

# Chapter 8.0

## Airport Layout Plan



**BROOKSVILLE - TAMPA BAY REGIONAL AIRPORT**  
& TECHNOLOGY CENTER



**Michael Baker**  
INTERNATIONAL

## **8.0 AIRPORT LAYOUT PLAN**

### **8.1 Introduction**

The purpose of an approved Airport Layout Plan (ALP) is to serve as the blueprint for future airport development. One condition of accepting and utilizing grant funding for airport improvement projects is to maintain an updated ALP. For the Brooksville-Tampa Bay Regional Airport (BKV), the updated development recommendations presented in this study are pictorially summarized in the ALP drawing set and include the preferred concepts for airfield development, landside facility development, and other reserved areas for non-aviation use. The ALP drawing set represents a scaled, graphic presentation of the airport's 20-year development program, thereby providing the airport with a feasible improvement plan that would increase the capability and safety of aircraft operations, promote compatibility with existing and proposed developments, and further upgrade the airport to effectively serve the anticipated demands of general aviation, corporate, and potentially commercial aircraft traffic. The drawings depict the recommendations of this study with regard to aviation development for the short, intermediate, and long-term planning periods.

The dimensional information provided in the drawings demonstrates compliance with minimum airport design standards established by federal, state, and local authorities. The ALP Drawing Set was developed in accordance with the guidance outlined in Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6, Airport Master Plans, AC 150/5300-13A, Airport Design, FAA ARP Standard Operating Procedure (SOP) 2.0, Standard Operating Procedure for FAA Review and Approval of Airport Layout Plans and other supporting circulars and orders.

The ALP drawing set includes the following individual drawing sheets:

- Title Sheet (Sheet 1)
- Airport Data Sheet (Sheet 2)
- Airport Layout Plan Drawing (Sheet 3)
- Airport Airspace Drawings (Sheets 4 through 6)
- Inner Portion of the Approach Surface Drawings (Sheets 7 through 10)
- Runway Departure Surface Drawings (Sheets 11 and 12)
- Terminal Area Drawing (Sheet 13)
- Land Use Drawing (Sheet 14)
- Airport Property Map/Exhibit A (Sheet 15)

### **8.2 Title Sheet (Sheet 1)**

The Title Sheet serves as the introduction to the ALP drawing set. It includes the airport name, a location map, vicinity map, and an index of drawings included in the ALP drawing set. Also highlighted on the Title Sheet are the project name, sponsor's name, and the FAA grant number.

### **8.3 Airport Data Sheet (Sheet 2)**

The Airport Data Sheet summarizes key elements that are depicted on the Airport Layout Plan Drawing such as airport coordinates, runway end elevations, runway high and low points, and true azimuths for each runway. Supplemental tables, as required by the FAA ALP Review Checklist, are depicted on the Airport Data Sheet including the airport data table and runway data table.

## **8.4 Airport Layout Plan Drawing (Sheet 3)**

The Airport Layout Plan Drawing, also referred to as the ALP, depicts all existing facilities and proposed developments planned over the 20-year planning period at BKV. These plans are reviewed by and must be approved by the FAA prior to authorizing federal funding for future improvement projects. The ALP provides clearance and dimensional information required to show conformance with applicable FAA design standards as outlined in FAA AC 150/5300-13A, Airport Design. The ALP also reflects planned changes to physical features on the airport property and critical land use changes near the airport property that may impact navigable airspace or the ability of the airport to operate. The features of the ALP include, but are not limited to: the runway, taxiways, lighting, navigational aids, terminal facilities, hangars, other airport buildings, aircraft parking areas, automobile parking, and airport access elements.

Key dimensional criteria for Runway 9-27 was based on Runway Design Code (RDC) D-IV and Runway 3-21 was based on RDC B-II. The RDC and other runway approach factors are used to determine the physical characteristics of the runways (e.g., length, width, and strength), taxiway widths, and dimensions for the Runway Safety Area (RSA), Runway Object Free Area (ROFA), Building Restriction Line (BRL), clearance areas around navigational aids, etc.

## **8.5 Airport Airspace Drawings (Sheets 4 through 6)**

Federal Aviation Regulations (FAR) Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, prescribes airspace standards, which establish criteria for evaluating navigable airspace. Airport imaginary surfaces are established relative to the airport runways and types of approaches they provide. The size of each imaginary surface is based on the runway category with respect to the existing and proposed visual, non-precision, or precision approaches for that runway. The slope and dimensions of the respective approach surfaces are determined by the most demanding, existing or proposed, approach for each runway. For Runway 9-27 at BKV, the dimensions of the imaginary surfaces are applicable to the precision Instrument Landing System (ILS) approach to the Runway 9 end with one-half mile horizontal visibility minimums and the non-precision GPS approach to the Runway 27 end with one mile horizontal visibility minimums. For Runway 3-21, the dimensions of the imaginary surfaces are applicable to the non-precision GPS approaches to each runway end with one mile horizontal visibility minimums.

- ➔ Primary Surface – A rectangular area symmetrically located about the runway centerline and extending a distance of 200 feet beyond each runway end. Its elevation is the same as the nearest point along the runway edge. The primary surface for Runway 9-27 is 1,000 feet wide and the primary surface for Runway 3-21 is 500 feet wide.
- ➔ Horizontal Surface – An oval shaped, flat area situated 150 feet above the published airport elevation of 75.7 feet Above Mean Sea Level (AMSL) at BKV. Its dimensions are determined by connecting 10,000-foot arcs starting 200 feet beyond the future runway ends. The horizontal surface elevation for BKV is 225.7 feet AMSL.
- ➔ Conical Surface – A sloping area whose inner perimeter conforms to the shape of the horizontal surface. It extends outward for a distance of 4,000 feet measured horizontally, and slopes upward at a 20:1 ratio. At BKV, the conical surface extends upward to an elevation of 425.7 feet AMSL.

- ➔ 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.
- ➔ Approach Surface – This surface begins at the ends of the primary surface and slopes upward at a predetermined ratio while at the same time flaring out horizontally. The width and elevation of the inner ends conform to that of the primary surface, while the slope, length, and outer width are determined by the runway service category and existing or proposed instrument approach procedures.

## **8.6 Inner Portion of the Approach Surface Drawings (Sheets 7 through 10)**

The Inner Portion of the Approach Surface Drawings show both plan and profile views of the approach surfaces beyond each runway end. The purpose of these drawings is to locate and document existing objects which represent obstructions to navigable airspace within the existing and proposed approach slopes for each runway. Additionally, the drawings show the ground profile and terrain features along the extended centerline of each runway end.

Any controlling structures, such as roadways, natural ground elevations, and trees, are also shown on the Inner Portion of the Approach Surface Drawings, if applicable. Additionally, fixed objects located along the extended runway centerlines are also illustrated on the sheets to provide an indication of the relative distance to the approach surfaces. As applicable, obstructions to navigable airspace are listed in an obstruction data table along with a recommended action for each obstruction.

## **8.7 Runway Departure Surface Drawings (Sheets 11 and 12)**

The Runway Departure Surfaces Drawing consists of large scale plan views of departure surfaces for all runway ends at BKV. The Departure Surfaces Drawing depicts the ground contour along the extended runway centerline plus any significant natural or non-natural objects located along the extended runway centerline and also provides a top elevation for those objects. Commonly shown objects include buildings, roads, ditches, and trees. Surface penetration and disposition information is included in the associated obstruction data tables.

## **8.8 Terminal Area Drawing (Sheet 13)**

The Terminal Area Drawing presents an enlarged view of the Fixed Base Operator (FBO) area at BKV and therefore provides additional dimensional details such as apron areas (existing and proposed) that are not easily visible on the ALP. This drawing denotes the short and long-term developments and improvements within the vicinity of the FBO complex at BKV and also illustrates many of the surrounding landside development recommendations. Existing and proposed automobile access and parking improvements are also included.

## **8.9 Land Use Drawing (Sheet 14)**

The Land Use Drawing designates various sectors of the property for specific uses and also shows an aerial view of the land surrounding BKV. Additionally, the 2013 and 2033 noise contours developed as a component of this study have been superimposed on the drawing to ensure that appropriate

aviation-compatible zoning is maintained. The FAA has established national guidelines for land use compatibility related to airport-generated noise impacts. In most cases, noise sensitive land uses are considered incompatible if they are exposed to Day-Night Average Sound Levels (DNL) of 65 decibels or higher, unless noise mitigation measures are undertaken.

### **8.10 Airport Property Map (Sheet 15)**

The Airport Property Map defines the existing and proposed airport boundaries in a graphical form. The purpose of the drawing and associated tables is to identify how property and easements have been acquired in the past as well as to illustrate properties and easements that should be obtained in the future as necessary to accommodate the proposed development plan. In order to promote compatible development, the purchase of easements is shown in the portions of the RPZ that extend beyond the Runway 9 end.

### **8.11 Summary**

The ALP Drawing Set is intended to depict BKV's capital development program in graphical form. Prior to incorporating the developments herein, preliminary plans were presented to the Hernando County Board of County Commissioners (BOCC), Master Plan Technical Advisory Committee, and to the public for their review and approval. Thus, this plan set accurately reflects the goals and intentions of airport management and the adjacent community throughout the 20-year planning period.