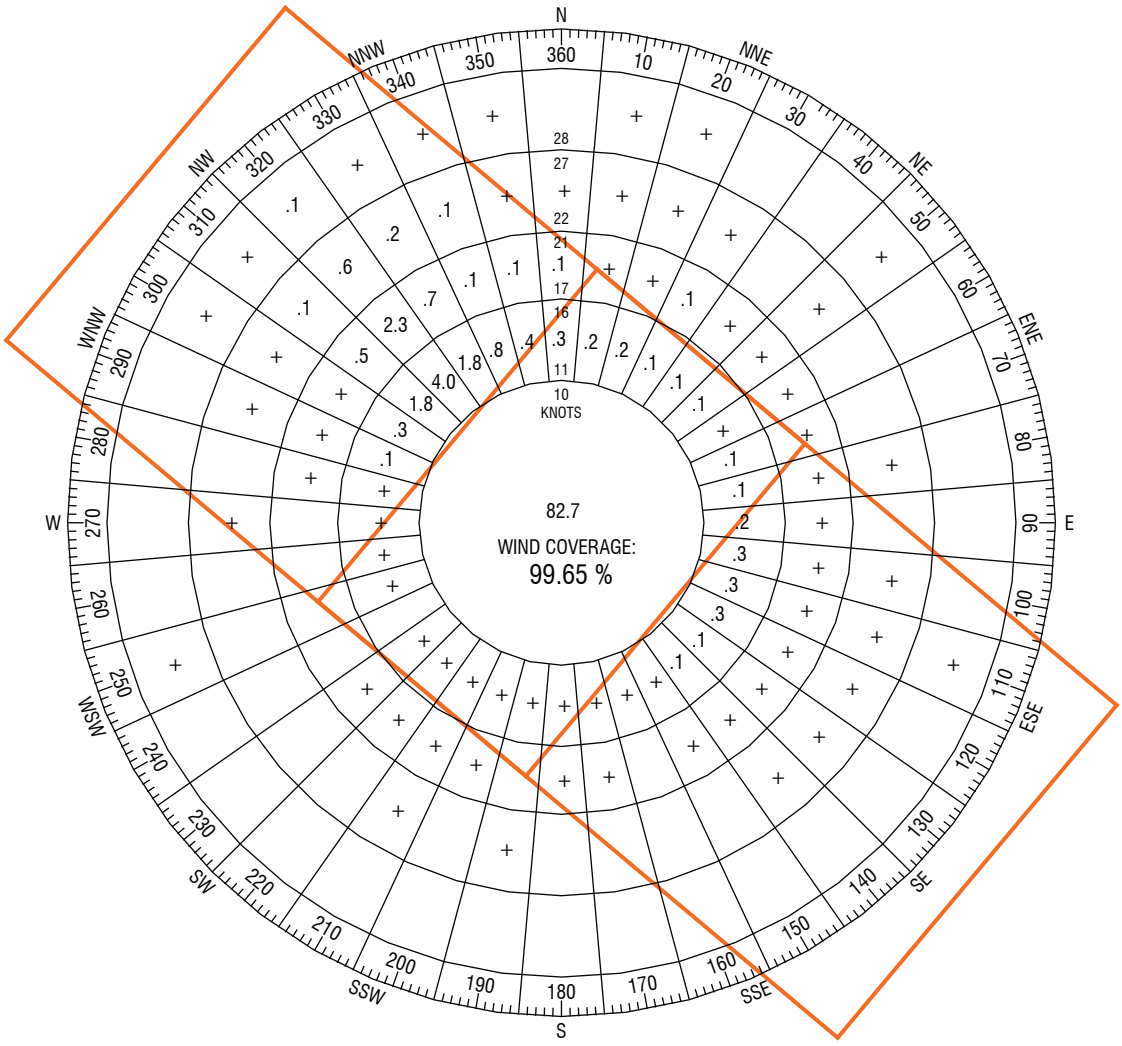
a runway is being planned, many years of historical wind data are used to determine the optimal runway direction. It is desirable for aircraft to operate with a minimal cross-wind component. As shown in **Figure 2-9**, the Airport's wind coverage diagram, Runways 13R-31L and 13L-31R cover 99.65 percent of the historical wind observations at PSP. When the cross-wind component of the wind goes above 20 knots, the runways may be considered inoperable for some air carrier aircraft. General aviation aircraft are normally not allowed to depart and land when the crosswind component of the wind exceeds 12.5 knots. At PSP this occurs approximately 1.08% of the year.

The Airport primarily operates in two flow patterns; West Flow and East Flow. Under West Flow, aircraft arrive and depart to Runways 31L and 31R. Under East Flow, aircraft arrive and depart to Runways 13L and 13R. As a noise mitigation measure, East Flow is considered the preferred aircraft flow pattern when calm winds prevail. The percentages of time the Airport operates in each flow are presented in **Table 2-6**. The Airport operates in East Flow and West Flow respectively approximately 42% and 58% of the time. There are, however, infrequent instances when the Airport is operating in West Flow where pilots request counter-flow "head-to-head" operations.

Table 2-6: Airport Directional Flow Percentages

Direction	Description	Percentage
West Flow	Aircraft take off and depart from Runways 13L and 13R	58%
East Flow	Aircraft take off and depart from Runways 31L and 31R	42%

Source: HNTB Analysis



Source: HNTB Analysis,
Station = Palm Springs International Airport (Data Collected 1994-2004)

PSP Wind Coverage Diagram

Figure 2-9

PALM SPRINGS INTERNATIONAL AIRPORT

Palm Springs International Airport
Master Plan

2.9-3 Runway Capacity / Annual Service Volume

Annual service volume is a FAA derived metric for estimating the Airport's annual capacity. The calculation generally takes into account runway use, runway exit locations, aircraft fleet mix and weather. As the Airport's annual total aircraft operations approaches the annual service volume, delays are experienced in the range of one to four minutes of annual average delay per operation. The annual service volume methodology is described in the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5060-5: Airport Capacity and Delay, published on September 23, 1983.

The annual service volume (ASV) for PSP was determined using the fleet mix breakdown taken from Official Airline Guide (OAG) monthly departure schedules and aircraft operations breakdown statistics for PSP. **Table 2-7** below presents the breakdown of operations by aircraft classification for each month in 2007.

Table 2-7: Aircraft Operations by Month and by Aircraft Weight Classification (2007)*

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Air Carrier / Commuter	Itinerant	3,036	2,904	3,298	2,930	2,350	1,790	1,818	1,802	1,782	2,146	2,598	2,772
Air Taxi	Itinerant	795	872	1173	807	535	251	190	96	215	376	786	569
General Aviation	Itinerant	3,799	3,736	4,660	3,835	3,381	2,547	1,723	1,659	1,747	2,320	2,984	2,347
	Local	782	758	1,406	1,256	1,464	1,122	1,010	942	838	1,280	918	962
Military	Itinerant	81	182	63	208	96	66	115	82	57	127	106	67
	Local	0	8	0	0	4	18	2	4	16	0	2	6
	Total	8,493	8,460	10,600	9,036	7,830	5,794	4,858	4,585	4,655	6,249	7,394	6,723
	Heavy Aircraft	0	0	0	0	0	0	0	0	0	0	0	0
	Large Aircraft	6,156	6,083	7,089	6,206	5,155	3,912	3,313	3,215	3,253	4,129	5,093	4,723
	Small Aircraft	2,337	2,377	3,511	2,830	2,675	1,882	1,545	1,370	1,402	2,120	2,301	2,000
	Total	8,493	8,460	10,600	9,036	7,830	5,794	4,858	4,585	4,655	6,249	7,394	6,723

Source: HNTB Analysis , Official Airline Guide (OAG)
Notes: * All terms are defined in the glossary of this Master Plan Update

The operations breakdown can be further split into the FAA's aircraft weight classifications. The Airport's mix index is expressed by the mathematical sum of the percentage of large aircraft operations weighing between 12,500 and 300,000 pounds and three times the percentage of heavy aircraft operations weighing over 300,000 pounds. For itinerant general aviation aircraft, it is assumed, based on interviews with the FBOs at PSP, the breakdown is 80% large and 20% small aircraft. Palm Springs International Airport's resultant mix index is 69.

The consistently clear weather at Palm Springs International Airport enables the Airport to operate under Visual Meteorological Conditions (VMC) approximately 97 percent of the time. Visual Meteorological Conditions require a minimum visibility ceiling of 1,000 feet and minimum horizontal visibility of three miles. The Airport operates under Instrument Meteorological Conditions (IMC) approximately 3 percent of the time. When the Airport operates under IMC, the ceiling is less than 1,000 feet and/or the horizontal visibility is less than three miles. The Airport is effectively reduced to using only Runway 13R-31L during IMC.

The hourly capacity of PSP's runway system, under VMC, is determined from Section 3-2 of the AC, *Hourly Capacity of the Runway Component.* The Airport has two parallel runways separated by 700 feet. Runway 13R-31L dimensions 10,000 feet long by 150 feet wide. It is adequate for large aircraft operations. Runway 13L-31R dimensions 4,925 feet long by 75 feet wide. The runway width limits the runway exclusively to small aircraft. Operations at the Airport are approximately balanced between departures and arrivals, and it is assumed, for the purposes of this capacity calculation, that the percent of arrivals at the Airport is 50 percent.

Approximately 10 percent of the operations at the Airport are touch-and-go operations. Touch-and-go operations take place when a pilot lands and departs without coming to a full stop. Touch-and-go operations are generally used for instructive purposes to expose a student pilot to multiple take offs and landings in a relatively short amount of time. Officially, a touch-and-go is recorded as two operations by the Air Traffic Control Tower.

Another important contributor to runway capacity is the location number and adequacy of exit taxiways. The location of exit taxiways directly correlates with runway occupancy time. The higher the runway occupancy time, the lower the runway capacity, as it takes longer for aircraft to clear the runway. The Airport's exit taxiways are located in key positions that allow aircraft to efficiently clear the runway.

Figure 3-5 of the AC shows that PSP's hourly runway capacity base is approximately 80 aircraft operations. The touch-and-go adjustment factor is 1.03. The runway exit factor is 1.0. The hourly capacity at the Airport under VMC is approximately 82 operations. When IMC prevails, according to Section 4-4 of the AC, the runway capacity is reduced to approximately 56 operations.

The weighted runway capacity is a function of the different runway-use configurations used over the course of a year, the percent of time each runway-use configuration is used, the hourly capacity for each runway-use configuration, and the ASV weighting factor. The weighted capacity expression is:

$$C_w = \left(\frac{(p_1 \cdot c_1 \cdot w_1) + (p_2 \cdot c_2 \cdot w_2)}{(p_1 \cdot w_1) + (p_2 \cdot w_2)} \right)$$

Cw = The weighted hourly capacity
p = The percent of time each configuration is used
c = The hourly capacity of each configuration
w = The ASV weighting factor (based on the percent of maximum capacity)

The weighted capacity is approximately 74 operations per hour. The ratio of annual demand to average daily demand at the Airport is approximately 248. The ratio of average daily demand to average peak hour demand during the peak month (March) is approximately 7. The resultant Annual Service Volume for Palm Springs International Airport is approximately 130,000 operations. An annual service volume is highly dependent on current aviation activity. The ASV for Palm Springs International Airport should be used only as a benchmark for operational characteristics. It is not intended to be identified as the maximum theoretical capacity of the Airport.

2.9-4 Taxiways

The taxiway system at PSP, depicted on **Figure 2-10** is a network of parallel, connecting, runway exit and runway access taxiways. Runway 13R-31L is served by two full length parallel taxiways, Taxiways C and W. Taxiway W parallels Runway 13R-31L to the west and is separated by 500 feet, runway centerline to taxiway centerline. At the intersection of Taxiway K, Taxiway W bends 100 feet closer to Runway 13R-31L. Taxiway C parallels Runway 13R-31L to the east and Runway 13L-31R to the west. Taxiway C is located 400 feet east of Runway 13R-31L and 300 feet west of Runway 13L-31R. There have been occasional reports of pilots recognizing Taxiway C as a runway as opposed to a taxiway despite the large "taxiway" markings painted on the surface. Taxiway E is a full length parallel taxiway to Runway 13L-31R and is separated by a centerline-to-centerline distance of 250 feet to the east. The taxiway system is presented in **Table 2-8**.

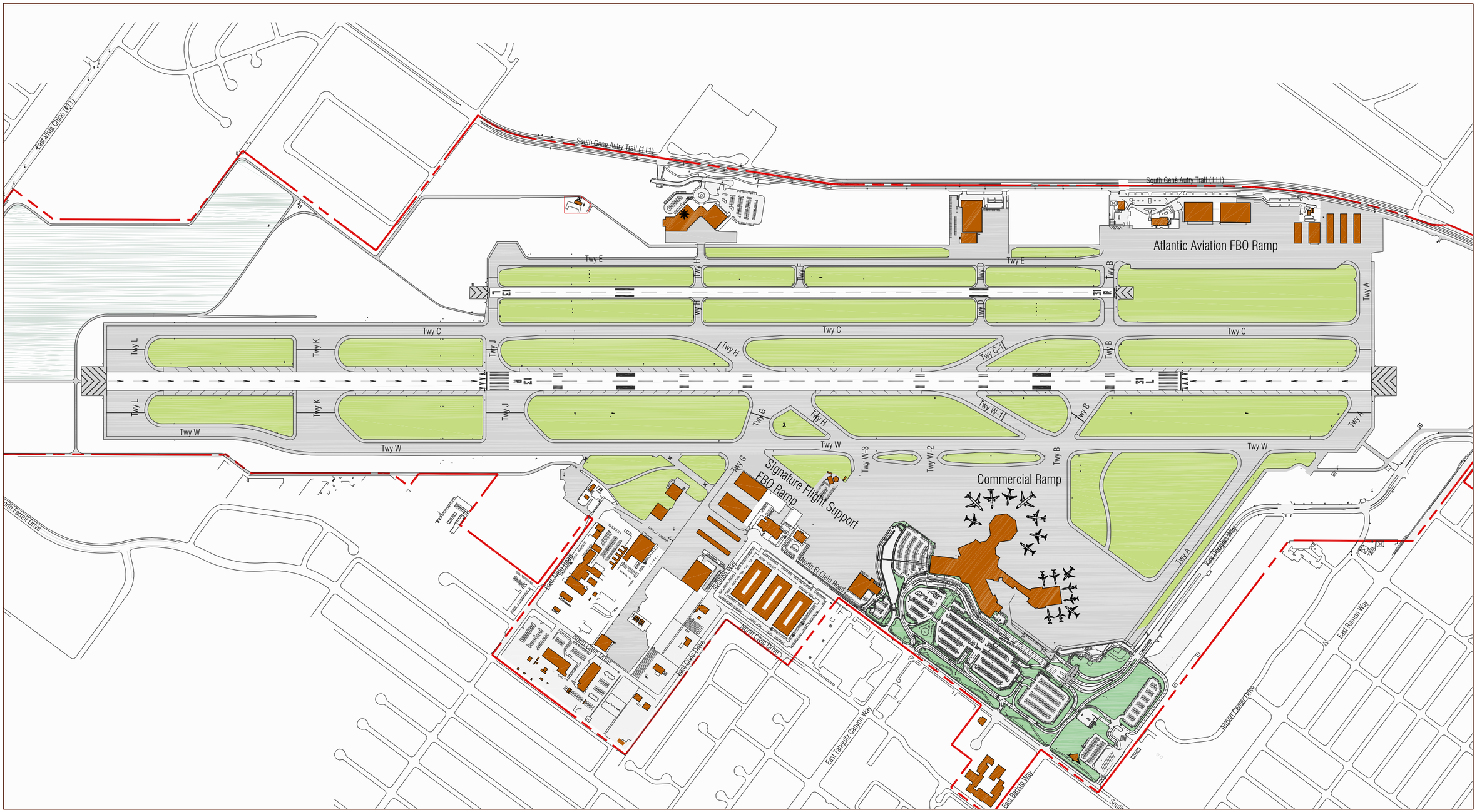
Table 2-8: Taxiway System Description

Taxiway	Width	Description
A	75 feet	Connects the south ends of Runways 13L-31R and 13R-31L with full length parallel Taxiways C and W
B	75 feet	Exit taxiway for Runway 13R-31L connecting the runway with Taxiway W and the terminal area, also connects to Runway 13L-31R and Taxiway C
C	75 feet	Full length parallel taxiway west of Runway 13R-31L
C-1	75 feet	East Flow high speed exit taxiway linking Runway 13R-31L with Taxiway C
D	50 feet	Connects the Sky West maintenance facility with Runway 13L-31R and Taxiway C
E	50 feet	Full length parallel taxiway east of Runway 113L-31R
F	50 feet	Exit taxiway for Runway 13L-31R connecting the runway with Taxiway E
G	75 feet	Exit taxiway connecting Runway 13R-31L with Taxiway W
H	75 feet	Cross-field taxiway connector linking Taxiway W with Taxiway E
J	75 feet	Cross-field taxiway connector linking Taxiway W with Taxiway E, also serves as a runway entrance and exit at the Runway 13R displaced threshold
K	300 feet	Runway 13R-31L runway exit, entrance, and holding point at the base of the bend in Taxiway W
L	300 feet	Runway 13R-31L runway exit, entrance, and holding point at the far west end of the runway
W	75 feet	Full length parallel taxiway east of Runway 13R-31L and west of Runway 13L-31R, also referred to as a centerline taxiway
W-1	75 feet	East flow high speed exit taxiway linking Runway 13R-31L with taxiway W
W-2	75 feet	Connects passenger terminal area with Taxiway W

Source: HNTB Analysis

The taxiways west of Runway 13R-31L are designed to meet ADG V standards. The centerline taxiway can be used up to ADG V aircraft when Runway 13L-31R is not in use. The taxiways east of Runway 13L-31R are designed to meet ADG II standards.

J:\46760-PSP\CADD\02-INVENTORY\CADD_FILES\ Fig_2_10_Taxiway-Ramp.dwg Oct 12, 2009 - 4:53pm



Source: City of Palm Springs Department of Aviation

PALM SPRINGS INTERNATIONAL AIRPORT
MASTER PLAN UPDATE

N

0 750'

On-Airport Facility

Airport Operations Area

Airport Property Line

Airport Ramps / Taxiway System

Figure 2-10

Palm Springs International Airport
Master Plan

2.9-5 Aircraft Ramps and Parking

Ramp areas are paved portions of the airfield where aircraft stop for loading and unloading of passengers, cargo, maintenance, and aircraft storage. It is also common to utilize ramp areas for aircraft ground servicing equipment storage. Ramp areas are considered non-movement areas by the FAA as they are not controlled by the ATCT and have no restrictions on obstructions. **Figure 2-10** depicts the various ramp areas at PSP, and **Table 2-9** presents the areas of each ramp in square yards and acres.

Table 2-9: Ramp Area Summary

Ramp	Area (Square Yards)	Area (Acres)
Terminal Ramp	199,430	41.2
Atlantic Aviation Ramp	89,400	18.5
Signature Flight Support Ramp	84,000	17.4
Maintenance Ramp	11,630	2.4
Total Ramp Area	384,460	79.5

Source: HNTB Analysis

The Terminal Ramp, located in the southwest corner of the airfield, encompasses the entire airside perimeter of the Bono and Regional concourses. The Terminal Ramp provides for 8 marked aircraft parking positions at the Bono Concourse and 8 marked positions at the Regional Concourse. All of the marked positions at the Bono Concourse are served by loading bridges (Gates 4-11), which allow passengers and employees to transfer between the Bono Concourse building and the aircraft within an enclosed and elevated mechanical walkway. Four of the aircraft parking positions at the Bono Concourse (Gates 5, 7, 8 and 10) are Aircraft Design Group IV capable and are served by loading bridges. The four remaining aircraft parking positions at the Bono Concourse are Aircraft Design Group III capable gates. The Regional Concourse's eight marked positions accommodate aircraft up to Aircraft Design Group III and are all ground-loaded positions. **Figure 2-11** presents the graphical layout of parking positions at the Terminal Ramp and the largest aircraft that can be accommodated at each position.

Gate 11
MD-80
B737-X00
A319/320

Gate 10
MD-80 B767-300
B737-X00 A319/320
B757-X00 DC-10-30

Gate 8
MD-80
B737-X00
B757-X00
A319/320

Gate 9
MD-80
B737-X00
B757-X00
A319/320

Gate 6
MD-80
B737-X00
B757-X00
A319/320

Gate 7
MD-80
B737-X00
B757-X00
B767-300
A319/320
DC-10-30

Gate 4
MD-80
B737-X00
A319/320

Gate 5
MD-80
B737-X00
A319/320

Gate 15
CRJ-700/900
A320-200

Gate 14
CRJ-700/900

Gate 16
CRJ-700/900

Gate 12
CRJ-700/900

Gate 17
CRJ-700/900

Gate 18
CRJ-700/900
B737-300/500/700/800

Gate 19
CRJ-700/900

Gate 20
CRJ-700/900

J:\46760-PSP\CADD\02-INVENTORY\CADD_FILES\ Fig_2_11_Aircraft_Parking.dwg Oct 12, 2009 - 4:58pm

Source: City of Palm Springs Department of Aviation

PALM SPRINGS INTERNATIONAL AIRPORT
MASTER PLAN UPDATE

N

0 100'

Terminal Building

Aircraft Parking Positions

Figure 2-11

Palm Springs International Airport
Master Plan

2.9-6 Remain-Over-Night Parking

The location of the Airport in the southwestern quadrant of the United States contributes to its role as an airline "spoke" airport. As a spoke airport, airlines do not utilize PSP as a hub for connecting through-passengers to other final destinations. Instead, the airlines use PSP as a means to take passengers to/from their large hub airports, which are strategically positioned throughout the continental United States. Spoke airports generally have high demand for Remain-Over-Night (RON) parking. Typically the first round of flights each day is aircraft outbound from the spoke airports to the hubs, while the last round of flights is outbound from hubs to spoke airports. The last aircraft arriving at night and leaving first the next morning are parked overnight at a terminal passenger gate. If the number of overnight aircraft exceeds the number of available gates, these additional aircraft must be parked at RON positions. RON positions are apron parking positions for aircraft that are not adjacent to the terminal building. The Airport does not utilize additional ramp space for RON parking as the Terminal Ramp has sufficient capacity for the existing demand.

2.9-7 Pavement Use and Management

Airport pavement management is governed by FAA Advisory Circular 150/5380-6B: Guidelines and Procedures for Maintenance of Airport Pavements, published September 28, 2007. Airports receiving Federal funding are required to have a pavement maintenance management program in place. At minimum the program must contain:

- Pavement Inventory detailing the *location of all runways, taxiways, and aprons, pavement dimensions, type of pavement, year of construction or most recent rehabilitation, and whether Federal financial assistance was used to construct, reconstruct, or repair the pavement.*
- An inspection schedule that includes *a detailed inspection of airfield pavements at least once a year* and a monthly drive-by inspection.
- A minimum of five-year records detailing the inspections and maintenance performed.
- Have the program information readily available to the FAA.
- *Identify funding and other resources available to provide remedial and preventive maintenance activities.*

Visual surveys of the pavement condition at the Airport are conducted on a regular basis, in accordance with FAA requirements. Pavements are rated using a standard Pavement Condition Index (PCI) with a scale of 0 to 100 (failed to excellent). The most recent survey, conducted in 2008, indicated that approximately 25% of pavement segments were rated 86-100 (excellent), 31% were rated 71-85 (very good), 8% were rated 56-70 (good), 9% were rated 41-55 (fair), 11% were rated 26-40 (poor), and 16% were rated 0-25 (very poor to failed).

The pavement composing Runway 13R-31L is generally in very good condition. On average, the runway dropped approximately 25 points in the PCI scoring from testing done in 2001. It is anticipated that within a five year time frame, Runway 13R-31L could undergo rehabilitation. The runway was last rehabilitated in 1995. The Airport will close the runway in the summer months to complete the

rehabilitation process. During the closure, center Taxiway C is set up as a temporary runway. The Airport cannot use Taxiway C and Runway 13L-31R simultaneously. The vast majority of poor to failing pavement can be found near the Signature Flight Support FBO apron areas.

2.9-8 Surveillance Equipment and Navigational Aids

Existing runway markings, lighting, and landing navigational aids (NAVAIDS) are presented in **Table 2-10**.

Table 2-10: Runway Surveillance Equipment and Navigational Aids Inventory

Runway	Marking	Lighting	NAVAIDS
13R	Precision	HIRL, VASI, REIL	VOR, RNAV
31L	Precision	HIRL, VASI, REIL	VOR
13L	Precision	MIRL, PAPI, REIL	VOR, RNAV
31R	Precision	MIRL, PAPI, REIL	VOR, RNAV

Source: AirNav Facility Database
HIRL – High Intensity Runway Lights
MIRL – Medium Intensity Runway Lights
REIL – Runway End Identification Lights
VASI – Visual Approach Slope Indicator
PAPI – Precision Path Approach Indicator

Precision pavement markings identify runway centerline, displaced threshold, runway end threshold, touchdown point, aircraft hold location, runway edge and runway name designation. All pavement markings on the runways are in good condition.

Runway lighting is used to ensure safe navigation during periods of low visibility or at night. Runway 13R-31L is outfitted with High Intensity Runway Lighting (HIRL), while Runway 13L-31R is outfitted with Medium Intensity Runway Lighting (MIRL). Air Traffic Controllers have the ability to adjust the intensity of the runway edge lights depending on the visibility or time of day. In addition to the runway lighting system, all airfield taxiways are equipped with High Intensity Taxiway Lighting (HITL). Two synchronized flashing lights on the lateral sides of each runway end, known as Runway End Identification Lights (REIL), alert arriving aircraft as to the location of the end of the runway. An airport beacon, located on top of the Palm Springs Air Museum, projects rotating beams of white and green light spaced 180 degrees apart.

The six-box Visual Approach Slope Indicators (VASIs) installed on the left side of each end of Runway 13R-31L enable an aircraft operator to determine whether or not they are on the 3.25 degree approach angle. The mountainous geography of the region restricts the usable range of the VASI to 3 nautical miles. Similar in function, a four-box Precision Approach Path Indicator (PAPI) guides pilots to the 3.50 degree approach glide path on Runway 13L-31R.

Two Very-High-Frequency Omnidirectional Ranges (VORs) collocated with Tactical Air Navigation (TACAN) support Palm Springs Airport. The Palm Springs VORTAC is located 4.5 nautical miles northeast of the Airport and the Thermal VORTAC is located 20 nautical miles southeast of PSP.

An Airport Surveillance Radar (ASR-9) displays both weather and aircraft simultaneously for PSP's terminal airspace. A technical incompatibility sometimes exists between the region's many wind turbines and the ASR-9. When the velocities of the turbine blades exceed 60mph, the radar will sense the movement of some higher elevation units and the radar system has to electronically adjust itself in order to compensate. Although safety is not compromised, the FAA systems require ongoing attention and adjustment to properly address the large growing wind farm.

In accordance with Code of Federal Regulations (CFR), Title 14, a Part 139 certified airport is required to have runway and taxiway signage that meet federal design standards. Palm Springs International Airport has a signage system that includes signs for runway and taxiway designations, runway length remaining, preferential flow direction, runway exits and runway entrances.

2.9-9 Airspace

Classification of airspace dictates the level of involvement by Air Traffic Control (ATC). Very large airports, such as Los Angeles International Airport, operate under Class B airspacewhere all aircraft are required to obtain ATC clearance when entering that airspace. The airspace above Palm Springs International Airport is Class D airspace. Aircraft operating under Instrument Flight Rules (IFR) are separated from each other by ATC. Aircraft operating under Visual Flight Rules (VFR) are given traffic updates about other aircraft in the sector. Class D airspace governs flights from ground level to approximately 2,500 feet above the surface.

Over the course of a flight, different ATC facilities assume responsibility for handling a flight. On the ground and in the air within a 5 mile radius of the Airport, PSP Air Traffic Control Tower (ATCT) staff communicates with and give direction to pilots. Within an approximate 40 mile radius of PSP, the Southern California Terminal Radar Approach Control (TRACON) facility is responsible for all aircraft departure and arrival clearances. Beyond the TRACON's jurisdiction, the Los Angeles Air Route Traffic Control Center (ARTCC), located in Palmdale, assumes responsibility for flights. The TRACON provides approach and departure services for Palm Springs International Airport between the hours of 6:00 a.m. and 11:00 p.m.. Approach and departure service is maintained between 11:00 p.m. and 6:00 a.m. by the ARTCC.

From an airspace perspective, operations from Bermuda Dunes Airport directly influence operations at Palm Springs International Airport. The departure path at Bermuda Dunes is slightly offset with the approach path to Palm Springs. Rapidly ascending aircraft from Bermuda Dunes must be carefully integrated with approaching aircraft to PSP.

Published routes have been developed for arriving and departing aircraft. Standard Terminal Arrivals (STARs) control arrivals, and Departure Procedures (DPs) control departures. The STARs and DPs are primarily used by faster moving, higher performance aircraft. Lower performance aircraft and those going to a routing not served by a STAR or DP are given directions by air traffic control, called RADAR vectors. Since PSP is far enough from other large airports, there are no significant airspace conflicts between air routes serving PSP and air routes serving other large airports within the region. Airport staff reports that it is not uncommon for airline flights between other airports to be diverted to PSP because of

inclement weather in other cities or for in-flight emergencies with ill passengers, as well sometimes for minor mechanical issues with the aircraft.

2.9-10 Noise Management

The location of the Airport within a populated residential area has necessitated noise management and mitigation programs. The displacement of runway threshold on both ends of Runway 13R-31L ensures that aircraft are flying at a higher altitude over residential neighborhoods upon final approach, thus reducing perceived noise. Runway 13R, used for approaches from the west, is displaced 3,000 feet while Runway 31L is displaced 1,500 feet. In addition to the implementation of displaced thresholds, the Airport has constructed a noise wall and noise berm on the northwest edge of Airport property to mitigate noise impacts from aircraft in nearby residential areas. Palm Springs International Airport also employs some voluntary noise abatement procedures. Noise abatement procedures are policies and procedures that are designed to minimize aircraft noise experienced by neighboring communities. The programs in place at PSP include encouraging noise abatement departure profiles by jets, a voluntary restriction of air carrier aircraft from 11 p.m. to 6 a.m., delayed thrust application for departures until the aircraft is aligned with the runway centerline, restrictions on engine run-up maintenance, maintaining aviation compatible land-use with the 60 Community Noise Equivalent Level (CNEL), and had completed a federally funded sound insulation program for homes within the 65 CNEL.

The Airport has identified two areas on the airfield where engine maintenance run-ups are allowed: Taxiway A with the aircraft tail oriented toward Runway 31L and Taxiway W north of Taxiway B with the tail oriented to the north. The holding apron at the intersection of Taxiways A and W for Runway 31L departures and on Taxiway C for departures on Runway 13R serve as locations for routine pre-flight engine run-ups. The SkyWest maintenance facility has a hush-house that enables small turboprop aircraft to conduct engine maintenance run-ups.

2.10 PASSENGER TERMINAL

The passenger terminal complex, depicted on **Figure 2-12,** consists of a pier configuration linking the following building components:

- One-story terminal processor with a mezzanine
- Two-story main concourse named the “Bono Concourse” for mainline aircraft
- One-story Regional Concourse for regional jets and turbo prop aircraft.

The above components are connected by an open air landscaped plaza and pedestrian walkway. The terminal configuration and architecture complement the image of Palm Springs, its fair weather and attractive environment.

2.10-1 Terminal Complex

The total area of the terminal complex is approximately 247,477 square feet. The total area includes both enclosed portions of the terminal facilities as well as open-air portions primarily utilized for circulation. A functional breakdown of the terminal complex area is shown in the **Table 2-11.**

Table 2-11: Terminal Complex Functional Areas

Functional Area	Area (square feet)
Airline Operations	12,846
Airline Ticketing	2,369
Airline Holdrooms	31,005
Post Security Circulation Areas	54,198
Pre Security Circulation Areas	24,325
Restrooms (Public)	6,179
Concession/Concession Storage	15,253
Baggage Claim	12,731
PSP Administration and Operations	12,240
Ground Service Equipment Parking/Staging	12,883
Utilities and Building Maintenance	23,653
TSA SSCP and Offices	9,555
Rental Car Reservation Counters	2,843
United Service Organization (USO) Offices	1,252
Total Area	247,477

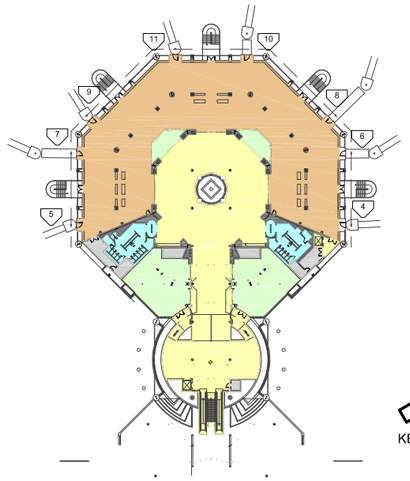
Source: GPA Architects Analysis

The original passenger terminal complex was initially constructed and put into service in 1967. Since its initial construction, the passenger terminal complex has been remodeled and expanded. The ticketing lobby and baggage claim area were enlarged in 1992. The security screening checkpoints and EDS screening areas were enlarged in 2007. A new two-story concourse for mainline aircraft gates was constructed and opened in 1999. This was followed in Fall 2007 by the construction of a new Regional Concourse for regional jets and turbo prop aircraft. The Airport has a total of 16 gates, with 8 at the Bono Concourse and 8 at the Regional Concourse. The current preferential gate utilization is shown in **Table 2-12** below.

Table 2-12: Airline Gate Utilization

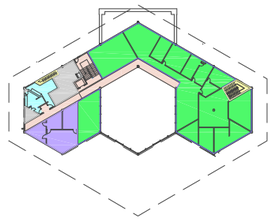
Airline	Concourse	Gate Number(s)	Aircraft Size
Alaska Airlines	Bono	10, 11	737
Allegiant Air	Bono	11	MD-80
American Airlines	Bono	4, 6, 8	MD-80
Delta Connection	Regional	17, 18, 19, 20	RJ
Horizon Air	Regional	12, 14	RJ
Northwest Airlines	Bono	8	A320
Sun Country	Bono	9	737
United Airlines / United Express	Bono, Regional	7, 17, 18, 19, 20	A320/RJ
US Airways Express	Regional	15, 16	RJ
WestJet	Bono	6, 8	737

Source: Palm Springs International Airport website (September 26, 2008)
Note: Airline gate utilization changes monthly.



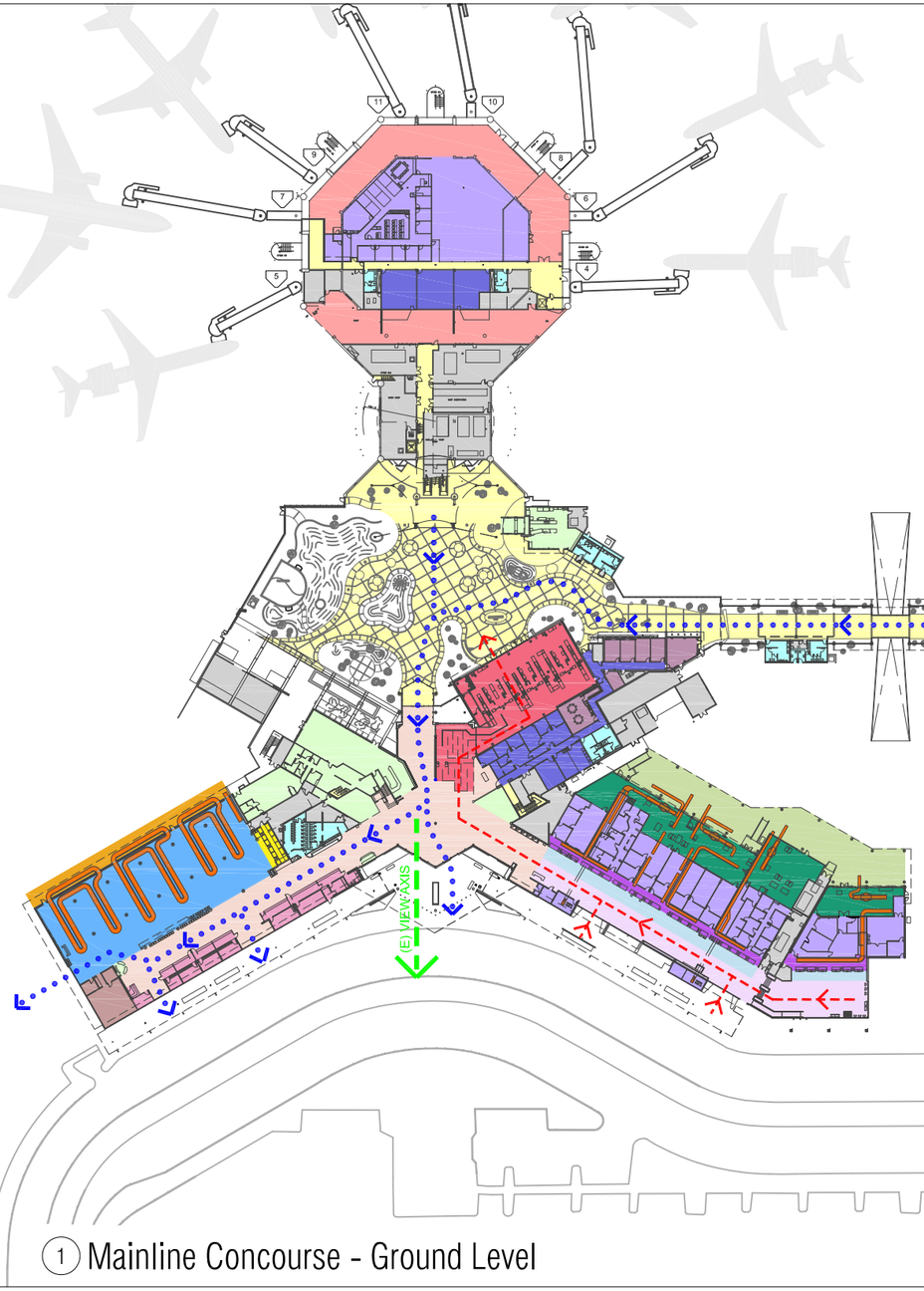
KEY PLAN

3 Sonny Bono Concourse - Second Level



KEY PLAN

2 Processor - Mezzanine Level



1 Mainline Concourse - Ground Level

Legend

- Airline Ticket Offices
- Ticket Counters
- Ticket Counter Queueing
- Ticket Counter Circulation Areas
- Pre Security Circulation Areas
- Post Security Circulation Areas
- Restrooms
- Concession / Concession Storage
- Rental Car Reservation Counters
- Baggage Claim
- Baggage Service Office
- PSP Operations
- PSP Administration
- SSCP
- Utilities & Building Maintenance
- TSA Offices
- Outbound Baggage
- Inbound Baggage
- USO
- EDS
- CBP
- Baggage Conveyor
- Gate (XX)

EXISTING VIEW AXIS

ENPLANING PASSENGERS — MAX TRAVEL DIST*: ±1,255'

DEPLANING PASSENGERS — MAX TRAVEL DIST*: ±1,200'

*MAX TRAVEL DISTANCE CALCULATED FROM GATE #17 TO FURTHEST TICKET COUNTER (ENPLANING) OR BAG CLAIM DEVICE (DEPLANING)

J:\46760-PSP\CADD\02-INVENTORY\CADD_FILES\Terminal_Schemes_09_0921\ PS~SK01-EXISTING.dwg Oct 12, 2009 - 4:36pm

PALM SPRINGS INTERNATIONAL AIRPORT

N

0 120'

Terminal Complex - Overall

Figure 2-12

Palm Springs International Airport
Master Plan

2.10-2 Terminal Processor

The terminal processor is depicted on **Figure 2-13.** It contains the following major functional areas:

- Pre Security Circulation (central lobby, ticketing lobby, baggage claim / rental car reservation lobby)
- Inbound Baggage and Baggage Claim
- Rental Car Reservations Area
- USO Offices
- Airline Ticketing
- Airline Operations (airline ticketing offices, baggage screening and make-up area)
- Concession / Concession Storage (Pre Security)
- Transportation Security Administration (TSA) Security Screening Checkpoint (SSCP) & Offices
- Airport Administration Area
- Restrooms

The following sections provide a detailed description of each of the above functions.

Pre Security Circulation Area

Central Lobby

The 3,104-square-foot hexagonal lobby is the central traffic point for departing and arriving passengers and meeters and greeters. It consists of a two-story-high structure, which was part of the original terminal built in 1967. The City of Palm Springs designated in March 2009, the west façade and lobby structure a local historical monument.

Ticketing Lobby

The 10,839-square-foot ticketing lobby is located in the south wing of the terminal processor. Departing passengers check-in their baggage and obtain their boarding passes in the ticketing lobby. The lobby dimensions are 326 feet long by 38 feet wide. The width of the lobby, measured from the back wall behind the counters to the curbside wall, is substandard for the width required for a Level of Service B, as outlined by the International Air Transport Associations (IATA).

The Airport utilizes a frontal type check-in counter system with linearly aligned ticket counters served by ticket agents. The lobby area includes room for passenger queuing and circulation that extends to the building façade.

At PSP, the check-in counter includes a total of 48 agent positions, plus 12 self-service ticket kiosks integrated into the ticketing line. Alaska Airlines has 1 additional remote kiosk located in the ticketing lobby. Current use of ticket counters is described in **Table 2-13.**

Table 2-13: Airline Ticket Counter Positions

Airline	Traditional Positions	Self Service Kiosks
Alaska Airlines / Horizon Airlines	9	4 + 1 remote
Allegiant Air	2	0
American Airlines	6	2
Delta Connection / Northwest Airlines (seasonal)	8	4
Sun Country (seasonal)	4	0
United Airlines (seasonal) / United Express	6	2
US Airways Express	3	0
WestJet (seasonal)	6	0
Unoccupied	4	0
Total Area	**48**	**12 + 1 remote**

Source: GPA Architects

Additional check-in options for passengers on Alaska / Horizon, American and WestJet include a fee-based skycap service located at the terminal curbfront. The remaining airlines do not offer curbside check-in services. The narrow width of the ticketing lobby results in insufficient queue space in front of the counters, causing conflicts between overlapping queues. The circulation space between queuing areas and the exterior terminal wall is constrained and creates movement problems for passengers moving from the south end of the ticketing lobby to the central lobby.

Unique check-in conditions at the Airport include the large number of golf bags, due to the Palm Springs region's high number of golf courses, and a higher than average of mobility challenged and elderly passengers.

Baggage Claim / Rental Car Reservation Lobby

Located between the rental car customer service counters and the baggage claim devices, a 6,882-square-foot area is used for the baggage claim wait area, rental car customer service queue lines, and general passenger circulation area. Serving multiple uses, this lobby does become very congested during peak times and passenger circulation is reduced to a minimum.

Inbound Baggage and Baggage Claim Area

The baggage claim area is located in the north wing of the terminal processor. Passengers arriving at the Airport retrieve their bags at one of the 3 baggage claim units. Electronic baggage information display systems (BIDS) located at each claim device provides information for arriving passengers regarding the baggage claim unit to which their baggage will be delivered.

The flatbed claim devices are fed from the inbound baggage carts outside of the exterior airside wall of the baggage claim area. Beyond the exterior wall of the baggage claim area, the open air bag belt devices are currently spaced close to each other. The distances between baggage carousels 1 and 2 and between baggage carousels 2 and 3 are 8 feet - 9 inches and 11 feet, respectively. This limited spacing between baggage carousels outside where baggage are placed onto bag belts from arriving aircraft presents a problem for airline personnel when unloading bag carts simultaneously. Because PSP attracts a high

percentage of leisure travel, there is a higher than normal amount of golf bags and this adds additional handling challenges and magnifies peak congestion issues.

An additional operational inefficiency for airlines is current procedure used to prevent unscreened baggage from entering the secure side of the Airport. This adds additional labor costs to the airlines. Currently, for security reasons, a baggage handler from an airline utilizing a bag belt has to remain near the conveyor door until the last bag has been removed from the claim device. Once the last bag has been removed from the claim device, the handler will turn off the device to prevent unchecked baggage from entering back into the secure side of the airport and manually move any remaining bags to other side.

Other functions occupying the baggage claim area include the rental car reservation counters, rental car provider offices, portable luggage carts, airline baggage office, and public restrooms. Based on interviews conducted with airline and rental car personnel, the baggage claim area is congested during peak hours in the peak season. Based on observations during peak periods, the baggage claim devices have insufficient linear frontage to accommodate current demand. The frontages are 204 feet, 248 feet and 221 feet for baggage carousels 1, 2, and 3, respectively. The approximately 510-square foot baggage claim office located at the southern end of the baggage claim area is also insufficient in size.

Rental Car Customer Service Area

Palm Springs International Airport has seven rental car providers (Advantage, Enterprise, Avis, National/Alamo, Dollar/Thrifty, Hertz, and Budget).

Rental car customer service counters and back offices are located in the baggage claim area. For passengers picking up their rental cars, the short walking distance from the rental car reservation counter to the ready lot is convenient. However, for passengers returning their rental cars in the north end of this same lot, the distance to the airline ticketing counters in the south wing of the terminal processor is less convenient. The total walking distance from the point passengers return their rental cars to the airline ticketing counters is approximately 1,029 feet. The suggested IATA walk time is approximately 984 feet. Furthermore, the path made is heavily congested as there are convergent streams of traffic, especially during peak times. For example, the area designated as the baggage claim / rental car reservation lobby serves multiple purposes - for departing passengers coming in from the rental car return lot to return their cars and then to the ticketing counters in the south wing of the terminal processor, arriving passengers heading proceeding to the rental car reservation counters and then to the rental car ready lot, from arriving passengers waiting for their bags, and from meeters and greeters. Further constraining the building are the support columns in the middle of the main circulation space.

United Service Operations Offices

The Airport has a 1,200 square feet (40 feet by 30 feet) United Service Operations (USO) office for United States military personnel located at the northwest corner of the baggage claim and rental car reservation areas.

Airline Operations

Airline Ticketing Offices (ATO)

Airline ticket offices traditionally include space to support the day-to-day specific administrative and customer service functions. At PSP the ATOs are located behind the lobby enclosure wall and are not accessible to the general public. The ATOs are separated from the ticket lobby by a one-hour fire exposure rated wall and have controlled security access.

Outbound Baggage Screening and Make-up Areas

The outbound baggage handling system consists of both common-use and dedicated take-off belts conveying the baggage to a decentralized explosive detection system (EDS). Five (5) CTX machines and Explosives Trace Detection (ETD) tables for detection tracing of alarmed bags serve all airlines. The airlines utilizing the CTX machines are as follows.

- Alaska Airlines (connected to an in-line system with one belt feeding a dedicated CTX machine)
- Alaska Airlines / USAirways Express / Northwest Airlines (shared)
- WestJet / Allegiant / Northwest (shared).
- Delta Connection / United / United Express (shared)
- American Airlines

Since the introduction of baggage screening following 9/11, the outbound baggage make-up area has lost a considerable amount of floor area. The airlines have continued to successfully manage their conveyor-to-tug bag handling operations in a more confined space.

Concessions / Concessions Storage (Pre Security)

A food concession and another news and gift shop concession are located in the pre-security or non-secure area of the central lobby. The food concession is a full-service, sit down restaurant (Celebrity Bistro). The other concession sells retail snacks , named gifts, and periodicals. HMS Host provides management and staffing services for the Airport's concessions along with Paradies Shops, both which are nationally recognized and in many other airports.

Transportation Security Administration (TSA) Security Screening Checkpoint (SSCP)

The security screening checkpoint (SSCP) is accessible from the central lobby. Following the check-in process, passengers proceed to the SSCP located at the east side of the central lobby for mandatory screening by the Transportation Security Administration (TSA). The SSCP was recently enlarged to provide more queuing space and screening lanes in order to meet current TSA passenger screening guidelines. The facility now has 6 screening lanes, including a priority lane, and 3 search corrals. Each screening lane is equipped with an x-ray bag belt and shares a walk through metal detector with the adjacent bag belt.

The dimensions of the expanded facility are 98 feet long by 56 feet wide. While the length of the facility appears to be adequate, the depths of the facility may not be optimum. The distance between the divestiture tables, where passengers depose of items to be x-rayed, and the wall is approximately 9.5 feet apart. TSA staff conveyed their concerns that this area is constrained during peak times.

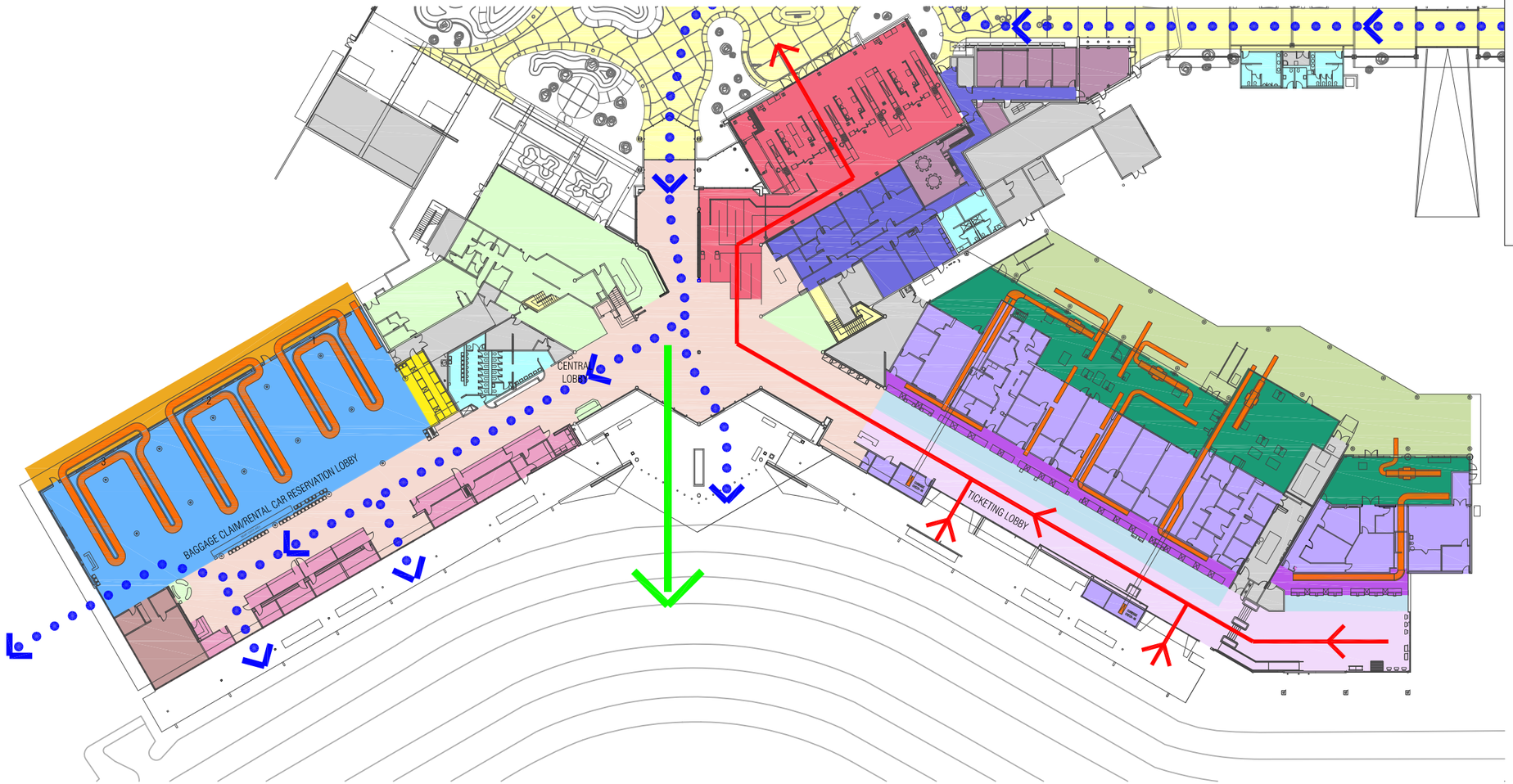
Airport Administration and Operations

The Airport's administrative offices are located on the mezzanine level of the terminal processor and accessible via stairs and an elevator from the lobby. The administration area provides both enclosed offices and open work space for airport staff. A conference room provides meeting space for a variety of uses and functions. In case of an emergency, this room also serves as the media center. Airport operations and police staff have offices located on the ground floor of the terminal processor adjacent to the security screening checkpoint. The operations space was originally designed for a different function and some interior remodeling could be easily done to improve the control center nature of this space.

Restrooms

The ground level of the main terminal processor has a total of two public restrooms (one for men and one for women). There are two separate non-public restrooms used by TSA and operations staff. The mezzanine level (shown on Figure 2-12), which consists of Airport administration and operations areas, has a total of two quasi-public restrooms (one for men and one for women). Restrooms located in the terminal concourses are described in Sections 2.10-3 and 2.10-4.

J: \46760-PSP\CADD\02-INVENTORY\CADD_FILES\Terminal_Schemes_09_0921\ PS-SK01-EXISTING.dwg Oct 12, 2009 - 4:41pm



Legend

- Airline Ticket Offices
- Ticket Counters
- Ticket Counter Queueing
- Ticket Counter Circulation Areas
- Pre Security Circulation Areas
- Post Security Circulation Areas
- Restrooms
- Concession / Concession Storage
- Rental Car Reservation Counters
- Baggage Claim
- Baggage Service Office
- PSP Operations
- PSP Administration
- SSCP
- Utilities & Building Maintenance
- TSA Offices
- Outbound Baggage
- Inbound Baggage
- USO
- EDS
- CBP
- Baggage Conveyor
- Gate (XX)

PALM SPRINGS INTERNATIONAL AIRPORT

N

0 60'

Terminal Processor - Ground Level

Figure 2-13

Palm Springs International Airport
Master Plan

2.10-3 Bono Concourse

The Bono concourse is shown in **Figure 2-14**. With its unique sweeping fabric roof and pavilion type configuration this concourse is the architectural signature of the Airport. The Concourse is characterized by the following levels and function areas:

- Landscaped Level (shown on **Figure 2-12**)
- Ground Level
  - Utilities & Building Maintenance
  - Ground Support Equipment Parking / Staging
  - Airport Maintenance and Operations Offices
  - Airline Operations Area
  - Concessions Storage Areas
- Second Level
  - Post Security Circulation Areas
  - Concessions / Concession Storage (Post Security)
  - Restrooms
  - Airline Holdrooms
  - Open Courtyard

Landscaped Plaza

A unique landscaped plaza bridges the terminal processor to the Bono Concourse and the Regional Concourse. The plaza features landscaping, both softscape and hardscape, flight information and recently added food and advertising concessions, and bathrooms. This plaza adds to the unique, relaxing, and open air environment of the Airport

Ground Level

The ground level provides space for airline operations, Ground Support Equipment (GSE) parking, Airport maintenance and storage, concessions storage and mechanical / electrical rooms. The mechanical rooms contain chillers, boilers and air handlers. An underpass connects the north and south aprons.

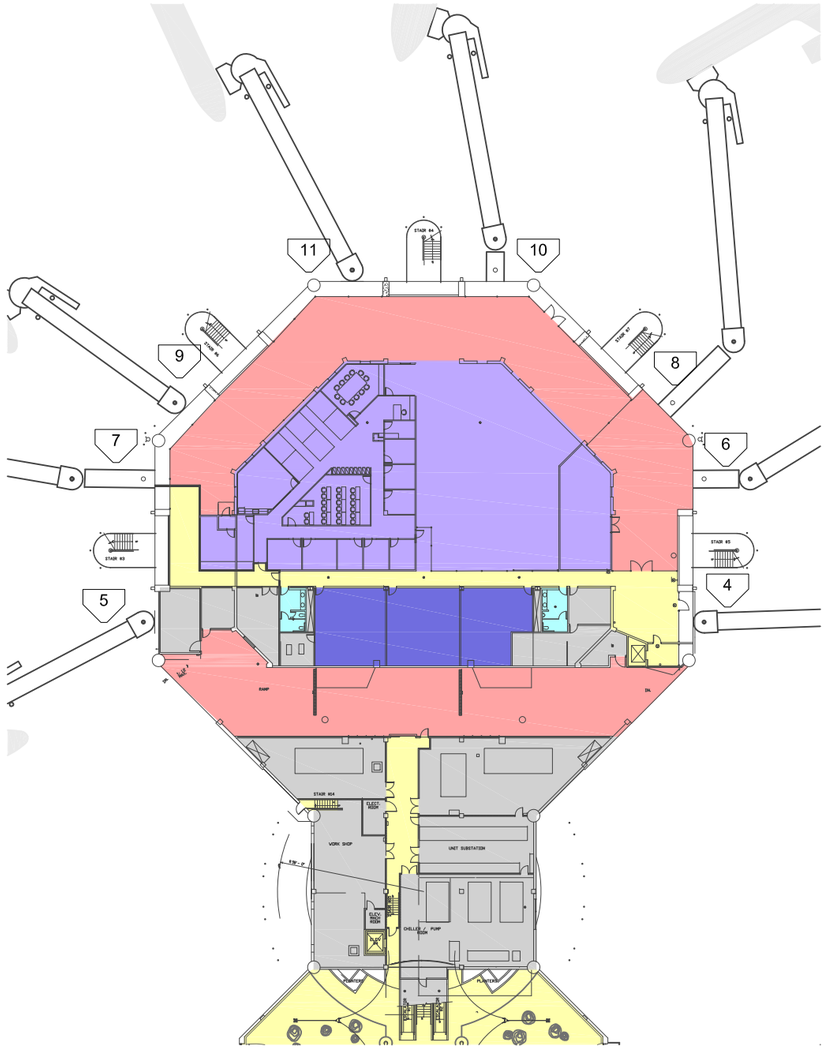
Second Level

After the Security Screening Checkpoint (SSCP) area and the landscaped plaza, passengers ascend on either an escalator, steps, or elevator to the second level. Air-conditioned holdrooms are clustered around the open air concourse. Palm trees in the center of the octagon–shaped concourse are planted under the fabric roof. The fabric roof structure above the concourse provides sun, wind and rain protection. The holdrooms are separated from the open air concourse by glass walls with sliding automatic glass doors. During the hot summer months an evaporative cooling system reduces the ambient air temperature in the concourse, providing temperature relief to the passengers. Passengers aboard aircraft via passenger loading bridges at Gates 4 through 11.

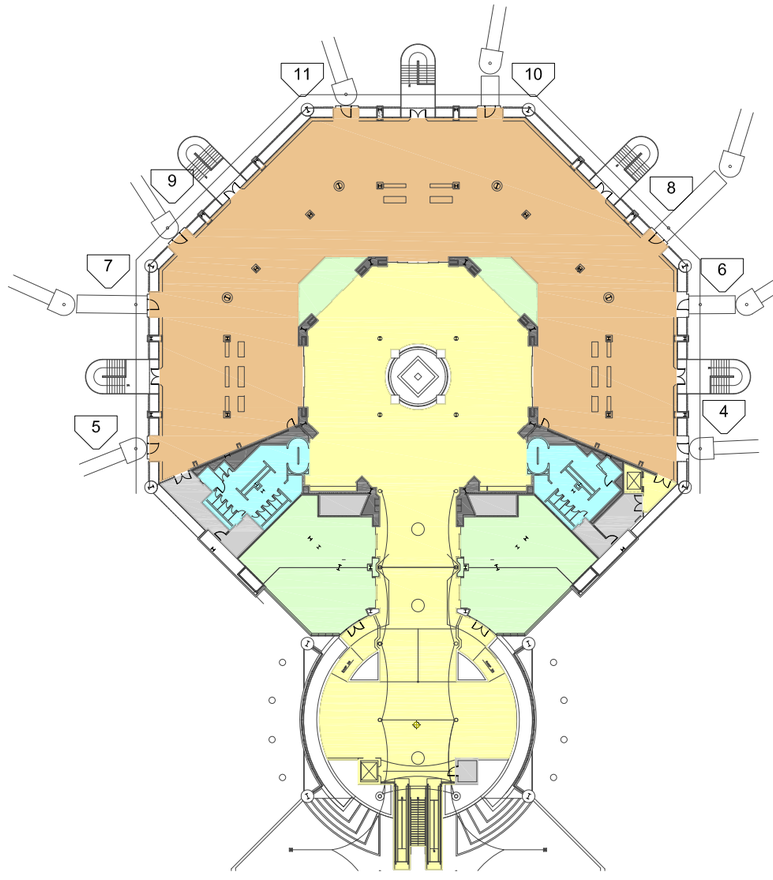
Concessions / Concessionaires (Post Security)

The second level contains seating areas and concessions spaces. Various concessions are located on the second level including Desert Market Place, 12th Fairway Grille, PGA Tour Shop, and EVA's of Palm Springs gift item kiosks.

J:\46760-PSP\CADD\02-INVENTORY\CADD_FILES\Terminal_Schemes_09_0921\ PS-SK01-EXISTING.dwg Oct 12, 2009 - 4:42pm



1 Ground Level



2 Second Level

Legend

- Airline Ticket Offices
- Ticket Counters
- Ticket Counter Queueing
- Ticket Counter Circulation Areas
- Pre Security Circulation Areas
- Post Security Circulation Areas
- Restrooms
- Concession / Concession Storage
- Rental Car Reservation Counters
- Baggage Claim
- Baggage Service Office
- PSP Operations
- PSP Administration
- SSCP
- Utilities & Building Maintenance
- TSA Offices
- Outbound Baggage
- Inbound Baggage
- USO
- EDS
- CBP
- Baggage Conveyor
- Gate (XX)

PALM SPRINGS INTERNATIONAL AIRPORT

N

0 60'

Bono Concourse

Figure 2-14

Palm Springs International Airport
Master Plan

2.10-4 Regional Concourse

A new Regional Concourse was completed in Fall 2007. The Regional Concourse is characterized by the following levels and function areas:

- Regional Concourse Walkway
- Regional Concourse
  - Concessions / Concession Storage (Post Security)
  - Restrooms
  - Holdrooms

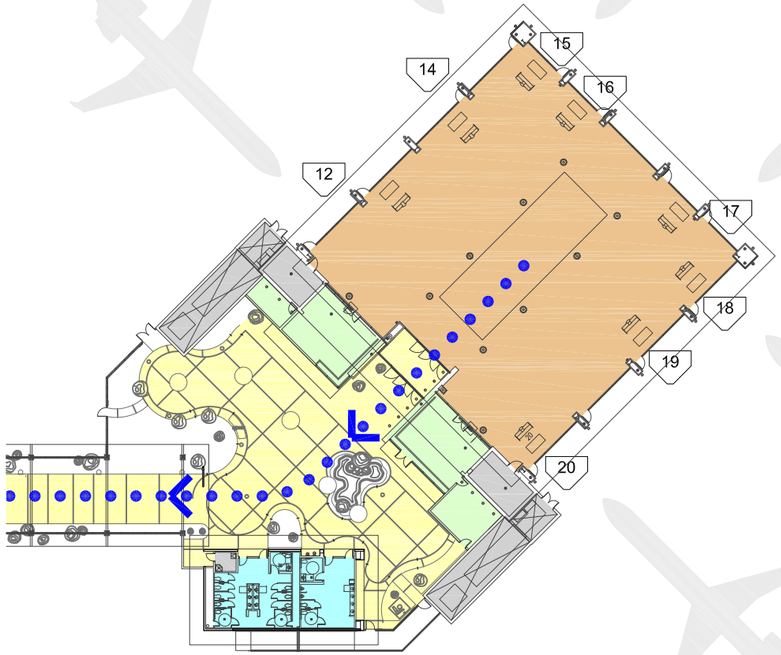
Regional Concourse Walkway

An open landscaped walkway connects the landscaped plaza to the enclosed Regional Concourse, located on the south side of the terminal complex. From the walkway, passengers have a view of the apron. Two public restrooms are located along the walkway. Construction of new fabric roof modules for sun, wind, and rain protection between the main terminal and regional concourse was completed in the Summer of 2009. Outdoor advertising concessions were also installed and blended into the landscape along the walkway.

Regional Concourse

The 20,000 square-foot single-level enclosed Regional Concourse, shown on **Figure 2-15**, accommodates aircraft parking for 7 regional jets plus one turbo prop. All the aircraft parking positions are ground loaded and passengers aboard aircraft via stairs and ramps. Concession spaces include a new gift shop and a restaurant / bar that opened in the Fall of 2009. Two public restrooms are located in the Regional Concourse. Each of the 8 gates within the Regional Concourse has a holdroom area.

J:\46760-PSP\CADD\02-INVENTORY\CADD_FILES\Terminal_Schemes_09_0921\ PS-SK01-EXISTING.dwg Oct 12, 2009 - 4:43pm



Legend

- Airline Ticket Offices
- Ticket Counters
- Ticket Counter Queueing
- Ticket Counter Circulation Areas
- Pre Security Circulation Areas
- Post Security Circulation Areas
- Restrooms
- Concession / Concession Storage
- Rental Car Reservation Counters
- Baggage Claim
- Baggage Service Office
- PSP Operations
- PSP Administration
- SSCP
- Utilities & Building Maintenance
- TSA Offices
- Outbound Baggage
- Inbound Baggage
- USO
- EDS
- CBP
- Baggage Conveyor
- Gate (XX)

PALM SPRINGS INTERNATIONAL AIRPORT

N

0 60'

Regional Concourse

Figure 2-15

Palm Springs International Airport
Master Plan