



CHAPTER SEVEN

AIRPORT LAYOUT PLANS

GENERAL OVERVIEW

An update to the Airport Layout Plan drawing set (ALP) for the Tyler Pounds Regional Airport (TYR) is included and discussed in this chapter. The Federal Aviation Administration (FAA) as a part of the Master Plan process requires the Airport Layout Plan set. This drawing set provides a portion of the input required to determine the eligibility of proposed airport improvement projects. The FAA will generally not provide financial assistance for projects that are not depicted on the ALP. The drawings which comprise the updated ALP illustrate the current (2005) facilities at TYR and proposed improvements resulting from the analyses contained in the previous sections of the Master Plan Study for the short, intermediate, and long-term planning periods.

The Airport Layout Plan (ALP) set was prepared in conformity with the criteria established by the Federal Aviation Administration (FAA) in **Advisory Circular (AC) 150/5070-6B, “Airport Master Plans”** and **AC 150/5300-13 Change 9, “Airport Design”** and supporting circulars and orders.

The ALP set includes the following individual drawing sheets:

- Cover Sheet
- Airport Layout Drawing
- Airspace Drawing
- Airspace Drawing (Runway 4 Extended Approach)
- Airspace Drawing (Runway 13 Extended Approach)
- Airspace Drawing (Runway 22 Extended Approach)
- Runway 4 Inner Portion of the Approach Surface Drawing
- Runway 22 Inner Portion of the Approach Surface Drawing
- Runway 13 Inner Portion of the Approach Surface Drawing
- Runway 31 Inner Portion of the Approach Surface Drawing
- Runway 17 Inner Portion of the Approach Surface Drawing
- Runway 35 Inner Portion of the Approach Surface Drawing
- Terminal Area Drawing - Terminal Area Development
- Terminal Area Drawing – North Area Development
- Terminal Area Drawing - West Area Development
- Terminal Area Drawing - South Area Development
- Airport Property Map
- Land Use Drawing

Additionally both a location and a vicinity map for the airport are incorporated onto the cover sheet, which also provides an index of individual drawing sheets. A reduced version of the ALP set is included at the end of this chapter.



Airport Layout Drawing

The airport layout drawing depicts all existing facilities as well as proposed development over the course of the master plan. These facilities include, but are not limited to: the runway and taxiway system, taxilanes, hold aprons, lighting, NAVAIDs, terminal facilities, hangars, other airport buildings, aircraft parking areas, automobile parking, and airport access elements. Key dimensional criteria are included for the airfield geometry. This includes, but is not limited to, the size of the runways and various taxiways; runway safety and runway object free areas; building restriction lines; and navigational aid critical areas. Airport coordinates, airport elevations, general airport data, basic runway data, a modification approval block, and wind rose data are included on the separate Airport Layout Plan Data Sheet.

One of the most significant improvements shown on the ALP involves the extension of Runway 4-22 to the southwest by approximately 1,400 feet. An extension of this length will allow Runway 4-22 to function as a primary runway capable of accommodating the future aircraft fleet mix projected to operate at TYR. Additionally, improvements to the runway safety areas associated with Runways 4, 22 and 13 will be a funding priority.

Additional airfield improvements include the integration of high-speed taxiway exits for increased capacity along with the addition of various taxiway connectors for improved airfield circulation. Precision approach capability to Runway 4-22 is also planned.

Several apron and taxilane improvements are shown on the plan including general aviation facility development on the north, west and south areas of the airport. These expansions create additional room for ground circulation and aircraft parking and are required to accommodate the growth of general aviation traffic that is expected to occur during the planning period.

The plan also indicates proposed commercial hangar construction for the expansion of existing business or for new businesses that are expected to commence at TYR throughout the planning period. Additional t-hangar and corporate hangar development is also incorporated in future plans for the three primary general aviation development areas.

Airspace Drawings

To enhance the safe operation of aircraft in the airspace around the airport, the FAA has adopted **Federal Aviation Regulations (FAR) Part 77 “Obstructions Affecting Navigable Airspace.”** Subpart C of FAR Part 77 establishes standards for determining obstructions to air navigation. These regulations enable the establishment of imaginary surfaces, which no object, manmade or natural, should penetrate. FAR Part 77 surfaces are utilized in zoning and land use planning adjacent to an airport to protect the navigable airspace from encroachment by hazards that would potentially affect the safety of airport operations.

The FAR Part 77 Imaginary Surfaces Plan depicts the physical features of the area around the airport including existing obstructions that penetrate the surfaces. The specific imaginary surfaces, which should be protected from obstructions, include:

Primary Surface - A rectangular area symmetrically located about each runway centerline and extending a distance of 200 feet beyond each runway threshold. Width of the Primary Surface is based on the type of approach a particular runway has, while the elevation is the same as that of the runway centerline at all points.

Horizontal Surface – A level oval-shaped area situated 150 feet above the airport elevation, extending 5,000 or 10,000 feet outward, depending on the runway category and approach procedure available.



Conical Surface - Extends outward for a distance of 4,000 feet beginning at the outer edge of the Horizontal Surface, and sloping upward at a ratio of 20:1.

Approach Surfaces - These surfaces begin at the end of the Primary Surface (200' beyond the runway threshold) and slope upward at a ratio determined by the runway category and type of approach available to the runway. The width and elevation of the inner end conforms to that of the Primary Surface while approach surface length and width of the outer end are governed by the runway category and approach procedure available.

Transitional Surface - A sloping area beginning at the edges of the Primary and Approach Surfaces and sloping upward and outward at a ratio of 7:1 until it intersects the Horizontal Surface.

Inner Portion of the Approach Surface Drawings

The Inner Portion of the Approach Surface drawing denotes a plan and profile view of a particular runway end. Obstructions are listed numerically in a table with data describing the obstruction, obstruction elevation, affected Part 77 surface, surface elevation, amount of penetration, and proposed dispositions. Potential obstructions in the approach zones include vertical clearances required over roadways and railroads as well as incursions by power poles, trees, buildings, etc. for both the existing and ultimate approaches.

The drawings identify that prior to the installation of a precision approach, removal of obstructions will be required to keep the heights of these objects below the required 50 to 1 approach surface. As indicated, the existing approaches to Runways 4-22 and 13-31 are impacted by various objects penetrating the approach surfaces. Most of these objects are trees; however, the plans also indicate penetrations by man made objects including light poles and a building as well. The approach drawings for Runways 17 and 35 demonstrate that the existing approaches are unobstructed.

Terminal Area Plan

The Terminal Area Plan drawings (TAP) depict the same configuration and dimensional information shown on the ALP drawing, but provide a larger scale version of the terminal development areas so that certain features and greater detail of the proposed improvement can be discerned. The plans include recommended improvements to access roads, parking areas, the buildings, hangars, commercial development, and support facilities.

Airside improvements shown on the Terminal Area Plan for Terminal Area Development include provisions to expand the main terminal. As illustrated, future terminal expansion will create additional gates for expected increases in airline activity and similar expansions to the passenger terminal will accommodate additional passenger traffic associated with the increased airline activity.

Landside improvements shown include expansion to existing long-term and short-term parking facilities and also consider the construction of an airport maintenance complex and a rental car service center.

The drawing for the North Development area characterizes general aviation growth balanced with commercial development opportunities along the frontage to Highway 64. Drawings for the West and South Development areas depict options for various general aviation development opportunities at TYR during the 20-year planning period and beyond.



Airport Property Map

The Airport Property Map is intended to accurately show the airport property line and all current lease boundaries. To develop this property map, an extensive review of recorded deeds, plats, and rights of way was conducted. The Property Map not only displays the existing inventory of property on the airport but also identifies those tracts of land that have been recommended for future acquisition. As noted on this drawing, approximately 126.5 acres are identified for acquisition to the southwest of the airport. This area is required to address existing runway safety area deficiencies and the proposed extension of Runway 4-22. Given the continued expansion of developed land uses in the immediate airport environs, it is important that a property envelope sufficient to provide for airport needs well into the future be defined and acquired. This avoids the need to acquire costly developed property in the future to meet airport's development needs. The proposed acquisitions depicted on the Airport Property Map will ensure the viability of the airport for an extended period of time and will provide proper protection for the future development of approaches and the runway extension that is expected to occur in the future.

Airport Land Use Plan

The Airport Land Use Plan shows the proposed utilization of property within the existing and future boundary of Tyler Pounds Regional Airport. The land use designations illustrated correspond with the future developments shown on Airport Layout Plan and assign undeveloped areas to their most desired or likely use for the future. The purpose of the plan is to ensure that the airport strategically allocates areas of property for future need such that future acquisition of land and easements are minimized.

SUMMARY

The preceding chapters have identified the forecast level of activity at TYR, applied that demand to the existing available facilities to determine future facility needs, and investigated an array of alternatives that could be employed to meet the projected demand. From the alternatives analysis and its subsequent refinement, a set of development actions have been defined for use in graphically depicting the future extent and configuration of facilities at TYR. These have been briefly discussed in the preceding sections. The next step in the planning process consists of refining the preliminary costs that were first identified in the alternatives analysis, developing a prioritized phasing program for the recommended development actions and determining the funding sources that will be employed to pay for the recommended improvements. The financial considerations including phasing, development and capital costs and funding options will be addressed in the Implementation Plan Chapter.