F. Airport Plans

The plan for the future development of Grand Junction Regional Airport has evolved from an analysis of many considerations. Among these are: aviation demand forecasts and facility requirements; aircraft operational characteristics; construction phasing; environmental considerations; and, as characterized in the previously noted statement of goals, the general direction of airport development prescribed by airport management. Forecasts are utilized as a basis for planning; however, facilities are only to be constructed to meet actual demand.

Previous chapters have established and quantified the future development needs of the Airport. In this chapter, the various elements of the plan are categorically reviewed and detailed in summary and graphic format. A brief written description of the individual elements, represented in the set of Airport Plans for Grand Junction Regional Airport, is accompanied by a graphic description presented in the form of the Airport Layout Plan, the Airport Airspace Drawings, the Inner Portion of the Approach Surface Drawings, the Departure Surface Drawings, the Terminal Area Plans, the Land Use Drawing, and the Airport Property Map.

Airport Layout Plan

The Airport Layout Plan (ALP) is a graphic depiction of existing and ultimate airport facilities that will be required to enable the Airport to properly accommodate the forecast future demand. In addition, the ALP also provides detailed information on both airport and runway design criteria, which is necessary to define relationships with applicable standards. The following illustrations, entitled AIRPORT LAYOUT PLAN EXISTING and AIRPORT LAYOUT PLAN FUTURE, and the following paragraphs describe the major components of the future Airport Development Plan.

Runway System

The Airport’s runway configuration will remain structured around two runways throughout the 20-year planning period. Runway 11/29 will remain the Airport’s primary runway, but will be relocated in order to correct all non-standard conditions associated with this runway and its connector taxiways. The relocation will also separate the runways and reduce the potential for runway incursions by eliminating the Runway Visibility Zone (RVZ). The relocation of the
runway will allow construction to be phased over a number of years and allow the Airport to continue to accommodate commercial service aircraft operations during construction. The primary runway will retain its existing length and width (10,501’ x 150’). The crosswind runway (Runway 4/22) will also remain at its existing length and width (5,501’ x 75’), but a potential extension of the approach end of Runway 22 should continue to be protected for. An ultimate parallel commercial service runway (Runway11L/29R), as shown on historical plans for the Airport, is protected for at a standard runway/runway separation (4,300 feet) to allow for the potential of simultaneous IFR approaches. However, based on aviation activity forecasts, the implementation of this project is not anticipated during the 20-year planning period.

Another important consideration related to runway development at Grand Junction Regional Airport is the existing and planned instrument approach system.

- As recommended in previous planning studies, the approach visibility minimum to both ends of the future Runway 11/29 should be protected for ½-mile visibility minimums. This will require the installation of a Medium Intensity Approach Lighting System with Runway Alignment Indicator Light (MALSR) system on both runway ends.
- Both ends of Runway 4/22 are programmed for future non-precision GPS approach capabilities with not-lower-than ¾-mile visibility minimums.
- Both ends of the future Runway 11L/29R should be protected for ½-mile visibility minimums. This will require the installation of a MALSR system for both runway ends.

**Runway Lighting and Landing Aids.** The High Intensity Runway Lights (HIRLs) (edge lighting) serving Runway 11/29, and the Medium Intensity Runway Lights (MIRLs) serving Runway 4/22 should be maintained. The Precision Approach Path Indicator (PAPI) lights serving both ends of Runway 11/29 and Runway 4 should be maintained, while the Visual Approach Slope Indicator (VASI) lights serving Runway 22 should be upgraded to PAPIs. The future Runway 11L/29R is planned to be equipped with HIRLs and PAPIs. Relocation of the Instrument Landing System (ILS) components for Runway 11, including the localizer and glide slope antennas, will be required during the Runway 11 relocation project.

**Taxiway System**

Recommended taxiway system improvements include:
- Parallel Taxiway “A” will be relocated to the “crown” of the existing Runway 11/29 (600-foot separation from the new Runway 11/29).
- At least two high-speed (acute-angled) exit taxiways should be constructed to maximize the capacity of the relocated Runway 11/29.
- A taxilane running parallel to Taxiway “A” is protected for that could ultimately be extended for the entire length of Runway 11/29, providing a full dual-taxiway system.
- Relocation of parallel Taxiway “C” will be protected for; however, this is considered a low priority project.
- Additional parallel taxiways on opposite sides of each runway are protected for.
- A taxilane to serve the future general aviation development area south of Navigator’s Way is protected for.
Landside Development

As discussed in the previous chapters, the ALP also allocates various development areas for landside facilities. Landside facilities include terminal facilities, aircraft parking aprons, hangars, aircraft maintenance facilities, automobile access and parking, support facilities, etc. Detailed illustrations of these landside development areas are provided in the *Terminal Area Plans* section of this chapter.

The area south and west of the runway complex at Grand Junction Regional Airport is very close to full build out with only three locations left for development including the area adjacent to connector Taxiways A1 and A2, the “infill” area between connector Taxiways A3 and A4, and the area south of Navigators Way. Shifting Runway 11/29 approximately 650 feet to the north and east will create additional landside developable area for both aircraft parking apron and aviation facilities expansion.

**Passenger Terminal Area.** The existing passenger terminal building is approaching capacity in various areas and consideration should be given to the space requirements to accommodate the forecast passenger demand at the Airport. Previous planning documents have introduced the potential alternative of relocating the passenger terminal and related facilities to the northwest side of Runway 11/29. However, relocating Runway 11/29 by 650 feet to the north and east would create an additional development envelope for terminal expansion. This will allow for better utilization of the significant investment the Airport has made in both vehicle parking and landside access improvements in recent years. Due to the anticipated additional space requirements of both the Transportation Security Administration (TSA) and airport administration/operations, a separate administrative office building has been included in the capital funding plan.

**Airspace Plan**

The Airport Airspace Drawing is based upon Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace.* In order to protect the Airport’s airspace and approaches from hazards that could affect the safe and efficient operation of aircraft, federal criteria contained in the FAR Part 77 document have been established to provide guidance in controlling the height of objects in the vicinity of airports. FAR Part 77 criteria specify a set of imaginary surfaces, which, when penetrated, identify an object as being an obstruction.

The *AIRPORT AIRSPACE DRAWINGS*, which are illustrated in the following figures, provide plan and profile views depicting these criteria as they specifically relate to Grand Junction Regional
Airport. The plan is based on the ultimate planned runway lengths, along with the ultimate planned approaches to each runway end. For Runways 11/29 and 11L/29R, it is based on larger-than-utility criteria with a precision approach to each end of the runway. For Runway 4/22, it is based on larger-than-utility criteria with a non-precision approach to both runway ends.
Inner Portion of the Approach Surface Drawings

To provide a more detailed view of the inner portions of the Part 77 imaginary approach surfaces [the Threshold Siting Surfaces (TSS) and the Runway Protection Zone (RPZ) areas], the following drawings are provided. An RPZ is trapezoidal in shape, centered about the extended runway centerline and typically begins 200 feet beyond the end of the runway. The RPZs are safety areas within which it is desirable to clear all objects (although some uses are normally acceptable). The size of the RPZ is a function of the design aircraft and the visibility minimums associated with the runway’s instrument approach capabilities.

The INNER PORTION OF THE APPROACH SURFACE DRAWINGS, which are depicted in the following illustrations, provide large-scale drawings with both plan and profile delineations. They are intended to facilitate identification of the roadways, utility lines, railroads, structures, and other possible obstructions that may lie within the confines of the inner approach surface area associated with each runway end. As with the AIRPORT AIRSPACE PLANS, the INNER PORTION OF THE APPROACH SURFACE DRAWINGS are based upon the ultimate planned runway length, along with the ultimate planned approaches to each runway.

Mitigation measures for identified obstructions to the Part 77 surfaces can range from obstruction lighting and marking to removal. When a penetration to a Threshold Siting Surface exists, one or more of the following actions is required:

- The object is removed or lowered to preclude penetration of applicable threshold sitting surfaces;

- The threshold is displaced to preclude object penetration of applicable threshold sitting surfaces, with a resulting shorter landing distance;

- The Glide Path Angle (GPA) and/or Threshold Crossing Height (TCH) is/are modified, or a combination of threshold displacement and GPA/TCH increases;

- Visibility minimums are raised; or,

- Night operations are prohibited unless the obstruction is lighted or an approved Visual Glide Slope Indicator (VGSI) is used.
Departure Surface Drawings

The following illustrations, entitled *DEPARTURE SURFACE DRAWING EXISTING AND FUTURE RUNWAY 11/29*, and *DEPARTURE SURFACE DRAWING POST-PLANNING RUNWAY 11L/29R*, present detailed views of departure ends of these runways. The applicability of the departure surface is dependent on the designation of primary runway(s) for departure. Grand Junction Regional Airport has published departure procedures for both Runway Ends 11 and 29. Mitigation measures for identified obstructions are similar to those required for penetrations to the Threshold Siting Surfaces.

Also shown on the following illustrations is the one-engine inoperative (OEI) obstacle identification surface (OIS). According to FAA AC 150/5300-13, *Airport Design*, this surface is provided for information only and does not take effect until January 1, 2010.
Terminal Area Plans

The following illustrations, entitled TERMINAL AREA PLAN 1, TERMINAL AREA PLAN 2, and TERMINAL AREA PLAN 3, present detailed views of the more intensely developed landside use areas on the Airport.

Airport Land Use Plan

The LAND USE PLAN, presented in the following figure, depicts existing and recommended use of all land within the ultimate airport property line and in the vicinity of the Airport [including the area contained in the future 65 day/night average sound level (DNL) noise contour]. The purpose of the on-airport portions of the LAND USE PLAN is to provide airport management with a guide for leasing revenue-producing areas on the Airport. The off-airport portions of the LAND USE PLAN provide guidance to local authorities for establishing appropriate land use zoning in the vicinity of the Airport.

Airport Property Map

The AIRPORT PROPERTY MAP, which is presented in the following illustration, indicates how various tracts of land within the airport boundaries were acquired (e.g., federal funds, surplus property, local funds, etc.). The purpose of the AIRPORT PROPERTY MAP is to provide information for analyzing the current and future aeronautical use of land acquired with federal funds.