5. Facility Requirements

The purpose of this chapter is to compare existing airfield and adjacent landside facilities with the Airport operations and aircraft forecasts developed in the previous chapter (see Table 17) to identify improvements required to meet future growth and demand. Additional improvements required to meet certain goals of the Airport Authority will also be highlighted.

5.1 Airport Design Criteria

Critical Aircraft

An airport is designed based on the characteristics of the most demanding aircraft, in terms of approach speed and wing span, that currently use an airport, or that are projected to use an airport at some point in the future. The critical aircraft for an airport must have 500 or more annual itinerant operations at the airport. Itinerant operations involve a trip extending more than 20 miles from and/or to the airport.

The current critical aircraft for Logan-Cache Airport in general, and Runway 17-35 specifically, is the Gulfstream III. This aircraft has a wing span of 77'-10" and a maximum takeoff weight of 69,700 pounds. The critical aircraft for Runway 10-28 is the Raytheon Beechcraft Super King Air B-100. This aircraft has a wing span of 45'-11" and a maximum takeoff weight of 11,800 pounds.

Airport Reference Code

The Airport Reference Code (ARC) is a criterion that defines the critical airport dimensions based on the airport's critical aircraft. The ARC is defined specifically by the approach category and the design group of the critical aircraft. The approach category is defined by 1.3 times the stall speed of the aircraft in its landing configuration at its maximum landing weight. The approach category is represented by the letters A, B, C, D, and E as shown in Table 19. The design group of the aircraft is based on the aircraft's wing span and is defined by Roman Numerals I, II, III, IV, V, and VI as shown in Table 20. Table 18 summarizes representative aircraft by ARC.

Table 18. Representative Aircraft by Airport Reference Code

Airport Reference Code	Examples	
A-I small less than 12,500 lbs.	Cessna 172, 182 Piper Warrior, Archer, Malibu Piper Seminole, Seneca Cirrus SR-20/22 EADS Tobago, Trinidad Beechcraft Bonanza Mooney Ovation	
B-I small less than 12,500 lbs.	Beechcraft King Air 90/100 Beech Baron Cessna 421, Citation I Piper Navajo, Cheyenne	

Airport Reference Code	Examples
B-II small less than 12,500 lbs.	Beechcraft King Air 200 Cessna 441 de Havilland Twin Otter 
B-I, II greater than 12,500 lbs.	Dassault Falcon 10, 20, 50, 200, 900 Beechcraft King Air 300/350 Beechcraft 1900 Cessna Citation II Hawker 400 Embraer 120 Brasilia Saab 340 Dassult Falcon 50EX 
A-III, B-III	de Havilland Dash 7/8 Bombardier Q300 ATR 42/72 Douglas DC-3 Fairchild F-27 
Very Light Jets under 10,000 lbs. takeoff weight	HondaJet Cessna Citation Mustang Eclipse 500 Embraer Phenom 100 Diamond D-Jet  Photo: Honda Manufacturing
C-I, D-I	Bombardier Learjet 45, 55, 60 IAI Westwind Hawker 125 
C-II, D-II	Bombardier CRJ-700, Challenger Series Cessna Citation Soverign Gulfstream 200, 350, 450 (II,III,IV) Hawker 800 Embraer ERJ 135/145 
C-III, D-III	Bombardier Q400 Gulfstream 500/550 (V) Boeing Business Jet Airbus A319/320 Boeing 737, MD-80, MD-90 Bombardier CRJ-900 Embraer 175/190 

Airport Reference Code	Examples
C-IV, D-IV	Boeing 757/767, MD-11, DC-10 Airbus A300/A310 
D-V	Boeing 747 Series Boeing 777 Series Airbus A340 
Light Sport 1320 lb. max takeoff weight; 120 knots max airspeed	Kitfox Cessna C-162 Skycatcher Cirrus SRS Icon A5 

The approach category and design group classifications used above are described in the following tables.

Table 19. Aircraft Approach Categories

Category	Approach Speed
A	Less than 91 knots
B	91-<121 knots
C	121-<141 knots
D	141-<166 knots
E	166 knots or more

Table 20. Airplane Design Groups

Group	Tail Height (ft.)	Wingspan (ft.)
I	<20	<49
II	20-<30	49-<79
III	30-<45	79-<118
IV	45-<60	118-<171
V	60-<66	171-<214
VI	66-<80	214-<262

The Logan-Cache Airport has an existing designated ARC of C-II. Critical aircraft with this ARC have an approach speed of between 121 and 141 knots, a wingspan of between 49 and 79 feet, and a tail height of between 20 and 30 feet. Each runway is further defined by an ARC, with Runway 17-35 having an ARC of C-II, based on the Gulfstream III as the critical aircraft, and Runway 10-28 having an ARC of B-I (small), based on use primarily by small general aviation aircraft conducting daytime VFR operations only. The designation of small is limited to aircraft with a gross weight of 12,500 pounds or less.

5.2 Future Airport Reference Code and Critical Aircraft

As discussed previously in this chapter, the Airport Reference Code (ARC) is an important parameter for airport design. The appropriate ARC for an airport is determined by its design, or critical aircraft, which is the most demanding aircraft that regularly uses the airport. Regular use is defined as at least 500 annual itinerant operations — equivalent to an average of one departure per weekday.

The Logan-Cache Airport's existing ARC designation of C-II is based on the previous critical aircraft performing a minimum of 500 annual operations. The critical aircraft for the airport is currently the Gulfstream III, which has a maximum takeoff weight of 68,700 pounds and a wingspan of 77'-10".

In order to assess the future critical aircraft and trends specific to the Logan-Cache Airport, a survey was mailed to airport tenants and select local businesses identified as current or potential users of general aviation aircraft. Phone interviews were also conducted with key airport users including those involved in flight training, aircraft maintenance, charter services, fixed base operations and fractional operations. Several individuals and businesses whose current aviation activity level is extensive were also contacted.

Activity at the airport is predominately small general aviation used for recreation and flight training. Utah State University is among the most active users and offers a program designed to prepare pilots for careers in the aviation industry. The program includes training from basic private pilot using single-engine piston aircraft to commercial instrument-rated pilot on twin-engine aircraft. The aircraft used in the program are designated as ARC A-I. Many other flight training programs, including the Utah Army Guard, in the region visit the airport with similar aircraft for flight training. Aircraft used for recreation at the airport are typically very similar to these small general aviation aircrafts.

More demanding aircraft used at the airport are medium business class jet and turboprop aircraft owned by local individuals and businesses, as well as those of businesses outside the area used to access the Cache Valley. Three Cessna Citation Encore jets, one Cessna Citation I business jet, and a Pilatus PC-12 turboprop are based at the airport. Qwest Communications uses a Falcon 2000 jet aircraft to shuttle personnel into the airport a few times a year. Current operations for these aircraft total approximately 1,500 per year. Several users indicated that they may upgrade to larger aircraft or acquire additional aircraft in the next 5 to 10 years, to include an additional Pilatus PC-12 (ARC B-II), a Falcon 50EX (ARC B-II), and a Gulfstream III (ARC C-II).

Finally, the airport began Part 139 charter operations in 2008 in support of college athletic programs. The aircraft used include Airbus A319, Boeing 737, and McDonnell Douglas MD-80 aircraft with a designated ARC C-III. These flights have been limited in number, less than 20 operations per year, and are not expected to increase dramatically in coming years. The airport is currently able to meet the demands of these aircraft at their current operations level. Should operation of these aircraft begin to approach 500 per year, the airport would need to consider upgrading the ARC to C-III. Most notably, such a change requires increases in minimum taxiway width, from 35 feet to 50 feet, as well as increased runway and taxiway shoulder widths, taxiway safety area widths, and taxiway object free area widths. The larger aircraft will also require that most airport pavements be strengthened, either through overlays or reconstruction, as their gross takeoff weights can reach 225,000 pounds.

Based on current airport operations and demand indicated by users for the next 5 to 10 years, the future Airport Reference Code (ARC) should remain C-II. This ARC includes an extremely wide range of many of the most popular business aircraft and insures that the airport is flexible in meeting future demand. A supplementary future ARC of C-III should be considered to accommodate dramatic increases in charter operations or a resumption of commercial airline service to the airport.

A list of potential design aircraft and their associated characteristics is contained in Table 21.

These, or similar aircraft, anticipate using the airport on a regular basis through the established 20-year planning horizon. Federally funded projects require that critical design aircraft have at least 500 or more annual itinerant operations at the airport for an individual aircraft or family of aircraft. While these aircraft are anticipated to use the airport within the planning horizon, implementing improvements based on the future ARC will be considered demand-driven, in that the improvements will be justified when the 500 annual itinerant operations have been achieved or can be documented as occurring.

Table 21. Aircraft Characteristics and Estimated Operations

Aircraft	Max Gross Weight (Lb.)	Wingspan (Ft.)	Length (Ft.)	Approach Speed (Knots)	ARC Class	Estimated Existing Operations	Estimated Future Operations (2029)
Cessna 172	2,660	27.2	8.9	61	A-I	19,000	28,900
Diamond DA40	2,645	38.2	26.4	<90	A-I	28,000	43,400
Piper PA-28	2,758	35.4	24.7	61	A-I	9,400	14,500
Diamond DA42	3,935	44.5	28.1	<91	A-I	14,000	21,700
Cessna Citation Mustang	8,645	43.2	40.6		B-I	0	100
Pilatus PC-12	10,450	53.4	47.3	95	B-II	100	150
King Air 200	12,500	54.5	43.8	119	B-II	150	225
King Air 350	15,000	57.9	46.7	115	B-II	200	300
Cessna Citation Encore	16,630	54.1	48.1		B-II	1,500	2,000
Falcon 50EX	39,900	61.8	60.8	124	B-II	0	250
Gulfstream G-III	71,300	77.8	83.1	136	C-II	50	500
Airbus A319	166,500	111.1	111		C-III	8	30
Boeing 737-200	115,500	93	100.2		C-III	6	20
McDonnell Douglas MD-80	140,000	107.8	147.8		C-III	6	200

5.3 Airside Facilities

The airport is currently classified as ARC C-II and is anticipated to remain so for the planning period. FAA Advisory Circular (AC) 150/5300-13 "Airport Design" recommends standard widths, minimum clearances and other dimensional criteria for runways, taxiways, safety areas, aprons and other physical airport features. Dimensions are recommended based on Aircraft Approach Category, in this case not lower than ¾-mile visibility, and the ARC. Table 22, Airport Design Standards Evaluation, presents the existing airport dimensional information and the design standards that the airport should have in order to meet FAA recommendations for an ARC of C-II for Runway 17-35 and B-I (small) for Runway 10-28. In addition, standards for an ARC of C-III are included for discussion of long-term commercial airline planning. Both runway facilities meet associated design standards.

Table 22. Airport Design Standards Evaluation

Design Feature	C-II* (feet)	C-III* (feet)	Runway 17-35 (feet)	B-I (small)* (feet)	Runway 10-28 (feet)
Runway Centerline to:					
- Holdline	250	250	250	125	200
- Taxiway Centerline	300	400	400	150	525
- Aircraft Parking Area	400	500	750	125	600
Runway Width	100	100	100	60	60
Runway Safety Area (RSA)					
- Width	500	500	500	120	120
- Length Beyond Runway End	1,000	1,000	1,000	240	240
Runway Object Free Area (OFA)					
- Width	800	800	800	250	250
- Length Beyond Runway End	1,000	1,000	1,000	240	240
Runway Protection Zone (RPZ)					
- Length	1,700	1,700	1,700	1,000	1,000
- Inner Width	500	500	500	250	250
- Outer Width	1,010	1,010	1,010	450	450

**With not lower than ¾-statute mile approach visibility minimums*

Runways

Capacity

FAA Advisory Circular 150/5060-5, "Airport Capacity and Delay" provides guidance for evaluating the capacity of an airport runway based on configuration, percent of arrivals, percent of touch-and-go operations, aircraft mix, and exists from the runway. A full evaluation based on this guidance was not performed due to the lack of historical data specifically collected for these categories. Airport operations are currently estimated at 85,100 for 2009 are expected to grow to 130,200 by 2029. The Logan-Cache Airport has sufficient capacity for future growth based on an estimated Annual Service Volume (ASV) of approximately 230,000 annual operations.

An appropriate required runway length is calculated using the FAA Airport Design Computer Software and is derived from an airport elevation of 4,457 feet above mean sea level, the Mean Normal Maximum Temperature of 88°F, and the maximum difference in runway elevation at the centerline of 7.5 feet for Runway 17-35 and 7.9 feet for Runway 10-28. For the Logan-Cache Airport, the FAA model results in the following required runway lengths:

Runway 17-35

Small Airplanes (12,500 lbs. gross takeoff weight or less)

Accommodate 75 % of small airplanes (less than 10 pass. seats)	4,240	feet
Accommodate 95% of small airplanes (less than 10 pass. seats)	5,570	feet
Accommodate 100% of small airplanes (less than 10 pass. seats)	5,850	feet
Accommodate small airplanes with 10 or more passenger seats	5,850	feet

Large Airplanes (under 60,000 lbs. grow takeoff weight)

Accommodate 75% of large airplanes at 60% useful load	6,410	feet
Accommodate 75% of large airplanes at 90% useful load	8,680	feet
Accommodate 100% of large airplanes at 60% useful load	9,030	feet
Accommodate 100% of large airplanes at 90% useful load	10,750	feet

Accommodate large airplanes more than 60,000 pounds	6,580	feet

Runway 10-28

Small Airplanes (12,500 lbs. gross takeoff weight or less)		
Accommodate 75 % of small airplanes (less than 10 pass. seats)	4,240	feet
Accommodate 95% of small airplanes (less than 10 pass. seats)	5,570	feet
Accommodate 100% of small airplanes (less than 10 pass. seats)	5,850	feet
Accommodate small airplanes with 10 or more passenger seats	5,850	feet
Large Airplanes (under 60,000 lbs. grow takeoff weight)		
Accommodate 75% of large airplanes at 60% useful load	6,410	feet
Accommodate 75% of large airplanes at 90% useful load	8,680	feet
Accommodate 100% of large airplanes at 60% useful load	9,030	feet
Accommodate 100% of large airplanes at 90% useful load	10,750	feet
Accommodate large airplanes more than 60,000 pounds	6,580	feet

The runway length required to accommodate 100% of small airplanes is 5,850 feet. With the present runway lengths of 5,005 feet and 9,018 feet for Runways 10-28 and 17-35 respectively, the Airport is able to accommodate all of the anticipated operations for small airplanes. Runway 17-35 is also long enough to accommodate 75% of large airplanes at 90% useful load and is nearly long enough to accommodate 100% of large airplanes at 60% useful load. Runway 10-28 is currently long enough to meet the demand of VFR daytime small airplane operations it encounters. The runway length is also adequate to support expanded operations of small aircraft, should a runway lighting system be installed and approach procedures be established. Runway 17-35 is long enough to support operations by small aircraft and most airplanes under 60,000 pounds that use the airport. No complaints about runway length were received during user interviews or in the survey. Additional runway length to support the use of larger aircraft for charter operations or commercial airline service may be justified as the operations for these aircraft begin to approach 500 per year.

Runway 10-28 currently has a width of 75 feet and Runway 17-35 is 100 feet wide. These widths are adequate to meet the minimum standards of 60 feet and 100 feet respectively.

Strength

The existing pavement strength is 60,000 pounds dual-wheel gross for Runway 17-35 and 12,000 pounds single-wheel gross for Runway 10-28. While Runway 17-35 is in good condition, Runway 10-28 is in poor condition and is in need of reconstruction. Runway 17-35 is capable of supporting operations by all based aircraft and the larger business and charter aircraft visiting the airport, but survey comments indicated that many local pilots would use Runway 10-28 if it was in better condition. Additional runway pavement strength to support the use of larger aircraft for charter operations or commercial airline service may be justified as the operations for these aircraft begin to approach 500 per year. In addition, taxiways and designated apron areas must be strengthened sufficiently to support taxiing and parking of these aircraft.

Thresholds

The threshold requirements were previously identified in Section 2.5, Airfield Facilities, under Runways of this report. The only threshold to be relocated was that of Runway 28 for approach slope clearance over the railroad east of the airport.

Runway Protection Zone (RPZ) and Approaches

The purpose of Runway Protection Zones is to protect the people and property on the ground beyond the runway ends. Recent changes in regards to roads and obstructions within an RPZ clearly state that no new roads or objects are permitted within the RPZ boundary and removal or relocation of existing roads and objects in RPZs is a high priority. It further encourages that the RPZ be owned by the Airport sponsor.

Much of the property within the Runway 10 and 28 RPZs is currently owned by the Airport. The Airport controls development in the remaining areas through avigation easements. For Runway 17-35, the Airport owns approximately half of the Runway 17 RPZ north of 4200 North road. Avigation easements are held for the remainder of the Runway 17 RPZ. For Runway 35, the Airport does not own any of the RPZ south of Airport Road but does hold avigation easements for those properties. The financial plan for the Airport should include acquisition of the portions of RPZ not currently owned by the Airport. Priority should be given to acquisition of property in the Runway 35 RPZ as this area is likely to undergo future development first.

Crosswind Runway

The Logan-Cache Airport has a north-south runway as well as an east-west runway, which provides nearly 98% wind coverage. At one time, the Airport had another east-west runway, but this has been closed. The current runway configuration is adequate for accommodating crosswind operations.

Helicopter Operations

There are currently 4 based helicopters at the airport. There are no FAA-approved helicopter approaches to the airport, and no strictly defined helicopter landing procedures are in use. The helicopters typically park on the aprons adjacent to the hangars in which they are stored. The number of helicopters based at the airport is forecast to increase to 6 within 20 years. Improvements should be considered for accommodating increased helicopter operations such as a designated helipad and helicopter approach and operations procedures.

Taxiways and Taxilanes

All taxiways in use at the airport are 50 feet wide, with the exception of Taxiway A at 75 feet wide. These widths are sufficient to meet current and forecast needs. The centerline-to-centerline separation for Runway 17-35 and Taxiway B is 400 feet, exceeding the required separation of 300 feet for ARC C-II and meeting the required separation for ARC C-III. This taxiway separation is sufficient to meet forecast future demand.

The centerline-to-centerline separation for Runway 10-28 and Taxiway C is 525 feet, far exceeding the required separation of 150 feet for its current designation of ARC B-I (small). Taxiway C is in poor condition and is in need of reconstruction. During reconstruction, it can be relocated to a separation of 240 feet or 300 feet and meet the requirements for ARC B-II or B-III respectively. Such relocation would allow additional apron development along the current flight line, while separating taxiway and apron pavements. Taxiway C should also be extended to Taxiway B to provide better separation from apron areas.

Taxiway A, located along the east edge of the main aircraft apron, is in poor condition and should be reconstructed. Limiting operations to small aircraft only, after an extension of Taxiway C, will improve safety in adjacent ramp areas.

Additional taxiway pavement strength to support the use of larger aircraft for charter operations or commercial airline service may be justified, as the operations for these aircraft begin to approach 500 per year.

Hangar taxilanes are adequate to serve existing hangars. Additional robust taxilanes should be constructed as new hangar development occurs.

Aprons and Other Airfield Pavements

The apron pavements on the airport are currently in fair to good condition based on the 2006 UDOT Pavement Condition Index survey and they are adequate to meet the needs along the flight line. Additional apron space is required to serve new hangar development south of FL-14 . Additional apron pavement strength and a designated apron parking area to support the use of larger aircraft for charter operations or commercial airline service may be justified as the operations for these aircraft begin to approach 500 per year.

A designated helipad should also be considered to increase operational safety and further accommodate this growing aviation segment.

Objects Affecting Navigable Airspace (Part 77)

The FAA Federal Aviation Regulation (FAR) Part 77, "Objects Affecting Navigable Airspace," apply to existing and manmade objects. These guidelines define the critical areas in the vicinity of airports that should be kept free of obstructions. Currently, there are no obstructions within the navigable airspace of the airport for Runway 10-28. For Runway 17, the Part 77 airspace requirements are more restrictive. The 50:1 approach surface slope is penetrated by 24.2 feet to the east of the runway by the railroad track with a 23-foot object height. It is also penetrated to the north of the runway, ranging from 4.3 to 10.2 feet, by 4200 North Street with a 15-foot object height. The Airport is currently working to address potential Runway 17 airspace penetrations that may occur during IFR conditions. A solution being considered uses a gate system, similar to railroad crossing arms that will be tied to the lighting and communications system and will restrict vehicle traffic on 4200 North during actual instrument approaches.

Airport Navigational Aids (NAVAIDs)

Navigational aids and landing aids are sufficient at this time for Runway 17-35. There are no visual or instrument NAVAIDs for Runway 10-28.

Lighting, Signing, and Marking

Runway 17-35, along with its associated taxiway system, has adequate lighting, signing, and markings. Runway 10-28 does not have runway lighting, and is marked as a Visual Runway.

Approach Procedures

Runways 17 and 35 have published RNAV (GPS) approaches and Runway 17 has a precision ILS approach. Approaches to Runways 10 and 28 are visual only. A WAAS-aided GPS approach should be established for Runway 35 to provide a cost-effective precision instrument approach alternative for wind conditions that favor that landing direction.

A designated helicopter approach procedure should also be considered to increase operational safety and further accommodate this growing aviation segment.

5.4 Landside Facilities

Hangars

As previously discussed, the current based aircraft count is 125. There are approximately 110 aircraft stored in the airport's 67 hangar buildings of various sizes, an occupancy rate of 95-100%. There are approximately 15 small airplanes being stored at tie-downs. Some of the owners would prefer they be stored in hangars and the airport maintains a waiting list of potential tenants willing to relocate their aircraft to Logan if space is available. Current forecasts for based aircraft indicate an additional 70 aircraft in the next 20 years.

Based on the assumption that most aircraft owners would prefer to store airplanes in hangars, there will be a need for additional space in the next 20 years to accommodate approximately 65-70 planes of various sizes. Therefore, additional space for these aircraft will be needed to store the anticipated increase in based aircraft as well as some currently stored at tie-downs.

Several new hangars have been constructed in the last year and additional hangars are proposed for construction. Proposed buildings include a new T-hangar building and a large corporate hangar. Together, these buildings will be able to house 10-15 aircraft. There is ample space available around the airport to construct additional hangars and airport support buildings.

Tie-Downs

There are currently 54 tie-down spaces located in two general areas of the Airport for small aircraft. The existing tie-down space appears adequate. These tie-downs are recommended to remain in place for use by transient aircraft, sport aircraft activities and periodic fly-in events.

Airport Access and Vehicle Parking

Access to the airport from Logan City is west along 2500 North Street (Airport Road) along the southern boundary of the airport from SR 91 that runs north and south through the City. A paved access road leads into the airport from 2500 North Street. There are a series of paved roads throughout the developed area of the airport for access to various hangars, aprons, and vehicle parking. Several code-operated gates provide access to the secured areas of the airport for authorized personnel. Several access gates are located around the perimeter of the Airport and are accessible from 2500 North, 2600 North, 3100 North, 3600 North, 4200 North Streets. Additional gates provide access to and from adjacent properties. These gates are secured with keyed locks and are directly accessible only by Airport personnel, utility providers, FAA personnel, and some adjacent property owners. Airport access and roads are sufficient to meet current and forecasted needs.

Vehicle parking is provided throughout the hangar area. For most large hangars, parking is provided adjacent to the building on the land side. Parking is also available adjacent to medium and small hangars but these locations are inside the perimeter security fence. Finally, parking lots are provided between the two FBOs and adjacent to the USU classroom facility. Parking is currently adequate to meet airport needs but should be expanded as operations grow and new hangar areas are developed. New parking should be provided outside the secured area of the airport whenever possible.

Fencing

The current wildlife perimeter fencing is adequate for now and surrounds the entire airport. It is in good condition and has ample manual access gates. In addition, internal chain link security fencing with both manual and automatic gates separates the landside from the secured airside operations portions of the developed hangar area of the Airport. This chain-link fencing should be adjusted and expanded to encompass new hangar areas as they are developed.

Aircraft Rescue and Fire Fighting (ARFF)

There is a single 1977 ARFF vehicle at the Airport that is stored in the airport manager's hangar. The recent Part 139 inspection recommended that the airport acquire a new ARFF truck within the next 2 to 3 years.

Fueling Facilities

Two Fixed Base Operators (FBOs) provide both 100-LL avgas and Jet-A fuel at the airport. These fueling facilities are adequate to meet forecast needs. These facilities may need to be

expanded, however, if charter operations increase significantly, commercial airline operations begin, or if other operations by large aircraft increase demand for fuel.

Fixed Base Operators (FBOs) and Aviation-Related Services

Fixed Base Operator and other aviation-related services at the Airport are adequate to meet forecasted demand. There are no minimum standards for the users.

Utilities and Infrastructure

Utility services are currently adequate to serve potential Airport development near 2500 North Street. As the existing hangar area is built out and development moves to other areas, additional infrastructure will be needed to serve additional hangars and possible future construction of light industrial sites. Coordination of the utilities to serve additional development areas with utility providers should be incorporated into the Master Planning effort.

Property and Easements

The airport property is comprised of 700 acres of land owned by the airport with an additional 116 acres held in avigation easements. All of the avigation easements are for land located in the runway protection zones at each runway end. The FAA strongly recommends and encourages that RPZs be owned by the Airport. The current RPZ easement areas should be purchased by the Airport. In addition, the area between Runway 10 and the old Runway 5 should be purchased for future Airport Operations Area (AOA). Several parcels on the northwest side of Runway 17-35 have also been identified for future acquisition.

5.5 Summary of Airport Facility Needs

The following is a summary of key airside and landside facility needs:

Runways

- RPZ Protection - Continued acquisition of the Runway Protection Zone (RPZ) should be a priority. Ownership of the Runway 35 RPZ on the south side of Airport Road will prevent future development on those properties that may be incompatible with the airport. Likewise, ownership of the Runway 17 RPZ on the north side of 4200 North will protect that area and the critical precision instrument approach to the airport. Full ownership of the Runway 10 RPZ should be pursued as funding allows.
- Reconstruct Runway 10-28 – This runway is in poor condition and must be reconstructed to continue as a useful crosswind runway. The airport is working with the FAA to adjust the MALSR approach listing.

Taxiways/Taxilanes

- Reconstruct Taxiway C – This taxiway is in poor condition and must be reconstructed to continue to serve Runway 10-28. Relocating the taxiway could allow for future apron expansions and will increase safety by separating the taxiway from the flight line. An extension to Taxiway B will also increase safety by providing access from the hangars along the Runway 10-28 flight to Runway 17-35 without the need to taxi near the apron on Taxiway A.
- Reconstruct Taxiway A – This taxiway is in poor condition and must be reconstructed.
- Hangar Taxilane Construction – Additional hangar taxilanes must be constructed as new hangars are constructed.

Approach Protection (Part 77)

- Protect Runway 17 Approach – The current gate system proposal, or alternative measures to protect the precision approach to Runway 17 must be implemented.

Approach Procedures

- WAAS Approach Procedure – A WAAS-aided GPS approach should be established for Runway 35 to provide a cost-effective precision instrument approach alternative for wind conditions that favor that landing direction.
- Helicopter Approach Procedure - Helicopter approach and operations procedures should be considered to increase operational safety and further accommodate this growing aviation segment.

Vehicle Parking

- Vehicle parking areas should be expanded as hangar development occurs.

ARFF

- A new ARFF vehicle should be purchased within 2 to 3 years to insure compliance with charter operations regulations.

Hangars and Tie-Downs

- Table 23 provides the short- and long-term needs for hangars and tie-down spaces:

Table 23. Airport Design Standards Evaluation

	Existing	2019 Needs	2029 Needs
Hangars	110 Spaces	25 Additional Spaces	55 Additional Spaces
Tie-Downs	54 Spaces (15 in use)	No Additional Spaces Needed*	No Additional Spaces Needed*

** May need to be relocated, depending on development alternative selected.*

5.6 Public, Users, and Operators Needs

During the course of evaluating the facility needs (both airside and landside), interviews with the adjacent property owners, users and operators have been conducted to identify their issues and concerns about the airport. Additionally, an area-wide survey was distributed for input from users and businesses to gauge their perception of needs at the airport and their intended future use of the airport. These have been conducted in addition to information provided by the Technical Advisory Committee. Results of these interviews and surveys are included in the Appendix.

A summary of the key issues and needs are presented herein:

- Provide for a designated recreational and sport aviation area.
- Consider separating commercial from the general aviation.
- Consider a direct connection from 1000 West into the airport. 1000 West is expected to be improved.
- What should be done with the East Side development area between the airport and SR 91?
- Consider the future alignment of an arterial, 1400 West, planned for west of the airport.
- Address issues with farm access to the north of the airport. Some accesses have been cutoff due to the extension of the runway.

- Develop a Gateway to the airport from SR 91.
- Long term considerations in planning:
    - Parallel runway.
    - Terminal/parking.
    - Instrument approach to Runway 35.
    - Air Traffic Control Tower.
- Heightened security considerations.
- Set aside area for future cargo/manufacturing facilities.