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Airport Role and Activity Forecasts

AIRPORT ROLE

Present

Hanford Municipal Airport is one of two public-use airports in Kings County. It is the principal airport serving Kings County and the communities of Hanford, Armona, and Lemoore. As a general aviation facility, the airport provides a base of operations for local pilots, a point of air access to the community, a place to conduct business, and a place to conduct flight training. These general aviation roles are expanded upon below.

- **A Base for Kings County Area Pilots**—For pilots who live and work in Hanford and Kings County, Hanford Municipal Airport is the most convenient airport from which to fly. Recreation and personal business are the predominant reasons these pilots fly.
- **Point of Air Access for Visitors to the Community**—The airport is a means of accessing Hanford and Kings County for recreation and business.
- **A Source of Transportation to Other Areas**—The fixed base operator at Hanford Municipal Airport offers charter service to area residents and businesses. Sky Flight provides medical transport from the airport to area medical centers.

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.

Charter operator: a business providing on-demand passenger and cargo service.

- **A Place to Conduct Business**—A significant role expected in the future of Hanford Municipal Airport is as a place of business. Currently, there is only one aviation related business established at Hanford Municipal Airport. Planned industrial development (approximately 100 acres) in the immediate vicinity of the airport is expected to contribute to the local economy through their payrolls and purchases of goods and services. As these businesses begin to utilize airport services (i.e., transport people and merchandise), it is anticipated that activity levels at the airport will also increase.
- **Place to Conduct Flight Training** — The fixed base operator (FBO) provides flight training at Hanford Municipal Airport. The FBO offers instrument, multi-engine, commercial, and airline transport pilot training.
- **Site for Emergency Access to the Community**—Following calamities 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 a calamity, 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. Hanford Municipal Airport is well positioned in this regard, thus making this operational role an important one.

Future

Growth of industrial and commercial uses in the area is expected to shift the emphasis among the roles the airport currently serves. While flight training and recreational use will continue to account for the majority of aircraft operations, the percentage of operations by transient corporate aircraft is expected to increase progressively.

HISTORICAL AIRPORT ACTIVITY

Based Aircraft

Historic counts of based aircraft at Hanford Municipal Airport are recorded in *FAA Airport Master Records (Form 5010-1)* and the *1993 Airport Master Plan.* For recent years, estimates were obtained from airport management. This data was used to determine trends in the number of based aircraft at Hanford Municipal Airport. Data from these sources indicated steady growth between 1976 and 1987, averaging 1.3 percent annually. Based aircraft data was unavailable from 1992 to 1996. The number of based aircraft fluctuated from 1997 to 2003; 50-based aircraft between 1997 and 1999, rising to 57 in 2000, and declining to 48 in 2003. As of June 2005, there were 62 aircraft based at Hanford Municipal Airport.

Twin Star Helicopter

Of the 62 aircraft currently based at the airport, 55 are single-engine, propeller airplanes. This includes one motor glider, a sailplane that has an engine to enable self-launches. There are also six twin-engine piston aircraft. A Twin Star helicopter was recently added to the fleet of based aircraft. This helicopter is associated with a medical transport operation based at the airport.

Transient Aircraft Parking

Information on the demand for transient aircraft parking was estimated from interviews with airport management and the FBO. Demand for transient aircraft parking varies significantly on a day-to-day basis. On peak days, up to eight aircraft may be parked on the transient ramp at one time. Occasionally, the number of transient aircraft reaches 10. The current mix of transient aircraft includes twin-engine piston (e.g., Beech Baron 58), turboprop (e.g., Beech Super King Air) and other 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.

Currently, there are 43 transient parking spaces located near the FBO ramp and on the apron areas north and east of the airport manager's office. The current number of transient parking spaces available at Hanford Municipal Airport is adequate for current demand. However, no parking positions are specifically designed to accommodate larger turboprops and jets.

Operations

The California Division of Aeronautics conducts counts of aircraft operations at non-towered airports throughout the state. These counts are made using an acoustical counter set up adjacent to the runway. Typically, counts are made for three separate two-week periods representing different seasons of the year. These sample counts are then extrapolated to produce an estimated annual count. California Division of Aeronautics estimate for 1995/1996 was 15,347, and 1993 estimates were 11,834. Acoustical counts were conducted by the Division for two-week periods in November 2000, March/April 2001, and August 2001. These counts resulted in an estimated annual operations level of approximately 6,518 for the year 2000/2001.

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.

According to airport management, the decline of operations in 2001 is due to the loss of an agricultural operator. Prior to 2001, it is estimated that agriculture operations accounted for nearly half of annual operations at Hanford Municipal Airport. Activity levels for fixed-wing aircraft do not appear to have changed significantly since 2001.

California Division of Aeronautics data is the most recent official count of operations at Hanford Municipal Airport. Therefore, in light of airport management comments, the Division's operations estimate for 2001 will be used as the estimate of current fixed-wing aircraft operations. Helicopter operations have been estimated from discussion with the staff of the based helicopter. Combining the two figures yields an estimate of total current operations of 7,600 operations. Note that the totals for fixed-wing operations have been rounded to the nearest hundred.

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 123 annual operations per based aircraft. This figure places Hanford Municipal Airport at the lower end of the spectrum. Busy general aviation airports often have ratios of 400 to 600 operations per based aircraft. The ratio for Hanford Municipal Airport is believed to reflect three factors:

- The modest level of training activity
- Recreational orientation of most based aircraft
- Low level of transient use

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, flight instructors). The majority of operations at Hanford Municipal 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 exaggerate the percentage of local operations. Based on conversations with the FBO and airport management, it is more likely that local operations at Hanford Municipal Airport represent 30 percent 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 Hanford Municipal Airport are summarized in Table 2A, together with the estimates of current activity levels.

Table 2A

Master Plan Activity Forecasts

	Current	Projected		
	2005	5+ Years (2010)	10+ Years (2015)	20+ Years (2025)
Based Aircraft				
Aircraft Types				
Single-Engine, Piston*	55	60	68	86
Twin-Engine, Piston	6	8	9	13
Helicopter	1	1	1	1
Turboprop / Jet	0	2	4	10
Total Aircraft	**62**	**71**	**82**	**110**
Transient Aircraft				
Peak Daytime Parking Demand (excluding major events)	8	10	12	15
Annual Aircraft Operations				
Aircraft Mix				
Single-Engine, Piston	4,800	5,400	6,000	8,000
Twin-Engine, Piston	1,100	1,250	1,450	1,900
Helicopter	1,100	1,240	1,500	2,000
Turboprop	400	650	900	1,300
Light Jet	175	225	350	500
Medium Jet	25	35	50	100
Total	**7,600**	**8,800**	**10,250**	**13,800**
Type of Operation				
Local (Touch-and-Goes)	2,300	2,600	3,100	4,100
Itinerant	5,300	6,200	7,150	9,700
Total	**7,600**	**8,800**	**10,250**	**13,800**
Average Operations per Based Aircraft				
Total	**123**	**126**	**127**	**128**

* Includes 1 motor glider

Source: Mead & Hunt, Inc. (June 2005)

Projections have been developed 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 Hanford Municipal 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 2005 to 2016* projects trends for several factors that are relevant to the future of Hanford Municipal 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 percent 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 percent, 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 percent.

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.

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 population will expand at an average annual rate of 5.4 percent 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 percent 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 percent.

Hours flown by turbine-powered aircraft (turboprops and jets) are anticipated to grow an average of 5.0 percent annually over the forecast period, compared to 0.3 percent for piston-powered aircraft. The largest increase in hours flown is estimated to occur in turbojets, an average of 6.7 percent 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 75, and annual operations remain at 30,500.

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 Hanford Municipal 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 Hanford Municipal 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 Hanford Municipal 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. As these aircraft typically have a higher utilization rate than aircraft used for recreation or personal business, operations are expected to grow faster than based aircraft.
- **Facilities and Services Available**—Existing general aviation facilities and services at Hanford Municipal Airport provide the majority of services necessary to support current operations. Improvements planned by the City of Hanford and the FBO will make the airport more attractive to turbine aircraft operators. The FBO's planned addition of a turboprop aircraft to provide charter services is also expected to increase use of the airport.
- **Demand for Hangar Space**—Most aircraft owners prefer to store their aircraft in a hangar. Hanford Municipal 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 eight public-use and 12 private-use airports within a 30-mile radius of Hanford Municipal Airport. The greatest interaction is with Visalia Municipal Airport, located 11 nautical miles east of the airport. The nearest airline service airport is Visalia Municipal Airport. However, its passenger service is limited. Fresno-Yosemite International, 28 nautical miles north offers a much larger range of destinations for passengers. Only Visalia Municipal Airport and Fresno-Yosemite International Airports offer enhanced services, instrument approach capabilities with lower visibility minimums, and longer runways than Hanford Municipal Airport. Planned improvements at Hanford will make its facilities largely comparable to those at Visalia Municipal Airport.

Beech King Air B200

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

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 Hanford area should result in an increase in operations and based aircraft. Population growth in the City of Hanford is expected to surpass the County as a whole. It is forecast to continue its historical trend of 3.2 percent (1990-2004) annual population growth compared to 2.4% growth annual growth forecast for the County. By 2020, Hanford projects the population to reach 75,870.

Master Plan Based Aircraft Forecast

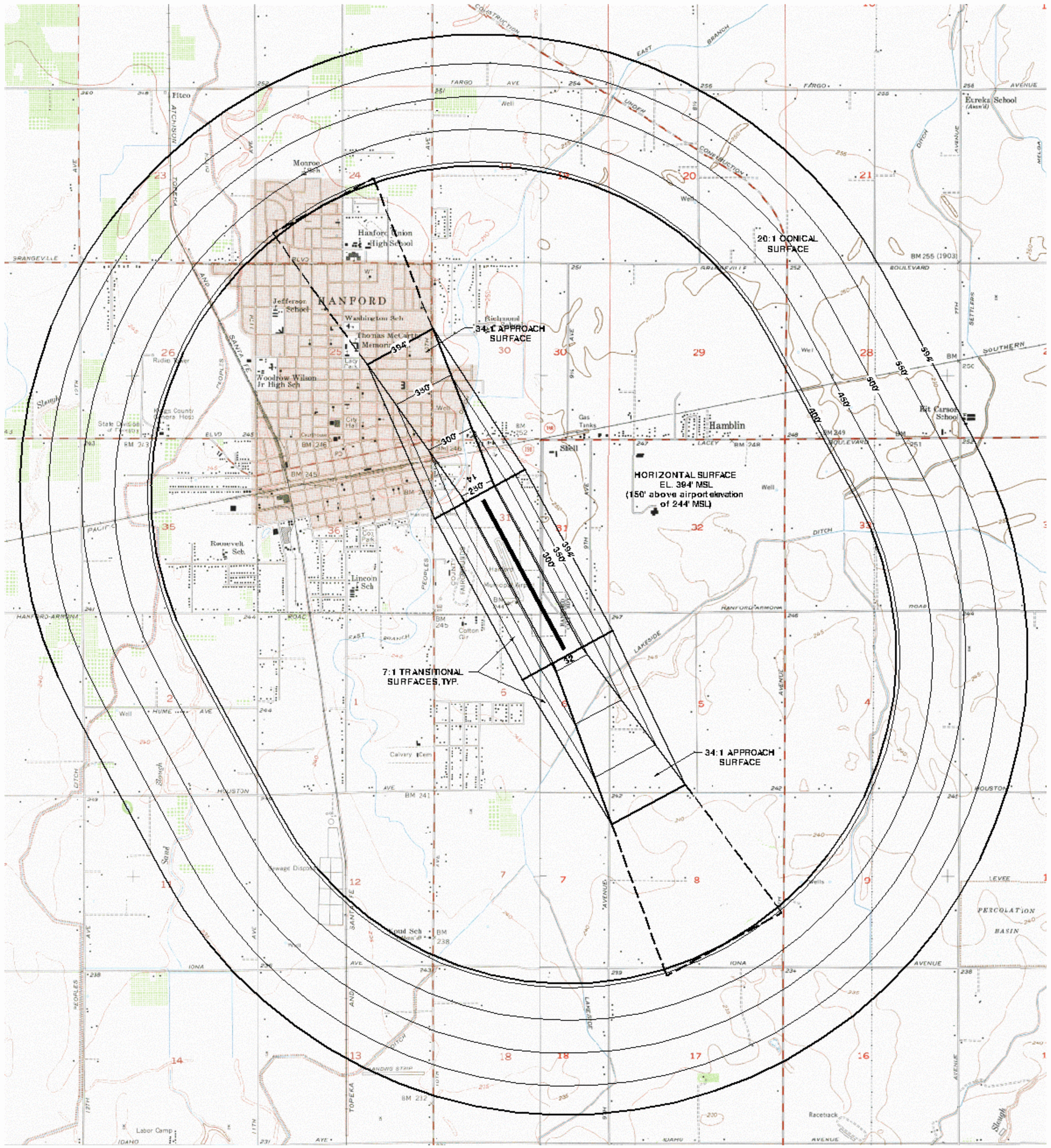
In recognition of the above-noted national, state, and local demand factors and planning projections, the *Master Plan* concludes that there is potential for an increase in Hanford Municipal Airport's based aircraft population. While the majority of aircraft based at Hanford Municipal Airport will continue to be single- and twin-engine piston aircraft, both

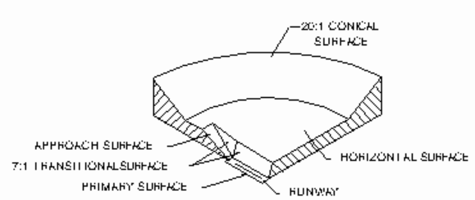
turboprop and jet aircraft are expected to be added during the 20-year planning period.

Growth in based aircraft is forecast to grow at a rate that lies between the forecast population growth rates for Kings County (2.4%) and the City of Hanford (3.2%). Specifically, an average annual growth rate of 3.0% 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 forecast will be below the 5-year TAF forecast (71 vs. 75), and seven aircraft higher than the 10-year TAF forecast (82 vs. 75 or about 9.3% higher).

Master Plan Operations Forecast

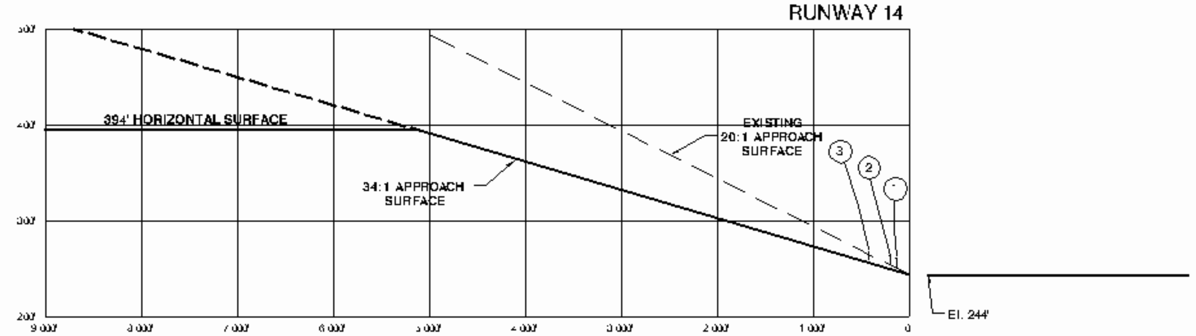
Continued modest increases in annual aircraft operations at Hanford Municipal Airport are anticipated. Growth in operations will come from two sources. Increases in based aircraft will generate additional operations. The number of operations by based aircraft is forecast to growth proportionate to the number of based aircraft. Economic growth in the region will result in additional transient aircraft operations. The forecast is for transient operations to grow faster than the growth in based aircraft. This will increase the average annual operations per based aircraft ratio above its current level of 123. For master plan purposes, the ratio is forecast to grow to 128 annual operations per based aircraft. At this growth rate, total annual aircraft operations at Hanford Municipal Airport will increase from the estimated 2004 level of 6,518 to 13,800 in the year 2025. This forecast will be below the TAF forecast (30,500).



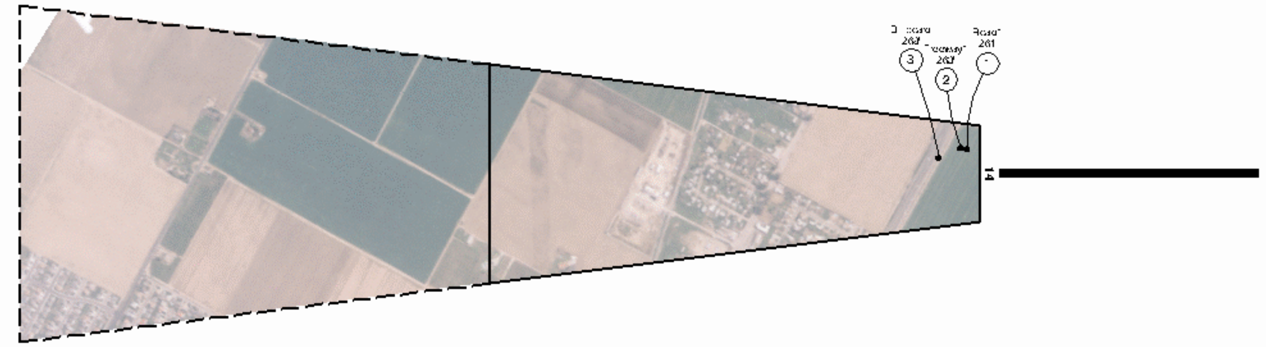


TYPICAL FAR PART 77 SURFACES

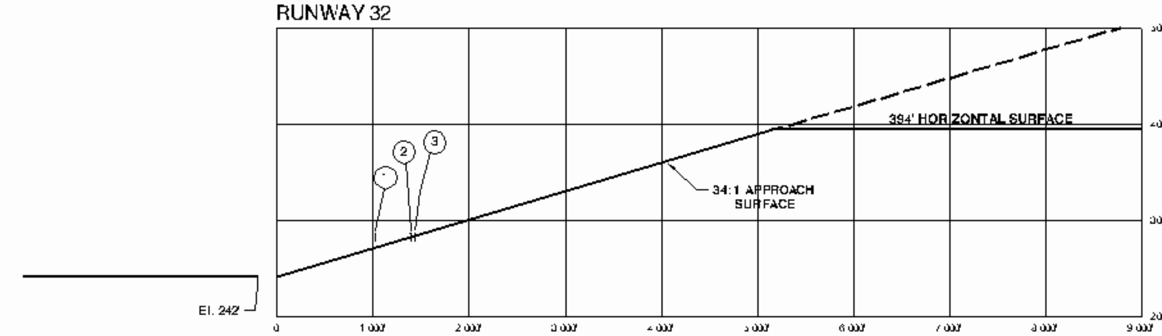
RUNWAY 14



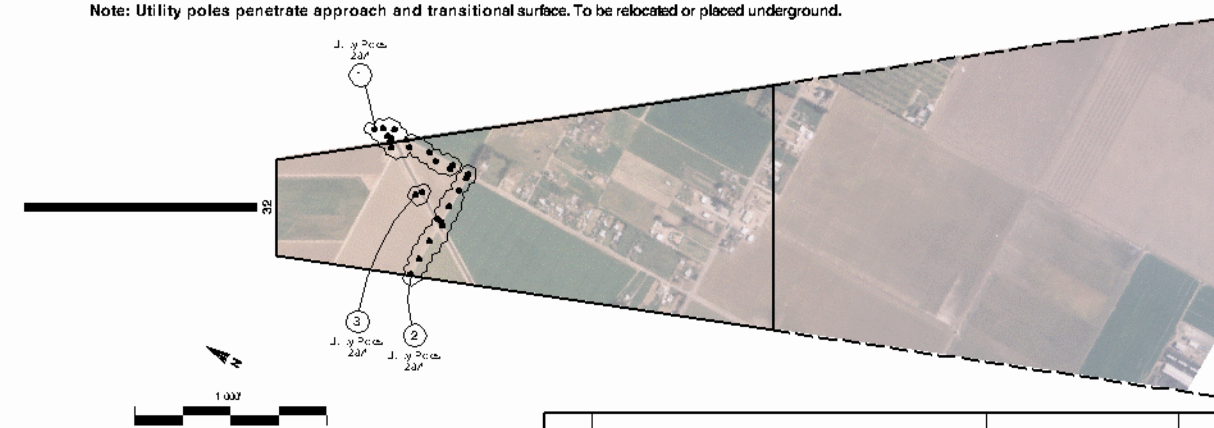
Note: Road is controlling obstruction. Obstruction light to be placed at critical point.



RUNWAY 32



Note: Utility poles penetrate approach and transitional surface. To be relocated or placed underground.



LEGEND

- ■ Object penetrates indicated surface
- ○ Object falls outside or below indicated surface
- * 15 feet vertical clearance added to road elevations

NOTES:

All elevations in feet above mean sea level (MSL) and NAVD88.

SOURCES:

USGS Topographic Maps

NO.	REVISION	SPONSOR	DATE

HANFORD MUNICIPAL AIRPORT

HANFORD, CALIFORNIA

AIRSPACE PLAN

MEAD & HUNT

DESIGN: DD	DRAWN: GJ	DATE: JUNE 2006	SHEET 2 OF 3

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