



CHAPTER ONE: INVENTORY





Chapter One INVENTORY

The initial step in the preparation of the Airport Master Plan for Laughlin/Bullhead International Airport is the collection of information that will provide a basis for the analysis to be completed in subsequent chapters. For the Master Plan, information is gathered regarding not only the airport but also the region it serves. This chapter will begin with an overview of the existing conditions at Laughlin/Bullhead International Airport consisting of descriptions of the airport facilities, airspace, and the airport's role in state and national aviation systems. This will be followed by background information regarding the City of Bullhead City, Arizona and Town of Laughlin, Nevada, including information regarding surface transportation and the historic socioeconomic profile.

AIRPORT OWNERSHIP AND ROLE

The Laughlin/Bullhead International Airport is owned by Mohave County. The airport is managed and operated by the Mohave County Airport Authority, Inc. (MCAA), a non-profit corporation. It is

a volunteer organization composed of residents of Mohave County, Arizona and Clark County, Nevada. Membership requires two-thirds approval by the existing voting membership at the annual meeting.

The Authority membership also elects its Board of Directors. The eleven-member Board of Directors serve staggered three-year terms. The majority of the membership (six members) rotates annually between the two counties. During odd-numbered years, six members must be from Mohave County, and during even-numbered years, six members must be from Clark County. The Authority's Executive Director and Chief Operating Officer oversee the day-to-day business operations of the Airport Authority.

Laughlin/Bullhead International Airport is a commercial service airport serving all aspects of civil aviation and military activity. The airport is certificated under Title 14 of the Code of Federal Regulations (CFR) Part 139, *Certification of Airports*, to accommodate scheduled airline operations. While the airport does not have regularly scheduled airline service, the airport accommodates large aircraft (more than 30 passenger seats) charters by Sun Country Airlines, Allegiant Airlines, and Canadian North Airlines serving the gaming industry in Laughlin, Nevada. The airport accommodates both





private recreational and business general aviation activity. Military aircraft occasionally use the airport as a refueling stop and for training.

AIRPORT FACILITIES

This section presents a description of the existing facilities at Laughlin/Bullhead International Airport. These facilities can be divided into two distinct categories: airside facilities and landside facilities. Airside facilities include those directly associated with aircraft operation. Landside facilities include those necessary to provide a safe transition from surface to air transportation and support aircraft servicing, storage, maintenance, and operational safety.

AIRSIDE FACILITIES

Airside facilities are depicted on **Exhibit 1A**. Airside facilities include runways, taxiways, airport lighting, and navigational aids. Airside facility data is discussed in detail below.

Runway

Laughlin/Bullhead International Airport is served by a single runway. Runway 16-34 is 7,500 feet long and 150 feet wide and is constructed of asphalt. The runway was reconstructed in December 2007.



Runway Safety Area (RSA) improvements were completed concurrently with the reconstruction. Federal Aviation Administration (FAA) design standards require the RSA to extend 250 feet on each side of the runway centerline and 1,000 feet beyond the runway end. Prior to reconstructing the runway, the RSA beyond the Runway 16 end (north of the runway) did not meet these standards. The RSA only

extended approximately 500 feet beyond the end of the runway where it was intersected by a perimeter service road. The Highland Wash is located beyond the perimeter service road. To provide the RSA beyond the Runway 16 end, the existing Runway 16 end was relocated 500 feet south. To maintain the existing runway length, the Runway 34 end was shifted 500 feet south, as well. The Runway 34 landing threshold will remain in its existing location until such time that the FAA can republish the instrument approach procedures to Runway 34. Therefore, the pavement that comprises the 500-foot shift will only be used for departures to the north.

The relocation of runway ends and displacement of landing thresholds has resulted in different takeoff and landing distances for each runway. To notify pilots of the different runway lengths available for landing and departure, declared distances have been implemented at the airport. Declared distances incorporate the following concepts:

Takeoff Runway Available (TORA) - The runway length declared available and suitable for the ground run of an airplane taking off;

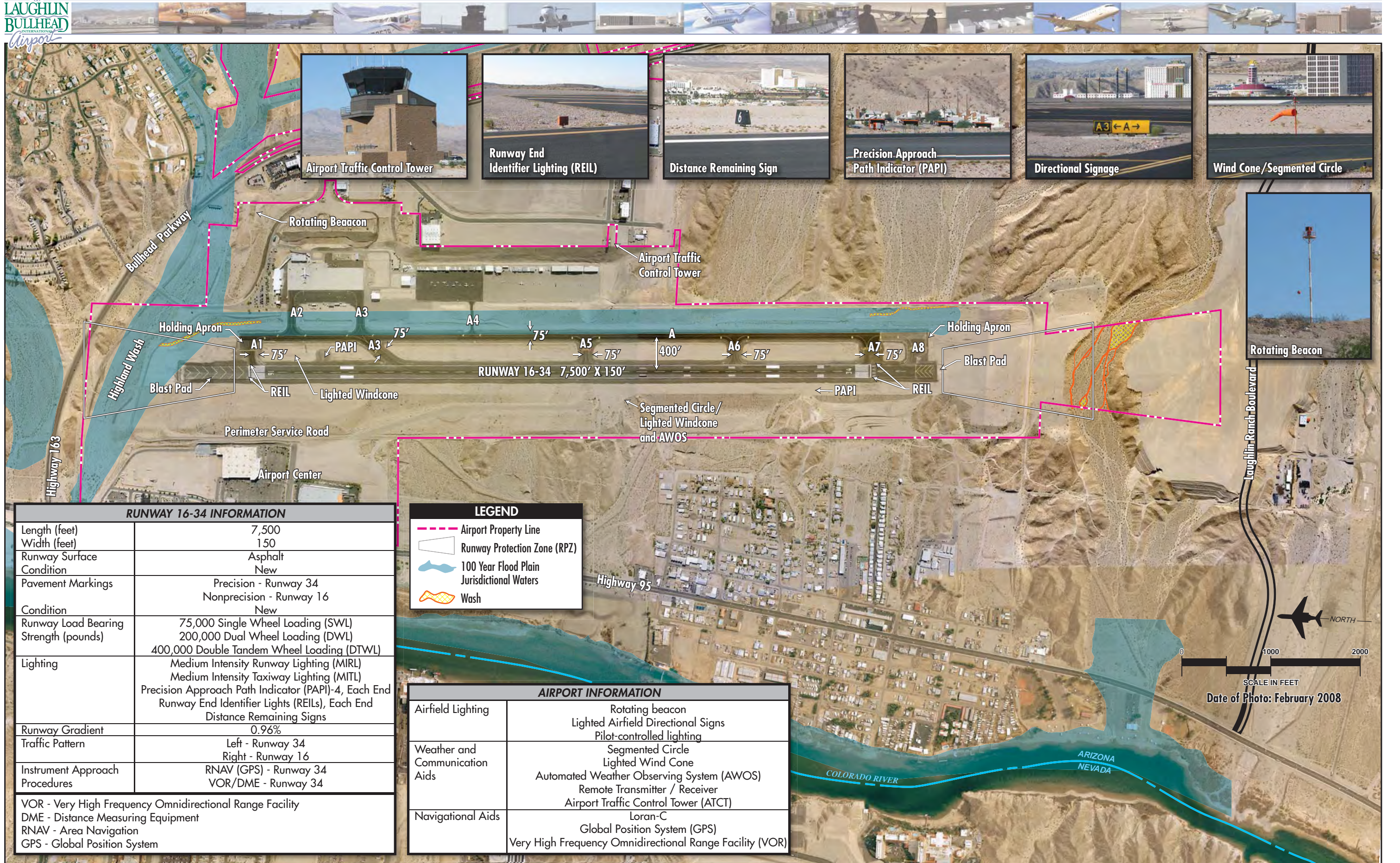
Takeoff Distance Available (TODA) - The TORA plus the length of any remaining runway and/or clearway beyond the far end of the TORA;

Accelerate-Stop Distance Available (ASDA) - The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff; and

Landing Distance Available (LDA) - The runway length declared available and suitable for landing.

The declared distances at the airport are as follows:

	Runway 16	Runway 34
TORA	7,000 feet	7,500 feet
TODA	7,000 feet	7,500 feet
ASDA	7,000 feet	7,500 feet
LDA	7,500 feet	7,000 feet



RUNWAY 16-34 INFORMATION

Length (feet)	7,500
Width (feet)	150
Runway Surface Condition	Asphalt
Pavement Markings	Precision - Runway 34 Nonprecision - Runway 16
Condition	New
Runway Load Bearing Strength (pounds)	75,000 Single Wheel Loading (SWL) 200,000 Dual Wheel Loading (DWL) 400,000 Double Tandem Wheel Loading (DTWL)
Lighting	Medium Intensity Runway Lighting (MIRL) Medium Intensity Taxiway Lighting (MITL) Precision Approach Path Indicator (PAPI)-4, Each End Runway End Identifier Lights (REILs), Each End Distance Remaining Signs
Runway Gradient	0.96%
Traffic Pattern	Left - Runway 34 Right - Runway 16
Instrument Approach Procedures	RNAV (GPS) - Runway 34 VOR/DME - Runway 34

VOR - Very High Frequency Omnidirectional Range Facility
DME - Distance Measuring Equipment
RNAV - Area Navigation
GPS - Global Position System

LEGEND

- Airport Property Line
- Runway Protection Zone (RPZ)
- 100 Year Flood Plain
- Jurisdictional Waters
- Wash

AIRPORT INFORMATION

Airfield Lighting	Rotating beacon Lighted Airfield Directional Signs Pilot-controlled lighting
Weather and Communication Aids	Segmented Circle Lighted Wind Cone Automated Weather Observing System (AWOS) Remote Transmitter / Receiver Airport Traffic Control Tower (ATCT)
Navigational Aids	Loran-C Global Position System (GPS) Very High Frequency Omnidirectional Range Facility (VOR)

SCALE IN FEET
Date of Photo: February 2008





A paved blast pad is available beyond each runway end. These pavement areas reduce the chances of soil erosion caused by breakaway take-off thrust and propeller wash.

The runway has a pavement strength rating of 75,000 pounds single wheel loading (SWL), 200,000 pounds dual wheel loading (DWL), and 400,000 pounds double tandem wheel loading (DTWL). SWL refers to the design of certain aircraft landing gear that has a single wheel on each main landing gear strut. DWL refers to certain aircraft landing gear which has two wheels on each main landing gear strut. DTWL refers to certain aircraft landing gear which has two sets of dual wheels on each main landing gear strut in a tandem configuration.

A 1,000-foot extension of Runway 16-34 to the south is being considered. This runway extension was proposed in the previous airport master plan. An on-going Environmental Assessment (EA) is being conducted to evaluate any potential environmental impacts and for compliance with the *National Environmental Policy Act* (NEPA).

Taxiways

The taxiway system at Laughlin/Bullhead International Airport includes a full-length parallel taxiway and six connecting taxiways. Taxiway A is 75 feet wide and located 400 feet east of the Runway 16-34 centerline. Taxiways A1, A3, A5, A6, A7 and A8 connect Runway 16-34 to Taxiway A. All taxiways are 75 feet wide. Taxiway A3 is constructed at an acute angle to allow a direct connection to the terminal apron taxiway.



Holding aprons are available at each runway end. The holding aprons allow an area off the taxiway for aircraft to complete pre-departure procedures or hold awaiting clearance. This allows aircraft ready for departure to by-pass the holding aircraft and depart without delay.

Airfield Lighting

Airfield lighting systems extend an airport’s usefulness into periods of darkness and/or poor visibility. A variety of lighting systems are installed at Laughlin/Bullhead International Airport for this purpose. An emergency generator is located near the terminal to power the airfield lighting systems in case of electrical supply disruptions. The lighting systems at the airport, categorized by function, are summarized as follows.



• **IDENTIFICATION LIGHTING**

The location of an airport at night is universally indicated by a rotating beacon which projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon at Laughlin/Bullhead International Airport is located atop a metal tower northeast of the Runway 16 end.

• **RUNWAY AND TAXIWAY LIGHTING**

Runway and taxiway lighting utilizes light fixtures placed near the pavement edge to define the lateral limits of the pavement. This lighting is essential for maintaining safe operations at night and/or during times of poor visibility in order to maintain safe and efficient access from the runway and aircraft parking areas. Runway 16-34 is equipped with medium intensity runway lighting (MIRL). Medium intensity taxiway lighting (MITL) has been installed on all taxiways.



The Runway 16 and 34 ends are equipped with threshold lighting to identify the landing threshold. Threshold lighting consists of specially designed light fixtures that are red on one half of the lens and green on the other half of the lens. The green portion of the lights are turned towards the approach surface and intended to be seen from landing aircraft, while the red portion is visible to aircraft on the runway surface.

• VISUAL APPROACH LIGHTING

A four-box precision approach path indicator (PAPI-4) system has been installed at the Runway 16 and Runway 34 ends. The Runway 16 PAPI-4s are located on the east side of the runway approximately 700 feet south of the runway end. The Runway 34 PAPI-4s are located on the west side of the runway approximately 700 feet from the runway end. The PAPI consists of a series of lights that, when interpreted by the pilot, give him or her an indication of being above, below, or on the designed descent path to the runway.

• RUNWAY END IDENTIFICATION LIGHTING

Runway end identification lights (REILs) provide rapid and positive identification of the approach ends of a runway. A REIL system has been installed at each runway end. A REIL consists of two synchronized flashing lights, located laterally on each side of the runway threshold, facing the approaching aircraft. REILs are installed to each runway end.

• AIRFIELD SIGNS

Airfield identification signs assist pilots in identifying their location on the airfield and directing them to their desired location. Lighted airfield signs at Laughlin/Bullhead International Airport are located at aircraft hold positions, taxiway intersections, and at the intersection of the connecting taxiways and runways.

Mandatory hold signs are also installed at the airport. These signs alert the pilot to the location to stop and hold prior to taxiing to the runway. These hold signs are located 250 feet from the runway centerline on all taxiways which connect to the runway and coincide with painted hold markings on the taxiway surface.

• PILOT-CONTROLLED LIGHTING

The MIRL system on Runway 16-34 is connected to the pilot-controlled lighting system (PCL). This system allows pilots to turn on or increase the intensity of the MIRL from the aircraft with the use of the aircraft's radio transmitter. The MIRL operates from dusk to dawn.

Pavement Markings

Pavement markings aid in the movement of aircraft along airport surfaces and identify closed or hazardous areas on the airport. Runway 16 has non-precision markings which identify the runway designation, centerline, threshold, and aiming point. Runway 34 has precision markings which identify the runway designation, edges, centerline, threshold, touchdown zone, and aiming point.



Taxiway and taxilane centerline markings are provided to assist pilots in maintaining proper clearance from pavement edges and objects near the taxiway/taxilane edges. Taxiway markings also include aircraft holding positions located on the connecting taxiways. For Runway 16-34, the holdlines are marked 250 feet from the runway centerline. Aircraft movement areas on the apron are also identified with centerline markings. Aircraft tie-down positions are identified on the various apron surfaces, and pavement edge markings.



Weather Facilities

The airport has a lighted wind cone and segmented circle located approximately 4,200 feet south of the Runway 16 end and 250 feet west of the runway centerline as shown on **Exhibit 1A**. A lighted wind cone provides information to pilots regarding wind conditions. The segmented circle surrounds the lighted wind cone and provides traffic pattern information to pilots. A lighted wind sock is also available between the runway and Taxiway A adjacent to Taxiway A2, while another is located approximately 1,000 feet north of the Runway 34 threshold.



An Automated Weather Observation System III (AWOS-III) was installed at the airport in 2007. The AWOS automatically records weather conditions such as wind speed, wind gusts, wind direction, variable wind direction, temperature, dew point, altimeter setting, density altitude, visibility, variable visibility, precipitation, sky condition, and cloud height. This information is then transmitted at regular intervals. The AWOS is located adjacent the segmented circle.

Navigational Aids

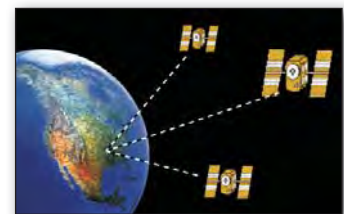
Navigational aids are electronic devices that transmit radio frequencies which pilots of properly equipped aircraft translate into point-to-point guidance and position information. The types of electronic navigational aids available for aircraft flying to or from Laughlin/Bullhead International Airport include the very high frequency omnidirectional range (VOR) facility, Loran-C, and the global positioning system (GPS).

The VOR, in general, provides azimuth readings to pilots of properly equipped aircraft by transmitting

a radio signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility (VOR/DME) to provide distance as well as direction information to the pilot. Military tactical air navigation aids (TACANs) and civil VORs are commonly combined to form a VORTAC. A VORTAC provides distance and direction information to civil and military pilots.

The Kingman VOR/DME, located approximately 31.3 nautical miles northeast of the airport, Needles VORTAC, located approximately 23.9 nautical miles southeast, and the Goffs VORTAC, located approximately 30.3 nautical miles west/northwest, can be utilized by pilots flying to or from the airport. The locations of these navigational facilities are shown on **Exhibit 1B**.

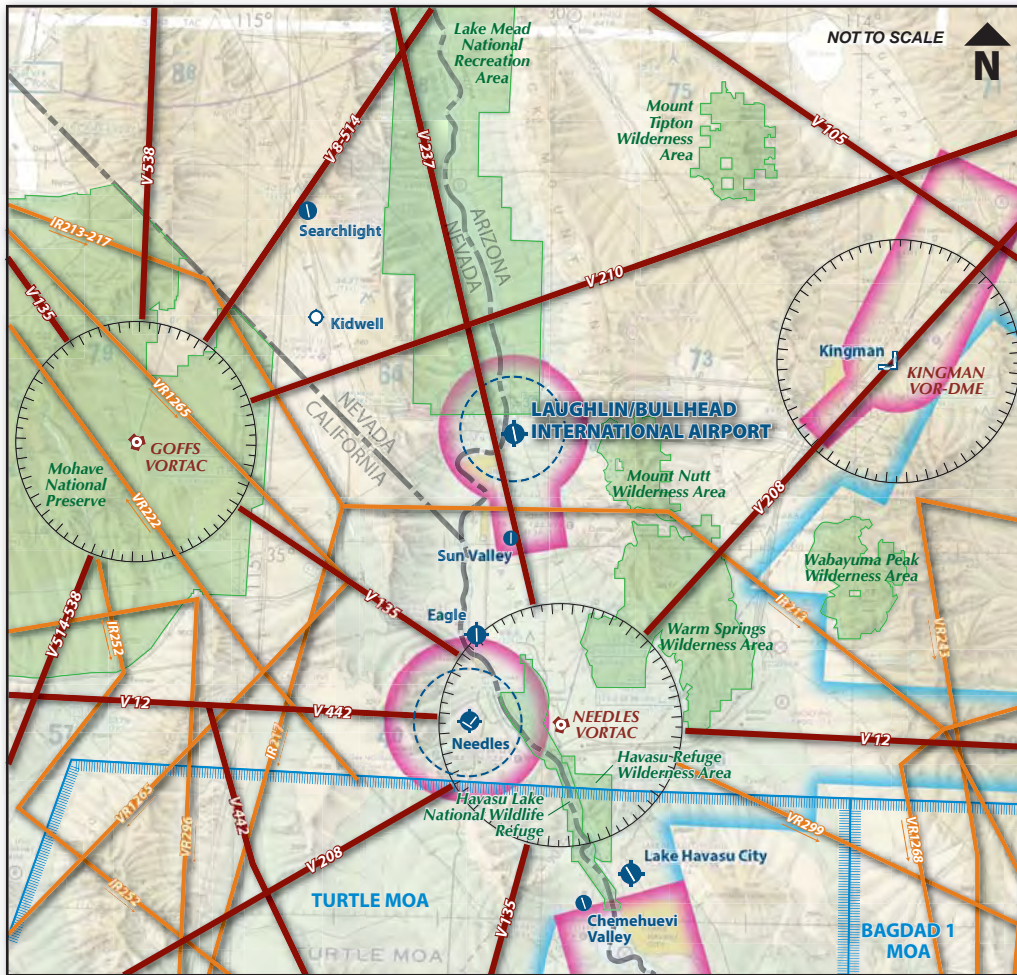
GPS was initially developed by the United States Department of Defense for military navigation around the world and is currently being utilized more and more in civilian aircraft. GPS varies from the VOR in that pilots are not required to navigate using a specific facility. GPS uses satellites placed in orbit around the earth to transmit electronic signals, which properly equipped aircraft use to determine altitude, speed, and navigational information. With GPS, pilots can directly navigate to any airport in the country and are not required to navigate using a specific navigational facility. The FAA is proceeding with a program to gradually replace all traditional enroute navigational aids with GPS over the next 20 years.



Loran-C is a ground-based enroute navigational aid which utilizes a system of transmitters located in various locations across the continental United States. Loran-C is similar to GPS as pilots are not required to navigate using a specific facility. With a properly equipped aircraft, pilots can navigate to any airport in the United States using Loran-C.



Exhibit 1B: VICINITY AIRSPACE



Instrument Approach Procedures

Instrument approach procedures are a series of predetermined maneuvers established by the FAA which utilize electronic navigational aids (such as those discussed in the previous section) to assist pilots in locating and landing at an airport during low visibility and cloud ceiling conditions. The capability of an instrument approach is defined by the visibility and cloud ceiling minimums associated with the approach. Visibility minimums define the horizontal distance that the pilot must be able to see to complete the

approach. Cloud ceilings define the lowest level a cloud layer (defined in feet above the ground) can be situated for a pilot to complete the approach. If the observed visibility or cloud ceilings are below the minimums prescribed for the approach, the pilot cannot complete the instrument approach.

There are two operational instrument approach procedures for Laughlin/Bullhead International Airport, both to Runway 34. An instrument approach procedure was previously available to Runway 16; however, this approach procedure was decommissioned in December 2007 when the Runway 16 end was relocated to the south.

The two approaches available to Runway 34 utilize GPS and the Needles VORTAC. The localizer performance with vertical guidance (LPV) GPS

LEGEND

- Airport with other than hard-surfaced runways
- Airport with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- VORTAC
- Compass Rose
- Wilderness Area
- Class D Airspace
- Class E Airspace with floor 700 ft. above surface
- Class E Airspace with floor 1,200 ft. or greater above surface that abuts Class G Airspace
- Victor Airways
- Military Training Routes
- Military Operations Area (MOA)

Source: Phoenix Sectional Charts, US Department of Commerce, National Oceanic and Atmospheric Administration 02/15/07



approach minimums provides both vertical guidance and course guidance to a pilot. The lateral navigation (LNAV) GPS approach minimums provide only for course guidance to a pilot. The VOR/DME approach only provides course guidance to a pilot.

Each approach also has circling minimums. Circling minimums allow pilots to land on Runway 16 even though there is not a specific approach defined to that runway end any longer. While providing flexibility for the pilot to land on Runway 16 when the winds support this runway's use, the circling approach has higher visibility and cloud ceiling minimums. This is done to provide pilots with sufficient visibility and ground clearance to navigate visually from the approach to the desired runway end for landing. **Table 1A** summarizes the approach capabilities at Laughlin/Bullhead International Airport.

Local Operating Procedures

Laughlin/Bullhead International Airport is situated at 695 feet above mean sea level (MSL). The traffic

pattern altitude for light aircraft at the airport is 1,005 feet above the airfield elevation (1,700 feet MSL). The traffic pattern altitude for high performance aircraft is 1,505 feet above ground level (AGL) (2,200 feet MSL). Runway 16 utilizes a right traffic pattern. In doing so, the approach to landing is made using a series of right turns. Runway 34 utilizes a left traffic pattern. In doing so, the approach to landing is made using a series of left turns. The use of a right traffic pattern on Runway 16 and left traffic pattern on Runway 34 maintains the traffic pattern west of the runway.

During the environmental approval process for the construction of Runway 16-34 (referred to as Runway 16R-34L in the agreement), the Department of the Interior, the National Park Service, and the FAA adopted the following agreement with regards to overflights of the Lake Mead Recreation Area that is located immediately north of the airport:

"For mitigation on Lake Mead National Recreation Area: Aircraft departures to the north from Runway 16R-34L under visual flight rule (VFR) conditions will

**Table 1A
INSTRUMENT APPROACH DATA**

	Weather Minimums by Aircraft Type					
	Categories A & B		Category C		Category D	
	Cloud Height (feet AGL)	Visibility (miles)	Cloud Height (feet AGL)	Visibility (miles)	Cloud Height (feet AGL)	Visibility (miles)
RNAV (GPS) Runway 34						
LPV	700	2	700	2	700	2
LNAV	1,000	1.25/1.5	1,000	3	1,000	3
Circling	1,000	2	1,000	3	1,100	3
VOR/DME Runway 34						
Straight	1,800	1.25/1.5	1,800	3	1,800	3
Circling	1,800	1.25/1.5	1,800	3	1,800	3

Aircraft Categories are established based on 1.3 times the stall speed in landing configuration as follows:
 Category A/B: 0-120 knots
 Category C: 121-140 knots
 Category D: 141-166 knots
 LPV - localizer performance with vertical guidance
 LNAV - lateral navigation

Source: U.S. Terminal Procedures



climb straight out for 2 nautical miles and then turn to the west and south, exiting the recreation area. Airport departures to the north from Runway 16R-34L under instrument meteorological conditions (IMC) will climb straight out for 2 nautical miles and then turn to the east, exiting the park. Aircraft landing from the north to the south on Runway 16R-34L will approach the airport generally from the east and will turn on to the final straight-in segment at a point ranging from 1 to 2 nautical miles north of Runway 16R-34L. When wind and weather conditions do not require approach and departure procedures north of the airport, a preferential runway use program will provide for departures to the south and arrivals from the south. Notice to airmen will publicize this preferential runway use procedure. Pilots operating VFR over parkland will be advised to fly not less than 2,000 feet above the surface, in accordance with the Interagency Agreement between the FAA and the National Park Service and with FAA Advisory Circular 91-36C."

Air Traffic Control

Laughlin/Bullhead International Airport has an operational airport traffic control tower (ATCT). The ATCT is operated daily from 8:00 am to 6:00 pm local time. Outside these times, there are no formal ATC services available at the airport for takeoff and landing clearances. When the ATCT is closed, air traffic advisories are made using the Common Traffic Advisory Frequency (CTAF). Approach/Departure



Control services for arriving and departing aircraft on an instrument flight plan are provided by the Los Angeles Air Route Traffic Control Facility (ARTCC), which controls aircraft in a large multi-state area. Remote transmitter/receiver equipment at the airport provides for contacting the Los Angeles ARTCC after the ATCT is closed.

The ATCT is located east of the airport approximately at midfield. Serco provides ATCT services at the airport under contract with the FAA. The MCAA owns and maintains the ATCT.

Vicinity Airspace

To ensure a safe and efficient airspace environment for all aspects of aviation, the FAA has established an airspace structure that regulates and establishes procedures for aircraft using the national airspace system. The U.S. airspace structure provides for two basic categories of airspace, controlled and uncontrolled, and identifies them as Classes A, B, C, D, E, and G as described below.

- Class A airspace is controlled airspace and includes all airspace from 18,000 feet MSL to Flight Level 600 (approximately 60,000 feet MSL).
- Class B airspace is controlled airspace surrounding high capacity commercial service airports (i.e., McCarran International Airport).
- Class C airspace is controlled airspace surrounding lower activity commercial service and some military airports.
- Class D airspace is controlled airspace surrounding airports with an airport traffic control tower (ATCT).

All aircraft operating within Classes A, B, C, and D airspace must be in contact with the air traffic control facility responsible for that particular airspace.



- Class E is controlled airspace that encompasses all instrument approach procedures and low altitude federal airways. Only aircraft conducting instrument flights are required to be in contact with air traffic control when operating within Class E airspace. While aircraft conducting visual flights in Class E airspace are not required to be in radio communications with air traffic control facilities, visual flights can only be conducted if minimum visibility and cloud ceilings exist.
- Class G airspace is uncontrolled airspace that does not require contact with an air traffic control facility.

Airspace within the vicinity of Laughlin/Bullhead International Airport is depicted on **Exhibit 1B**. Due to the presence of the ATCT, the airspace for an approximately five nautical mile radius around the airport is Class D. The Class D airspace extends from the ground to 3,200 feet MSL. Surrounding this Class D airspace is Class E airspace with a floor 700 feet above ground level (AGL) and extending to 18,000 feet MSL. The airspace outside the immediate Class E airspace surrounding Laughlin/Bullhead International Airport is Class E airspace with a floor 1,200 feet above the ground. When the ATCT is closed, Class D airspace reverts to Class E.

A number of Victor Airways are present near Laughlin/Bullhead International Airport. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet AGL to 18,000 feet MSL, and extend between VOR navigational facilities.

There are two military operations areas (MOAs) located south of Laughlin/Bullhead International Airport. MOAs define airspace where a high level of military activity is conducted and are intended to segregate military and civilian aircraft. While civilian aircraft operations are not restricted in the MOA, civilian aircraft are cautioned to be alert for military aircraft during periods the MOA is active and at the specified altitudes. These MOAs include the Turtle and Baghdad 1 MOAs.



The military training routes are located near Laughlin/Bullhead International Airport. The routes are used by military aircraft for training activity and commonly operate at speeds in excess of 250 knots and at altitudes above 10,000 feet MSL. While civilian aircraft are not restricted in the vicinity of these routes, civilian aircraft are cautioned to remain alert for high speed military jet aircraft. These routes are designated alpha-numerically and start either with an IR or VR. IR routes are instrument training routes, whereas VR routes are visual training routes.

While not considered part of the U.S. airspace structure, the boundaries of the National Park Service areas, U.S. Wildlife Service areas, and U.S. Forest Wilderness and Primitive areas are noted on aeronautical charts. While aircraft operations are not specifically restricted over these areas, aircraft are requested to maintain a minimum altitude of 2,000 feet AGL. As shown on **Exhibit 1B**, the Lake Mead National Recreational Area is located directly north of the airport.

AREA AIRPORTS

As indicated on **Exhibit 1B**, there are several other airfields in the tri-state area. There are seven other airports in the vicinity that are open to the public and approximately two private, restricted-use airports. The two private, restricted-use airports include Willow Springs Ranch Airport to the northeast and Camino Airstrip Airport to the southwest. **Table 1B** summarizes the seven public use airports.



Table 1B
REGIONAL AIRPORT SUMMARY

	Sun Valley Airport	Eagle Airpark	Kidwell Airport	Needles Airport	Searchlight Airport	Kingman Airport	Lake Havasu City Airport	Chemehuevi Valley Airport
Distance from IFP	9.1 nm South	16.4 nm South	18.2 nm West/SW	23.7 nm South	24.3 nm NW	31.1 nm East/NE	36.5 nm South/SE	38.2 nm South
Ownership	Private	Private	Private	Public	Public	Public	Public	Public
Number of Runways	1	1	1	2	1	2	1	1
Longest Runway	3,700' x 42'	4,800' x 50'	4,140' x 65'	5,005' x 100'	5,040' x 70'	6,827' x 150'	8,001' x 100'	5,000' x 75'
Runway Surface	Asphalt	Asphalt	Dirt	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt
Instrument Approach	None	None	None	Yes	None	Yes	Yes	None
Automated Weather	No	No	No	Yes	No	Yes	Yes	Yes
ATCT	No	No	No	No	No	No	No	No
Based Aircraft	22	58	19	24	0	273	302	2
Operations	14,235	16,060	3,484	10,585	300	60,955	51,100	4,004
Fuel	100LL	100LL/ Jet-A	None	100LL/ Jet-A	None	100LL/ Jet-A	100LL/ Jet-A	None
Airframe Service	Minor	Minor	None	Minor	None	Major	Major	None
Power Plant Service	Minor	Minor	None	Minor	None	Major	Major	None

nm – nautical miles SW – Southwest NW – Northwest NE - Northeast

Source: FAA Records

Kingman Airport is the only other commercial service airport near Laughlin/Bullhead International Airport. Starting April 17, 2009 Great Lakes will provide daily service to Phoenix from Kingman Airport. Lake Havasu City Airport has had intermittent periods of scheduled service in the past. However, in 2008 the Lake Havasu City Airport did not have scheduled airline service. All other airports are general aviation airports exclusively.

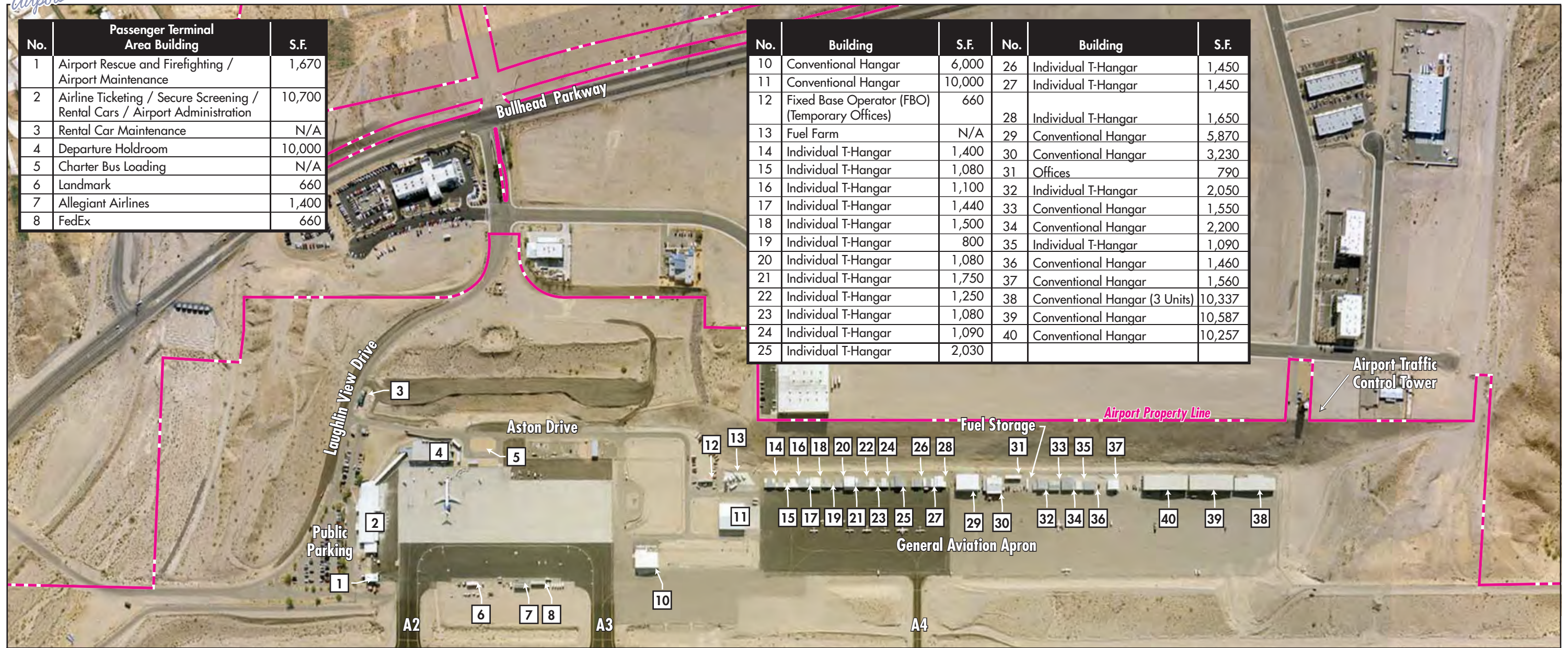
LANDSIDE FACILITIES

Landside facilities are the ground-based facilities that support the aircraft and pilot/passenger handling functions. These facilities typically include the passenger terminal building, aircraft storage/maintenance hangars, aircraft parking apron and support facilities, such as fuel storage, automobile

parking, and roadway access. Landside facilities at Laughlin/Bullhead International Airport are identified on **Exhibit 1C**.

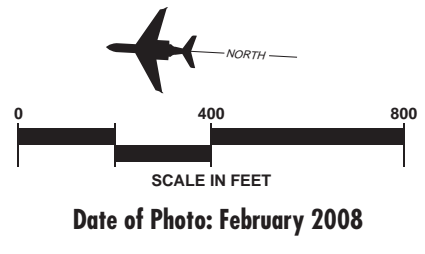
Passenger Terminal Building

Commercial airline terminal functions are provided in two separate single-level buildings located in the northeast portion of the airport. As shown on **Exhibit 1D**, the main terminal building provides space for ticketing, airline operations, checked baggage screening and make-up, secure screening, rental cars, airport administration, and Transportation Security Administration (TSA) offices. Constructed in 1992, the building was completely renovated in 2007 and expanded. This building currently encompasses approximately 15,000 square feet. Baggage claim is located at the far western end of



No.	Passenger Terminal Area Building	S.F.
1	Airport Rescue and Firefighting / Airport Maintenance	1,670
2	Airline Ticketing / Secure Screening / Rental Cars / Airport Administration	10,700
3	Rental Car Maintenance	N/A
4	Departure Holdroom	10,000
5	Charter Bus Loading	N/A
6	Landmark	660
7	Allegiant Airlines	1,400
8	FedEx	660

No.	Building	S.F.	No.	Building	S.F.
10	Conventional Hangar	6,000	26	Individual T-Hangar	1,450
11	Conventional Hangar	10,000	27	Individual T-Hangar	1,450
12	Fixed Base Operator (FBO) (Temporary Offices)	660	28	Individual T-Hangar	1,650
13	Fuel Farm	N/A	29	Conventional Hangar	5,870
14	Individual T-Hangar	1,400	30	Conventional Hangar	3,230
15	Individual T-Hangar	1,080	31	Offices	790
16	Individual T-Hangar	1,100	32	Individual T-Hangar	2,050
17	Individual T-Hangar	1,440	33	Conventional Hangar	1,550
18	Individual T-Hangar	1,500	34	Conventional Hangar	2,200
19	Individual T-Hangar	800	35	Individual T-Hangar	1,090
20	Individual T-Hangar	1,080	36	Conventional Hangar	1,460
21	Individual T-Hangar	1,750	37	Conventional Hangar	1,560
22	Individual T-Hangar	1,250	38	Conventional Hangar (3 Units)	10,337
23	Individual T-Hangar	1,080	39	Conventional Hangar	10,587
24	Individual T-Hangar	1,090	40	Conventional Hangar	10,257
25	Individual T-Hangar	2,030			

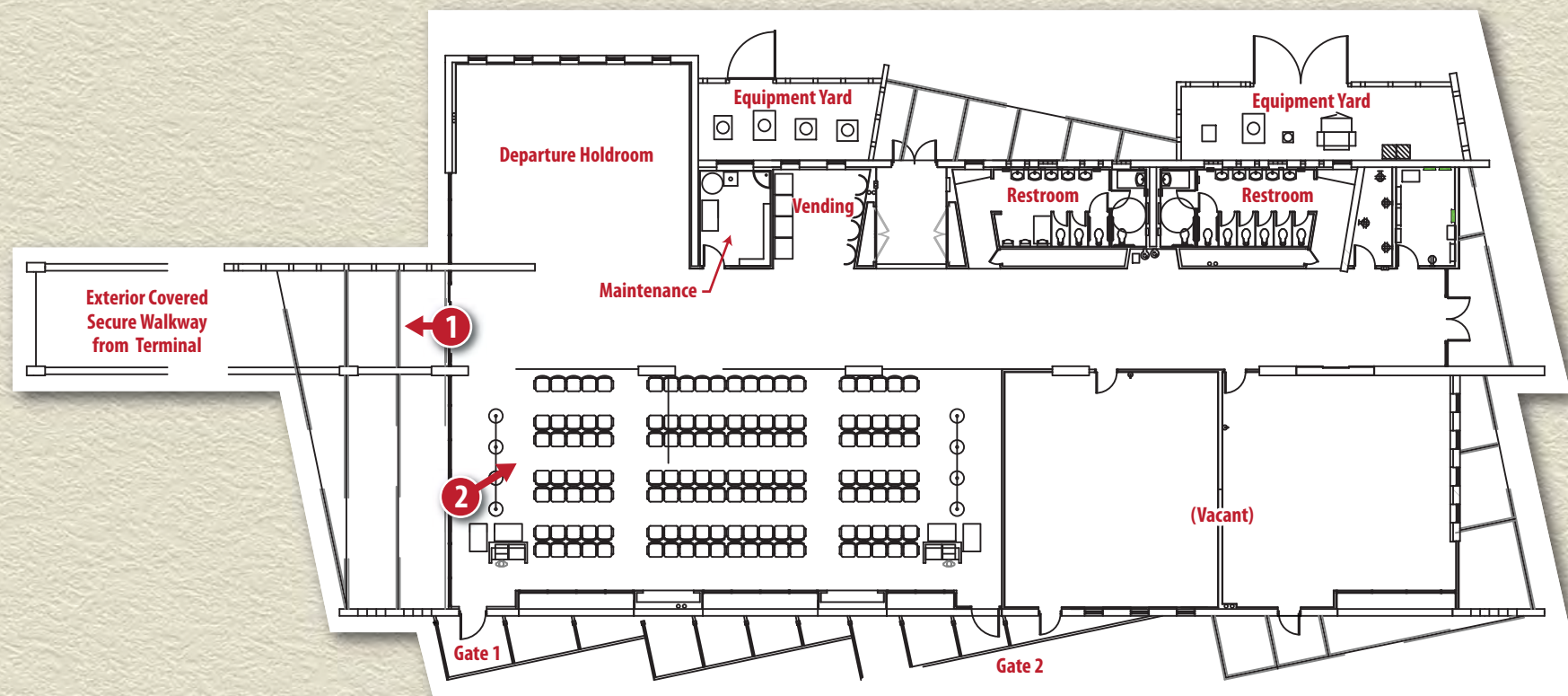


Main Terminal

Terminal Building Specifications	
Main Terminal Building (s.f.)	15,000
Departure Holdroom Building (s.f.)	9,950
Total Area (s.f.)	24,950
Functional Area Specifications	
Main Terminal Building	
Ticket Counter Length (l.f.)	49
Ticket Lobby (s.f.)	1,400
Airline Operations Area (s.f.)	1,400
Checked Baggage Screening (s.f.)	900
Bag Claim Display (ft.)	30
Bag Claim Lobby (s.f.)	1,200
Rental Car Counter Length (ft.)	24
Rental Car Offices (s.f.)	600
Rental Car Queuing (s.f.)	300
Checkpoint Screening (s.f.)	2,900
Security Queuing Area (s.f.)	1,000
TSA (s.f.)	1,300
Restrooms (s.f.)	700
Circulation (s.f.)	2,200
Airport Administration (s.f.)	2,300
Departure Holdroom Building	
Holdroom (s.f.)	3,800
Vending/Snack Counter (s.f.)	400
Circulation (s.f.)	2,200
Restrooms (s.f.)	900
Vacant Offices(s.f.)	2,500
Maintenance (s.f.)	150
Terminal Curb and Automobile Parking	
Enplane/Deplane Curb Length (l.f.)	330
Public Parking Spaces	141
Rental Car Parking Spaces	42
Total Parking Spaces	183



Departure Holdroom





the building. The baggage claim shelf and lobby are located outside in a covered area.

Departure functions are contained in a second separate building located southeast of the main terminal building. Access to this building is via a covered secure walkway. This building was constructed in 2005. The walkway is enclosed by chain-link fencing and/or steel bar fencing on both sides. This building provides the departure gates, hold rooms, and vending/snack bar. While the main terminal building was under construction in 2007, this building also provided ticketing and secure screening. All aircraft boarding is ground level through aircraft stairs.

Combined, the two buildings encompass nearly 25,000 square feet. **Exhibit 1D** depicts the terminal building floor plan and summarizes the functional areas of the terminal building.

As shown on **Exhibit 1D**, an enplaning/deplaning curb extends the full-length of the terminal building. There are four vehicle traffic lanes provided in front of the terminal building. This allows for parking at the curb with two through lanes. A separate lane is also available for loading and unloading opposite the terminal curb and across the two through lanes.

Two distinct automobile parking areas are provided near the passenger terminal building. The public parking area is located just north of the main passenger terminal building and provides approximately 310 parking spaces for public and terminal employee parking and was reconstructed and expanded in early 2009. The rental car ready/return lot is located northeast of the terminal and provides approximately 90 parking spaces. This area was expanded in 2009.

Aircraft Parking Aprons

There is approximately 138,500 square yards of apron area for commercial airline, air cargo, and

general aviation use at the airport. The apron in the northeast portion of the airport between Taxiways A2 and A3 encompasses approximately 43,100 square yards. This apron serves both commercial airline and air cargo aircraft. The apron is bisected by an apron taxilane. The northeastern corner of this apron provides three parking areas adjacent to the departure holdroom building for commercial airline aircraft. Presently, air cargo is handled from a temporary building located on the west end of the apron near Taxiway A3. Future plans would move air cargo to the southeastern edge of this apron where vehicle access would be from Aston Drive. Presently, air cargo vehicles must cross the apron and Taxiway A2 to load and unload freight from aircraft.

Aircraft Hangar Facilities

There are 34 separate and multiple hangar facilities located at the airport totaling approximately 87,100 square feet. Hangar space is comprised of conventional hangars and individual T-hangars. Conventional hangars provide a large enclosed space, typically accommodating more than one aircraft. T-hangars provide for separate, single aircraft storage areas. All hangars at the airport are privately owned.

As shown in **Exhibit 1C**, conventional hangar space at the airport totals approximately 67,700 square feet in 14 separate hangars. There are 15 individual T-hangars totaling approximately 19,400 square feet.





Fuel Facilities

All fuel storage and dispensing facilities at the airport are privately owned and operated.



Landmark fuel storage is in above ground tanks located at the terminus of Aston Drive as shown on **Exhibit 1C**. Jet fuel storage totals 40,000 gallons. 100LL fuel storage totals 12,000 gallons. All fuel is dispensed via mobile fueling trucks. Tri-State Care Flight maintains a 12,000 gallon above ground fuel storage tank for self-fueling. This tank is located between hangars 31 and 32.

Aircraft Rescue and Firefighting

The airport rescue and firefighting (ARFF) facility is located west of the terminal building along the terminal entrance road. Access to the runway is via Taxiway A2. ARFF services are provided by the MCAA. The ARFF building contains two bays for vehicle storage. Adjacent office space for ARFF training and management are located in the building.



The airport meets ARFF Index B requirements. This means the airport can accommodate operations by aircraft up to 126 feet in length. The ARFF vehicle is a 1992 Oshkosh 1500, which holds 1500 gallons of water, 300 gallons of aqueous film forming foam (AFFF), and 750 pounds of dry chemical.

Utilities

Water, sanitary sewer, natural gas, and electrical utilities are available at the airport. Water service is provided by the North Mohave Valley Water Company. Sanitary sewer services are provided by the Bullhead Sanitation District. Mohave Electric Cooperative provides electrical service at

the airport. Southwest Gas Corporation provides natural gas service.

Fencing

The airport is equipped with six-foot chain-link fencing with three-strands of barbed-wire on top. Automated gates control access to portions of the airport.

Air Cargo Services

FedEx operates weekday service to Laughlin/Bullhead International Airport. Service is provided by a single Cessna Caravan turboprop aircraft. FedEx is located in a temporary building on the west side of the apron near Taxiway A3.

General Aviation Services and Terminal

Landmark Aviation provides all fueling and line services at the airport. These services include aircraft fueling, aircraft tiedowns, aircraft storage, ground power, and aircraft towing. Landmark Aviation operates from a temporary facility located at the terminus of Aston Drive. Landmark Aviation plans the construction of a new 3,000 square-foot general aviation terminal in January 2009. Landmark Aviation also provides all ground handling services for the commercial charter airlines operating at the airport.

Airport Center

Airport Center is an approximately 75-acre non-aviation commercial development area on airport property boundary. As shown previously on **Exhibit 1A**, Airport Center is located along the airport's western property boundary along Highway 95. Airport Center tenants include Home Depot, Sam's Club, Carl's Jr., Chili's, McDonalds, IHOP, Panda Express, Taco Bell, and Long John Silver's.



PAVEMENT MANAGEMENT PROGRAM

The Arizona Department of Transportation – Aeronautics Division (ADOT) has implemented the Arizona Pavement Preservation Program (APPP) to assist in the preservation of the Arizona airport system infrastructure. Public Law 103-305 requires that airports requesting Federal Airport Improvement Program (AIP) funding for pavement rehabilitation or reconstruction have an effective pavement maintenance management system. To this end, ADOT has completed and is maintaining an Airport Pavement Management System (APMS) which, coupled with monthly pavement evaluations by the airport sponsor, fulfills this requirement.

The APMS uses the Army Corps of Engineers’ “Micropaver” program as a basis for generating a five-year APPP. The APMS consists of visual inspections of all airport pavements. Evaluations are made of the types and severities observed and entered into a computer program database. Pavement Condition Index (PCI) values are determined through the visual assessment of pavement conditions in accordance with the most recent FAA Advisory Circular 150/5380-6 and range from 0 (failed) to 100 (excellent). Every three years, a complete database update with new visual observations is conducted. Individual airport reports from the update are shared with all participating system airports. ADOT ensures that the APMS database is kept current, in compliance with FAA requirements.

Every year ADOT, utilizing the APMS, will identify airport pavement maintenance projects eligible for funding for the upcoming five years. These projects will appear in the State’s Five-Year Airport Development Program. Once a project has been identified and approved for funding by the State Transportation Board, the airport sponsor may elect to accept a state grant for the project and not participate in the APPP, or the airport sponsor may sign an Inter-Government Agreement (IGA) with ADOT to participate in the APPP.

Laughlin/Bullhead International Airport participates in the state’s pavement maintenance program for AIP eligible pavement rehabilitation projects. On a daily basis, airport personnel complete an operations log for the airport, a portion of which includes visual observations of the pavement conditions. The MCAA performs routine pavement maintenance such as crack sealing and repair on an as-needed basis.

Pavement conditions are ranked according to the Pavement Condition Index (PCI). The PCI is a numerical index between 0 and 100 and is used to indicate the condition of pavement. The 2006 *Pavement Condition Survey* revealed several areas of distressed pavement at the airport. Runway 16-34 and associated taxiways were rated a 57 on the PCI scale. As mentioned earlier, Runway 16-34 was reconstructed in 2007. The concrete portion of the northeast apron (commercial airline apron) was rated a 99. The northern portion of the general aviation apron had a rating of 64. The southern portion of the apron had a rating of 91. Ratings over 85 are considered in good condition. Failed pavements have a rating below 55.

ENVIRONMENTAL INVENTORY

Available information about the existing environmental conditions at Laughlin/Bullhead International Airport has been derived from previous environmental studies, internet resources, agency maps, and existing literature. Studies and analyses completed for the on-going Environmental Assessment (EA) for the southerly extension of Runway 16-34 were also referenced for this inventory effort.

The intent of this task is to inventory potential environmental sensitivities that might affect future improvements at the airport. These resources are discussed further within the following sections.



AIR QUALITY

The Environmental Protection Agency (EPA) has adopted air quality standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for six criteria pollutants which include: Ozone (O₃), Carbon Monoxide (CO), Sulfur Dioxide (SO_x), Nitrogen Oxide (NO_x), Particulate Matter (PM₁₀), and Lead (Pb).

Primary air quality standards are established at levels to protect the public health and welfare from any known or anticipated adverse effects of a pollutant. All areas of the country are required to demonstrate attainment with NAAQS.

Air contaminants increase the aggravation and the production of respiratory and cardiopulmonary diseases. The standards also establish the level of air quality which is necessary to protect the public health and welfare, including among other things, effects on crops, vegetation, wildlife, visibility, and climate, as well as effects on materials, economic values, and on personal comfort and well-being. According to the Environmental Protection Agency's "Green Book," Mohave County is in nonattainment for particulate matter.

COASTAL RESOURCES

Federal activities involving or affecting coastal resources are governed by the *Coastal Barriers Resources Act* (CBRA), the *Coastal Zone Management Act* (CZMA), and Executive Order 13089, *Coral Reef Protection*. Laughlin/Bullhead International Airport is located in an inland area not subject to coastal laws or regulations.

DEPARTMENT OF TRANSPORTATION ACT: SECTION 4(f)

Section 4(f) properties include publicly owned land from a public park, recreational area, or wildlife

and waterfowl refuge of national, state, or local significance; or any land from a historic site of national, state, or local significance. The Lake Mead National Recreation Area is located less than one-half mile north of the airport.

During the environmental approval process for the construction of Runway 16-34 (referred to as Runway 16R-34L in the agreement), the Department of the Interior, the National Park Service, and the FAA adopted the following agreement with regards to overflights of the Lake Mead Recreation Area:

"For mitigation on Lake Mead National Recreation Area: Aircraft departures to the north from Runway 16R-34L under visual flight rule (VFR) conditions will climb straight out for 2 nautical miles and then turn to the west and south, exiting the recreation area. Airport departures to the north from Runway 16R-34L under instrument meteorological conditions (IMC) will climb straight out for 2 nautical miles and then turn to the east, exiting the park. Aircraft landing from the north to the south on Runway 16R-34L will approach the airport generally from the east and will turn on to the final straight-in segment at a point ranging from 1 to 2 nautical miles north of Runway 16R-34L. When wind and weather conditions do not require approach and departure procedures north of the airport, a preferential runway use program will provide for departures to the south and arrivals from the south. Notice to airmen will publicize this preferential runway use procedure. Pilots operating VFR over parkland will be advised to fly not less than 2,000 feet above the surface, in accordance with the Interagency Agreement between the FAA and the National Park Service and with FAA Advisory Circular 91-36C."

ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and the accompanying Presidential Memorandum, and Order DOT 5610.2,



Environmental Justice, require FAA to provide meaningful public involvement by minority and low-income populations and analysis, including demographic analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse. A review of the EPA “Enviromapper” website does not indicate a disproportionately low income population near the airport. Therefore, actions at the Airport may not result in disproportionately high or adverse impacts to minority or low-income populations.

FARMLANDS

Under the **Farmland Protection Policy Act** (FPPA), federal agencies are directed to identify and take into account the adverse effects of federal programs on the preservation of farmland, to consider appropriate alternative actions which could lessen adverse effects, and to assure that such federal programs are, to the extent practicable, compatible with state or local government programs and policies to protect farmland. The FPPA guidelines developed by the Department of Agriculture apply to farmland classified as prime or unique, or of state or local importance as determined by the appropriate government agency with concurrence by the Secretary of Agriculture.

In the State of Arizona, prime and unique farmland is characterized as any farmland which is currently being irrigated. Irrigated farmland does not exist on Airport property. Therefore, the **Farmland Protection Policy Act** does not apply.

FISH, WILDLIFE, AND PLANTS

A number of regulations have been established to ensure that projects do not negatively impact protected plants, animals, or their designated habitat. Section 7 of the **Endangered Species Act** (ESA), as amended, applies to federal agency actions and sets forth requirements for consultation to determine if the proposed action “may affect” a

federally endangered or threatened species. The **Sikes Act** and various amendments authorize states to prepare statewide wildlife conservation plans for resources under their jurisdiction.

Field surveys were conducted in April 2007 to identify potential habitat for state or federally protected species at the Airport. According to the survey, vegetation in the project area consists of undisturbed, heavily disturbed, and denuded native desert scrub. Past disturbance within the project area boundary was evident from blading on the existing airport, the presence of unpaved roads, and trash dumping in the unnamed wash. The upland vegetation in the project area consisted of species typically found in the Mohave Desert of the Desert scrub Formation biotic community. Although not abundant, the dominant species in the upland portion of the project area are burrobrush (*Hymenoclea salsola*) and brittlebush (*Encelia farinosa*). Only one honey mesquite (*Prosopis glandulosa* var. *torreyana*) was observed in the project area.

Ephemeral washes or drainage areas were observed in the project area. Storm runoff flows primarily south-north or east-west. The vegetation type observed in these portions of the project area is associated with an ephemeral water supply (ephemeral washes typically flow only briefly, usually in direct response to significant precipitation in the immediate vicinity). Vegetation in and adjacent to ephemeral washes did not differ significantly from upland portions of the project area; however, creosote bush (*Larrea tridentata* var. *tridentata*) was more abundant in the unnamed wash bisecting the southern parcel of the project area. This is most likely due to the fact that this area had not been previously bladed. Burrobrush was also associated with these areas. Cacti were uncommon, and only a few branched pencil cholla (*Cylindropuntia ramosissima*) were observed near braids of the unnamed wash. There were no permanent existing surface waters in the project area, and no wetland vegetation or stands of deciduous broadleaf riparian trees were present.



Seventeen federally listed species, three candidate species, and one species under conservation agreement occur in Mohave County. All 17 federally listed species, the three candidate species, and the one species under conservation agreement are not impacted by the operation or development at Laughlin/Bullhead International Airport because their known geographic ranges are distant from the project area or because the project area does not contain conditions similar to those known to be necessary to support these species, or both. The project area does occur within three miles of designated Critical Habitat for two federally listed species: 1) bonytail chub; and 2) razorback sucker. However, the project area does not contain the primary constituent elements or conditions (i.e., aquatic habitat) similar to those known to be necessary to support these species.

FLOODPLAINS

A review of Flood Insurance Rate Maps (FIRM) for the area indicates that the project is located outside a 100-year floodplain. One-hundred-year floodplains near the airport are shown on **Exhibit 1A**.

HAZARDOUS MATERIALS

The two statutes of most importance to the FAA in proposing actions to construct and operate facilities and navigational aids are the *Resource Conservation and Recovery Act* (RCRA) (as amended by the *Federal Facilities Compliance Act of 1992*) and the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), as amended by the *Superfund Amendments and Reauthorization Act of 1986* (SARA or Superfund), and the *Community Environmental Response Facilitation Act of 1992*. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum)

into the environment. E.O. 12088, as amended, directs federal agencies to: comply with “applicable pollution control standards,” in the prevention, control, and abatement of environmental pollution; and consult with the EPA, state, interstate, and local agencies concerning the best techniques and methods available for the prevention, control, and abatement of environmental pollution. According to the EPA National Priorities List, the Airport is not listed as an active SUPERFUND site nor is there is any *Clean Water Act*, Section 303(d) listed impaired waters near the project area.

HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Determination of a project’s environmental impact to historic and cultural resources is made under guidance in the *National Historic Preservation Act* (NHPA) of 1966, as amended, the *Archaeological and Historic Preservation Act* (AHPA) of 1974, the *Archaeological Resources Protection Act* (ARPA), and the *Native American Graves Protection and Repatriation Act* (NAGPRA) of 1990. In addition, the *Antiquities Act of 1906*, the *Historic Sites Act of 1935*, and the *American Indian Religious Freedom Act of 1978* also protect historical, architectural, archaeological, and cultural resources. Impacts may occur when the proposed project causes an adverse effect on a property which has been identified (or is unearthed during construction) as having historical, architectural, archaeological, or cultural significance.

A cultural resources survey was conducted at Laughlin/Bullhead International Airport in April 2007 in compliance with NEPA and Section 106 of the *National Historic Preservation Act* (NHPA). This survey encompassed approximately 130 acres of airport property, split into two areas. The northern area extended beyond the Runway 16 end to the wash. The southern area included all existing airport property south of the existing Runway 34 end.



The survey revealed that there are no National Register of Historic Places (NHRP)-Eligible Sites or NHRP-Ineligible Sites located in the APE. Two archaeological sites were previously recorded in the project area: AZ F:14:126 and AZ F:14:170. During a site survey, it was noted that the modern surface of the Airport has been extensively disturbed from airport construction and improvement activities. As such, both sites could not be identified and appear to have been destroyed. The site survey recorded five isolated occurrences (IOs) in the project area. The IOs consists of Historical period, or modern, artifacts and features. The IOs are not considered significant cultural resources.

WATER QUALITY

The Airport operates in conformance with Section 402(p) of the *Clean Water Act*. The MCAA holds an AZ-PDES permit for stormwater drainages. As an industrial facility, the Airport is covered under this permit.

According to a water quality inventory completed in April 2007, the Arizona Department of Environmental Quality (ADEQ) has identified nitrogen as a potential problem in the area; however, based on water quality data, nitrate does not appear to be a widespread water quality issue. There are two known leaking underground storage tanks (LUST) sites with contaminated groundwater on the airport. While the water quality inventory found 29 monitoring wells associated with the airport, these wells have been removed. They were replaced with 14 monitoring wells associated with one of the LUST sites. There are 96 wells within one mile of the airport, and most are small diameter domestic or monitoring wells.

WETLANDS/WATERS OF THE U.S.

The U.S. Army Corps of Engineers regulates the discharge of dredged and/or fill material into waters of the United States, including adjacent wetlands, under Section 404 of the *Clean Water Act*. Wetlands

are defined in Executive Order 11990, Protection of Wetlands, as “those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetation or aquatic life that requires saturated or seasonably saturated soil conditions for growth and reproduction.” Categories of wetlands include swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mud flats, natural ponds, estuarine areas, tidal overflows, and shallow lakes and ponds with emergent vegetation. Wetlands exhibit three characteristics: hydrology, hydrophytes (plants able to tolerate various degrees of flooding or frequent saturation), and poorly drained soils.

A field survey was conducted in April 2007 to assist in the preparation of a Jurisdictional Waters Determination (JWD). The field survey concluded that “There were no permanent existing surface waters in the project area, and no wetland vegetation or stands of deciduous broadleaf riparian trees were present.” Therefore, there were no wetlands present in the project area. The field survey did indicate the potential for Waters of the U.S. As shown on **Exhibit 1A**, one ephemeral drainage area, braided ephemeral washes, and associated tributaries are located on the airport.

WILD AND SCENIC RIVERS

The Verde River is the only wild and scenic river in Arizona. This river is not in proximity to the airport.

COMMUNITY PROFILE

The purpose of this section is to summarize various studies and data to provide an understanding of the characteristics of the local area. Within this section is a description of ground access systems near the airport, a description of existing and future land use around the airport, local climate data, and a historical summary of the local economy and demographics.



REGIONAL SETTING, ACCESS, AND TRANSPORTATION

The City of Bullhead City is located in west-central Mohave County, Arizona. Located on the east side of the Colorado River, the City is near the juncture of Arizona, California, and Nevada. Bullhead City is located directly across the river from Laughlin, Nevada which has 11 major casino/resort hotels. In addition to the gaming industry in Laughlin, Nevada, area attractions include the Davis Dam and Lake Mohave.

As shown on **Exhibit 1E**, the City of Bullhead City is located at the juncture of Highways 163 and 95. Las Vegas is less than 90 minutes from Bullhead City. Phoenix is more than 220 miles southeast of the City.

Amtrak service is provided in nearby Kingman and Needles. Greyhound bus service is available from Kingman. Within the township of Laughlin, Citizen's Area Transit, known as CAT, provides affordable

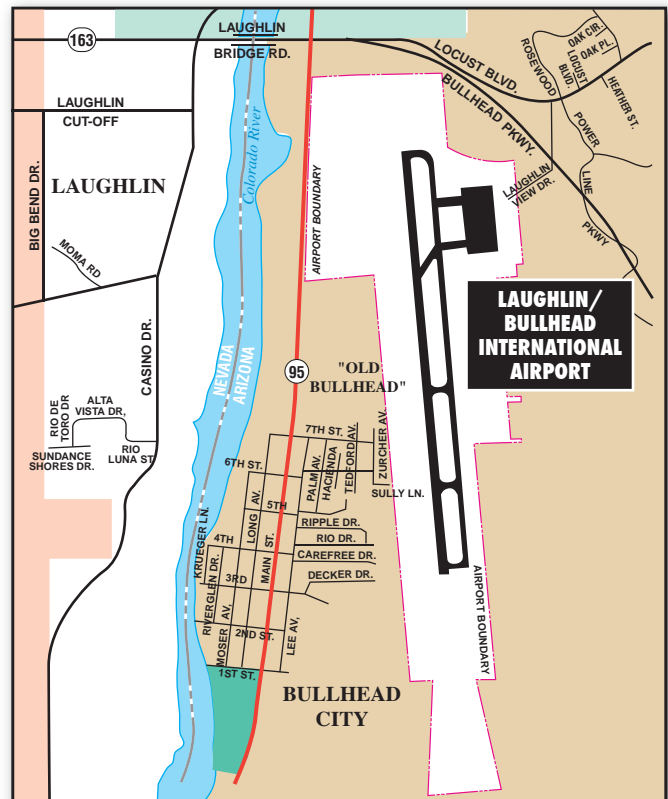
transportation up and down Casino Drive and through the residential areas. The Bullhead Area Transit System (BATS) provides public transportation services in Bullhead City. Freight rail service is available in Needles and Kingman.

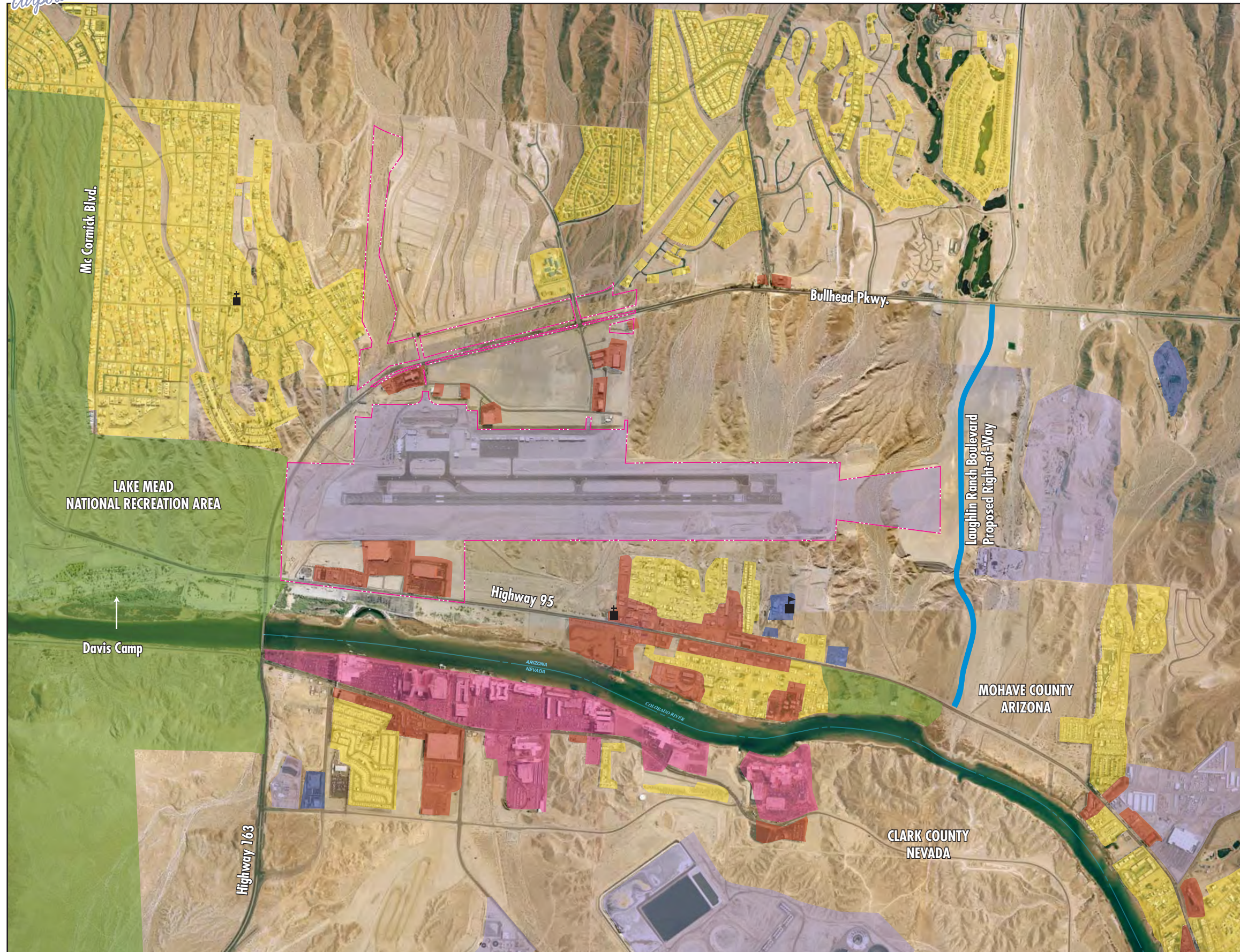
AREA LAND USE AND CONTROL

Exhibit 1F depicts the existing land use within the airport environs. The Lake Mead Recreation Area is located to the north. Residential development is located to the northeast, east, and west/southwest. Commercial development is located along Bullhead Parkway to the east and along Highway 95 to the south. Casino/resort areas are located to the west in Laughlin, Nevada, along with some residential and commercial uses. **Exhibit 1F** also depicts existing schools and churches.

Exhibit 1G depicts the General Plan for Bullhead City and Laughlin North planned land use. Commercial

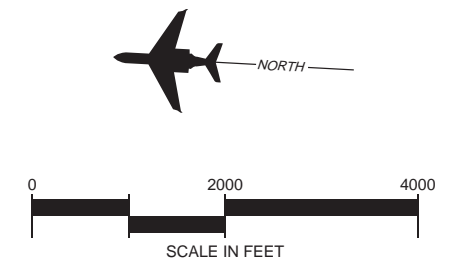
Exhibit 1E: VICINITY MAP





LEGEND

- Residential
- Commercial
- Industrial, Transportation, Utilities
- Casino / Resort
- Park / Open Space
- Public / Semi - Public
- Church
- School



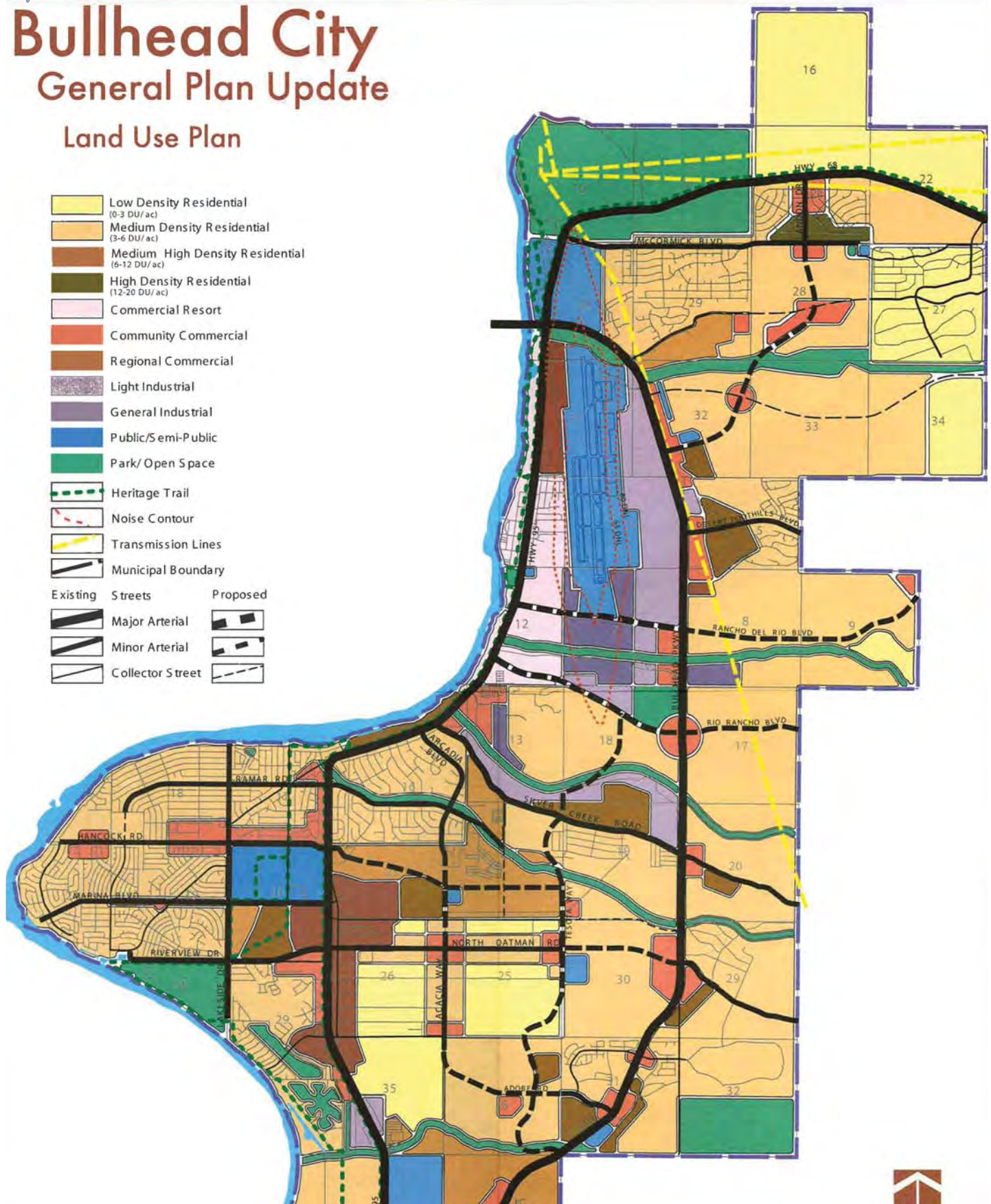
Date of Photo: February 2008

Source: Coffman Associates Photo Interpretation

Bullhead City General Plan Update

Land Use Plan

- Low Density Residential (0-3 DU/ac)
- Medium Density Residential (3-6 DU/ac)
- Medium High Density Residential (6-12 DU/ac)
- High Density Residential (12-20 DU/ac)
- Commercial Resort
- Community Commercial
- Regional Commercial
- Light Industrial
- General Industrial
- Public/Semi-Public
- Park/Open Space
- Heritage Trail
- Noise Contour
- Transmission Lines
- Municipal Boundary
- Existing Streets: Major Arterial, Minor Arterial, Collector Street
- Proposed Streets: Major Arterial, Minor Arterial, Collector Street



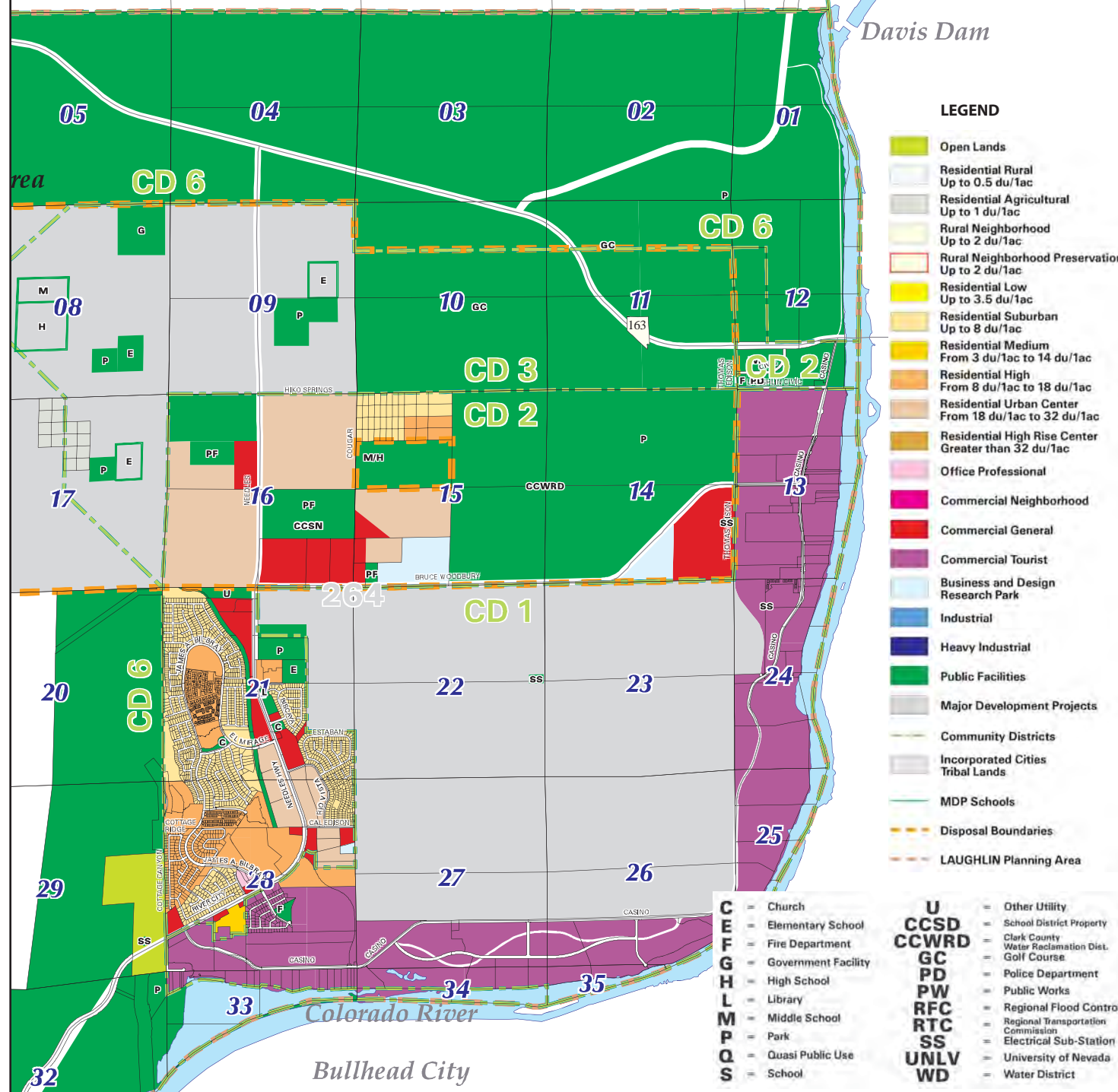
Comprehensive Planning LAUGHLIN Planned Land Use

Adopted on: May 16, 2007



0 1800 3600 5400
SCALE IN FEET
Plot created on: June 13, 2007

This information is for display purposes only. No liability is assumed as to the accuracy of the data delineated hereon. For detailed Land Use Information, see Adopted Land Use Plans.
NOTE: This map reflects parcels as they were configured at the time of Adoption. Please see the LAUGHLIN Planned Land Use with Current Parcel Configuration map for current parcel configuration.



- ### LEGEND
- Open Lands
 - Residential Rural Up to 0.5 du/1ac
 - Residential Agricultural Up to 1 du/1ac
 - Rural Neighborhood Up to 2 du/1ac
 - Rural Neighborhood Preservation Up to 2 du/1ac
 - Residential Low Up to 3.5 du/1ac
 - Residential Suburban Up to 8 du/1ac
 - Residential Medium From 3 du/1ac to 14 du/1ac
 - Residential High From 8 du/1ac to 18 du/1ac
 - Residential Urban Center From 18 du/1ac to 32 du/1ac
 - Residential High Rise Center Greater than 32 du/1ac
 - Office Professional
 - Commercial Neighborhood
 - Commercial General
 - Commercial Tourist
 - Business and Design Research Park
 - Industrial
 - Heavy Industrial
 - Public Facilities
 - Major Development Projects
 - Community Districts
 - Incorporated Cities
 - Tribal Lands
 - MDP Schools
 - Disposal Boundaries
 - LAUGHLIN Planning Area
- | | |
|--------------------------------|--|
| U - Church | CC - Other Utility |
| E - Elementary School | CS - School District Property |
| F - Fire Department | CC - Clark County |
| G - Government Facility | WR - Water Reclamation Dist. |
| H - High School | GC - Golf Course |
| L - Library | PD - Police Department |
| M - Middle School | PW - Public Works |
| P - Park | RFC - Regional Flood Control Commission |
| Q - Quasi Public Use | SS - Electrical Sub-Station |
| S - School | UNLV - University of Nevada |
| | WD - Water District |

Exhibit 1G
LAND USE PLANS



resort and regional commercial and industrial uses are planned along the airport property boundary in Bullhead City. Planned land uses are similar to existing land uses in Laughlin, Nevada.

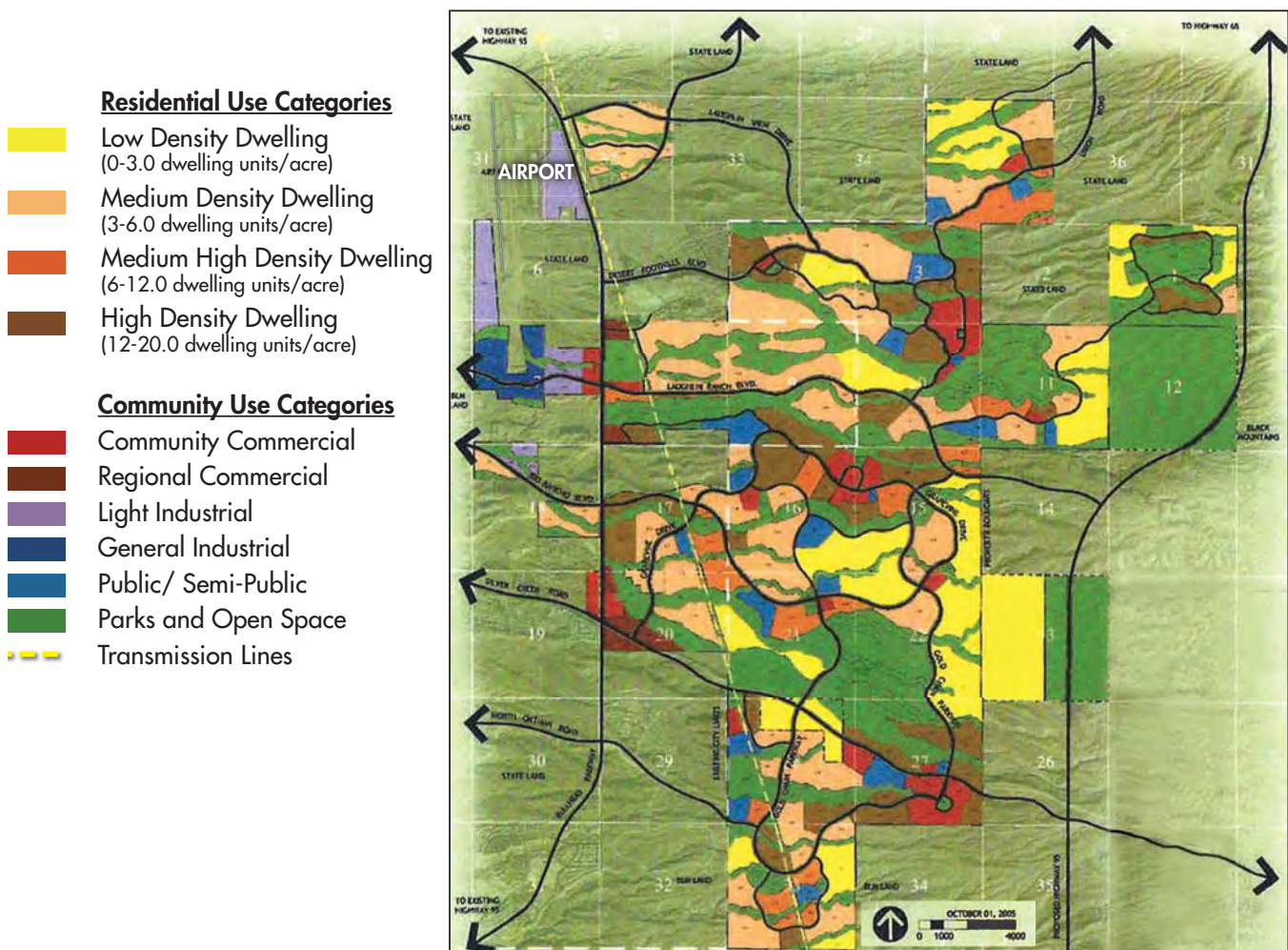
Exhibit 1H depicts the Land Ranch General Plan Amendment. This plan amendment adds a total of 9,204 acres of additional development area to the existing Bullhead City General Plan. Land Ranch is a mixed-use planned development with residential, open space, public lands, and commercial and industrial uses. Laughlin Ranch Boulevard is planned to connect to Highway 95 to the south.

Chapter 17.34, *Airport Noise and Height Overlay District*, of the City of Bullhead City municipal code

provides for land use controls to promote the compatibility of the airport with the community. The principal purpose of the district is to promote and protect the public health, safety, and general welfare in the vicinity of the Laughlin/Bullhead International Airport by minimizing exposure to high noise levels and accident hazards generated by airport operations and to encourage future development which is compatible with the continued operation of the airports. In addition, it is the purpose of the district to minimize future conflicts between land uses and excessive noise generated by aircraft.

To achieve these goals, the ordinance sets forth geographical districts based upon noise exposure, clear zone standards, and heights of objects. The

Exhibit 1H: LAUGHLIN RANCH LAND USE PLAN





code establishes permitted uses within each of these districts. Within the Height Overlay District, height restrictions are based upon 14 CFR Part 77, *Objects Affecting Navigable Airspace*, which establishes imaginary surfaces emanating from the runway and specify the acceptable height of objects near the airport. The Noise Overlay District is based upon computer-modeled noise exposure from the operation of aircraft at the airport. The Clear Zone Overlay District relates to areas off the end of the runway with a potential for accidents.

THE AIRPORT’S SYSTEM ROLE

Airport planning exists on many levels: local, state, and national. Each level has a different emphasis and purpose. Locally, this Master Plan is the primary airport planning document.

At the state level, the airport is included in the *Arizona State Aviation System Plan* (SASP). The purpose of the SASP is to ensure that the state has an adequate and efficient system of airports to serve its aviation needs. The SASP defines the specific role of each airport in the state’s aviation system and establishes funding needs. Through the state’s continuous aviation system planning process, the SASP is updated every five years. According to records, the most recent update to the SASP was in 2000 when the *State Aviation Needs Study* (SANS) was prepared. The SANS provides policy guidelines that promote and maintain a safe aviation system in the state, assess the state’s airports’ capital improvement needs, and identify resources and strategies to implement the plan. Laughlin/Bullhead International Airport is one of 112 airports included in the 2000 SANS, which includes all public and private airports and heliports in Arizona that are open to the public, including American Indian and recreational airports.

At the national level, the airport is included in the *National Plan of Integrated Airport Systems* (NPIAS). The NPIAS includes a total of 3,660 airports (both

existing and proposed) which are important to national air transportation. Laughlin/Bullhead International Airport is classified as a commercial service airport within the NPIAS.

CLIMATE

Weather conditions are important to the planning and development of an airport. Temperature is an important factor in determining runway length requirements, while wind direction and speed are used to determine optimum runway orientation. The need for navigational aids and lighting is determined by the percentage of time that visibility is impaired due to cloud coverage or other conditions.

July is the hottest month with an average daily maximum temperature of 111 degrees Fahrenheit (F), and December is the coldest month with an average daily minimum temperature of 42 degrees F. The average precipitation in Bullhead City is only 5.95 inches per year. Average temperature and precipitation totals by month are summarized in **Table 1C**.

Table 1C
WEATHER SUMMARY - BULLHEAD CITY, ARIZONA

Month	Daily Minimum (degrees F)	Daily Maximum (degrees F)	Average Total Precipitation (inches)
January	43	65	0.98
February	46	71	1.05
March	50	78	0.91
April	56	88	0.16
May	65	97	0.08
June	73	107	0.01
July	79	111	0.30
August	79	109	0.73
September	71	103	0.35
October	59	90	0.46
November	49	74	0.42
December	42	65	0.49
Yearly Average	59	88	5.95

Source: Western Regional Climatic Center



SOCIOECONOMIC CHARACTERISTICS

A variety of historical and forecast socioeconomic data, related to the regional area, has been collected for use in various elements of this Master Plan. This information provides essential background for use in determining aviation service level requirements. Aviation forecasts are often related to the population base, economic strength of a region, and the ability of a region to sustain a strong economic base over an extended period of time.

Population

Population is one of the most important elements to consider when planning for future needs of the airport. Historical population data for the City of Bullhead City, Mohave County, and the Town of Laughlin, Nevada are presented in **Table 1D**. As shown in the table, the population of the City of Bullhead City has grown at an average annual growth rate of 3.9 percent since 1980, doubling in population. In contrast, Mohave County as a whole has grown at an average annual rate of 4.5 percent. The Town of Laughlin has grown at a slower rate of only 2.7 percent.

Employment

Analysis of a community's employment base can be valuable in determining the overall well-being of that community. In most cases, the community's make-up and health is significantly determined by the availability of jobs, the variety of employment opportunities, and the types of wages provided by local employers. Locally, employment is driven by the robust gaming/resort activities in Laughlin, Nevada. In 2006, the 11 major casinos/resorts in Laughlin employed more than 14,000. On the Arizona side, more than 2,000 businesses employed approximately 6,800.

Table 1E summarizes historical unemployment statistics for the City of Bullhead City. This data shows that while the labor force is growing, the

Table 1D
HISTORICAL POPULATION

Year	Bullhead City	Mohave County	Town of Laughlin, NV
1988	19,950	87,900	NA
1989	21,009	92,800	NA
1990	22,228	95,400	5,577
1991	23,615	102,375	7,454
1992	24,665	105,725	7,429
1993	25,825	114,000	7,550
1994	26,535	120,325	7,955
1995	26,940	124,500	7,945
1996	27,370	127,700	7,988
1997	27,800	133,550	6,988
1998	28,535	138,625	7,985
1999	29,315	142,925	7,903
2000	33,769	155,032	8,100
2001	34,615	161,580	6,271
2002	35,410	166,465	6,468
2003	35,760	170,805	7,041
2004	36,960	180,150	8,258
2005	38,210	188,035	8,315
2006	39,930	198,320	8,629
2007	41,000	204,122	8,998
Avg. Annual	3.9%	4.5%	2.7%

Source: Arizona Department of Economic Security, Clark County Department of Comprehensive Planning

number of jobs has also grown consistently. With the exception of 2002 when unemployment exceeded 5.2 percent, total unemployment has been slightly above 4.0 percent since 2000.

Table 1F summarizes total labor force and nonfarm employment for Mohave County. As shown in the table, total employment has grown nearly at the same rate as the labor force. Within the county, there is more employment in goods production (mining, manufacturing) than in the private service sectors. The services sector has grown faster than the goods producing sector.

Growth Indicators

The State of Arizona and City of Bullhead City track several indicators which assist in characterizing the



Table 1E
UNEMPLOYMENT STATISTICS - BULLHEAD CITY, ARIZONA

	2000	2001	2002	2003	2004	2005	2006	2007
Labor Force	16,182	17,090	18,004	19,272	19,917	20,861	21,790	21,679
Employment	15,511	16,336	17,075	18,376	19,097	20,023	20,918	20,716
Unemployment	671	754	929	896	820	838	872	963
Unemployment Rate	4.1%	4.4%	5.2%	4.6%	4.1%	4.0%	4.0%	4.4%

Source: State of Arizona, Department of Commerce, Research Administration, CES/LAUS Unit

Table 1F
MOHAVE COUNTY LABOR FORCE AND NONFARM EMPLOYMENT

	2003	2005	2007	Change	% Change
Total Civilian Labor Force	81,700	88,400	91,900	10,200	12.5%
Total Employment	77,700	84,675	87,600	9,900	12.7%
Total Nonfarm	47,425	52,800	54,850	7,425	15.7%
Total Private	39,825	45,000	46,175	6,350	15.9%
Goods Producing	9,275	11,325	10,400	1,125	12.1%
Mining and Construction	5,950	7,350	6,725	775	13.0%
Manufacturing	3,325	3,975	3,675	350	10.5%
Service-Providing	38,150	41,475	44,450	6,300	16.5%
Private Service-Providing	30,550	33,675	35,800	5,250	17.2%
Trade, Transportation, and Utilities	10,575	11,325	11,425	850	8.0%
Information	875	950	1,000	125	14.3%
Financial Activities	1,875	2,225	2,775	900	48.0%
Professional and Business Services	3,475	3,825	3,675	200	5.8%
Educational and Health Services	5,825	6,575	7,450	1,625	27.9%
Leisure and Hospitality	5,750	6,450	6,775	1,025	17.8%
Other Services	2,200	2,350	2,700	500	22.7%
Government	7,600	7,800	8,650	1,050	13.8%
Federal Government	525	525	500	-	-4.8%
State and Local Government	7,075	7,275	8,150	1,100	15.6%

Source: Arizona Department of Economic Security

growth in the community. **Table 1G** summarizes these growth indicators. Taxable Sales and Per Capita Tax Collection are descriptors of the retail economy in the City. School enrollment and building permits assist in describing population growth. Net assessed value describes the appreciation of assets in the community as well as investments made in the City.

HISTORICAL AIRPORT DEVELOPMENT

Table 1H summarizes the historical development at the airport funded with federal grants. Since 1988, nearly \$149 million has been invested in the airport with federal and state grant assistance.



**Table 1G
GROWTH INDICATORS**

Indicator	1985	1990	2000	2005	2006
Taxable Sales (Mil\$)	54.20	212.74	367.15	698.33	742.82
Per Capita Tax Collection (000\$)	50.42	193.83	217.45	349.17	371.41
School Enrollment	3,793	4,119	4,960	7,279	6,396
Net Assessed Value (Mil\$)	168.5	190.6	204.0	398.0	444.2

Building Permits					
Dwelling Unit	2002	2003	2004	2005	2006
Single Family	371	508	845	805	551
Mobile/Mfg	41	77	202	254	228
Commercial	105	74	12	17	57
Multifamily	3	3	16	2	54

Source: City of Bullhead City

**Table 1H
AIRPORT DEVELOPMENT GRANTS**

Year	Improvement	Grant Amount
FAA AIP Grants		
1988	Site prep/grading, relocation of powerline	\$2,800,000
1989	Land acquisition (68.84 acres) for terminal site	2,800,000
1990	Site prep/grading	2,800,000
1991	Construct runway, lighting, fencing, ARFF vehicle and building	3,913,171
1992	Runway overlay, rotating beacon	2,396,100
1993	Air carrier apron extension, security fencing	400,000
1993	Airport Master Plan Update	111,080
1993	Runway widening to 150'	2,196,354
1995	Noise Compatibility Study	150,000
1995	East FBO site property acquisition, site prep, apron construction	947,149
1996	East FBO site property acquisition, site prep, apron construction	383,697
1997	Eastside apron construction	561,621
1997	Acquire 47.7 acres (south)	2,000,000
1998	Eastside Apron Construction and Master Plan Update	689,364
1999	Land Acquisition and Construction (Eastside)	363,664
1999	Phase III - Eastside General Aviation Development (Site Preparation, Drainage, Utilities, Apron Construction, Taxilanes, Access Road, and Security Lighting)	136,336
2000 & 2001	Phase IV - Eastside General Aviation Development (Taxilanes, Apron, and Access Road)	1,300,000
2001	Phase IV - Eastside General Aviation Development (Taxilanes, Apron, and Access Road); RIAT Projects (Perimeter Road, Hold Lines, and Relocation of Wind Cones)	842,000
2002	Reimbursement of Operational Security Costs, Acquire Hadicap Boarding Device, Expand Terminal Building (Remote Hold Room)	1,149,726
2002	Rehabilitate/Construct Apron	1,822,704



Table 1H (continued)
AIRPORT DEVELOPMENT GRANTS

Year	Improvement	Grant Amount
FAA AIP Grants		
2003	Remote Holdroom/Terminal Expansion (Phase II); Construct/Rehabilitate Parking Apron (Phase II); Install Automated Weather Observing System (AWOS-3)	1,196,228
2004	Construct Remote Holdroom for Terminal Building (Phase III); Rehabilitate Parallel Taxiway A (Design Only)	1,196,228
2004	Conduct Environmental Assessment (EA) associated with a 1,500 foot extension to the south end of Runway 16-34.	255,000
2006	Terminal Building Rehabilitation (Design Only); Runway 16-34 Rehabilitation (Design Only); Pavement Rehabilitation for Access Road, GA Apron, and Parking Lot (Design Only)	457,373
2006	Update Airport Master Plan Study including an Environmental Evaluation/Environmental Overview (Phase I).	145,000
2007	Rehabilitate Terminal Building	2,977,848
2007	Update Airport Master Plan Study including an Environmental Evaluation/Environmental Overview (Phase II).	45,000
2007	Improve Runway 16-34 Safety Area (Shift Runway 16-34 500 feet to the South); Rehabilitate Runway 16-34.	7,205,995
Total		\$41,241,638
ADOT Grants		
1989	Relocate coal slurry line, power line	\$423,000
1989	Coal slurry line engineering	\$315,000
1990	Financial feasibility study, old taxiway design and overlay, terminal design	\$432,000
1991	Terminal site prep	\$475,000
1994	Waterline extension, emergency generator, aerial photogrammetry	\$500,000
1996	Acquisition of property, grading & paving	\$500,000
1996	Acquisition of property, grading & paving	\$650,000
1997	Planning and Land Acquisition (Eastside)	\$940,950
1998	Land Acquisition (South)	\$98,177
1998	Land Acquisition (Eastside)	\$940,950
1998	Control Tower Construction	\$750,000
1998	Consultation, Purchase, Transport, and Reconstruct Tower Cab	\$250,000
1999	Design and Construction (Eastside)	\$338,400
1999	Runway Pavement Preservation	\$432,000
2002	FAA Grant Match	\$6,692
2001	FAA Grant Match	\$63,815
2001	FAA Grant Match	\$41,333
2004	FAA Grant Match	\$54,411
2003	FAA Grant Match	\$89,474
2005	FAA Grant Match	\$58,721
2005	FAA Grant Match	\$29,069
2005	FAA Grant Match	\$6,710



Table 1H (continued)
AIRPORT DEVELOPMENT GRANTS

Year	Improvement	Grant Amount
ADOT Grants		
2007	FAA Grant Match	\$12,037
2007	FAA Grant Match	\$3,816
2008	FAA Grant Match	\$78,367
2008	FAA Grant Match	\$1,184
2008	FAA Grant Match	\$189,632
Total		\$7,680,738

Source: Airport Records

DOCUMENT SOURCES

As mentioned earlier, a variety of different sources were utilized in the inventory process. The following listing reflects a partial compilation of these sources. This does not include data provided by airport management as part of their records, nor does it include airport drawings and photographs which were referenced for information. On-site inventory and interviews with staff and tenants contributed to the inventory effort.

Airport/Facility Directory, Southwest, U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office.

Phoenix Sectional Aeronautical Chart, U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office.

National Plan of Integrated Airport Systems (NPIAS), U.S. Department of Transportation, Federal Aviation Administration, 2007-2011.

U.S. Terminal Procedures, Southwest U.S., U.S. Department of Transportation, Federal Aviation Administration, National Aeronautical Charting Office.

A Cultural Resources Survey for the Proposed Laughlin/Bullhead International Airport Expansion Project, Mohave County, Arizona, SWCA Environmental Consultants, April 2007

Biological Evaluation of 131 Acres for the Laughlin Airport Expansion Project in Mohave County, Arizona, SWCA Environmental Consultants, April 2007

Laughlin Airport Expansion – Water Quality Inventory, Technical Memorandum SWCA Environmental Consultants, April 2007

Preliminary Jurisdictional Delineation of 131 Acres for the Laughlin Airport Expansion Project in Mohave County, Arizona, SWCA Environmental Consultants, April 2007

Airport Certification Manual for Laughlin/Bullhead International Airport, MCAA, January 2008.

FAA Form 5010-1, Laughlin/Bullhead International Airport

U.S. Environmental Protection Agency, *EnviroMapper*, <http://www.epa.gov/enviro/ej/>

United States Census Bureau, *U.S. Census 2000*, <http://www.census.gov/main/www/cen2000.html>



U.S. Environmental Protection Agency, Green Book Nonattainment Areas for Criteria Pollutants, <http://www.epa.gov/oar/oaqps/greenbk/>

U.S. Environmental Protection Agency, National Priorities List, <http://www.epa.gov/superfund/sites/npl/sd.htm>

Bullhead City Economic Development Authority
www.bullheadeconomicdevelopment.com

Air Nav, www.airnav.com

Arizona Department of Commerce, www.azcommerce.com

Western Regional Climatic Center, www.wrcc.dro.edu

Clark County Comprehensive Planning, http://www.co.clark.nv.us/Comprehensive_planning/LUP/Laughlin.htm

Flood Insurance Rate Maps, Federal Emergency Management Agency

2006 Airport Pavement Management System Update, Arizona Department of Transportation, Aeronautics Division.