

**CHAPTER 7.**

## **AIRPORT PLANS**

### **Introduction**

The plan for future development at Northern Colorado Regional Airport (FNL or Airport) incorporates a variety of considerations, including the following:

- Aviation demand forecasts
- Facility requirements
- Aircraft operational characteristics
- Environmental considerations
- Assumptions and goals formulated in the initial stages of the planning process
- Development alternatives analysis.

While the components listed above are analyzed in previous chapters of the Master Plan to establish and quantify the future development needed to accommodate the anticipated demand at FNL, this chapter provides a narrative summary to accompany the full Airport Layout Plan (ALP) drawing set provided in **Appendix G – Airport Layout Plan**, which serves as the blueprint for airport development. The ALP depicts the existing facilities and proposed facilities that are needed to accommodate anticipated demand throughout the planning period and relationships of those facilities in the context of the airport setting and adjacent land uses.

The ALP, a planning guidance tool created by the Federal Aviation Administration (FAA), establishes a checklist of required documents which depict the existing and future facilities needed to accommodate anticipated demand at an airport. These documents are to be depicted in the form of illustrations outlining both existing and proposed airside and landside facilities at an airport.

Airports are required to maintain an up-to-date ALP as part of federal grant assurances. Upon conditional approval of the ALP by the FAA, the FAA can subsequently fund development that is eligible for FAA participation, pending the necessary environmental processing through the National Environmental Policy Act (NEPA) prior to development of the proposed projects.



## 7.1 Cover

The **Cover Sheet (sheet 1 of 18)**, provides required airport location information, an index of drawings included in the ALP drawing set Prior to FAA conditional approval and signature of an ALP, the drawing set is circulated throughout various lines of FAA business for review and comment.

## 7.2 Airport Data

The **Airport Data Sheet (sheet 2 of 18)** provides detailed airport and runway design criteria information as well as wind data. Data on this sheet informs the size, type, dimensions, and design criteria relative to existing facilities FNL maintains as well as future facilities the Airport intends to construct to accommodate anticipated demand.

## 7.3 Existing and Future Airport Layout Plans

**Existing Airport Layout (sheet 3 of 18)** and **Future Airport Layout Plan (sheet 4 of 18)** depict the existing and future runway and taxiway systems and landside development, as well as proposed property acquisitions.

### Runway System

The airport layout currently consists of two runways: Runway 15/33 and Runway 6/24. A third runway, Runway 15R/33L, is a proposed future runway that would relieve GA traffic from both 15/33 and 6/24.

**Dimensions.** Runway 15/33 serves the Airport as the primary runway and is 8,500 feet long by 100 feet wide; it is programmed to be extended by 1,000 feet to the south and widened to 150 feet.

Runway 6/24, the Airport's smaller secondary runway, is 2,189 feet in length and 40 feet in width; it is programmed to be widened to 60 feet while maintaining its current length.

Future Runway 15R/33L is planned for construction west of Runway 15/33 with a length of 6,700 feet and width of 75 feet.

**Instrument Approaches.** The existing Area Navigation/Global Positioning System (RNAV/GPS) and Very High Frequency Omnidirectional Range (VOR) non-precision approach capabilities for Runway 15; and Instrument Landing System (ILS), Non-Directional Beacon (NDB), GPS, and VOR precision approach to Runway 33 will be maintained. Visibility minimums for Runway 33 will be maintained at ½-mile and the ability to implement precision instrument



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approach capabilities (not lower than  $\frac{3}{4}$ -mile visibility minimum) will be protected for Runway 15.

**Runway Lighting.** Existing visual aids are planned to be maintained on the existing runways. It is recommended that a Medium Intensity Approach Lighting System (MALS) be installed at Runway 15 to support improved instrument approach capabilities ( $\frac{3}{4}$ -mile visibility minimum). This improvement will require a larger RPZ (1,000 x 1,700 x 1,510 feet).

### Taxiway System

The existing taxiway system will be maintained, and fillets will be constructed to meet the updated design criteria outlined in FAA Advisory Circular (AC) 150/5300-13A, *Airport Design*. It is recommended that Taxiway "A" serving Runway 15/33 be extended 1,000 feet south from its present Runway 33 end to provide a full-length parallel taxiway and align with the 1,000 feet Runway 15/33 extension to the south. Also, 400 feet of separation will be maintained between the runway and taxiway centerlines. Additionally, it is recommended that a full-length parallel taxiway system serve the west side of future Runway 15R/33L.

In addition, to facilitate aviation development on the east side of the Airport, north of Earhart Road, future parallel taxiways are recommended on both sides of Runway 6/24. The Medium Intensity Taxiway Lighting System (MITL) serving Taxiway "A" will be replaced with a High Intensity Lighting System (HITL).

### Property Acquisition

Several parcels of land are recommended for acquisition. These include approximately:

- 15 acres of land for the Runway Protection Zone associated with Runway 15 via aviation easement.
- Seven (7) acres of land northeast of the approach end of Runway 15. This land is recommended for acquisition for aviation use and land use compatibility.
- 310 acres west of Runway 15 and Future Runway 15R approach thresholds. This land is recommended for acquisition for approach protection, for future aviation development, and for land use compatibility.

### Landside Development

Landside development is also shown on the existing and future ALP sheets. These facilities are demand-driven and will only be developed when sufficient demand exists; therefore, the layout of hangars and other landside facilities on the ALP are considered conceptual layouts. Landside facilities include terminal services,



aircraft parking aprons, hangars, automobile access and parking, aircraft maintenance areas, and airport support facilities.

## 7.4 Airspace Plan

The Airspace Plan for the Airport is based upon Federal Aviation Regulation (FAR) Part 77: *Safe, Efficient Use, and Preservation of the 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 the Airport. FAR Part 77 criteria specify a set of imaginary surfaces which, when penetrated, designate an object as being an obstruction.

The Airspace Plan provides plan and profile views that depict these criteria as they specifically relate to FNL. The plan is based on the ultimate planned runway lengths, along with the ultimate planned approaches to each runway end. Therefore, it is based on larger-than-utility airport criteria with precision instrument approaches to Runway 33 and Runway 15 and visual approaches to Runways 6/24 and 15R/33L.

The **Airport Airspace Drawings (sheets 5 to 8 of 18)** illustrate the plan and profile views of the imaginary surfaces and penetrations to those surfaces at FNL.

## 7.5 Inner Approach Surfaces

The primary component of the inner portions of a runway's approach are the Part 77 imaginary approach surfaces and the Runway Protection Zone (RPZ). An RPZ is trapezoidal in shape, centered about the extended runway centerline, and typically begins 200 feet beyond each runway end. 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 driven by the approach category of the design aircraft and the visibility minimums associated with the type of approach (visual and not lower than one mile, not lower than  $\frac{3}{4}$ - mile, and lower than  $\frac{3}{4}$ - mile).

The **Inner Approach Drawings (sheet 9 to 14 of 18)** 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 lie within the confines of the inner approach surface area associated with each runway end. The figures also depict the approach clearance requirements specified by threshold siting criteria. As with the airspace plans detailed in **Section 7.4**, the Inner Portion of the Approach Surface Drawings



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are based on the ultimate planned runway length and instrument approach capabilities associated with each runway.

A future access road extends across the RPZ at the southern end of Runway 15/33 that would provide an access point to the to the innovation focused aeronautical/non-aeronautical development area on the west side of the Airport and would be constructed only if such a demand exists. This road reflects a conceptual layout. Prior to construction, a full range of alternatives will need to be evaluated, and coordination with FAA and local road jurisdictions would need to occur.

### 7.6 Departure Surface Drawing

The **Departure Surface Drawing (sheet 15 of 18)** presents a detailed view of departure ends of Runway 15/33. Departure surfaces begin at the point identified as the end of the takeoff distance available and extend along the extended runway centerline at a slope of 40 to 1. When clear, departure surfaces allow pilots to follow standard departure procedures. Obstacle penetrations of the departure surfaces may require non-standard climb rates, higher departure minimums or possibly a reduction in the takeoff distance available. The applicability of the departure surface is dependent on the designation of primary runway(s) for instrument departures. Runway 6/24 is not equipped for instrument departures; therefore, there are no departure surfaces for Runway 6/24.

### 7.7 Terminal Area Plan

The **Terminal Area Plan (sheet 16 of 18)** provides a detailed drawing of the more intensely developed portions of the Airport.

#### Passenger Terminal Facilities

Land reserved in the vicinity of the terminal complex will accommodate a replacement passenger terminal facility and the long-term expansion of the facility, automobile parking facilities, and other passenger terminal support facilities. Forecasted airport activity over the planning period indicates that the reservation of space shown on the Terminal Area Plan will adequately accommodate future demand.

#### General Aviation (GA) Facilities

Programmed improvements for general aviation facilities are also critical components of the master planning effort. As such, general aviation facilities require significant improvement to accommodate both existing and forecasted activity.



A significantly greater amount of space has been reserved at the Airport than has been forecasted over the planning period. Hangar facilities will only be constructed as demand requires. As dictated by demand, these new facilities may include a variety of hangar types ranging in style from small executive or T-hangars to larger corporate hangars.

### Aviation Support Facilities

**Aircraft Rescue and Firefighting Facility (ARFF).** ARFF Index B facilities and equipment are currently provided at the Airport. It is anticipated that the existing ARFF Index B facilities and equipment will adequately accommodate forecasted aircraft operations at FNL.

**Fuel Storage Facility.** The Airport's fuel storage facility is located adjacent to the main remote air traffic control camera tower, north of the FBO parking lot and south of passenger terminal. While the site provides adequate access for fuel delivery trucks and aircraft fueling trucks, its current location represents an opportunity for a higher and better use related to proposed landside access and general aviation development. It is recommended that the fuel storage facility be relocated farther east on the south side of Earhart Road.

**Remote Tower.** A temporary Remote Tower control center along with three camera masts and associated utilities have been installed at FNL. The Remote Tower, which is currently pending FAA certification, will eventually control air traffic will enhance safety and better manage aircraft operations at the Airport. The temporary Remote Tower Control Facility is located in a modular building. Space for a permanent building location has been reserved east of the temporary building, off Earhart Road.

## 7.8 Land Use Plan

The **Airport Land Use Plan (sheet 17 of 18)** depicts existing and recommended future land use within the ultimate airport property boundary, along with land use planning considerations for areas in the vicinity of the Airport. It incorporates land use information from Larimer County, the City of Fort Collins, and the City of Loveland and serves as a key planning document that is used to identify existing and long-term land use compatibility in the Airport vicinity. The Land Use Plan also provides Airport Management with a plan for the use of lease revenue-producing areas on the Airport, in consideration of FAA specified safety setbacks and object clearing standards.

## 7.9 Airport Property Map



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The **Airport Property Map (sheet 18 of 18)** depicts the legal control exercised by the Cities of Loveland and Fort Collins, the acquisition history of tracts within the airport boundary, and the ownership status of any land recommended for acquisition in the Master Plan. The purpose of the Property Map is to confirm that existing and future airport development is and will be constructed on land that is owned and/or controlled by the Airport Sponsor (the cities of Fort Collins and Loveland). Several parcels are recommended for future acquisition during the planning period; however, such acquisition will be dependent on the availability of federal funding. The Property Map also indicates whether land is retained for aeronautical uses or if land has been released from aeronautical uses, such as the area on the west side of the Airport that encompasses the Northern Colorado Law Enforcement Training Center.



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