



INTRODUCTION

This chapter describes the Airport Layout Plan (ALP) drawing set developed for the 20 year planning period of this master plan. These plans identify areas needed for aviation related development during and beyond the planning horizon, as well as the available land on the airport, which should be reserved for future revenue support. The plans will also serve as reference for the County to evaluate existing and/or future obstruction disposition in conjunction with the Federal Aviation Administration (FAA) criteria. The ALP set presented becomes the official development plans for the airport, which may be amended over time to reflect changes in the airfield environment or the demand affecting future facilities.

The ALP set consists of seven separate drawings, which have been prepared on a computer-assisted drafting system to graphically depict the recommended airfield improvements, imaginary safety surfaces, and the layout of future facilities. The sheets of the ALP set meet the criteria established by the FAA in Advisory Circular (AC) 150/5070-6B, "Airport Master Plans" and AC 150/5300-13 Change 11, "Airport Design." This drawing set includes:

- Cover Sheet
- Airport Layout Plan
- Terminal Area Plan
- Runway 09-27 Inner Portion of the Approach Surface Plan
- Runway 18-36 Inner Portion of the Approach Surface Plan
- Future FAR Part 77 Airspace Surfaces
- Airport Property Map

The recommended development scheme addresses, to the maximum extent feasible, the needs first identified in the assessment of the facility requirements, which were then analyzed further to arrive at a flexible development scheme meeting long-term airport goals. A full size version of the ALP set is available in the Citrus County Department of Public Works at the Lecanto Government Building.

Airport Layout Plan

The ALP graphically presents the existing and ultimate airfield layout, key design standards, runway data, and buildings, as well as the orientation of roads, structures, and other features in the immediate vicinity of the airport. This information is presented on Drawing 2. The ALP becomes the official guidance for Citrus County, once approved by the FAA and the Florida Department of Transportation (FDOT), to make decisions on the funding of airfield improvements or other requests for development on airport property.

By having the final drawing in both a hard-line form and on computer software, Citrus County will be able to continually update this drawing as needed, and ensure that FAA and FDOT always have an official ALP reflective of current conditions. However, it should be noted that no survey or aerial photogrammetry was budgeted for this update. Therefore, the existing digital files available from the Citrus County Engineering Division were utilized as the basis for this drawing set.



Most of the information presented on the ALP has been analyzed in proceeding chapters, justifying the need for recommended development. This includes the plan to provide a 445 foot extension to Runway 09-27, related extension to the current full length parallel taxiway, straight-in non-precision instrument approaches, and additional hangar facility development. In addition, some features beyond the 20 year planning horizon have been included to insure their viability in the future, including a second full length parallel taxiway on the south side of Runway 09-27. By including this taxiway and its associated safety criteria now, the County preserves the ability to construct this airfield component when it is needed.

As described in the facility requirements, the ALP depicts how the airport security fencing along the west side of the airport is outside the current property line. This is due to the 99 year lease which gives the airport control of a portion of the Florida Department of Transportation (FDOT) right-of-way through the year 2102. As shown, this allows the airport to protect the space required for the future Runway Safety Area (RSA) and Runway Object Free Area (ROFA) associated with Runway 09.

It should be noted that there are no run-up areas shown for either end of Runway 09-27. While the facility requirements indicated that such areas should be planned to provide bypass capability, they simply do not work well with the future parallel taxiway alignment. On the Runway 09 end, there is not adequate space available to provide a run-up area. This is due to the proximity of Taxiway B, the south end of the aircraft parking apron, and the existing drainage features in this area. On the Runway 27 end, some space does exist that could be utilized for a run-up area; however, this space would potentially impact the drainage features required to keep stormwater on-airport property in this corner of the airport. Once Runway 09-27 is extended, the current and new end connector taxiways will provide bypass capability, thus reducing the need for a run-up area.

The build out shown on the ALP reflects more facilities than what is required over the 20 year planning period. Additional structures were shown to reflect the potential development as well as to offer flexibility in the County's expansion of facilities. It will also decrease the need for the County to update the ALP for individual projects. However, the potential build out shown highlights the requirement to update the 2000 Airport Master Drainage Plan. This study is outdated and is no longer recognized by the Southwest Florida Water Management District due to changes in local and state regulations. Along these lines, none of the airport improvements shown will be allowed to create any offsite impacts with respect to drainage or water quality. Before construction, each project will have to show that all runoff is properly treated on airport property in order to obtain the necessary permits for construction.

Terminal Area Plan

The Terminal Area Plan (Drawing 3) depicts the same configuration and dimensional information shown on the ALP drawing, but provides a larger scale version so that certain additional features and greater detail of the general aviation facilities can be discerned. The plan reflects the potential for the development of t-hangars, various sized clearspan hangars, aircraft parking areas, taxiway access to the airfield, automobile parking, and landside access.

The primary landside access into the airport will continue to be via North Lindbergh Drive. On the airside, additional hangar, aircraft parking, and automobile parking facilities are located just



south of Bicentennial Park with security fencing separating these facilities from public access. These have been depicted to provide a general layout of how future general aviation facilities might be developed. Nearly all of the taxiways to and from this portion of the airfield have been designed to accommodate Design Group II aircraft (35 feet wide). The exceptions include the smaller taxilanes that will provide access into the t-hangars, which are designed to accommodate Design Group I aircraft standards (20 feet wide).

The relation of airport facilities to the critical setbacks associated with the airfield is also shown on the Terminal Area Plan. Of most significance is the proximity of some facilities to the 20 foot Future Building Restriction Line (FBRL). The FBRL is based on the design criteria required for the airfield, including protecting the ability to improve the instrument approach capability to both ends of Runway 09-27.

Inner Portion of the Approach Surface Plans

The Inner Portion of the Approach Surface Plans illustrate in detail the approach area immediately beyond the ends of each runway. These drawings reflect the RSA, Future Runway Safety Areas (FRSA), Future Runway Protection Zones (FRPZ), Primary Surfaces, Approach Surfaces, and Transitional Surfaces associated with both runway ends. Descriptions of the Primary, Approach, and Transitional Surfaces are included in the following section. Essentially, all of the areas within these imaginary surfaces should be kept free of obstacles that could constitute a hazard to aircraft approaching or departing the airport. Each of these sheets depict the location of roadways, structures, ground elevations, and other man-made or natural features within the limits of the various imaginary surfaces.

Details on each drawing are provided for objects that penetrate the appropriate criteria related to these surfaces. Obstructions are listed numerically in a table with data describing the obstruction, obstruction elevation, impact (penetration) to the various surfaces, and proposed mitigation. It should be noted that no budget was provided to conduct an obstruction survey. Therefore, obstacle locations were digitized using the March 11, 2004 aerial photo, while their respective elevations were estimated during field visits. All elevations are representative of average situations only. All of the imaginary surfaces related to the ultimate configuration for Runway 09-27 are shown on Drawing 4 while the same surfaces for Runway 18-36 are depicted on Drawing 5. On both sheets, the future Approach Surfaces extend out to a height of 100 feet above the runway threshold, as per FAA guidance for this type of drawing.

Runway end siting criteria contained in Appendix 2 of AC 150/5300-13 Change 11, "Airport Design" has been applied to the approach end of Runway 09. The standards of this appendix are used in certain circumstances in lieu of the Federal Aviation Regulations Part 77 surfaces, which are described in the following section. For Runway 09, the 20:1 Obstacle Clearance Surface (Table A2-1, Runway Type 3) is used due to the proximity of US 19/98. These standards must be applied in order to obtain the proper vertical clearance (15 feet) between the imaginary surface and the public roadway. Runway Type 3, which is the best condition that can be applied, provides the criteria required for both day and night visual approaches. In the future, it will also allow instrument approach minimums with greater than or equal to one statute mile visibility. This instrument approach capability will only be available during the day for aircraft over 12,500 pounds. In other words, due to the proximity of US 19/98, night instrument



approaches for aircraft greater than 12,500 pounds will not be allowed to Runway 09. These standards were originally applied in 2001 when the both ends of Runway 09-27 were extended.

Future FAR Part 77 Airspace Surfaces

The airspace surfaces shown on Drawing 6 were developed utilizing the criteria found in Federal Aviation Regulations (FAR) Part 77, "Objects Affecting Navigable Airspace." In order to protect the airspace and approaches to each runway from hazards that could affect the safe and efficient operation of the airport, the ultimate runway lengths and instrument approaches are utilized in this drawing. This Federal criterion has been established for use by local planning and land use jurisdictions to control the height of objects in the vicinity of the airport. The specific imaginary surfaces, which shall 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 threshold, when the runway is paved (Runway 09-27). For Runway 18-36, the Primary Surface ends at the runway end. Width of the Primary Surface is based on the type of approach a particular runway has, while the elevation follows, and is the same as that of the runway centerline, along all points. For Runway 09-27 this ultimate width is 500 feet, and for Runway 18-36 the width of the Primary Surface is 250 feet.

Horizontal Surface

An oval-shaped area situated 150 feet above the established airport elevation, extending 5,000 or 10,000 feet outward, depending on the runway category and approach procedure available. Runway 09-27 will ultimately require a 10,000 foot Horizontal Surface radius due to the planned instrument approaches, while Runway 18-36 will require a 5,000 foot radius. Due to the airfield configuration at Crystal River, the 10,000 foot radii will prevail and the Horizontal Surface will be at 159 feet above mean sea level (AMSL).

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. For Crystal River, the Conical Surface protects airspace up to 359 feet AMSL.

Approach Surfaces

These surfaces begin at the end of the Primary Surface and slope upward at a ratio determined by the runway category and type of instrument approach available to the runway. The width and elevation of the inner end conforms to that of the Primary Surface while Approach Surface width and length to the outer end are also governed by the runway category and instrument approach procedure available.



For both ends of Runway 09-27, the ultimate non-precision instrument approaches require a surface that extends out 10,000 feet at a slope of 34:1 to an outer width of 3,500 feet. In addition, for both ends of Runway 18-36, the ultimate visual approach slopes extend out 5,000 feet at a 20:1 ratio to an outer width of 1,250 feet.

As described previously, FAA runway end siting criteria has been applied to the approach end of Runway 09. This is not shown on the FAR Part 77 drawing as this criterion is not intended to be used by local jurisdictions for land use compatibility planning.

Transitional Surface

A sloping area beginning at the edges of the Primary and Approach Surfaces that extend upward and outward at a 7:1 ratio.

The Future FAR Part 77 Airspace Surfaces must be used in conjunction with local ordinances in order for County staff to readily determine if the construction of a proposed structure will penetrate any of the protective surfaces. Therefore, the FAR Part 77 Surfaces in this ALP set should be incorporated into or update the County's height and hazard zoning ordinance as the current version does not reflect the plans to extend Runway 09-27 to 5,000 feet. This ordinance is Section 4672 (Airports – Adjacent Land Use Controls) of the Land Development Code. It should also be noted that the mapping associated with the airport zoning ordinance currently reflects a precision instrument approach into Runway 09. It is recommended that this protection be added to the Runway 27 end in addition to reflecting the ultimate runway length of 5,000 feet. As described in the facility requirements, while the current design standards prevent the ability of the airport to accommodate a precision approach, this will not always be the case. Therefore, the County must continue to protect the future runway environment, including the proposed extension and potential for better instrument approach capability.

Although no survey was budgeted for these sheets, a search for area obstruction data was conducted. Structures documented in the FAA and FDOT databases are shown on the drawing and included in the obstruction data table.

Airport Property Map

The Airport Property Map, Drawing 7, is intended to accurately show all of the details associated with the current airport property line. Since an independent boundary survey was not conducted or budgeted, this property map was developed using the information on file at the Citrus County Engineering Division. Details contained on the sheet describe all of the features of the property, as well as the documentation of source data and any limitations. This sheet also depicts the current leaseholds, including the 3.1 acres leased from FDOT, and land identified as part of the property acquisition plan recommended in the alternatives analysis.

SUMMARY

The preceding chapters have identified the anticipated level of activity for the Crystal River Airport, converted that demand into facility needs, and investigated the alternatives available to address the demand. From the alternatives analysis a set of development actions were

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selected for use in preparing the ALP drawing set. The final step in the process is to identify the development schedule for implementing the proposed improvements and the cost associated with those actions.