PAGE MUNICIPAL AIRPORT

MASTER PLAN UPDATE

2000-2020

Facility Requirements

CHAPTER 4 FACILITY REQUIREMENTS

4.1 INTRODUCTION

This chapter summarizes the results of the master plan's facility requirements task for the various airport components under two major categories: 1) airside, and 2) landside. These facility requirements are presented in three phases. Development phasing is based on the need to maintain minimum airport standards, satisfy projected aviation demand, and programmatically finance the development. The following three phases are used for this plan.

Phase I	Current-2005
Phase II	2006-2010
Phase III	2011-2020

Established planning criteria have been applied to the various demand parameters to determine the specific facility requirements for both airside and landside elements of the airport. This task serves to:

- Determine whether the existing airside and landside facilities at Page Municipal Airport can accommodate the forecast demand levels presented in the previous chapter and quantify the shortfalls.
- Translate the capacity shortfalls into specific airport development needs through the planning year 2020; and define other requirements relating to meeting FAA airport design standards.

A brief summary of both airside and landside facility requirements for Page Municipal Airport are presented here with a detailed discussion for each that follows.

Airside

- During Phase I and II, Runway 15-33 is defined as a B-II runway serving large (greater than 12,500 lbs.) aircraft. During Phase III, C-II is the projected design aircraft, which requires increased separations to accommodate larger aircraft.
- Runway 07-25 is defined as a B-II runway serving small (less than 12,500 lbs.) aircraft through the planning period.
- Airfield operational capacity is more than adequate to accommodate demand throughout the planning period (2020) and beyond.
- Wind data reveals that each individual runway has greater than 95 percent wind coverage.
- Runway 15-33 should be extended to 5,950 feet during Phase I to accommodate 100% of small aircraft operations, and to 6,620 feet during Phase III to accommodate increasing C-II aircraft operations. The gradient on both runways meets FAA standards.
- Future Runway 15 runway protection zone (RPZ) extends beyond airport property and over the Glen Canyon National Recreation area.
- Existing parallel and connecting taxiway dimensions and separations are adequate.
- Approach Category C (during Phase III) requires a runway-to-aircraft parking apron separation of 400 feet, an increase over the existing separation of 343 feet.

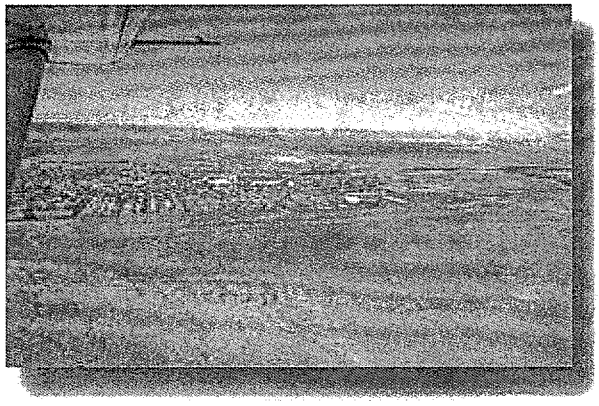
- During Phases I and II, aircraft parking capacity is adequate. However, expansion is required during Phase III to meet projected aviation demand. Commuter service staging and parking adjacent to the current terminal building is adequate through the planning period.
- Helicopter facilities are adequate through Phases I and II of the planning period. However, the existing landing pads should be upgraded to meet FAA heliport design standards. A total of two additional helicopter parking spaces for staging and/or transient helicopters will be needed during Phase III. However, the fixed wing and rotorcraft conflicts dictate that this be resolved.
- All airfield pavement strengths are adequate to accommodate projected aircraft fleet mix through 2020 and beyond. However, a maintenance program should be established.
- Airfield signage is adequate and meets FAA standards.
- The current airfield lighting system is inadequate. Current Medium Intensity Runway Lighting (MIRL) System needs upgrading with new conduits and electrical lines to maintain system's integrity during low light or visibility conditions. Moreover, additional apron lights should be installed within secured areas, as needed.
- Additional security measures (Part 107) will be necessary as commuter service destinations change.
- The airport does not require an air traffic control tower during the planning period. Forecast annual operations are well below the minimum 200,000 operations threshold to qualify for a FAA-supported control tower.
- There are no airspace conflicts with other facilities or Military Operating Areas (MOAs) in the vicinity of the airport.

Landside

- The terminal facility size is adequate to accommodate demand throughout the planning period. However, specific terminal functions require additional space during Phase III. This can be accommodated through an internal reconfiguration/redistribution of space in the terminal, as needed.
- Approximately 16 additional hangars/storage facilities are required by the end of the planning period to accommodate growth in privately owned general aviation based aircraft.
- The primary airport access roadways are adequate, based on designed roadway width and speed limit, to accommodate the existing airport traffic. Additional directional signage is an alternative to channeling and segregating airport traffic if the need arises. Currently off-airport signage is adequate.
- An estimated 16 additional parking spaces are currently needed in the primary auto parking area to support terminal and adjacent facilities. By 2020, a total of 133 additional spaces will be required.

4.2 AIRSIDE

Photo by Ed Huber from Mountain Pilot Magazine



Airside facility requirements presented in this section include runways, taxiways, aircraft apron, helicopter facilities, airfield pavement, navigation aids, visual aids, marking, signage, airfield security, automated weather reporting system, air traffic control tower, and airspace.

4.2.1 Runway Demand/Capacity

The capacity of the runway system to accommodate existing and forecast demand is determined by various statistical measurements. Standard techniques for producing these measurements are derived from FAA Airport Capacity and Delay (Advisory Circular 150/5060-5) to include:

- Hourly Capacity: The maximum number of aircraft operations that can occur on a runway system in a particular hour under two operating scenarios -- visual flight conditions and instrument flight conditions.
- Weighted Hourly Capacity: Average of hourly capacities for various runway use scenarios weighted according to percentage of use.
- Annual Service Volume (ASV): The number of annual aircraft operations that can be accommodated on a runway system under a full range of airport operating conditions that would be encountered over a year's time.
- Aircraft Delay: The average amount of time aircraft will be delayed as a result of a demand/capacity deficit, expressed in minutes per operation or annual hours.

The capacity of an airport is affected by several factors including meteorological conditions, aircraft mix, runway use, percent arrivals, percent touch and gos, and exit taxiway locations. Each factor considered in the capacity analysis is described here.

METEOROLOGICAL CONDITIONS can have a significant affect on airfield capacity. As weather conditions deteriorate, the spacing of aircraft must increase to provide an additional margin of safety. This consequently reduces overall airfield capacity.

There are three categories of meteorological conditions each defined by the reported cloud ceiling and flight visibility. They are as follows:

- **Visual Flight Rules (VFR)** conditions exist whenever the cloud ceiling is greater than 1,000 feet above ground level and visibility is greater than three statute miles.
- **Instrument Flight Rules (IFR)** conditions exist when the reported ceiling is less than 1,000 feet above ground level and/or visibility is less than three statute miles.

- **Poor Visibility Conditions (PVC)** exist when the cloud ceiling and/or visibility are less than prescribed by the instrument approach procedures for the airport. Because it is below minimums, the airport is essentially closed to arrivals during PVC conditions.

According to weather observation data from Page Municipal Airport[1], VFR conditions prevail approximately 98 percent of the time, whereas IFR conditions occur two percent of the time, and PVC is negligible for this analysis.

AIRCRAFT MIX refers to the speed, size and flight characteristics of aircraft operating at the Page Municipal Airport. There are four aircraft classes, A, B, C, and D. Classes A and B consist of single and multi-engine aircraft weighing less than 12,500 pounds. Aircraft within these classifications are primarily associated with general aviation operations, but do include some turboprop and jet aircraft (e.g. Cessna Citation and Beechcraft King Air). Class C consists of multi-engine aircraft weighing between 12,500 and 300,000 pounds. This classification includes jets, turboprops and some large commercial airline aircraft (e.g. Gulfstream and Challenger). Class D includes all aircraft over 300,000 pounds and includes wide-bodied and jumbo jets.

As the percentage of large aircraft operating at an airport increases, airfield capacity begins to diminish. This is due to larger separation distances that must be maintained between aircraft of different speeds and sizes.

For the capacity analysis, the percentage of Class C and D aircraft operating at the Page Airport is used to determine the annual service volume. Consistent with projections prepared in the previous Forecast Chapter, the operational fleet mix at the airport is expected to maintain approximately one percent of Class C aircraft through the planning period. Class D aircraft are not anticipated to operate at Page within the planning period.

RUNWAY USE is normally dictated by wind conditions. The speed and direction of the wind determine the direction of takeoff and landing. It is generally safest for aircraft to takeoff and land into the wind, avoiding crosswind (wind that is blowing perpendicular to the travel of the aircraft) or tailwind components during these operations. Page Municipal Airport's noise abatement procedures recommend, when winds permit, that aircraft takeoff and land on Runway 33 end. Further, the procedures call for right traffic on Runways 25 and 33. The use of Runway 07-25 is recommended only during extremely high crosswinds. Most pilots prefer to land on Runway 15 and fly short patterns (1 mile or less).

THE PERCENTAGE OF ARRIVALS as they relate to the total operations in the design hour is important in determining airfield capacity. For Page, it is assumed that 50 percent of operations are arrivals.

A TOUCH-AND-GO OPERATION involves an aircraft making a landing and an immediate takeoff without coming to a full stop or exiting the runway. These operations are normally associated with training operations and are typically included in local operations data recorded by staff. Touch-and-go operations currently account for approximately one percent of annual operations. According to the operations forecast, this percentage is anticipated to remain constant through the planning period.

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[1] *Western Regional Climate Center, January 2000 (Year 1999 Data)*

EXIT TAXIWAYS have a significant impact on airfield capacity since the number and location of exits directly determines the occupancy time of an aircraft on the runway. Both runways have a sufficient number of properly located exits minimizing runway occupancy times.

Annual Service Volume (ASV)

According to the 1995 State Aviation Needs Study (SANS), the existing annual service volume (ASV) for Page Municipal is estimated at 294,600 operations (pg. 3-19). In comparison, FAA's Airport Design Program, version 4.2D, reflects an estimated ASV of 200,000 operations for an airport configuration similar to Page. This capacity analysis used the lower ASV of 200,000 for Page.

With 1998 operations near 58,000, the airport is currently at 30 percent of its annual service volume. In 2020, annual operations are forecast to reach over 84,000 operations, approximately 43 percent of the airport's ASV.

Table 4-1 compares forecast demand to ASV Page Municipal Airport. As shown, the runway system capacity is more than adequate to meet demand projected throughout the planning period.

Table 4-1 Forecast Demand vs. Annual Service Volume (ASV)

Year	Annual Operations	Annual Service Volume (ASV)	Percent Capacity
1998	57,919	200,000	30%
2000	39,507	200,000	20%
2005	48,190	200,000	25%
2010	57,971	200,000	30%
2020	84,150	200,000	43%

Sources: FAA Airport Design Program, version 4.2D, and Stantec Forecasts.

FAA Order 5090.3B indicates that improvements for airfield capacity purposes should be considered once operations reach 60 percent of the annual service volume. While forecast operations continue to grow, the ASV for Page is not anticipated to reach 60 percent through the planning period.

Hourly Runway Capacity

The percentage use of each runway, the amount of touch-and-go activity and the number and location of runway exits play an important role in determining the hourly capacity of each runway. The existing maximum hourly capacity during VFR conditions totals 77 operations, while IFR operations totals 57 operations. **Table 4-2** compares projected peak hour demand to capacity through the planning period.

Table 4-2 Forecast Demand vs. Hourly Capacity

Year	Peak Hour Demand	Hourly Capacity		Percent of Capacity	
		VFR	IFR	VFR	IFR
1998	34	77	57	44%	60%
2000	23	77	57	30%	40%
2005	28	77	57	36%	49%
2010	34	77	57	44%	60%
2020	49	77	57	63%	86%

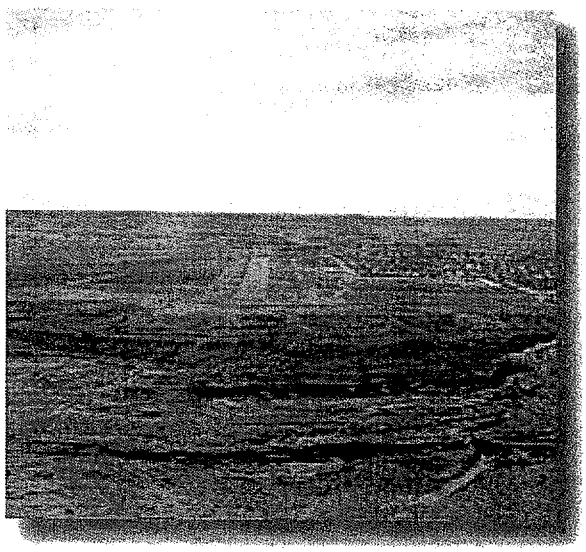
Sources: FAA Airport Design Program, version 4.2D, and Stantec Forecasts.

As shown, the maximum hourly capacity of the current runway system under VFR and IFR conditions will remain the same through the planning period. The capacity remains relatively constant due to the small percentage of Class C aircraft (which require longer utilization of the runway and greater separation) anticipated through the planning period. In 2020, peak hour demand will reach 63 percent of VFR capacity and 86 percent of IFR capacity.

Delay

As the number of annual aircraft operations approaches the airfield's capacity, increasing delay occurs. Delays occur to arriving and departing aircraft in all weather conditions. Current annual delay is 12 minutes. As the airport's operations increase, delay increases exponentially. In 2020, the annual delay increases to 34 minutes. This level of delay is insignificant and indicates that Page Municipal Airport has adequate airfield capacity.

Photo by Ed Huber for Mountain Pilot Magazine



4.2.2 Runways

Runway Orientation/Wind Coverage

As described in Chapter 2, Inventory, Runways 15-33 and 07-25 have a combined wind coverage of approximately 99 percent at both 12 MPH and 15 MPH. Further, each runway has more than 95% coverage alone. For airports, like Page, it may be a factor in determining to what extent an existing crosswind should be maintained.

According to airport staff, the crosswind runway plays an important part in supporting airport operations regardless of the fact that both runways provide over 95 percent wind coverage (FAA threshold for determining crosswind runway need).

Further, airport staff noted that there have been 11 reported accidents within the last five years in which one-third were related to high crosswind components (10 knots or more). Therefore, crosswind Runway 07-25 serves as a safe alternative for small aircraft operations during high crosswind conditions at Page.

Runway Length

Runway length requirements for Page Municipal airport are based on several factors:

- Critical aircraft type expected to use the airport
- Stage length of the longest nonstop trip
- Mean maximum daily temperature of the hottest month
- Runway gradient
- Airport elevation

As discussed previously, the existing fleet mix indicates that the Jetstream (B-II) currently represents the critical aircraft for runway length at Page. Since aircraft performance declines as the temperature, airport elevation and runway gradient increase, runway length requirements increase. The airport's mean maximum temperature of the hottest month (July) is 97 degrees Fahrenheit. The airport elevation is 4,319 feet above mean sea level (MSL) and effective runway gradient for Runway 15-33 is 1.23 percent and Runway 07-25 is 0.14 percent. The FAA Airport Design Model is used in the runway length analysis. Results for Page are reflected in **Table 4-3.**

Table 4-3 FAA Computer Model - Runway Length Requirements for Page

AIRPORT AND RUNWAY DATA	
Airport elevation	4,319 feet
Mean daily maximum temperature of the hottest month	97.00 F.
Maximum difference in runway centerline elevation	67 feet
Length of haul for airplanes of more than 60,000 pounds	500 miles
Dry runways	
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
➢ Small airplanes with approach speeds of less than 30 knots	430 feet
➢ Small airplanes with approach speeds of less than 50 knots	1,150 feet
Small airplanes with less than 10 passenger seats	
➢ **75 percent of these small airplanes**	**4,300 feet**
➢ 95 percent of these small airplanes	5,650 feet
➢ **100 percent of these small airplanes**	**5,950 feet**
Small airplanes with 10 or more passenger seats	5,950 feet
Large airplanes of 60,000 pounds or less	
➢ **75 percent of these large airplanes at 60 percent useful load**	**6,620 feet**
➢ 75 percent of these large airplanes at 90 percent useful load	8,650 feet
➢ 100 percent of these large airplanes at 60 percent useful load	10,520 feet
➢ 100 percent of these large airplanes at 90 percent useful load	11,050 feet
➢ Airplanes of more than 60,000 pounds . . . . . Approximately	6,530 feet
REFERENCE: Chapter 2 of AC 150/5325-4A, Runway Length Requirements for Airport Design, no changes included.	

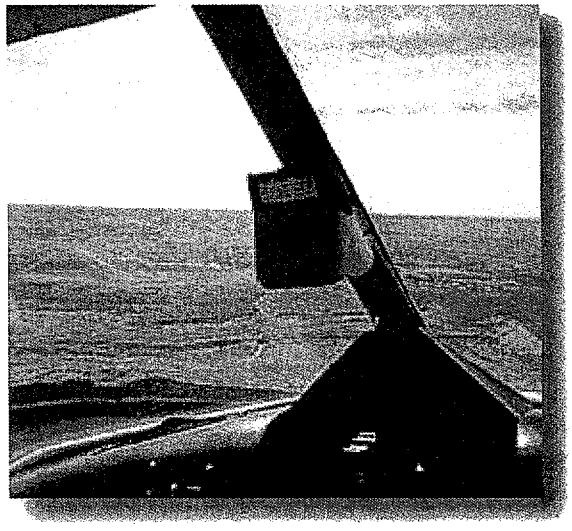
Note: **Bold italicized data** *represents key lengths for runways at Page.*

According to the table, primary Runway 15-33 at 5,499 feet can accommodate more than "*75 percent of small airplanes with less than 10 passenger seats, but less than 95 percent*" of the same fleet. This runway length is adequate to accommodate a number of small B-II aircraft at

Page. However, a length of 5,950 feet is required to accommodate 100 percent of the small aircraft fleet. Since the airport is currently serving both small (less than 12,500 lbs) and some large (greater than 12,500 lbs) aircraft, a runway extension to 5,950 feet is recommended during Phase I of the planning period.

C-II aircraft operations are projected to grow to more than 500 annual operations in Phase III of the planning period. Based on this level of activity, it is recommended that Runway 15-33 be extended to 6,620 feet during Phase III to accommodate larger aircraft such as the Gulfstream and Challenger.

Photo by Ed Huber for Mountain Pilot Magazine



As shown in Table 4-3, Runway 7-25 at an actual length of 2,200 feet can accommodate *small aircraft with approach speeds less than 50 knots.* Since the primary runway has 95 percent wind coverage, an extension of the crosswind runway is not required.

Runway Dimensions

In addition to runway capacity and delay measurements, it is important to determine whether the runway dimensions (width and clearances) are adequate to serve the type of aircraft operating at Page. These dimensional standards vary depending upon the approach category and design group for each runway. **Table 4-4** summarizes standards for B-II and C-II aircraft operating and forecast to operate at Page Municipal Airport. Furthermore, the airport serves some C-II aircraft traffic now and anticipates that this activity will grow beyond 500 annual operations during Phase III. This dictates that design standards be upgraded from B-II to C-II in Phase III. Table 4-4 summarizes the design standards for both B-II and C-II.

Some of the terms presented in Table 4-4 are defined (using FAA guidance) as follows:

Runway Widths: Runway 15-33 is defined as serving both small and large aircraft (greater than 12,500 lbs.) and crosswind Runway 07-25 is defined as serving primarily small aircraft. Both runways were reviewed with respect to previously discussed aircraft forecast to operate at the Page Municipal Airport that fall primarily within the B-II and C-II classification. Through this analysis, the current runway widths are adequate through the master planning period.

Visibility Minimums: Visibility required before executing an approach to the designated runway. For Page, Runway 15-33 has a VOR-DME and GPS approach with visibility minimums not lower than one mile. For planning purposes, Page is projected (year 2020 and beyond) to have an instrument approach to Runway 15-33 for C-II aircraft with visibility minimums of not lower than ¾ mile. However, an airspace analysis (through FAA) is required to determine if this is possible.

Table 4-4 Design Standards

Aircraft Type Served:	B-II		C-II	
Visibility Minimums:	Visual and not lower than ¾-mile	Lower than ¾-mile	Visual and not lower than ¾-mile	Lower than ¾-mile
Runway width	75	100	100	100
Runway Safety Area width	150	300	500	
Runway Safety Area length[1]	300	600	1,000	
Runway Object Free Area width	500	800	800	
Runway Object Free Area length[1]	300	600	1,000	
Runway to Taxiway separation	240	300	300	400
Runway to Parking Area Separation	250	400	400	500
Runway Protection Zone dimensions	1,000x250x450[2] 1,000x500x700[3] 1,700x1,000x1,510[4]	2,500x1,000x1,750	1,700x500x1,010[3] 1,700x1,000x1,510[4]	2,500x1,000x1,750

[1]*Beyond runway end.* [2]*Serving small aircraft.* [3]*Visual and* not lower than 1 mile. [4]Not lower than ¾-mile.
Note: All dimensions shown in feet. Source: FAA AC 150/5300-13

Runway Safety Area (RSA): The purpose of the RSA is to enhance the safety of aircraft which overshoot, undershoot, or veer off the runway. The RSA also provides greater accessibility for firefighting and rescue equipment during such incidents. The RSA is an area (cleared and graded) centered about the runway centerline for the full length of the runway plus an extended distance off each runway end. The width and length off each runway end is a function of the type of aircraft and approach visibility minimums associated with the runway.

Runway Object Free Area (ROFA): The purpose of the OFA is to maintain a clear area (beyond that required by the RSA) surrounding the runway. The OFA does not have a grading requirement like the RSA, but no object can protrude above ground level within its boundary. The OFA is an area centered about the runway centerline for the full length of the runway plus an extended distance off each runway end. The width and length off each runway end is a function of the type of aircraft and approach visibility minimums associated with the runway.

Runway Protection Zone (RPZ): The function of the RPZ is to enhance the protection of people and property on the ground. The RPZ is an area (trapezoidal in shape) centered about the extended runway centerline and beginning 200 feet from the runway end. The size of the RPZ is a function of the type of aircraft and approach visibility minimums associated with the runway end. FAA desires that all objects are clear of the RPZ, but some uses (under certain conditions) are permitted. See the Airport Plans Chapter for an illustration of the RPZ located off each runway end at Page.

Summary of Runway Dimensional Requirements

Primary Runway 15-33 and crosswind Runway 07-25 are both considered adequate in width to meet projected demand through the planning period. However, Runway 15-33 should be extended to 5,950 feet during Phase I to accommodate existing aircraft operations and to 6,620 feet in Phase III to accommodate projected C-II aircraft operations. Existing object free areas (OFA) for both runways are contained within airport property as required by FAA guidelines. Portions of the future runway protection zones (RPZs) for Runway 15-33 extend beyond the airport property. According to FAA standards, RPZs should be fully controlled by the airport owner. Therefore, it is recommended that avigation easements, at a minimum, be acquired for these RPZ portions located off airport.

Although Crosswind Runway 7-25's OFA is located on airport, the RPZ for Runway 7 is outside the airport boundary. In a separate study, the City evaluated this issue and is currently planning to displace the Runway 7 threshold (588') to accommodate the RPZ within the airport boundary.

4.2.3 Parallel Taxiways

Taxiways are constructed primarily to facilitate aircraft movements to and from the runway system. As detailed in the Inventory Chapter, Runway 15-33 is served by a full-length parallel taxiway (Taxiway A). Any future runway extension should include the extension of the parallel taxiway. Crosswind Runway 07-25 does not have a parallel taxiway, however its access to Taxiway A adequately serves the needs based on the low level of usage.

Separation

The parallel taxiway for Runway 15/33 is 300 feet from runway centerline. The 300-foot separation meets the requirement for existing and forecast operations at the airport through the planning period.

Exit Taxiway Locations

Acute angle, or high-speed, exits provide aircraft with an opportunity to clear the runway faster, thus increasing airfield efficiency. According to FAA Advisory Circular 150/5300-13, Appendix 9, acute angle exits located 2,000 to 3,000 feet from the runway threshold would be optimum for use by the single engine aircraft that dominates activity at Page Municipal Airport. The current high-speed exits located approximately 3,000 feet from Runway 15 end are ideal for use by single- and twin-engine aircraft.

Exit Taxiway Dimensions

Runway 15-33 has five (5) connecting taxiway exits, three are 40 feet wide and two are 75 feet wide. These widths exceed the minimum 35-foot FAA requirement for Design Group II aircraft operations. According to standards, the existing Taxiway A including width and separation is adequate to accommodate demand through the planning period.

4.2.4 Airfield Pavement

Airfield pavements (including runways, taxiways, and aircraft aprons) are measured by their ability to accommodate the load of specific aircraft types at a design volume of traffic as well as by its condition.

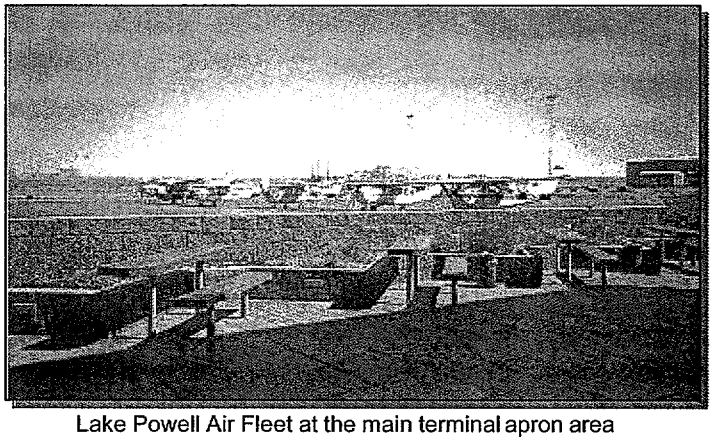
The primary Runway 15-33 pavement strength is rated @ 65,000 lbs. SWL (90,000 lbs. DWL). This is adequate to accommodate the forecast aircraft fleet mix and is in fair condition. The crosswind Runway 07-25 has a non-rated weight bearing capacity because it has a gravel surface. Since, the primary runway is used by 99 percent of the airport's operational fleet mix, the crosswind runway is necessary primarily for small aircraft weighing less than 12,500 pounds during high crosswind conditions. Thus, the current design strength for the crosswind runway is adequate for the planning period. However, there have been a number of complaints from users regarding damage caused by gravel when the crosswind runway is used. Further, airport staff have indicated that many aircraft users have, on occasion, used the primary runway in lieu of the crosswind runway during high crosswinds to specifically avoid gravel damage to their aircraft. Therefore, it is recommended that Crosswind Runway 07-25 be paved with 12,500 lbs. SWL weight bearing capacity to alleviate this problem.

The following summarizes the current pavement strengths for the airfield:

Runway 15-33	90,000 lbs. DWL
Runway 07-25	12,500 lbs. SWL
Taxiways A	90,000 lbs. DWL
Main Apron (Terminal)	Varies
Secondary Apron	12,500 lbs. SWL
Helipads	Not available

The current airfield pavement strengths accommodate regular use by aircraft weighing less than 65,000 lbs. This is more than adequate to meet the airport's current needs since the majority of aircraft (Jetstreams, Caravans, and King Airs) weigh less than 15,000 lbs. Based on aircraft projected to operate at Page through 2020, all pavement strengths are adequate. However, it is recommended that a maintenance program be established and future pavement preservation projects be included in the airport's CIP every five years.

4.2.5 Aircraft Parking Apron



Lake Powell Air Fleet at the main terminal apron area

Separations

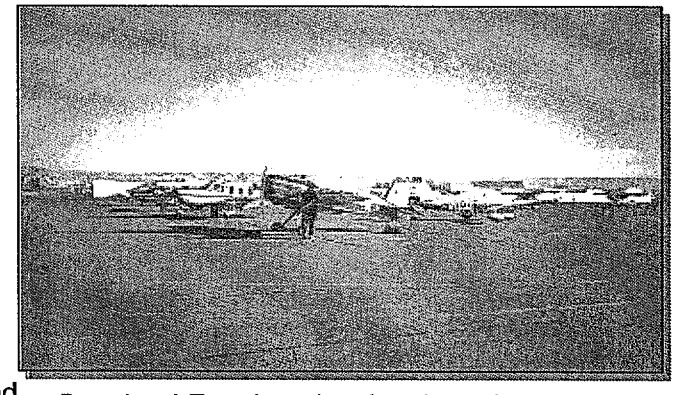
As discussed previously in the Inventory Chapter, there are two aircraft parking areas at the Page Municipal Airport. While, the existing 343-foot runway-to-aircraft parking apron separation is in compliance with FAA standards for approach category B, Phase III activity will require that the approach category C standard of 400 feet be applied. This increased separation will eliminate approximately 16 aircraft parking spaces along the apron edge and should be considered during the identification of physical development alternatives in the next chapter.

Local Apron

According to airport staff and users, approximately 30 percent of based single-engine aircraft and 35 percent of multi-engine aircraft owners prefer hangar storage. Further, all based helicopters are stored in hangars. Therefore, the parking apron is sized to accommodate these demands. For planning purposes, 360 square yards per tiedown is used to estimate the apron area required for based aircraft. These guidelines are applied throughout the planning period.

Transient Apron

Transient aircraft spaces are based on peaking characteristics identified in the previous chapter with additional spaces for periods of parking demand overlap. For Page, it is estimated that 35 percent of operations on an average day in the peak month are conducted by transient aircraft. Further, it is estimated that 45 percent of transient aircraft will park all day. For Page, this translates to an existing total of 71 transient aircraft parking spaces at the same time and increases to 103 aircraft by the year 2020.Therefore, transient parking is calculated to accommodate this scenario. Since a transient apron space serves a larger variety of aircraft, 600 square yards per aircraft space is applied.



Based and Transient aircraft at the main apron area

To accommodate circulation around the apron for taxiing aircraft, an additional 60 percent is added to the aircraft parking area requirements. Apron parking needs through the planning period are summarized in **Table 4-5.**

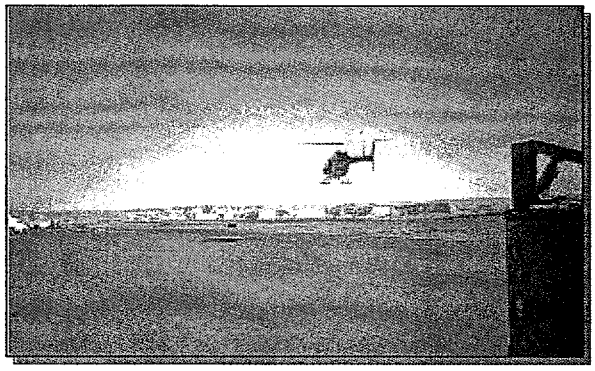
Based on the results, the demand/capacity ratio implies that the existing apron area is adequate through Phase II, but demand exceed capacity during Phase III of the planning period. This translates to a need for approximately 3,000 additional square yards of apron in Phase III.

Table 4-5 Apron Area Demand/Capacity Analysis

Existing Apron Available					
Parking Spaces	**137**				
Terminal (Main) in s.y.	109,202				
Secondary in s.y.	8,228				
TOTAL (in s.y.)	**117,430**				
Elements	1998	2000	2005	2010	2020
Non-Hangared Based Aircraft Spaces	15	16	23	29	38
Area in square yards	5,400	5,760	8,280	10,440	13,680
Transient Aircraft Spaces	71	49	59	71	103
Area in square yards	42,600	29,400	35,400	42,600	61,800
TOTAL Aircraft Spaces (cumulative)	86	65	82	100	141
Total Area in square yards	48,000	35,160	43,680	53,040	75,480
TOTAL apron + 60% circulation	76,800	56,256	69,888	84,864	120,768
Demand/Capacity Ratio	**65%**	**48%**	**60%**	**72%**	**103%**

Notes: Area required is based on the most efficient distribution of parked aircraft.

4.2.6 Helicopter Facilities



Helicopter at Parallel Taxiway A

According to helicopter owners and the FBO, it is anticipated that existing and future helicopters at Page will continue to be housed in hangars. However for safety reasons, helicopter operations should be located in areas outside fixed wing aircraft operation and parking areas. Similar to the runway, a takeoff and landing area should be designated for helicopter operations. This area may also function as staging areas for both based and transient helicopters.

There are four helipads and two helicopter takeoff areas are part of Classic Helicopter's lease. However, the existing helipads, located east of the main apron area, are not within FAA design standards and are not being used. In addition, there are no connectors from the helipads to the apron for staging activity. According to FAA Advisory Circular 150/5390-2A, Heliport Design, the following design standards are recommended for heliports.

- **Final Approach and Takeoff Area (FATO)** area should have an identifiable, object free area available for helicopter landings and takeoffs.
- **Location.** Objects or structures should be outside the FATO to permit at least one clear approach/takeoff path aligned with prevailing winds.
- **Size.** A FATO may have any shape provided that its dimension (i.e. length, width or diameter) is not less than 1.5 times that overall length of the design helicopter.
- **Gradients.** FATO should be graded to provide a smooth surface. To assure drainage, a 0.5 to 2 percent gradient is suggested for any part of a FATO surface on which a helicopter is expected to land.
- **Safety Area.** It is recommended that a safety area width of 1/3 rotor diameter of the design helicopter, but not less than 10 feet (3m). The FATO and safety area should be free of objects such as other helicopters, buildings, fences, etc.
- **Perimeter Lights.** At least three (3) uniformly spaced lights are recommended per side of a square or rectangle FATO. A minimum of eight lights are needed to define a circular FATO. The interval between lights should not exceed 25 feet.
- **Wind Direction Indicator.** A heliport must have at least one wind indicator.
- **Safety.** Provisions should be made to prevent any spilled fuel from collecting in a confined location and/or contaminating a waterway.
- **Security.** The operational areas of a heliport need to be kept free of people, animals, and vehicles.

While the assumption that the existing six (6) helicopter spaces will continue to be privately leased, the existing helicopter landing pads should be upgraded to meet FAA design standards. Based on the tour helicopter forecasts and the previous assumption, two (2) additional helicopter spaces will be required for a total of eight within the planning period.

Transient and other based helicopters operate in the main apron areas and/or in front of hangars. Based on forecast demand, two (2) additional public helipads will be needed to serve other based and transient helicopter operations during the planning period.

4.2.7 Navigational and Visual Aids, Lighting, Marking, and Signage

Navigational and Visual Aids

Airport and runway navigational aids are based on FAA recommendations in DOT/FAA Handbook 7031.3B and FAA Advisory Circular 150/5300-13.

The type, purpose and volume of aviation activity expected at the airport are factors in the determination of the airport's eligibility for navigational aids. The existing navigational and visual aids at Page Municipal airport include a VOR/DME and VASIs. The VOR/DME provides a non-precision approach with horizontal alignment location information. The Visual Approach Slope Indicators (VASIs) provide pilots visual descent information to the runway.

Due to 98 percent VFR weather, Page Municipal Airport's needs for instrument approaches are primarily based upon commuter airline activity.

With the evolution of Global Positioning Systems (GPS), it is likely that Page Municipal Airport will have the opportunity to be served by a standalone GPS instrument approach in the future. Higher minimum approaches may be added to the crosswind runway as long as airfield design standards are met.

Since the existing VOR/DME minimums will be lower at ¾ mile than the GPS system at 1 mile, it is recommended that the VOR/DME approach be used through the planning period until a GPS system can be fully assessed and minimums for a GPS approach can be lowered.

Presently Runway 15-33 is equipped with a four-box VASI system at both ends. The four-box systems are adequate for Approach Category B and Category C aircraft use.

The airport presently has a lighted wind cone and segmented circle, which provides pilots with information about wind conditions and the airport traffic pattern. In addition, the airport beacon assists in identifying the airport from the air at night. These facilities are in good condition and will adequately serve the needs of Page through the planning period.

Lighting

Runway End Identifier Lights (REILs) provide the pilot with a rapid and positive identification of the runway end. The REILs are installed at both ends of Runway 15-33 and are adequate for the planning period.

The Medium Intensity Runway Lighting (MIRL) and Medium Intensity Taxiway Lighting (MITL) systems are not fully operational and are inadequate through the planning period. Additional upgrades in electrical lines and conduits are recommended. Furthermore, when the runway and taxiway is extended, additional lights will be required.

Additional apron lighting is also recommended during the planning period at the Main Apron and Hangar Area to improve security and nighttime line of sight.

Signage and Marking

Airfield signage is located throughout the airfield. This signage meets current FAA standards and is adequate through the planning period.

Runway 15-33 is currently marked for non-precision operations. Ultimately, it is anticipated that these markings will be upgraded to precision approach markings for Runway 15. Non-precision runway markings consist of runway end numerals (to designate direction of landing), centerline markings, and threshold markings. The main differences between non-precision and precision runway markings are additional touchdown zone markings and side stripes on the runway.

The touchdown zone markings identify the touchdown zone for landing operations and are coded to provide distance information, which consist of groups of one, two and three white rectangular bars symmetrically arranged in pairs about the runway centerline.

Side stripes provide a visual contrast between the runway and the surrounding terrain and delineate the width of the paved area that is intended to be used as a runway. These white stripes are continuous along each side of the runway.

4.2.8 Airfield Security

Airside security procedures must be identified as the commuter service based at Page begins serving destination airports with sterile areas. Under FAA Part 107 (Airport Security), an aircraft isolation area should be designated on the airfield in the event of sabotage. FAA regulations mandate at least 328 feet from any other aircraft parking, building, public areas or utilities. Page Municipal Airport's aircraft isolation area is located near Runway 07's displaced threshold.

4.2.9 Automated Weather Report System

The existing Automated Surface Observation System (ASOS), provides continuous weather observations along with standardized visibility and sky condition measurements around the area. The existing ASOS serves the needs of the airport through the planning period.

4.2.10 Airport Traffic Control Tower

Local traffic information is provided by existing UNICOM Communications. This system is adequate and provides aircraft with information to assist in flight operations to and from the airport.

Page does not have an air traffic control tower. According to the Airways Planning Standard Number 1 (APS-1) standard for establishment of a control tower, an airport is eligible for a FAA-supported tower when annual operations reach 200,000. The 2020 forecast of 84,150 annual operations is well below this threshold. A control tower can also be established on a contract basis (private). However, cost and staffing make this an undesirable option for airports similar to Page. Therefore, a control tower is not proposed during the planning period.

4.2.11 Airspace

Airspace in the vicinity of an airport should be clear and free of obstructions, which can be hazardous to aircraft. All future airport improvement projects should ensure that airspace surfaces are not penetrated. Based on projected aviation activity and airport configuration, no airspace conflicts with other facilities will be encountered. Current military operating areas (MOAs) will not impact Page Municipal Airport operations.

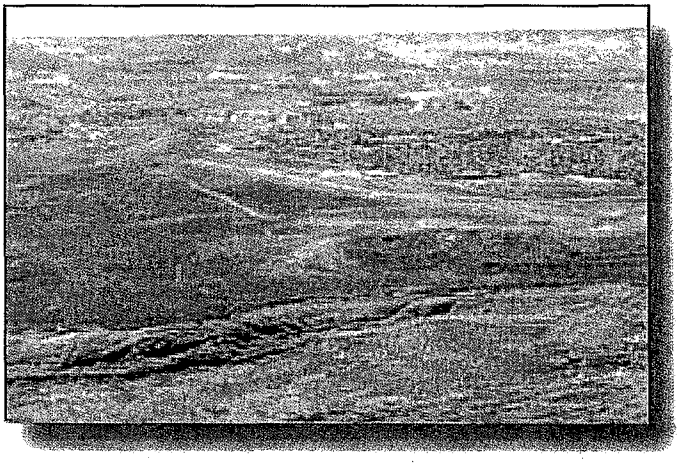


Photo by Ed Huber for Mountain Pilot Magazine

4.3 LANDSIDE

Landside facilities include all components between the airport boundary and the point where passengers interface with the aircraft. The basic components consist of the terminal, ground access, and aviation support facilities.

4.3.1 Terminal Facilities

The purpose of the terminal facility is the transferring of passengers to and from aircraft and various modes of ground transportation in a safe, efficient, and comfortable manner. The process involves systemically moving through primary areas of the terminal, which include the public areas, airline space, concessions, and airport and building service areas.

In Page Municipal Airport, the terminal is located west of the runway and south of the primary tiedown apron. Sunrise Airlines owns the building and operates its scheduled commuter service and aerial tours (d.b.a. Lake Powell Air) from the facility. Inside the building, there is a gift shop and the Avis car rental company.

Public Area

Waiting Area

The waiting area of the terminal facility is located inside and outside the eastern wall of the building. The inside area covers over 800 square feet of space and provides 70 seats. The outside area includes tables and benches and consists of almost 300 square feet of space.

In calculating the facility requirements for the waiting area, ten square feet per peak hour passenger is applied. In addition to passengers from Sunrise Airlines' scheduled commuter and tour operations, pilots/passengers from itinerant general aviation traffic is also factored into the calculation. The terminal is the main facility available to pilots and passengers from itinerant general aviation traffic. **Table 4-6** summarizes the demand/capacity analysis of the waiting area.

Table 4-6 Waiting Area Requirement

Period	Existing (SF)	Demand (SF)	Requirement (SF)
Existing	1,120	430	690 (surplus)
2005	1,120	620	500 (surplus)
2010	1,120	800	320 (surplus)
2020	1,120	1,210	90

Circulation

Circulation facilitates the flow of passengers through the terminal. The purpose is to move passengers through the different terminal facility areas in a simplified and direct manner. The design standard demand of 20 percent of gross terminal area required is used for calculating circulation requirements (see **Table 4-7**).

Table 4-7 Circulation Requirement

Period	Existing (SF)	Demand (SF)	Requirement (SF)
Existing	2,657	682	1,975 (surplus)
2005	2,657	878	1,779 (surplus)
2010	2,657	1,056	1,601 (surplus)
2020	2,657	1,457	1,200 (surplus)

Security Screening Station

Airlines operating under FAR Part 121 or operating into secured facilities are required to screen all passengers prior to boarding the aircraft. Sunrise Airlines currently uses a screening station (approximately 200 square feet) located at the northeast corner of the building, underneath the dispatch area. Commuter flights originating from Page to Las Vegas McCarran Airport require all passengers be screened prior landing at McCarran Airport. This area is adequate through the planning period.

Departure Area

The waiting area mentioned above is currently being used for both arrival and departure traffic, and the requirement to handle the dual traffic was factored into the requirement calculation. However, there is an independent departure area with 23 seats in the northeast corner of the terminal, beyond the security screening station. The purpose of this independent space is to provide a sterile area for passengers processed through the security screening station.

Generally, 100 to 1200 square feet or 20 square feet per seat are needed for a departure area. The existing area is approximately 250 square feet. In calculating the requirement, a 20-square-foot-per-peak-hour enplanement ratio is applied (see **Table 4-8**). This applies only to scheduled enplanements for Sunrise Airlines.

Table 4-8 Departure Area Requirement

Period	Existing (SF)	Demand (SF)	Requirement (SF)
Existing	248	100	148 (surplus)
2005	248	160	88 (surplus)
2010	248	210	38 (surplus)
2020	248	290	42

Restrooms

There are three sets of men and women restrooms and one single restroom in the terminal building. However, only one set of restrooms, located immediately left from the entrance doors, is for public use. The other restrooms are for airline personnel only, and are counted as part of airline office and operational space.

Restroom space requirements are calculated using three square feet per peak hour passenger. Based on this calculation, the existing 387-square foot facility is adequate for the planning period.

Airline Space

Actual airline space requirements are tenant-driven. Therefore, each tenant should be consulted prior to actual design. However, design standards applied here are presented for planning purposes.

Ticket Counter

Ticket counters for both scheduled and tour services are located diagonally left to right towards the departure gate from the terminal building entrance. Only one station, located at the far end, is designated for scheduled passengers. The ticket counter designated for aerial tours is located towards the terminal entrance, separated from the scheduled service station by the rental car counter.

Although Sunrise Airlines operates its tour service independent from its scheduled service, ticket counter space requirements for both services are combined for the purpose of this study. This is based on the rationale that ticket counter space can be used interchangeably, if necessary.

Ticket counter requirements are calculated using one linear foot plus 8 feet behind the counter space per peak hour enplanement. As shown in **Table 4-9**, an additional 53 square feet will be required in Phase III of the planning period.

Table 4-9 Ticket Counter Requirement

Period	Existing (SF)	Demand (SF)	Requirement (SF)
Existing	379	148	231 (surplus)
2005	379	220	159 (surplus)
2010	379	284	95 (surplus)
2020	379	432	53

Airline Office and Operational Space

Airline office and operational space encompasses airline functional areas such as management and agent offices, lounges, training rooms, rooms for crews, maintenance and storage space, plus an area for processing outgoing baggage, cargo, and mail. Space supporting these functions is located behind the ticket counter and on the second floor of the terminal building at Page Municipal Airport.

Estimated airline office and operational space requirements are based on a demand of 30 square feet per peak hour enplanement. Enplanements for both scheduled and tour operations are applied. This demand analysis indicates that the existing 4,600-square foot of airline office and operational space is adequate through the planning period.

Baggage Claim

The baggage claim process for Sunrise Airlines involves airline personnel unloading the aircraft and placing the baggage inside on the terminal floor by the arrival gate. The most common approach at low activity airports, such as Page Municipal Airport, is the utilization of a self-claim shelf or counter, which is generally 30 inches wide. Mechanical devices are usually introduced when passenger activity reaches higher levels.

If the self-claim shelf concept is adopted at Page Municipal Airport, space will need to be allocated to accommodate a shelf 30 inches wide and length based on one linear foot per 2.5 peak hour deplanements. The requirement equates to approximately 12, 20, 26, and 36 square feet for the existing, 2005, 2010, and 2020 periods respectively based on projected scheduled deplanements.

Concessions

Car Rental

Avis is the only car rental agency located at the terminal facility at this time. Their front counter is located along the ticket counters, between the scheduled and tour service operations. The 148 square feet of space occupied by Avis includes a small office immediately behind the front counter.

Generally, a minimum standard of an eight- by six-foot area, or 48 square feet, for each car rental company is used for planning purposes. With 148 square feet, Avis has adequate space to accommodate their operations through the planning period. Although no additional car rental agencies are anticipated to move into the terminal facility, ample counter space is available should the need arise.

Food, Beverage, and Miscellaneous

A gift shop is also located in the terminal facility. The shop is owned and operated by the airline and therefore does not technically fall under the concession definition. However, it is addressed under concessions for the purpose of this study. Demand based on ten square feet per peak hour passenger is applied in estimating this facility requirement. As shown, in **Table 4-10**, an additional 585 square feet is required during the planning period.

Table 4-10 Food, Beverage, & Misc. Concessions Requirement

Period	Existing (SF)	Demand (SF)	Requirement (SF)
Existing	625	430	195 (surplus)
2005	625	620	5 (surplus)
2010	625	800	175
2020	625	1,210	585

Airport and Building Services

Airport Management and Staff

Currently, the airport director and support staff are located at the City of Page building. Only airport maintenance staff are located at the airport, which consists of a small office trailer located west of the airport, adjacent to the City park and conventional hangars.

Airport management and staff are anticipated to remain at the City building. However, should they move into the terminal facility, a minimum office size of 180 square feet should be provided to accommodate two staff members, including furnishing and function space.

Building Mechanical Systems

Building mechanical systems (HVAC, electrical, telephone, etc) are integrated throughout the terminal facility and space requirement is factored into the separate terminal area requirements. Space generally requires approximately 15% of the total gross facility area. Supporting the systems, the terminal has an electrical/telephone/sprinkler room, approximately 98 square feet in size, to house the systems hardware and panels. A 55-square foot space is also available for a future elevator.

4.3.2 Ground Access Facilities

Ground access facilities support surface transportation serving an airport. They extend beyond the airport boundaries and are integrated within the airport system. The facilities consist of, but are not limited to, airport access roads, terminal curb areas, and auto parking. Design of the facilities should aid in minimizing congestion and providing efficient access to the different airport facilities.

Airport Access Roads

Airport access roads link the community with the airport and provide circulation and access within the airport. The roadway system generally consists of a primary airport access road, terminal access road, terminal frontage road, and service roads.

Primary Airport and Terminal Access Roads

Typically, airports have separate primary airport and terminal access roads. Primary airport access roads serve as a transition between the airport and community. It helps minimize airport surface congestion by separating traffic destined for the airport from the neighboring community roadway system, while also feeding departing traffic back into the community roadway system. Airport congestion is further minimized by the addition of well-designed terminal access roads. Terminal access roads provided airport circulation, supporting the different airport facilities. It facilitates traffic flow around the airport by segregating the various types of airport surface traffic.

Access into Page Municipal Airport is primarily provided by Sage Avenue. It serves as both a primary airport and terminal access road, while also providing circulation for the neighboring residential area. Sage Avenue runs north and south along the western boundary of the airport. It provides direct access to the terminal area and airport facilities located along the avenue. Public access to other airport facilities (hangars, tiedowns, etc.) is available through a gate located at the terminal area. Although various roadways connect to Sage Avenue, airport traffic primarily flows between Sage and Aero Avenues, which is facilitated with strategically located roadway signs. Secondary access to Sage Avenue and the airport is generally provided by 10th Avenue.

Sage Avenue is designed, based on roadway width and speed limit, to accommodate average day traffic of 400 to 1,500 vehicles per travel way capacity[2]. It is adequate to accommodate the average day/peak month passenger demand traffic for Sunrise (scheduled and tour service) and Classic Aviation, which are the primary users.

Terminal Frontage Roads

Terminal frontage roads facilitate the movement of traffic in front of the terminal building. Page Municipal Airport has three through-lanes and a curve/maneuvering lane for a total of four lanes, which is the minimum recommendation to avoid congestion and double-parking. A curve/maneuvering lane is essentially two lanes in one. The inside of the lane provides terminal curbfrontage parking while the outside serves through traffic and maneuvering to the terminal curbfrontage.

Service Roads

Page Municipal Airport has service roads throughout its property, providing access to any point on the airport. Currently, they are mostly utilized to support airport development and maintenance.

Terminal Curb Areas

Terminal curb frontage refers to the roadway curb located in front of the terminal building. It is primarily used for loading and unloading of passengers and their baggage. There is over 500 linear feet of curb frontage at Page Municipal Airport's terminal facility. This is adequate to accommodate the loading and unloading of passengers and their baggage through the planning period. However, there is only one entry point into the terminal facility. This may result in curb

[2] A Policy of Geometric Design of Highways and Streets, *1994.*

frontage usage being concentrated in front of the terminal entrance. Typically, the loading and unloading of passengers is preferred as close to the terminal entrance as possible to avoid long walking distances, especially if they have baggage to carry. With only one terminal entrance, the preferred curb frontage is limited to the one area in front of the entrance, leaving the rest of the curb frontage under utilized.

Auto Parking

The primary parking area is located in front of the terminal facility and consists of 94 paved parking spaces. Additional parking spaces are available in front of the old terminal building and an area (unpaved) located just south is used for long-term parking.

The parking area in front of the terminal, which is the most commonly used, consists of public, employee, and rental car parking. It provides parking spaces for the terminal and adjoining facilities. The area in front of the old terminal building is primarily used by the government agencies and ARFF personnel located at the airport. The long-term parking area (35 spaces), which is primarily used for vehicular storage versus the typical long-term parking associated with other airports, is usually at capacity with nearly 20 people on a waiting list.

For the purpose of estimating automobile parking requirements, only the parking area in front of the terminal was considered because it is the primary source for auto parking space. The other parking areas will be taken into consideration during the alternatives element of the study. As shown in **Tables 4-11 and 4-12**, parking demand will reach 207 spaces during the planning period which translates to a need for an additional 133 parking spaces by 2020.

Table 4-11 Auto Parking Demand (Terminal Area)

Period	Public (spaces)	Employee (spaces)	Car Rental (spaces)	Total (spaces)
Existing	56	12	10	78
2005	85	17	10	112
2010	106	20	20	146
2020	166	31	30	227

Demand was based on the following planning standards: Public parking = 1 space per 500 annual enplanements, Employee parking = 15% of projected parking space required, Car Rental parking = 10 spaces per agency.

Table 4-12 Auto Parking Requirement (Terminal Area)

Period	Existing (spaces)	Demand (spaces)	Requirement (spaces)
Existing	94	78	16 (surplus)
2005	94	112	18
2010	94	146	52
2020	94	227	133

4.3.3 Aviation Support Facilities

Hangars/Storage

There are a total of 35 hangar facilities plus the old terminal building, which is used as a storage facility, located at the airport. Only 32 of the hangar facilities are available to the private general aviation users.

Sunrise Airlines owns an 18,000-square foot maintenance hangar located west of the terminal facility. It contains additional office and storage space on the second floor. The old terminal building is also owned by Sunrise Airlines, of which 4,500 square feet is used for storage.

Sunrise Airlines does not, nor intend to, store their aircraft inside hangars. Therefore, the maintenance and storage facilities currently owned by Sunrise Airlines are adequate to meet their needs during the planning period.

Classic Aviation owns a 10,000-square foot maintenance and storage facility with additional office and storage space on the second floor. Classic Aviation's rotorcrafts are stored in their maintenance hangar and can accommodate the projected fleet growth.

Of the government agencies based in Page Municipal Airport, the National Park Service owns a 3,500-square foot hangar and Salt River Project leases approximately 3,000 square feet of space in the old terminal building from Sunrise Airlines. No growth in fleet is projected and current accommodations are adequate to meet their present and future needs.

Since existing facilities are able to accommodate the FBOs and government agencies located at the airport through the planning period, only hangar/storage requirements for private general aviation based aircraft are calculated. The requirements are based on the percent of forecasted based aircraft anticipated to be hangared. Currently, 100 percent of the private general aviation based aircraft (multi- and single-engine) utilize hangar space. The percent of single-engine based aircraft requiring hangar space is anticipated to drop five percent every five years, while 100 percent of the multi-engine based aircraft are projected to continue to be hangared. Generally, T-hangars (1,200 SF) are planned for single-engine aircraft and conventional hangars (2,500 SF) for multi-engine aircraft and larger. This guideline is applied for estimating minimum hangar/storage facility requirements.

Currently, every private rotorcraft based at Page Municipal Airport is hangared in a conventional hangar. Therefore, hangar/storage space demand for rotorcraft is grouped with the multi-engine aircraft for the purpose of this study.

There were 23 single- and 7 multi-engine (including rotorcraft) based at Page Municipal Airport during the Study's base year. Per the planning guideline described above and 100 percent of the based aircraft being hangared, hangar/storage demand was calculated at 23 T-hangars and 7 conventional hangars, for a total demand of 30 hangars. Hangars were inventoried at 20 T-hangars and 12 conventional hangars, resulting in a requirement of three additional T-hangars and a surplus of five conventional hangars. However, the surplus of conventional hangars can and is accommodating the overflow of single-engine aircraft. Therefore, the hangar/storage requirement balance for the base year is a surplus of 2 hangars.

By the end of the planning period, the number of single- and multi-engine/rotorcraft projected to be based at Page Municipal Airport are 44 and 13, respectively, for a total of 57 based aircraft. The percent of single-engine based aircraft anticipated to require hangar/storage demand is anticipated at 80 percent, while 100 percent of the multi-engine/rotorcraft are projected to continue to be hangared. Therefore, hangar demand is calculated at 35 T-hangars and 13 conventional hangars. The resulting balance is a requirement of 15 additional T-hangars and 1 conventional hangar, for a total hangar/storage requirement of 16 hangars by the end of the planning period.

Table 4-13 Hangar/Storage Requirement

Private GA Based Aircraft		Hangar/Storage Space				
Based Aircraft	Percent Hangared	Type	Area (SF)	Demand	Available	Requirement
Existing						
23 SE	100%	T-hangars	1,200	23	20	3
7 ME/Rotor	100%	Conventional	2,500	7	12	5 (surplus)
30 total				30	32	2 (surplus)
2005						
29 SE	95%	T-hangars	1,200	28	20	8
9 ME/Rotor	100%	Conventional	2,500	9	12	3 (surplus)
38 total				37	32	5
2010						
34 SE	90%	T-hangars	1,200	31	20	11
10 ME/Rotor	100%	Conventional	2,500	10	12	2 (surplus)
44 total				41	32	9
2020						
44 SE	80%	T-hangars	1,200	35	20	15
13 ME/Rotor	100%	Conventional	2,500	13	12	1
57 total				48	32	16

Fixed Based Operators (FBO)

FBO requirements are primarily tenant-driven. Sunrise Airlines (d.b.a. Lake Powell Air) and Classic Aviation are the two FBOs at Page Municipal Airport.

Lake Powell Air operates from the terminal building and its demand is factored into the terminal facility requirements. Classic Aviation operates from an 18,000-square foot facility with office, storage, and maintenance area. The facility is adequate to meet projected demand.

General Aviation Terminal and Auto Parking

Accommodations for general aviation pilots/passengers are currently provided by the commercial terminal facility, including auto parking. General aviation pilot/passenger demand is factored into the terminal facility requirements.

Air Cargo

Sunrise Airlines provides freight (small packages) service into the City of Page and surrounding communities. The level of service is minimal and no projected growth is anticipated. Small freight includes blood, water, and banking materials. Currently, the freight service is handled through the terminal facility which is anticipated to continue through the planning period.

Airport Rescue and Firefighting Facilities (ARFF)

As discussed in the Inventory Chapter of this study, Page Municipal Airport houses a fire station (approximately 122 square feet) located south of the old terminal. The facility is equipped with a fire truck and satisfies the recommended scale of protection for a system of airport rescue and firefighting services for general aviation.

Utilities

Utilities available at the airport include electric, water, sewer, sanitation, and gas (propane). Water, sewer, electric, and sanitation service (under contract) is provided by the City of Page. Black Mountain Gas Company provides the gas and the U.S. Bureau of Reclamation, from the generating station at Glen Canyon Dam, provides electrical power, which is managed by the City of Page through Page Electric Utility. Telephone service is also available at the airport, which is provided by U.S. West Communications.

The utility and telephone systems at the airport are adequate to serve existing and future needs.

Fuel Storage

The two FBOs located on the airport provide 100LL and Jet A fuel. Sunrise Airlines has five 12,000-gallon underground storage tanks, two for 100LL and two for Jet A fuel. The fifth tank is used to store 500 gallons of automotive fuel for operational use. Classic Aviation has one 2,000-gallon and one 750-gallon aboveground tank. The larger tank is used to store Jet A and the smaller tank for 100LL fuel. These tanks were upgraded to meet Environmental Protection Agency (EPA) underground fuel storage regulations in 1997. Fuel storage requirements can vary based upon individual supplies and distributor policies. For this reason, fuel storage requirements will be dependent upon the independent distributors. The existing fuel storage capacity is adequate through the planning period.

Fencing

Perimeter fencing exists around the entire airport. In addition to the FBO facilities, there are five secondary access points into the airport, which consist of one personnel gate and four vehicular gates.

The personnel and two vehicular gates are located in the old terminal area, another vehicular gate is located through the terminal parking, west of Classic Aviation's building, and the last access point for vehicles is located on northwest corner of the airport providing access to 17th Avenue. The main gate adjacent to Classic utilizes a magnetic card coding system to obtain access.

The existing perimeter fence will serve the airport's needs during the planning period. However, airport staff have expressed a need for an improved gate entry system, other than the magnetic cards, to obtain access into the airport.

Property Requirements/Deficiencies

Page Municipal Airport lies on 536 acres on the northeast corner of the City of Page. All of the landside facilities are located west of the runway occupying approximately 35 acres.

A total of approximately 213 acres is available for airport development. However, extremely sloping terrain on the north and east of the airport may make development in these areas cost prohibitive.

4.4 SUMMARY

This chapter has examined the airport's ability to accommodate existing and forecast aviation activity. As a result, several facility deficiencies have been identified for the airport. The next step in the master planning process is to analyze various alternatives capable of providing necessary facilities. Chapter Five will examine several alternatives, assess their relative strengths and weaknesses and recommend a development plan most equitable for Page Municipal Airport.