

CHAPTER SIX

Airport Layout Plan

The Airport Plans set is at the heart of the master plan document. The updated information presented in this Master Plan report is pictorially summarized in the set of drawings that make up the Airport Plans set. Major improvements outlined in the preferred concepts for land use, GA terminal area, and other major functional areas on the Airport are incorporated into the updated Airport Layout Plan (ALP). The ALP presents a group of drawings that serve as the primary tool to guide growth at HEG for the 20-year planning period and beyond. The various drawings depict the recommendations contained within this Master Plan Update with regard to aviation development for the short-, intermediate-, and long-term at the Airport.

In order to provide uniformity in the development of the Airport Plans set and to simplify agency review of the documents, the Federal Aviation Administration (FAA) requests that planners follow a general format for the presentation of specified information. The recommended format is outlined in the FAA **Advisory Circular (AC) 150/5070-6B, "Airport Master Plans"** and **AC 150/5300-13 Change 10, "Airport Design."** The ALP set for Herlong Airport was prepared in conformance with FAA established criteria.

The ALP set includes the following individual drawing sheets:

- Cover Sheet (Sheet 1)
- Airport Layout Plan Set (Sheet 2)
- Data Sheet (Sheet 3)
- General Aviation Terminal Area Drawing (Sheet 4)
- Inner Portion of Runway 7/25 Approach Surface Drawing (Sheet 5)
- Inner Portion of Runway 11/29 Approach Surface Drawing (Sheet 6)
- Inner Portion of Runway 7U/25U (Turf Runway) Approach Surface Drawing (Sheet 7)
- Airport Airspace Drawings (Sheets 8)
- On-Airport Land Use Plan (2005 Noise Contour) (Sheet 9)
- On-Airport Land Use Plan (2025 Noise Contour) (Sheet 10)
- Airport Property Map (Sheets 11 and 12)

Additionally, both a location and a vicinity map of the airport are incorporated onto the title sheet, which also provides an index on individual drawing sheets. These drawings are developed and produced as a set on 24" by 36" using AutoCAD 2006 from an Aerial Photo, and NAD 83 and NAVD 88 survey data. Reduced reproductions of the drawings are included in this chapter herein for illustration purposes. The drawings included in this chapter are for review and decision making purposes. A full-size set of the drawings will be submitted to the FAA for approval. An approved ALP is perhaps the single most



important planning tool for an airport. The drawings provide the airport management with an overall guidance on the direction for future development possibilities, given existing external constraints on a particular airport.

COVER SHEET

Sheet 1 serves as the ALP drawing set cover and provides basic information required under the FAA ALP guidelines. Information to be provided on the Title Sheet includes the project name, federal and state grant numbers, associated City and State, sponsor name and logo, and the party responsible for preparing the ALP set.

AIRPORT LAYOUT DRAWING

The ALP drawing as shown in **Sheet 2**, and depicts all existing facilities as well as proposed developments, to scale, over the 20-year master planning time period. It provides clearance and dimensional information required to show conformance with applicable FAA design standards. The ALP also reflects changes in the physical features on the Airport and critical land use changes near the Airport that may impact navigable airspace or the ability of the Airport to operate. The features of the ALP include, but are not limited to: runways, taxiways, hold aprons, lighting, navigational aids, 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 areas and runway object free areas, building restriction lines, and navigational aid critical areas, and other dimensional data recommended by the FAA. Airport coordinates, runway end elevations, runway high and low points, true azimuths for each runway, are also included on the drawing set.

Included on the ALP sheet are various data tables required in the FAA checklist. These tables include: Airport Data Table and Runway Data Table, Building Data Table. In addition to the tables, this sheet contains the IFR, VFR, and All-Weather Windroses and wind data tables.

Based upon discussions with the Jacksonville Aviation Authority (JAA), major airfield improvements include an extension to Runway 7-25 and associated pavement overruns, development of a 2,000-foot parallel turf runway, the conversion of the closed runways to taxiways, as well as pavement extensions to Taxiways A and E. In addition, a number of aviation storage and business facilities are recommended including T-Hangar, box, corporate and conventional hangar development, as well as non-aviation development including a commerce park and industrial park. Due to environmental and terrain issues, the turf runway is recommended to be constructed at a centerline to centerline separation of 400 feet. As a result, a modification to design standards was requested.

GENERAL AVIATION TERMINAL AREA DRAWING

The terminal area plan for Herlong Airport has been updated to reflect existing and future proposed development of terminal area and general aviation needs as identified in previous chapters of this study. The Terminal Area drawing graphically depicts the recommendations relating to the development of the airport GA terminal area, including apron parking facilities, aircraft storage, expansion of the Airport Terminal Facilities and the construction of an airport storage/maintenance area.

Sheet 4 shows the existing and long-term development plan for this area based in the improvements proposed on the ALP sheet. The terminal concept focuses on development of general aviation facilities over the 20-year planning period.

INNER APPROACH ZONE PROFILES

The RPZ and Approach Profile drawing shows both plan and profile views for each runway's RPZ and approaches as shown on the ALP. The purpose of these plans is to locate and document existing objects, which represent obstructions to navigable airspace and the existing and proposed approach slopes for each runway. Additionally, the drawing shows the ground profile and terrain features along the extended centerline at each runway end. The Inner Portion of the Approach Surface Drawings for Runways 7, 25, 11, 29, 7U and 25U are shown in **Sheets 5, 6 and 7**, respectively. Since HEG is not equipped with an air traffic control tower, the centerline separation between the primary runway and proposed turf runway (7U/25U) was increased to 700 feet, which allows each runway to operate independently.

A GPS instrument approach is recommended for both Runway 25 and 7. Obstructions to the inner approach surface of each runway have been identified as trees, which are recommended to be cut down or removed to accommodate the approach. In addition, approach and departure procedures related to Runway 7 will also likely require coordination with the FAA to limit potential airspace conflicts with Cecil Airport.

AIRPORT AIRSPACE DRAWING

The Airport Airspace Drawing reflects obstructions affecting navigable airspace as defined in Federal Aviation Regulations (FAR) Part 77. Part 77 was adopted by the FAA to enhance the safe operation of aircraft in the airspace around an airport. **Sheet 8** illustrates the airspace contours consistent with the imaginary surfaces as defined above. These contours are shown in 50-foot intervals as denoted on the plan sheets. 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 feet 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.

AIRPORT LAND USE DRAWING

The land use drawing depicts the existing and recommended use of the land on and in the immediate surroundings of the airport. The land uses shown on the plan were developed from data gathered from the most recent Master Plan Update as well as discussions with the Jacksonville Aviation Authority and the City of Jacksonville Planning Department. In addition, the drawings consider the land use controls in the 60 to 65 LDN contour based upon the current rewrite of the City of Jacksonville Zoning Code. This information has been utilized to develop the future land use of property within the airport environs and to minimize the need for future land acquisitions and easements.

The land use drawings, **Sheets 9 and 10**, depict the existing and future land use of all land in and within the vicinity of the Airport. The utilization of this land is represented by several use categories, including aviation, non-aviation, industrial and Commerce Park, which are labeled in the legend of each drawing. The land use plans have been developed through coordination with the City of Jacksonville to include existing city plans and ensure accuracy. Additionally, the existing (2005) and future (2025) noise contours (60, 65, 70 and 75 DNL) as provided in **Appendix D**, *Airport Noise Analysis*, have been superimposed on **Sheets 8 and 9**, respectively. This will give local authorities guidance and help to ensure appropriate aviation-compatible zoning is maintained in the future.

AIRPORT PROPERTY MAP

The Airport Property Map (previously referred to as Exhibit A) defines the existing and recommended future airport boundary for HEG in a graphical and tabular form. The purpose of the drawing, as shown in **Sheets 11 and 12**, provides information necessary to analyze the current and future use of land acquired with federal funds. The existing and recommended future airport property line is also identified. The property map also identifies contiguous property. However, based upon recommended development and future noise contours, acquisition of property other than for aviation easements related to the instrument approaches to Runway 25 and 7 is not required.

For reference, major airport facilities, both existing and proposed, are presented in the background. Known metes and bounds data is depicted, but have not been field verified as part of this study.

SUMMARY

The Airport Plans Set is intended to depict in graphical format the airport's capital development program. Preliminary plans were presented to the Jacksonville Airport Authority and airport management staff for discussion and review. Based upon discussions with the Technical Advisory Committee, City of Jacksonville Planning Department and JAA staff, recommended development was incorporated into the airport plans set to reflect development over the twenty-year planning period.