CHAPTER E

Airport Development Alternatives

■ INTRODUCTION

The purpose of this chapter is to present various development alternatives prepared for Franklin Field Airport (Franklin Field, Airport or F72) and summarize the planning issues and concerns associated with the future configuration of the Airport. This analysis recognizes input received from airport staff, key stakeholders, the review committees and the public. Consultant recommendations on individual issues are provided; and, where needed, a description of alternatives that need further consideration is presented.

Background

Franklin Field Airport (F72) (Airport) operates in a very unique environment with opportunities and challenges that must be factored into the alternatives development. It is important to restate that the Airport is a part of the Sacramento County Airport System (County Airport System) and plays a principal role as a training airport with much of the flight training activity originating from Executive Airport actually taking place at Franklin Field. This allows student pilots to gain proficiency by practicing take offs and landings and pattern flying skills in a less challenging flying environment. This reduces congestion at Executive and reduces noise and overflights into the surrounding neighborhoods. F72 also serves its resident small-aircraft aerial applicators (crop dusters) and based aircraft owners with existing taxiway and apron facilities with day-only visual runways. In a previous chapter of this Plan it was determined that airport airside and landside facilities will be designed to Federal Aviation Administration (FAA) Airport Reference Code (ARC) B-1/Small aircraft standards. All alternatives presented in this chapter adhere to these design guidelines.

The opportunities and challenges are circumstances having actual physical impact and/or influence on the alternatives development. These are considered together with the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis that was prepared earlier in the master

planning process, summarized in a later section of this chapter, and which also influences the alternatives development. The opportunities and challenges used as bases upon which to develop the alternatives consist of the following fundamental considerations:

- Avoidance of seasonal wetlands, vernal pools and potential suitable wildlife habitat;
- A minimized development envelope / existing facilities utilization, General minimized development cost, and;
- Base Flood Elevation (BFE) considerations

It is important to note the interrelationship and interconnectivity between these considerations. For example, a reduced development envelope helps avoid to the extent possible seasonal wetland. This in turn can help reduce project implementation costs with regard to environmental mitigation.

The Airport currently has only a modest level of development. And appropriately, the County Airport System operates and maintains the Airport in a fiscally responsible, efficient and prudent manner, meeting current needs, while poised to meet future demand-based needs as conditions warrant..This level of current development is, in some part, related to the Airport's present relative remoteness, the fact that the Airport lies completely within the 100-year floodplain, limited level of services and related demand, and all development is currently below the Base Flood Elevation (BFE). This essentially means that without raising structures above the BFE, all hangar-type development on the airport has to be temporary in nature and allow floodwaters to flow through the structures. All development must follow the Federal Emergency Management Agency's (FEMA) guidelines for functionally dependent use and only "Storage" is acceptable, meaning that no business functions with offices or maintenance shops would be allowed. Permanent development will require floor level to be raised 1.5 feet above the BFE. Regardless of structures being temporary or permanent, additional facilities (such as conventional hangars or Fixed Base Operator facilities) at Franklin Field would make it a more attractive airport for aviation users and more infrastructures would likely bring additional based aircraft to F72. As a result, the reader will note that much of the suggested landside development discussed and proposed in this chapter is considered "temporary" in nature, which allow it to be place at or below BFE.

The linkage between Franklin Field Airport and Executive Airport is clear; Franklin Field supports the operations of Executive Airport and both airports play an important role in the

County Airport System. As part of the four-airport County Airport System, each airport has an identified role (as briefly mentioned above and as more fully described in Chapter C of the Master Plan, *Forecasts of Aviation Activity*, page C.1). As a fiscally responsible airport operator, it is the goal of the County Airport System to move toward financial self-sufficiency for all system airports, to the maximum extent possible. In the case of Franklin Field, total financial self-sufficiency (i.e., paying for all operations, maintenance, overhead and capital costs through generated airport revenues) is not expected in the time frame of this master plan study. Although Franklin Field is a system airport with an important role, the role it plays is not one that lends itself well to the generation of revenue for the County Airport System for reasons that identify themselves throughout this chapter. Therefore the relative cost effectiveness and revenue generation potential of examined improvements is important to the alternatives analysis.

While additional development would almost certainly bring added revenue to the Airport and greater airport usage, environmental concerns, the lack of infrastructure and the potential for flooding, may well cause capital projects to be more expensive for the facilities that result. As such, a demand-based leasing policy should be established that provides for an acceptable rate of return on investments in light of this potential increase in the basis of the improvement costs for the County Airport System or a third-party developer. Therefore, a delicate balance must be created between added facilities, the value they bring to the Airport and the return on investment to the developer (whether County Airport System or third-party).

In Working Paper One (*Introduction and Vision, Inventory of Existing Conditions, Aviation Activity Forecasts, and Capacity Analysis and Facility Requirements*) present conditions, activity forecasting options and assumptions, and facility needs to meet anticipated demand were discussed. One of the demand assumptions included the possible closure of Sunset Sky Ranch in nearby Elk Grove. The assumption was that *if* Sunset Sky Ranch were to close, half of this airport's based aircraft population would relocate to Franklin Field Airport. This could bring an additional 30 aircraft to Franklin Field. *(Since the publication of Working Paper One, it appears that the continuation of Sunset Sky Ranch is much less in doubt, winning a recent court action that would suggest that its immediate future is more secure.)* From a planning perspective, however, it remains appropriate for this master planning exercise to consider the impact of a future closure of Sunset Sky Ranch on Franklin Field Airport and plan accordingly.

SWOT Analysis

In Chapter One of the Master Plan, *Introduction and Vision*, the master planning effort began with an assessment of Franklin Field's existing strengths and weaknesses and a prognostication of its future threats and opportunities. These evaluations were used to identify vision themes that positively state the future qualities of the airport, recognizing the weakness and threats that should be overcome while building on the Airport's strengths and maximizing its potential to realize new opportunities. Airport stakeholders, including elected and appointed officials, technical staff, airport users, interest groups and airport neighbors were interviewed to share their perspectives on Franklin Field and a SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis was conducted to create a vision statement for the Airport. Rather than restating the highlights of the analysis summary statement for each of the sections of the SWOT are included below.

Strengths

Assessment: ***Franklin Field is an excellent location for flight training with pent-up demand and does not have residential encroachment.***

Weaknesses

Assessment: ***The airport provides for only basic aviation needs, lies completely within the floodplain and the area is home to many species of concern that can conflict with the Airport's operation and development. As such, airport development costs to meet demand could be expensive and in cross purposes with habitat conservation efforts.***

Opportunities

Assessment: ***Future growth of south Sacramento County, the possible closure of other airports, and unmet demand suggests that if additional facilities were constructed and/or if FBO-type activities were present, additional aviation-use would likely occur at the Airport.***

Threats

Assessment: ***The RPZ to Runway 18 is mostly off-airport and vulnerable to incompatible land use. Outside influences such as the Cosumnes River Preserve and associated waterfowl habitat areas***

(conflicting land uses within the Airport's environs) and the RCCC (competing land use within the Airport property footprint) are threats to the airports long-term interests. Floodplain and wetland issues have every chance of adding complexity and cost to airport development.

Consultant's Conclusion Statement

Taken in the aggregate, the SWOT analysis suggests that Franklin Field Airport has development potential, but the possibility of meeting this growth assumption is made more difficult in consideration of the weakness and threats to Franklin Field, most notably overall environmental incomparability with airport environs and demand will establish the level of improvements needed at Franklin Field. Capital Development dollars will need to be maximized to cost effectively improve airport facilities. Third-party development may well be the only acceptable avenue to fund airport landside development.

Alternatives Analysis Themes

For the purpose of this alternative analysis (airside and landside), four general themes are considered and are the backdrop to the alternatives evaluation. These themes include:

- Operational Performance – Such as the efficient transit of aircraft to and from the runway systems and convenience and efficiency of facility development are considered.

- Best Planning Practices – Including rational growth, conformance with strategic vision, and the meeting of user needs.

- Economic and Financial Viability – Including capital cost considerations, the relocation of facilities, financial feasibility of alternatives, operations and maintenance costs, and potential development opportunities.

- Environment and Community – Such as sensitive species, aircraft-generates noise, air and water quality.

Each of the development alternatives presented in a later section of this chapter have been filtered through the lens of environmental considerations, airport design setbacks and framed in the context of the analysis themes presented in the above paragraph.

Every alternatives analysis must begin with a group of postulations created within the context of the historical and predicted future of Franklin Field Airport. Therefore, some basic assumptions have been established, which are intended to direct the future development. The aviation activity forecasts and the various considerations on which the forecasts have been based provide support to these assumptions.

Assumption One. In consideration of the County Airport System's role for each of its airports, Franklin Field will remain open and will be developed and operated in a manner that is consistent with local ordinances and codes, federal and state statutes, federal grant assurances, and Federal Aviation Administration (FAA) regulations.

Assumption Two. This assumption recognizes the role of the Airport. The Airport will continue serve as a facility that primarily accommodates recreational general aviation activity, with an emphasis on flight training, which dictates that Franklin Field should continue to operate with two runways (Runway 9/27 and Runway 18/36).

Assumption Three. This assumption relates to the size and type of aircraft that utilize the Airport and the resulting setback and safety criteria used as the basis for the layout of airport facilities.

The "Design Aircraft Fleet" for the Airport is represented by aircraft that have approach speeds of less than 121 knots, wings spans of less than 49 feet, and weighing no more than 12,500 pounds [FAA Airport Reference Code (ARC) B-I Small Aircraft]. Aircraft such as the Beech Baron 58, the Beech King Air B100, the Cessna 421, the Piper Cheyenne and the Swearingen Metro are contained in the ARC B-I Small Aircraft category.

Assumption Four. Because landside development area at any airport is always at a premium, the fifth assumption is that the plan for future airport development should strive to make most efficient use the available area for aviation related activities, including general aviation facilities.

Assumption Five. This assumption relates to the conscience need to balance all development against the capital costs of providing services and facilities. Implicit to this assumption is the goal of third party development for additional airport facilities and commercial aviation-related business.

Assumption Six. Franklin Field Airport is currently operated as a Visual Flight Rules (VFR) daytime-only airport. This operational situation has been status quo of the airport since its inception and has served the airport well. However, should significant additional based aircraft locate at Franklin Field during the planning period, it is prudent to program for the potential of nighttime and modest Instrument Flight Rules (IFR) operations, under most weather conditions, should traffic and funding warrant this advancement.

Assumption Seven. The Airport will follow all state and Federal laws and requirements in regards to the environment and wildlife. In future airport development, to the maximum extent possible, future facilities will be designed to avoid impacts with the Airport's environs."

■ Goals for Development

Accompanying these assumptions are several goals, which have been established for purposes of directing the Master Plan and establishing continuity in the future for airport development. These goals take into account several categorical considerations relating to the needs of the Airport both in the short-term and long-term, including safety, noise, capital improvements, land use compatibility, financial and economic conditions, public interest and investment, and community recognition and awareness.

- These goals are preliminary and are intended to stimulate discussion. After receiving input from the public and local government representatives, the goals will be used to guide in the formulation of recommendations for this Master Plan (MP):
- Provide effective direction for the future development of Franklin Field Airport through the preparation of a rational, reasonable, and implementable plan.
- Sacramento County Airport System is committed to the development of a safe, reliable, and high quality airport. "High quality" in this instance is intended to prescribe the *right sizing* of proposed development to effectively meet the needs of the community and its visitors in a manner that is in concert with surrounding development, while also addressing environmental concerns.
- Accommodate forecast aircraft operations in a safe and efficient manner by the provision of proper facilities and services. Plan and develop the Airport to be capable

of accommodating the future needs and requirements of Sacramento County and the surrounding communities; thus, the Airport will continue to serve as a regional general aviation facility.

ENVIRONMENTAL CONSIDERATIONS

The vision for Franklin Field Airport's future is based upon an evaluation of existing and potential opportunities and challenges. This evaluation was conducted to describe potential environmental conditions that the planning effort must anticipate when developing its recommendations.

■ Environmental Challenges

Important issues that will likely present considerations for future development (such as physical, economic, and environmental concerns) at Franklin Field Airport have been addressed in the development of the Airport's long term plan. The following considerations have been identified:

- Potential presence of endangered, threatened species, and species of concern
- Presence of wetlands and vernal pools
- Located in 100-year Base Flood Plain

One of the most critical issues affecting future development at the Airport, in regard to aircraft storage facilities is the 100-year Base Flood Plain. According to the Federal Emergency Management Agency (FEMA), Franklin Field Airport is located entirely within the 100-year Base Flood Plain meaning the ground elevation at the Airport is beneath the base flood elevation (BFE). During a base flood, the BFE is the surface elevation to which floodwater is expected to rise. This critical issue at the Airport has been taken into consideration for the future layout and development of hangar facilities.

The development areas defined for hangar placement opportunities have a BFE of 19 to 20 feet Mean Sea Level (MSL). FEMA has determined that Franklin Field is a "Functionally Dependent Use", which is a use located within close proximity to water, including port and docking facilities necessary for the loading and unloading of passengers or cargo, ship repair and building facilities, and not including manufacturing or long-term storage facilities. FEMA has also determined that Franklin Field Airport can continue to construct structures on the Airport, with conditions,

using the "Functionally Dependent Use" as a variance. The current Sacramento County ordinance governing Franklin Field only allows temporary structures to be developed because the Airport is within the Base Flood Plain.

In order to make an aircraft storage facility as flood resistant as possible, future permanent facilities will either need to be elevated by 1.5 feet above the BFE, or constructed at the existing grade elevation and dry-floodproofed (constructed with flood resistant materials). However, depending upon the location of the facility construction, when flood conditions occur at the Airport, the depth of floodwater may be severe enough to preclude dry-floodproofing. In the landside alternatives presented following this discussion, elevated facilities requiring aircraft access, such as conventional hangars, were designed at a maximum allowable longitudinal grade on the ramp of 2.0% (FAA Advisory Circular 150/5300-13, *Airport Design*) , for Category A and B aircraft . Also, to ensure compliance with both FEMA and Sacramento County Base Flood standards, the alternatives include temporary (portable) hangar type aircraft storage facilities at the existing ramp elevation, which is below BFE. temporary aircraft storage facilities are allowable as Functionally Dependant Uses below BFE.

In that the environmental considerations for development of the airport and its landside are really this driving influence and limiter for the construction of new facilities at Franklin Field it is most appropriate that they become the initial screening criteria for the determination of acceptable parcels for development at F72. The following illustration, entitled *ENVIRONMENTAL CONSIDERATIONS ANALYSIS,* provides an idea of the existing environmentally sensitive areas located on the Airport, along with those areas of airport property that can be used for future development. If fact, this generalized development alternatives analysis was carried out in a manner to avoid on-site environmental considerations to the maximum extent possible.

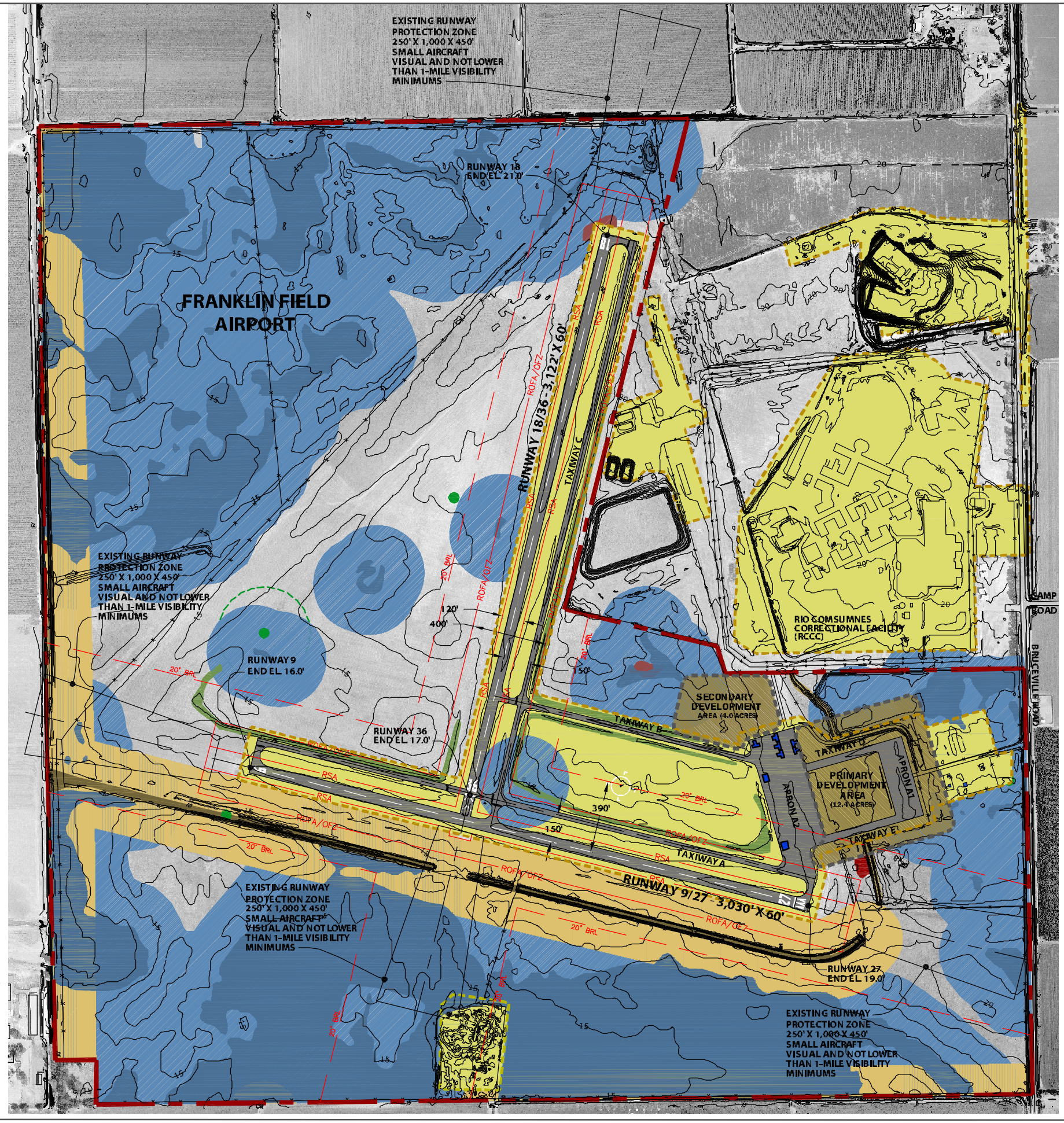


Figure E1 **Environmental Considerations Analysis**

SAFETY SETBACK CONSIDERATIONS

The following illustration, entitled *AIRSIDE DEVELOPMENT CONCEPT WITH AVIATION DEVELOPMENT CONSIDERATIONS AND POTENTIAL LANDSIDE DEVELOPMENT AREA,* provides a snapshot of the areas that are reserved for airside facilities (runways, taxiways, and safety setbacks), along with those areas of airport property that can be used for landside development. These safety setback are determined both laterally from the centerline of the runway and longitudinally off the ends of the runways. All landside development must remain clear of the airside pavements and associated safety setbacks.

The FAA Advisory Circular 150/5300-13, *Airport Design*, recommends standard widths, minimum clearances, and other dimensional criteria for runways, taxiways, safety areas, aircraft parking areas, and other physical airport facilities. Dimensions are recommended with respect to the Airport Reference Code and the lowest designated or planned approach visibility minimums. The following safety setbacks are defined on the following illustration:

Runway Safety Area (RSA). The Runway Safety Area is a defined surface that surrounds the runway, in order to reduce the risk of aircraft damage in the event of an overshoot, undershoot, or deviation from the runway.

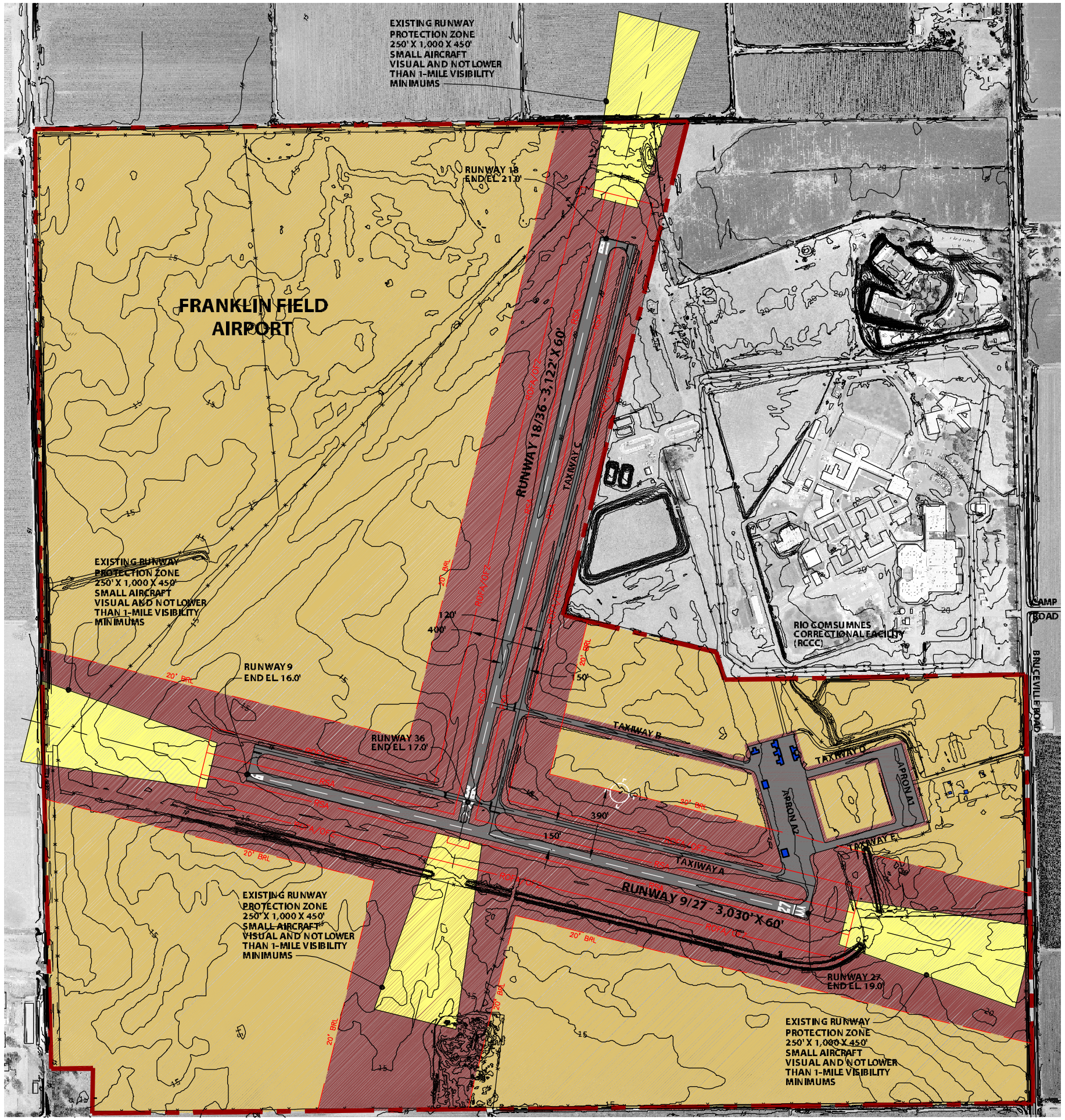
Obstacle Free Zone (OFZ). The Obstacle Free Zone is the airspace up to 150 feet above the Airport's established elevation along the runway and extended runway centerline that provides clearance protection for aircraft on a missed approach, landing, or taking off from the runway. The OFZ is required to be clear of all objects. In this case, the lateral setbacks for the OFZ are the same as for the Building Restriction Line described below.

Runway Protection Zone (RPZ). The function of the Runway Protection Zone is to enhance the protection of people and property on the ground beyond the end of runways. This is achieved through airport control of the RPZ areas. The RPZ is trapezoidal in shape, centered about the extended runway centerline, and begins 200 feet beyond the end of the area usable for takeoff or landing. The RPZ dimensions are functions of the type of aircraft and approach visibility minimums associated with each runway end.

Object Free Area (OFA). The Object Free Area is an area on the ground centered on taxilane, taxiway, or runway centerline that improves the safety of aircraft operations by having the area clear of objects.

Building Restriction Line (BRL). The Building Restriction Line is a line set back from the runway centerline that identifies suitable building area locations.

With these safety setbacks defined and identified on the Airport's current layout, the parcels outside these safety areas can be further analyzed for potential landside development areas. At Franklin Field Airport, these landside development areas must be evaluated against existing environmental considerations to further determine suitable locations for future facilities in order to avoid any potential impacts to environmental conditions.



Runway & Taxiway System

Runway & Taxiway System — RSA

Runway & Taxiway System — ROFA/OFZ

Runway & Taxiway System

Runway Protection Zones

Potential Landside Development Areas

Figure E2 **Airside Development Concept w/Aviation Considerations and Potential Landside Development Areas**

AIRSIDE DEVELOPMENT CONCEPTS AND ALTERNATIVES

■ Introduction and Preliminary Conclusions

Because all other airport functions relate to and revolve around the basic runway/taxiway layout, airside development alternatives must first be carefully examined and evaluated. Specific airside considerations for this airport include runway length, instrument approach capabilities, and taxiway layout. In light of the facility requirements information presented previously, several conclusions can be reached with regard to the future airfield components that should be recommended as part of this Master Plan Update. These include:

- As stated in first two assumptions on page E.1 the airport will continue to operate with two Runways to fulfill its County Airport System defined role.
- The Airport's main runway (Runway 18/36) will be maintained at its existing length (3,122) and its existing width (60 feet). The crosswind runway (Runway 9/27) will be maintained at its existing length (3,030) and its existing width (60 feet).
- The ARC for Runway 18/36 and Runway 9/27 will remain B-I Small Aircraft Exclusively.
- Medium Intensity Runway Lighting (MIRL) systems are programmed for both runways.
- Both ends of Runway 18/36 will be programmed for a not-lower-than 1 mile instrument approach.
- The full length parallel taxiway (Taxiway "A") on the north side of Runway 9/27 will be maintained.
- The full length parallel taxiway (Taxiway "C") on the east side of runway 18/36 will be maintained.
- The partial parallel taxiway (Taxiway "B") located midfield will be maintained.
- The connecting taxiway (Taxiway "D") will be maintained.
- The connecting taxiway (Taxiway "E") will be maintained.

Summary of Airside Alternative Considerations:

- Operational Performance. By maintaining Runways 18/36 and 9/27 the airport provides maximum flight training support for Executive Airport. Efficiency is maintained by continuing the dual taxiway access system to both runways making access to the aircraft apron/hangar development area convenient and useful. Runway lengths are consistent with and appropriate for the critical aircraft determination.
- Best Planning Practices. The airside complex is consistent with vision and the role of the airport and meets user needs.
- Economic and Financial Viability. Although maintaining a two-runway airside brings additional operation, maintenance and capital expenses, this Primary (prevailing and calm winds) and Crosswind Runway system is the ideal configuration to support flight training activity.
- Environment and Community. Continuing the existing airfield complex as is essentially represents an airside "no-build" scenario. Therefore, no additional environmental or community impact is caused by the continuation of its current configuration.

LANDSIDE DEVELOPMENT CONCEPTS

■ Introduction

With the framework of the Airport's ultimate airside development identified in a preliminary manner (the main runway will remain in its existing position at its existing length, the crosswind runway will be maintained in its existing location and at its existing length), the placement of landside facilities can now be analyzed. In general, landside facilities consist of terminal area development, aircraft parking aprons, support facility development, hangar development areas, and airport access. The overall objective of landside development planning at the Airport is the provision of facilities, which are conveniently located and accessible to the community, which accommodate the specific requirements of airport users, and are developed with consideration given to existing environmental conditions.

As identified in the previous chapters, there is current demand for additional general aviation facilities. Development alternatives and concepts for the landside development areas are provided below.

■ Landside Development Concepts and Alternatives

A significant landside development issue that has been identified is development area for general aviation storage facilities (hangars). These facilities can range from T-hangars that house aircraft in individual divided units that are contained in a larger structure, to small conventional hangars (executive hangars). T-hangars are capable of housing one or two general aviation aircraft, or corporate hangars capable of housing one or more business jet aircraft, to large "gang storage" hangars that can house a number of aircraft under one roof without the separating partitions that characterize a T-hanger structure. The *Master Plan Update* provides a detailed layout of facilities to provide space for these various hangar types, while also striving to achieve flexibility so that the type of hangar built can be in response to actual demand.

Aviation forecasts (developed earlier in the Master Plan Update) indicate that areas should be reserved for the storage of approximately 42 additional general aviation based aircraft, 32 of which are anticipated within the next five years. Initially, future facilities should be developed in the existing general aviation development area (east quadrant of airport property).

Terminal Area Alternative One. Terminal Area Alternative One provides for aircraft parking and storage facilities to be mostly oriented in a northwest/southeast configuration. Existing pavement on Apron A1 and A2 will be maintained, in addition to expanding both aprons within the center of each to provide additional space for aircraft parking and storage facilities. The existing portable T-hangars located on the main apron (Apron A2) will be relocated along the north and northeastern edges of the apron. Alternative One allows for a total of approximately 63 tie-down or nested portable hangars, which meets the total of forecasted based aircraft. In regard to the potential flooding of the 100-year Base Flood Plain, this alternative recommends the installation of temporary (portable) hangar type aircraft storage facilities at the existing ramp elevation.

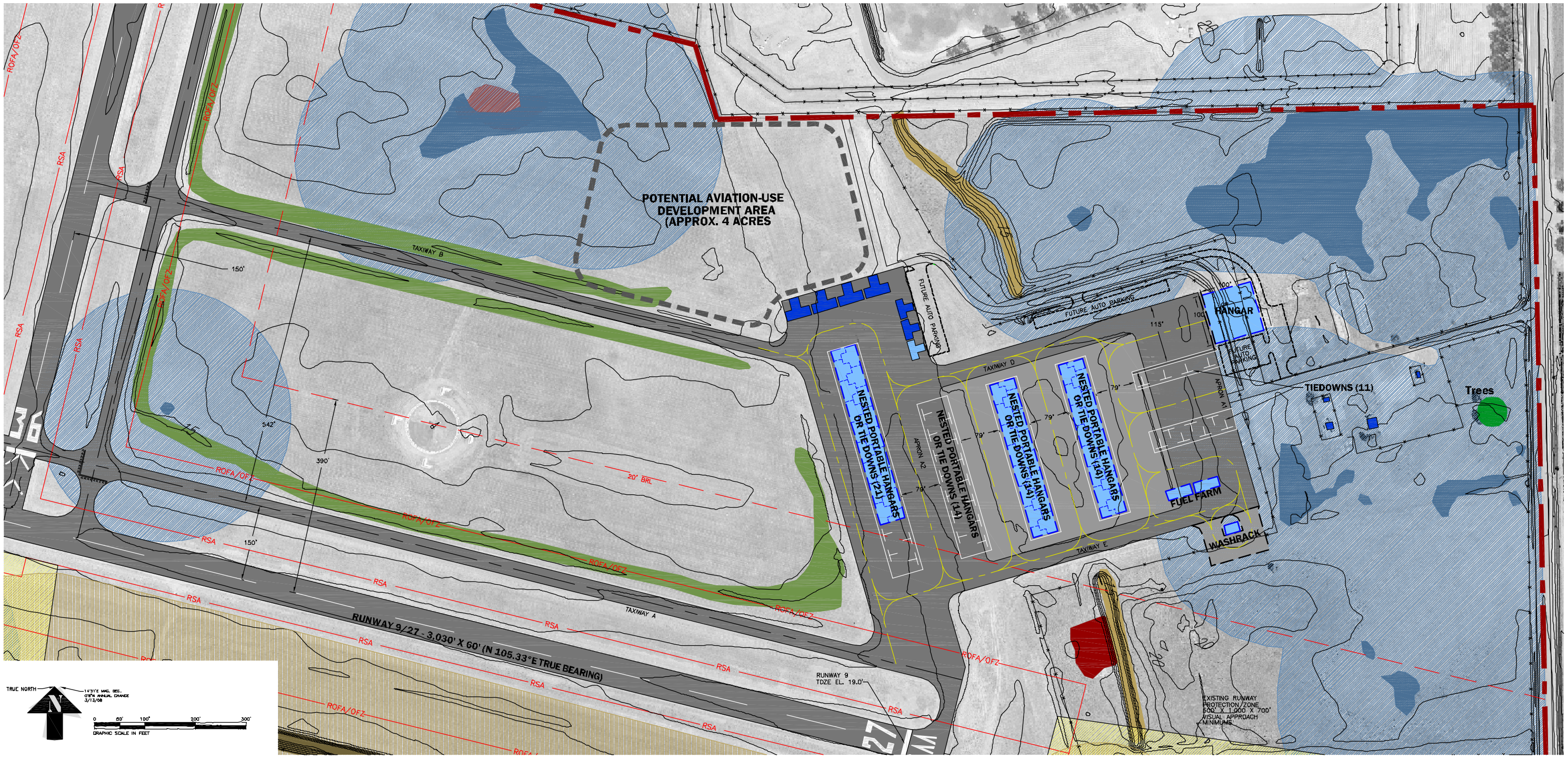
Additionally, Alternative One provides for the space reservation for a large conventional or fixed based operator (FBO) hangar located on the northeast side of Apron A1, with the ramp set back 175 feet to allow for the 2.0% longitudinal grade in order to meet FEMA and Sacramento County Base Flood standards. A potential location for an aircraft fueling facility is located on

the southern end of Apron A1. Convenient roadside access is provided off the airport entrance road, which continues north along the apron areas. Potential auto parking areas are located directly south and southeast of a future large conventional or FBO hangar, to the north of Apron A1, and on the northeast side of Apron A2.

A secondary aviation-use development area containing approximately four acres is located to the northwest of Apron A2. Convenient auto access would be provided to the east by the exiting airport entrance road and a new east/west road would be located north of Apron A1 (see Figure E3.

Summary of Alternative One Considerations:

- Operational Performance. By maintaining the dual taxiway system access to the Runways (Taxiway A and Taxiway B), efficient access from the apron/hangar development area to the airfield is maintained. In addition, by making use of the existing access roadway leading in from Bruceville Road, operational and capital costs are minimized.
- Best Planning Practices. The concept in Alternative One is to allow for rational growth. New landside facilities will be built within the existing development area and only if there is demand.
- Economic and Financial Viability. Alternative one recognizes capital cost considerations. *Initial* new hangar development will almost certainly be done in a manner that utilizes the existing infrastructure (e.g., new portable T-hangars on *existing* apron). If demands increase, financial resources (private party resources) will need to be provided to improve infrastructure for additional facility development (new hangars and new taxiway/apron pavement).
- Environment and Community. Because landside development recommendations are foreseen to take place primarily within the existing development area and wetlands, vernal pools and critical habitat areas are for the most part avoided, environmental concerns are minimized.



Vernal Pool Invertebrate Habitat

250' Buffer Around Vernal Pool Invertebrate Habitat

Suitable Giant Garter Snake Aquatic Habitat

200' Buffer Around Suitable Giant Garter Snake Aquatic Habitat

Marginal Giant Garter Snake Habitat

Burrowing Owl Known Location

Approximate Location of Burrowing Owl Burrows , Observed by SCAS

Ditches

Figure E3 **Terminal Area Alternative 1**

Terminal Area Alternative Two. Terminal Area Alternative Two provides for the flow of aircraft parking and storage facilities to be mostly oriented northwest/southeast configuration, similar to Terminal Area Alternative One. Existing pavement on Apron A1 and A2 will be maintained, in addition to expanding both aprons within the center of each to provide additional space for aircraft parking and storage facilities. The existing portable T-hangars located on the main apron (Apron A2) will be relocated along the north and northeastern edges of the apron. Alternative Two allows for a total of approximately 62 tie-down positions or nested portable hangars, which will accommodate the total forecasted based aircraft. In regards to the potential flooding of the 100-year Base Flood Plain, this alternative recommends the installation of temporary (portable) hangar type aircraft storage facilities at the existing ramp elevation.

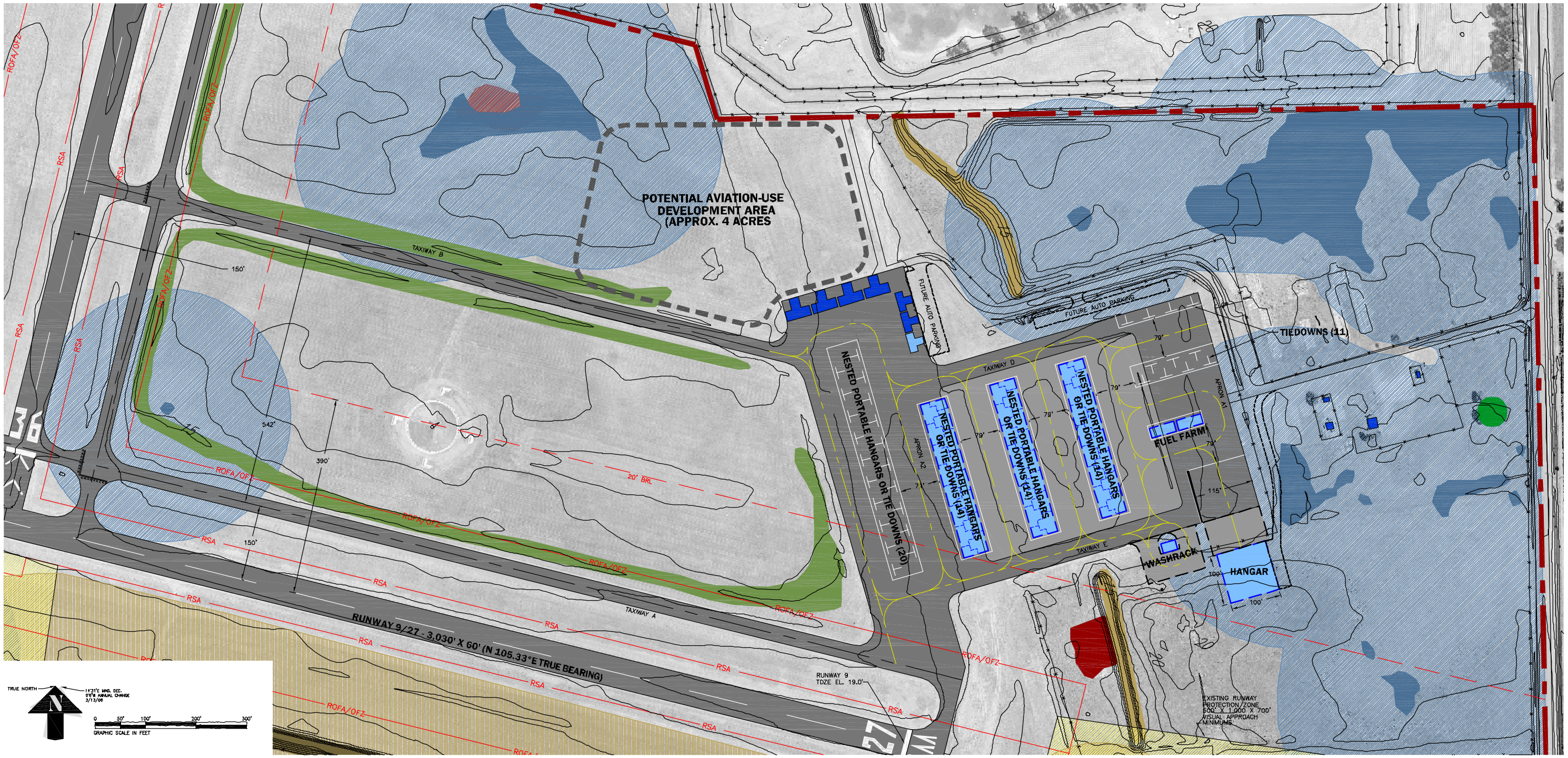
Additionally, Alternative Two provides for the space reservation for a large conventional or FBO hangar located on the southeast corner of Apron A1 with the ramp set back 175 feet to allow for the 2.0% longitudinal grade in order to meet FEMA and Sacramento County Base Flood standards. A potential location for an aircraft fueling facility is located in the center of Apron A1. Convenient roadside access is provided off the exiting airport entrance road, which continues north along the apron areas. An additional access road to a future large conventional or FBO hangar would be developed from the main airport entrance road, extending south to the hangar facility location. Potential auto parking areas would be located east of a future large conventional or FBO hangar, to the north of Apron A1, and on the northeast side of Apron A2.

A secondary aviation-use development area containing approximately four acres is located to the northwest of Apron A2. Convenient auto access would be provided to the east by the existing airport entrance road and a new east/west road that would be located north of Apron A1 (see Figure E4).

Summary of Alternative Two Considerations:

- Operational Performance. By maintaining the dual taxiway system access to the Runways (Taxiway A and Taxiway B), efficient access from the apron/hangar development area to the airfield is maintained. In addition, by making use of the existing access roadway leading in from Bruceville Road, operational and capital costs are minimized.

- Best Planning Practices. The concept in Alternative One is to allow for rational growth. New landside facilities will be built within the existing development area and only if there is demand.
- Economic and Financial Viability. Alternative one recognizes capital cost considerations. *Initial* new hangar development will almost certainly be done in a manner that utilizes the existing infrastructure (e.g., new portable T-hangars on *existing* apron). If demands increase, financial resources (private party resources) will need to be provided to improve infrastructure for additional facility development (new hangars and new taxiway/apron pavement).
- Environment and Community. Because landside development recommendations are foreseen to take place primarily within the existing development area and wetlands, vernal pools and critical habitat areas are for the most part avoided, environmental concerns are minimized.



Vernal Pool Invertebrate Habitat

250' Buffer Around Vernal Pool Invertebrate Habitat

Suitable Giant Garter Snake Aquatic Habitat

200' Buffer Around Suitable Giant Garter Snake Aquatic Habitat

Marginal Giant Garter Snake Habitat

Burrowing Owl Known Location

Approximate Location of Burrowing Owl Burrows , Observed by SCAS

Ditches

Figure E4 **Terminal Area Alternative 2**

Terminal Area Alternative Three. Terminal Area Alternative Three provides for the flow of aircraft parking and storage facilities to be mostly oriented northwest/southeast configuration, similar to Terminal Area Alternatives One and Two. Existing pavement on Apron A1 and A2 will be maintained, in addition to expanding both aprons within the center of each to provide additional space for aircraft parking and storage facilities. The existing portable T-hangars located on the main apron (Apron A2) will be relocated along the north and northeastern edges of the apron. Alternative Three allows for a total of approximately 62 tie-down positions or nested portable hangars, which will accommodate the total forecasted based aircraft. In regards to the potential flooding of the 100-year Base Flood Plain, this alternative recommends the installation of temporary (portable) hangar type aircraft storage facilities at the existing ramp elevation.

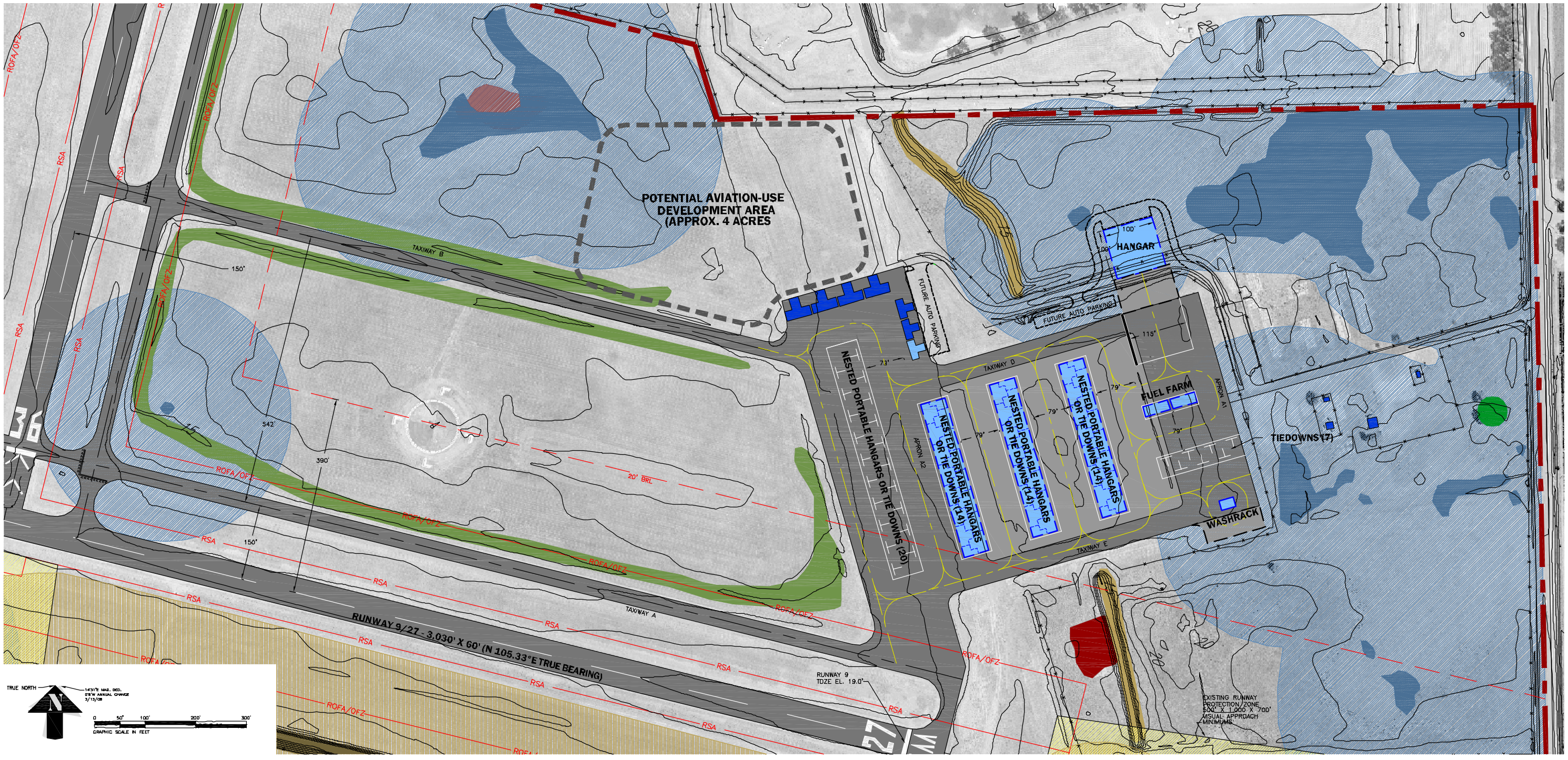
Additionally, Alternative Three provides for the space reservation for a large conventional hangar located on the northeast corner of Apron A1 with the ramp set back 175 feet to allow for the 2.0% longitudinal grade in order to meet FEMA and Sacramento County Base Flood standards. A potential location for an aircraft fueling facility is located in the center of Apron A1. Convenient roadside access is provided off the existing airport entrance road; however, should the large, conventional hangar be constructed in the location illustrated, the airport entrance road would be relocated behind the hangar and reconnected along the west side of the hangar. Potential auto parking areas are located to the north and southwest of the future conventional hangar and on the northeast side of Apron A2.

A secondary aviation-use development area containing approximately four acres is located to the northwest of Apron A2. Convenient auto access would be provided to the east by the existing airport entrance road (see Figure E5).

Summary of Alternative Three Considerations:

- Operational Performance. By maintaining the dual taxiway system access to the Runways (Taxiway A and Taxiway B), efficient access from the apron/hangar development area to the airfield is maintained. In addition, by making use of the existing access roadway leading in from Bruceville Road, operational and capital costs are minimized.

- Best Planning Practices. The concept in Alternative One is to allow for rational growth. New landside facilities will be built within the existing development area and only if there is demand.
- Economic and Financial Viability. Alternative one recognizes capital cost considerations. *Initial* new hangar development will almost certainly be done in a manner that utilizes the existing infrastructure (e.g., new portable T-hangars on *existing* apron). If demands increase, financial resources (private party resources) will need to be provided to improve infrastructure for additional facility development (new hangars and new taxiway/apron pavement).
- Environment and Community. Because landside development recommendations are foreseen to take place primarily within the existing development area and wetlands, vernal pools and critical habitat areas are for the most part avoided, environmental concerns are minimized.



Vernal Pool Invertebrate Habitat

250' Buffer Around Vernal Pool Invertebrate Habitat

Suitable Giant Garter Snake Aquatic Habitat

200' Buffer Around Suitable Giant Garter Snake Aquatic Habitat

Marginal Giant Garter Snake Habitat

Burrowing Owl Known Location

Approximate Location of Burrowing Owl Burrows , Observed by SCAS

Ditches

Figure E5 **Terminal Area Alternative 3**

■ Conceptual Airport Development Plan

In consideration of County Airport System comments during the development of alternatives, Alternative One appears to provide the most satisfactory conceptual layout of future facilities for the long-term planning purposes. As can be noted in Summary of Considerations for each of the Alternatives, they all were formulated in recognition of existing operational, economic, financial and environmental constraints. However, for ease of landside access and "front row" placement of the future permanent conventional hangar structure, Alternative One is likely the best. It should be emphasized that the layout of facilities shown on the *CONCEPTUAL AIRPORT DEVELOPMENT PLAN* (as illustrated in the following figure) is exactly that, conceptual. The actual layout of new facilities will almost certainly be different then the concept layout; however, the concept provides a guide that should be followed with regard to the location of development areas and the relationship to landside and airside access.

Actual new facilities at the airport will be constructed in response to actual demand, along with consideration of the financial and the environmental implications. No new facility will be constructed at the airport unless there is adequate demand, unless the project is financially feasible and unless all environmental concerns are appropriately addressed.

The Conceptual Development Plan, as amended in response to the Working Paper, will be utilized as the basis for the Environmental Review, the development of detailed Airport Plans, and the development of a long-term capital improvement program for the Airport.

Figure E6
CONCEPTUAL AIRPORT DEVELOPMENT PLAN
(to be included)