



9 AIRPORT LAYOUT PLAN SET

9.1 GENERAL OVERVIEW

An update to the Airport Layout Plan (ALP) drawing set for the Southwest Florida International Airport (RSW) is included and discussed in this chapter. The ALP set is required by the Federal Aviation Administration (FAA) as a part of the Master Plan process. This drawing set provides input required to determine the eligibility of proposed airport improvement projects. Generally, the FAA will not provide financial assistance for projects that are not depicted on the ALP. The drawings comprising the updated ALP illustrate the current (2003) facilities at RSW and the 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 ALP set has been prepared in conformity with the criteria established by the Federal Aviation Administration (FAA) in **Advisory Circular (AC) 150/5070-6A, “Airport Master Plans”** and **AC 150/5300-13 Change 7, “Airport Design”** and supporting circulars and orders.

The ALP set includes the following individual drawing sheets:

- Cover Sheet (Sheet 1)
- Airport Layout Plan (Sheet 2)
- ALP Data Tables (Sheet 3)
- Terminal Area Plan (Sheet 4)
- FAR Part 77 Approach Surfaces (Sheet 5)
- FAR Part 77 Inner Surfaces (Sheet 6)
- Runway 6 (6L) Protection Zone Plans (Sheet 7)
- Runway 24 (24R) Protection Zone Plans (Sheet 8)
- Runway 6R Protection Zone Plans (Sheet 9)
- Runway 24L Protection Zone Plans (Sheet 10)
- Runway 6-24 (6L-24R) Approach Zone Plans (Sheet 11)
- Runway 6R-24L Approach Zone Plans (Sheet 12)
- Land Use Plan (Sheet 13)
- Property Map (Sheet 14)
- Property Map (Overview) (Sheet 15)

Additionally, both a location and a vicinity map for the airport are incorporated onto the cover sheet (**Sheet 1**), which also provides an index of individual drawing sheets. A reduced scale version of the ALP set has been included at the end of this chapter.

9.2 AIRPORT LAYOUT PLAN DRAWING

The ALP (**Sheet 2**) depicts all existing facilities as well as those proposed for development over the course of the master plan (2000-2020) for RSW. These facilities include, but are not limited



to: the runway and taxiway system, taxilanes, hold aprons, lighting, nav 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 and runway object free areas; building restriction lines; and navigational aid critical areas. Phasing for various Airport improvements are also depicted on the ALP. Airport coordinates, airport elevations, general airport data, basic runway data, declared distances, a building/facilities table, a runway safety area determination table, a modification approval block, wind rose data, and all necessary abbreviations and legends are included on the separate ALP Data Sheet (**Sheet 3**).

The Airport Layout Plan includes the future 9,100-foot runway 6L-24R. Other key improvements depicted on the ALP include the midfield terminal complex, additional full-parallel taxiway associated with the current single runway, and the cross-field taxiways that integrate the new parallel runway with the existing airside facilities and new terminal area. The criteria that were applied in the development of the runway and taxiway system as well as those associated with mandatory FAA safety and object clearance criteria are defined in **Table 9-1**.

TABLE 9-1 AIRFIELD DESIGN STANDARDS FOR RSW		
Airfield Design Criteria	Runway 06-24 (6L-24R)	Proposed Runway 6R-24L
Airport Reference Code (ARC)	D-V	D-V
Runway Safety Area Length beyond Runway End	1,000 feet	1,000 feet
Runway Safety Area Width	500 feet	500 feet
Runway Width	150 feet	150 feet
Runway Object Free Area Length beyond Runway End	1,000 feet	1,000 feet
Runway Object Free Area Width	800 feet	800 feet
Runway/Taxiway Separation	400 feet	600 feet
Taxiway Width	75 feet	75 feet
Taxiway Safety Area Width	118 feet	118 feet
Taxiway Object Free Area Width	186 feet	186 feet
Taxiway Lighting	MITL	MITL
Runway Lighting	HIRL, REIL	HIRL, REIL, TDZ
Pavement Strength Rating	30,000 SWL 190,000 DWL 430,000 DTWL 840,000 DDTWL	30,000 SWL 190,000 DWL 430,000 DTWL 840,000 DDTWL

Source: FAA AC 150/5300-13 Change 7.

9.3 TERMINAL AREA PLAN

The Terminal Area Plan (TAP) (**Sheet 4**) depicts the same configuration and dimensional information shown on the ALP, but provides a larger scale version so that certain additional features and greater detail of the terminal area improvement can be discerned. The TAP displays the Midfield terminal complex currently under construction. The existing terminal is planned to



be removed and is therefore not depicted. Rooftop elevations above ground level (AGL) are also provided for the buildings and facilities in the plan.

9.4 FAR PART 77 APPROACH SURFACES

To enhance the safe operation of aircraft in the airspace around airports, 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 the airport to protect the navigable airspace from encroachment by hazards, which would potentially affect the safety of airport operations.

The FAR Part 77 Imaginary Surfaces Plan (**Sheets 5 and 6**) depicts the physical features of the area around the airport including existing obstructions that penetrate the surfaces. The specific imaginary surfaces that 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. The width of the primary surface for Runway 6-24 and the proposed Runway 6R-24L is 1,000 feet.

Horizontal Surface – A level oval-shaped plane situated 150 feet above the airport elevation, extending 5,000 or 10,000 feet outward, depending on the runway category and approach procedure available. The horizontal surface for RSW resembles the floor of a stadium. Its edge extends 10,000 feet from each point on both the existing and proposed runway centerlines.

Conical Surface - Extends outward for a distance of 4,000 feet beginning at the outer edge of the Horizontal Surface, and slopes 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.

9.5 RUNWAY PROTECTION ZONE PLANS

The Runway Protection Zone (RPZ) Plans illustrate in detail the approach area immediately beyond the ends of the existing and proposed runways at RSW. The primary purpose of the RPZ



is protection of people and property on the ground. Therefore, the areas within the RPZs should be kept free of obstacles that could constitute a hazard to aircraft approaching or departing the Airport. These drawings depict the location of roadways, structures, natural ground elevations, and other man-made or natural features within the limits of the RPZs. The drawings also detail objects that penetrate the approach surfaces or violate the Object Free Area criteria. These obstructions are listed numerically in an obstruction table with data describing the obstruction, obstruction elevation, affected Part 77 surface, surface elevation, amount of penetration, and proposed manner in which the obstruction will be addressed. Additionally, the drawings depict the configuration of the required Runway Safety Areas for each runway end.

The RPZ for Runway 6(6L) is shown in plan and profile on **Sheet 7**. The existing 50:1 precision approach slope is shown. As indicated on the drawing the approach to Runway 06 has no obstruction issues. The RPZ for Runway 24(24R) is shown in plan and profile on **Sheet 8**. The existing 34:1 non-precision approach and future 50:1 approach slopes are shown. A tree creates the only obstruction to both the existing and future approach slopes. There are a few obstructions located within the primary surface. Most of these obstructions noted in the Obstruction Table on the drawing are fixed by their aviation related function. These include two rods associated with the RVR, and the windsock. In all, the noted obstructions are limited in nature and do not pose a significant impact on the existing or proposed approaches to either end of Runway 6-24.

Sheet 9 displays the RPZ for Runway 6R, which has future 50:1 precision approach slope. Runway 24L also has a future 50:1 precision approach slope, which is depicted on **Sheet 10** along with the RPZ. No obstacles to either runway end approach surface have been determined. Additional information should be collected via survey regarding the approach surface obstacles prior to the construction of the new Runway.

9.6 APPROACH ZONE PROFILES

The Approach Zone Profiles depicted on **Sheet 11** (Runway 6-24 (06L-24R)) and **Sheet 12** (Runway 06R-24L) display the full profile view of the existing and ultimate approach surfaces without the use of match lines or truncated depictions. Potential obstructions in the approach zones include vertical clearances required over roadways as well as incursions by power poles, trees, buildings, etc. for both the existing and ultimate approaches. As depicted in the approach zone plan for Runway 6-24 there are no obstacles that penetrate the approach slope beyond those already noted in the discussion of Runway Protection Zones.

9.7 AIRPORT LAND USE PLAN

The Airport Land Use Plan (**Sheet 13**) shows the proposed utilization of property within the existing and future boundary of RSW. This drawing identifies various land use designations for airport owned property ranging from Airport Operations Areas covering portions of the airport utilized by aircraft or those areas required to meet FAA design and safety requirements, to non-aviation revenue support development areas.



9.8 PROPERTY MAP

An Airport Property Map features the tracts of land owned by the Airport and provides informative detail on those tracts such as the date of acquisition, the acreage, the purposeful interest in which the property was acquired, and the federal project number if paid for with federal aid. The property map also reveals the Airport's proposed property acquisition and informative detail on those tracts as well. The RSW Airport Property Map is presented on **Sheets 14 and 15**.

9.9 SUMMARY

The ALP set is a basic planning tool generated by the master plan process. It provides an informative basis to guide future planning and expansion efforts at RSW while maintaining and protecting the long-term viability of the airport. Implications of development to operations, expansion, land use compatibility, etc., can be readily identified and explored to ensure that airport growth occurs in a deliberate and efficient manner. To achieve full benefit of the ALP set and ensure project funding eligibility, it should be continually updated to reflect current conditions.