



Airport Role

Present

Willows-Glenn County Airport is one of two public-use airports in Glenn County. The airport provides general aviation facilities and services essential to pilots and businesses based in the community. As a general aviation facility, Willows-Glenn County Airport is utilized as a base for local pilots, a point of air access to the community, and a place to conduct business. These general aviation roles are expanded upon below.

Point of Air Access for Visitors to the Community — The airport is a means of accessing the City of Willows and central Glenn County for recreation and business.

A Base for Glenn County Area Pilots — For pilots who live and work in Willows and nearby areas, Willows-Glenn County Airport is a convenient airport from which to fly. Recreation and personal business are the predominant reasons these pilots fly.

A Place to Conduct Business — A significant role of Willows-Glenn County Airport is as a place of business. Currently, there are several established fixed base operators (FBOs) that provide agricultural spray services to nearby farms. Agriculture is the leading industry in the county and nearly 70% of all airport operations at Willows-Glenn County Airport are generated by aerial-application aircraft. The airport also caters to nonaviation-related businesses in the area by providing a place from which to transport personnel and small cargo. There is also a restaurant located on the airport. It is a favorite among the flying community, but also serves local residents and travelers on Interstate 5. These businesses contribute to the local economy through their payrolls and purchases of goods and services.

Place to Conduct Flight Training — Flight training activity at Willows-Glenn County Airport is predominantly conducted by transient aircraft users. The airport's relatively simple airspace (in comparison to tower-controlled metropolitan airports), somewhat low activity levels, surrounding land uses that are less impacted by typical airport operations, and better-than-average weather conditions provide an

***Personal/recreational flying:** the use of aircraft by individuals (in their own, rented, or borrowed aircraft) for pleasure, recreational, or personal transportation, not in furtherance of their occupation or company business.*

***Business flying:** the use of aircraft by pilots (not receiving direct salary or compensation for piloting) in connection with their occupation, their employer's business, or in the furtherance of private business.*

***Corporate flying:** the use of aircraft, owned or leased, and operated by a corporation or business firm, for the transportation of personnel or cargo in furtherance of the firm's business, and which are flown by professional pilots receiving a direct salary or compensation for piloting.*

operating environment which is conducive to basic flight training activity. It is estimated that a small percentage (less than 5%) of total airport operations are flight training related.

Support Public Safety Services — The California Highway Patrol's (CHP) helicopters use the Willows-Glenn County Airport several times each day. These helicopters are used for routine patrol in response to a variety of emergencies. This agency has a small tank of Jet 'A' fuel located near the helipad for refueling. The airport has also regularly been used as a base for fire attack helicopters in support of California Division of Forestry operations.

Site for Emergency Access to the Community — Following disasters such as a major earthquake, fire, or flood, airports are often of critical importance as points of community access for emergency and relief services. In addition, when regional ground access routes (i.e., roads, highways, and rail lines) are severed by such a disaster, transportation by air may be the only means of effectively moving about and delivering supplies. It is essential that airport facilities remain operational or can quickly become operational after such events. In these emergency circumstances, airports often see use by aircraft that are larger than those normally accommodated. It is also vital that the airport has usable local ground access to the surrounding community. Willows-Glenn County Airport is well positioned in this regard, thus making this operational role an important one.

Future

The operational role of Willows-Glenn County Airport is expected to remain essentially the same as at present. The airport will continue to serve as a base of operations for light-to-medium general aviation aircraft. While agricultural operations and recreational use will continue to account for the majority of aircraft operations, the percentage of operations by transient business/corporate aircraft is expected to increase. It is anticipated that with enhanced airport facilities and planned growth of industrial and commercial uses in the community, the airport will experience moderate growth. Accordingly, the future role of the airport will be defined less by the introduction of new uses and more by changes among the roles that the airport currently serves (e.g., volume of activity and aircraft mix).

Historical Airport Activity

As is common with most small general aviation airports, reliable historical information on based aircraft and aircraft operations are limited, with even published information often based on estimates. In some cases, the information contained in the various sources conflict. Consequently, the estimates of existing activity levels must be substantiated by reviewing available airport records and interviewing airport users. Historical activity data for Willows-Glenn County Airport is described below.

Based Aircraft

Historical counts of based aircraft at Willows-Glenn County Airport are recorded in the *FAA Airport Master Records (Form 5010-1)* and the *Airport Master Plan* adopted by the County Board of Supervisors in November 1979. Current (2005) counts were obtained from airport management records.

Historical records indicate that the number of aircraft based at Willows-Glenn County Airport has remained relatively constant, staying at around 57 over the last 20 years. However, as of June 2005, airport management records indicate that there are 42 aircraft currently based at Willows-Glenn County Airport. Airport staff and tenants indicate that the number of based aircraft has not changed in many years. There is no clear basis for this inconsistency. It may reflect the use of different data sources. As it is possible to document the source of the locally generated data, it has been used as the basis for this master plan.

Based upon County records, the current mix of aircraft types is:

Single-Engine, Piston	32
Single-Engine, Turboprop	7
Jet	1
Helicopters	2
Total	42

As is typical of most general aviation airports, the dominant type of aircraft based at Willows-Glenn County Airport is the single-engine, propeller-driven, piston airplane. Over three-quarters of the aircraft based at Willows-Glenn County Airport are in this category. Twenty-five of these aircraft occupy T-hangar units, four are stored in portable hangars, two are kept in the large FBO hangars, and one is parked on the aircraft parking apron. All of the single-engine, turboprop aircraft and helicopters are designed for agricultural aerial application. These specialized aircraft account for 7% of total based aircraft. These aircraft, as well as the jet, are stored in the large FBO hangars.



Cessna 152



Beech Baron 58



Hawker 800 XP



Citation V

Transient Aircraft Parking

There are two aircraft tiedown aprons on the airport providing 34 parking spaces for transient and based aircraft. There are eight marked tiedown spaces on the north ramp (located between the fuel island and the airport's restaurant). The balance of the aircraft parking positions is provided on the south apron located east of Runway 13-31.

Demand for transient aircraft parking varies depending on the day of the week; weekends see the highest use. Special events in the area will also result in peak parking demand. Transient aircraft typically park on the north apron first, given its proximity to the airport entrance and restaurant. The south ramp provides overflow parking, as well as sufficient space for large aircraft to maneuver. On peak days, up to ten aircraft may be parked on the transient ramp at one time. The current mix of transient aircraft most commonly includes single- and twin-engine piston (e.g., Cessna 152 and Beech Baron 58, respectively) and turboprop (e.g., Beech Super King Air) and comparable aircraft. The airport also sees regular, but less frequent use by mid-sized business jets, such as the Hawker 800 XP and Cessna Citation V.

The current number of transient parking spaces available at Willows-Glenn County Airport is adequate to meet current demand. However, there are no parking positions specifically designed for large aircraft. An area should be designated for this class of aircraft to improve safety and convenience.

Operations

As is the case for almost all airports without an air traffic control tower, aircraft operations at Willows-Glenn County Airport are not routinely counted. The best data comes from counts made by the California Division of Aeronautics using an acoustical counter. This data has been supplemented through interviews with knowledgeable local pilots.

The California Division of Aeronautics conducts counts of aircraft operations at non-towered airports throughout the state. These counts are prepared using an acoustical counter designed to identify aircraft operations by their sound signatures. Counts are typically taken for three separate two-week periods representing different seasons of the year. The sample counts are then extrapolated to produce an estimated annual count.

Local Operation (definition): An arrival or departure performed by an aircraft (1) operating in the traffic pattern, (2) departing or arriving from flight in local practice areas, or (3) executing practice instrument approaches.

Itinerant Operation (definition): An arrival or departure performed by an aircraft from or to a point beyond the local airport areas.

For the Willows-Glenn County Airport, counts were taken for the following two-week time periods.

- Spring: June 1993
- Summer / Fall: September 1993
- Winter: March and April 1999

Based on these records, the California Division of Aeronautics estimated annual operations at 23,324 for the year 1999.

County staff and airport tenants indicated that fixed-wing aircraft operations have not changed significantly since 1999. Therefore, Caltrans' operations estimate for 1999 will be used as the estimate of current fixed-wing aircraft operations. Helicopter operations have been estimated from discussions with the California Department of Forestry, the California Highway Patrol, and staff of the based helicopters. Combining the two figures yields an estimate of current activity of 29,500 operations in 2005.

The ratio of annual operations per based aircraft is commonly used to compare the relative activity level of an airport to other airports. Based upon the estimates of based aircraft and operations presented earlier, the current ratio is 702 annual operations per based aircraft. This figure places Willows-Glenn County Airport at the higher end of the spectrum. Busy general aviation airports often have ratios of 400 to 600 operations per based aircraft. The ratio for Willows-Glenn County Airport reflects the very high level of agricultural operations.

Note: The operations total for fixed-wing operations have been rounded to the nearest hundred.

Distribution of Operations

The historical distribution of operational activity (i.e., day/night, local/itinerant) can be estimated from discussions with those familiar with the airport (e.g., airport staff and FBO staff). The majority of operations at Willows-Glenn County Airport are conducted during daylight hours. This distribution is consistent with day/night activity indices at comparable general aviation airports.

The *FAA Terminal Area Forecast (TAF)* for 2004 estimates that aircraft operations are evenly split between *local* and *itinerant* operations. However, the distribution of operational estimates provided in the TAF appears to understate the percentage of local operations. Based on conversations with the FBO and airport management, it is more likely that local operations at Willows-Glenn County Airport represent 75% of the total activity level.

Aviation Activity Forecasts

In accordance with FAA guidelines, the time horizon of the forecasts in this *Airport Master Plan* is 20 years. The many uncertainties facing the future of the general aviation industry make forecasting of airport activity an inexact science at best. The *Master Plan* forecasts of future aviation at Willows-Glenn County Airport are summarized in Table 2A below, together with the estimates of current activity levels.

Table 2A Master Plan Activity Forecasts				
	Current 2005	2010	Projected 2015 2025	
Based Aircraft				
Aircraft Type				
Single-Engine, Piston	32	35	37	42
Single-Engine, Turboprop	7	8	8	9
Twin-Engine, Piston	0	0	1	1
Twin-Engine, Turboprop	0	0	1	1
Turbo-Jets	1	2	2	3
Helicopters	2	2	3	3
Total Aircraft	42	46	51	59
Storage Demand				
Hangar Space	40	44	48	55
Apron	2	3	3	4
Total Aircraft	42	46	51	59
Transient Aircraft				
Peak Daytime Parking Demand	10	13	15	20
Annual Aircraft Operations				
Aircraft Mix				
Single-Engine, Piston Fixed-Pitch Prop	7,100	8,150	9,650	11,700
Single-Engine, Turboprop	21,000	21,125	21,250	21,500
Twin-Engine, Piston	300	350	400	500
Twin-Engine, Turboprop	250	300	350	450
Turbo-Jets	350	575	800	1300
Helicopters	500	500	550	550
Total	29,500	31,000	33,000	36,000
Annual Aircraft Operations				
Local	22,000	22,500	23,000	24,000
Itinerant	7,500	8,500	10,000	12,000
Total	29,500	31,000	33,000	36,000
Annual Aircraft Operations				
Total	702	670	640	610

Projections have been estimated for based aircraft, transient aircraft parking, and annual aircraft operations. As outlined in the following sections, these forecasts have been developed by:

- Considering the previously described historical activity levels at Willows-Glenn County Airport,
- Assessing the national, state, and local trends and other factors which influence the airport's activity; and then
- Drawing conclusions from this data.

National Demand Factors

The FAA's *Aerospace Forecasts, Fiscal Years 2004 to 2016* projects trends for several factors that are relevant to the future of Willows-Glenn County Airport:

- Total active general aviation aircraft fleet
- Business/corporate aircraft use exceeds personal/sport aircraft use
- Total student pilots
- Hours flown by aircraft type

The active general aviation fleet is projected to increase at an average annual rate of 1.1% over the 12-year forecast period, from 211,295 aircraft in 2004 to 240,070 aircraft in 2016. The smallest increase will occur in piston-powered aircraft, an average annual increase of 0.2%, from 163,940 in 2004 to 167,805 in 2016. FAAs forecast estimates that turbine-powered aircraft will grow at an average annual rate of 3.2%.

With added security and safety measures, and increased passenger processing times at commercial airports, the FAA anticipates that use by business/corporate jet aircraft, on-demand charter flights, and fractional ownership will increase. The forecast assumes that the jet fleet will expand at an average annual rate of 5.4% over the forecast period, increasing from 8,425 in 2004 to 15,900 in 2016.

The general aviation industry, over the long term, depends on the interest and enrollment of student pilots. The FAAs forecast reported the number of student pilots increased by 0.7% in 2004. This trend is expected to continue over the forecast period; the total number of active pilots is estimated to increase at an average annual rate of 1.6%.

Fractional Ownership: A company or individual buys, or leases, a fractional interest in one aircraft. They can use their own aircraft or another similar or identical aircraft a certain number of hours or days per year. In most programs, if your 1/8 interest aircraft is not available when you want it, you can access a larger pool of identical or similar 1/8 interest aircraft fractionally owned or leased by others.

Hours flown by turbine-powered aircraft (turboprops and jets) are anticipated to grow an average of 5.0% annually over the forecast period, compared to 0.3% for piston-powered aircraft. The largest increase in hours flown is estimated to occur in turbojets, an average of 6.7% annually by the end of the forecast period.

In spite of the positive national trend, the most recent FAA *Terminal Area Forecast* (TAF, January 2005) projects no growth in based aircraft or aircraft operations over their forecast period (2003-2020). The TAF forecasts that the number of based aircraft will remain at 59, and annual operations remain at 33,500.

State and Local Demand Factors

The most recent California State Airport System Plan (CASP) was published in 1999. The system plan included all public-use airports in California. The plan calls for significant growth at Willows-Glenn County Airport with total based aircraft reaching 122 by 2020. The plan also calls for annual operations to reach 56,120 by 2020. However, as the CASP forecasts predate 9/11, the assumptions behind the forecasts may no longer be valid. Therefore, projections for Willows-Glenn County Airport may not be realized within the time horizon indicated in the CASP.

The following airport-specific demand influences partially overlap the above national and state demand factors, but is more reflective of the conditions existing at Willows-Glenn County Airport.

Airport Role — While the general role of the airport will not change, there is anticipated to be a shift towards greater use for business activities. The dominant class of users, agricultural applicators, is anticipated to remain at its current level of activity.

Facilities and Services Available — The limited services available at the airport serve as only a moderate attractor. One FBO's planned addition of turboprop aircraft to provide charter services is, however, expected to increase use of the airport.

Demand for Hangar Space — Most aircraft owners prefer to store their aircraft in a hangar. Willows-Glenn County Airport has adequate land area to develop a sufficient number of hangars to accommodate anticipated demand. Meeting the forecast increase in based aircraft will be driven in part by the availability of additional, suitably priced, aircraft storage hangars.

Nearby Airports — There are three public-use and one private-use airports within a 30-nautical mile radius of Willows-Glenn County Airport. Only Chico Municipal Airport offers enhanced services, instrument approach capabilities with lower visibility minimums, and longer runways than Willows-Glenn County Airport.

Proximity to Nearby Industry — Growth in commercial and industrial businesses in Willows are expected to cause an increase in use by transient corporate and charter aircraft. As development in Willows occurs, the number of based aircraft at Willows-Glenn County Airport is anticipated to increase. A change in the type of aircraft using the airport is also anticipated as a result of commercial and industrial development, primarily in business/corporate aircraft such as the Beech B200 King Air and small business jets such as the Cessna Citation I.

Demographics — Population growth alone does not typically generate a corresponding increase in based general aviation aircraft demand. However, the combination of increasing population and economic growth in the Willows area should result in an increase in operations and based aircraft. Population growth in the City of Willows is expected to reach a total population of 6,700 by 2015. It is forecast to continue its historical trend of 0.4% (1991-2004) annual population growth, compared to 0.65% growth annual growth forecast for the County. By 2025, the City of Willows is projected to reach a population of 7,000.

Master Plan Based Aircraft Forecast

In recognition of the above-noted national, state, and local demand factors and planning projections, the *Master Plan* concludes that there is potential for an increase in Willows-Glenn County Airport's based aircraft population. While the majority of aircraft based at Willows-Glenn County Airport will continue to be single-engine piston and turboprop aircraft, both twin-engine turboprop and jet aircraft are expected to be added during the 20-year planning period.

Growth in based aircraft is forecast to grow at a rate that lies between the forecast population growth rates for Glenn County (0.65%) and the City of Willows (0.4%). Specifically, an average annual growth rate of 0.5% has been used. This population growth rate is a surrogate for the economic growth that will support the growth in based aircraft. At this growth rate, the master plan's year 2025 forecast will equal the year 2020 FAA's Terminal Area Forecast.



Beech King Air B200



Cessna Citation I

Notes:

- The Terminal Area Forecast estimates the current number of based aircraft to be 59. It forecasts the number of based aircraft to remain at 59 through 2020.
- The Terminal Area Forecast estimates the current number of annual aircraft operations to be 33,500. It forecasts the number of annual operations to remain at 33,500 through 2020.

Master Plan Operations Forecast

Continued modest increases in annual aircraft operations at Willows-Glenn County Airport are anticipated. Growth in operations will come from two sources. Increases in based aircraft will generate additional operations. The number of operations by based aircraft is forecast to grow proportionate to the number of based aircraft. Economic growth in the region will result in additional transient aircraft operations. Annual aircraft operations at Willows-Glenn County Airport are forecast to increase from the estimated 2005 level of 29,500 to 37,000 in the year 2025. This forecast is slightly more than above the year 2020 Terminal Area Forecast of 33,500. If the growth rate stays constant, the master plan forecast would reach the Terminal Area Forecast of current operations in the year 2016.

Transient Aircraft Parking Demand

Peak transient parking demand currently occurs on weekends and is associated with local events (e.g., fly-ins). This peak use has seen slow growth during recent years. Peak use regularly reaches 10 aircraft, typically single-engine piston aircraft. If this trend continues, peak demand will increase to 20 aircraft by the end of the forecast period. Peak demand for larger aircraft occurs during weekdays. Typically, there are only one or two of these larger aircraft. Over the course of the current plan, peak use is expected to grow to three or four. The designated large aircraft parking area is sized to accommodate three turboprops or small jets. If additional space is needed, it is anticipated that space will typically be available on adjacent tiedown areas.