
AIRPORT LAYOUT PLAN

Appendix D

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Airport Master Plan
Lebanon State Airport

As part of this Master Plan, the Federal Aviation Administration (FAA) requires the development of several technical drawings detailing specific parts of the airport and its environs. The technical drawings are collectively referred to as the Airport Layout Plan (ALP) set. These drawings were created on a computer-aided drafting system (CAD) and serve as the official depiction of the current and planned condition of the Airport. These drawings will be delivered to the FAA for their review and approval. The FAA will critique the drawings from a technical perspective to be sure all applicable federal regulations are met.

The five primary functions of the ALP that define its purpose are:

- 1) An approved plan is necessary for the airport to receive financial assistance under the terms of the *Airport and Airway Improvement Act of 1982 (AIP)*, as amended, and to be able to receive specific Passenger Facility Charge funding. An airport must keep its ALP current and follow that plan, since those are grant assurance requirements of the AIP and previous airport development programs, including the 1970 Airport Development Aid Program (ADAP) and Federal Aid Airports Program (FAAP) of 1946, as amended. While ALPs are not required for airports other than those developed with assistance under the aforementioned federal programs, the same guidance can be applied to all airports.
- 2) An ALP creates a blueprint for airport development by depicting proposed facility improvements. The ALP provides a guideline by which the airport sponsor can ensure that development maintains airport design standards and safety requirements, and is consistent with airport and community land use plans.

- 3) The ALP is a public document that serves as a record of aeronautical requirements, both present and future, and as a reference for community deliberations on land use proposals and budget resource planning.
- 4) The approved ALP enables the airport sponsor and the FAA to plan for facility improvements at the airport. It also allows the FAA to anticipate budgetary and procedural needs. The approved ALP will also allow the FAA to protect the airspace required for facility or approach procedure improvements.
- 5) The ALP can be a working tool for the airport sponsor, including its development and maintenance staff.

It should be noted that the FAA requires that any changes to the airfield (i.e., runway and taxiway system, etc.) be represented on the drawings. The landside configuration developed during this master planning process is also depicted on the drawings, but the FAA recognizes that landside development is much more fluid and often dependent upon specific developer needs. Thus, an updated drawing set is not typically necessary for future landside alterations; however, a revision to the ALP drawing may be required.

AIRPORT LAYOUT PLAN SET

The ALP set includes several technical drawings which depict various aspects of the current and future layout of the Airport. The following is a description of the ALP drawings included with this master plan.

AIRPORT LAYOUT PLAN DRAWING

An official Airport Layout Plan (ALP) drawing has been developed for Lebanon State Airport, a draft of which is included in this appendix. The ALP drawing graphically presents the existing and ultimate airport layout plan. The ALP drawing includes such elements as the physical airport features, wind data tabulation, location of airfield facilities (i.e., runways, taxiways, navigational aids), and existing general aviation development. Also presented on the ALP are the runway safety areas, airport property boundary, and revenue support areas.

The computerized plan provides detailed information on existing and future facility layouts on multiple layers that permit the user to focus on any section of the airport at a desired scale. The plan can be used as base information for design and can be easily updated in the future to reflect new development and more detail concerning existing conditions as made available through design surveys.

FAR PART 77 AIRSPACE DRAWING

Federal Aviation Regulation (F.A.R.) Part 77, *Objects Affecting Navigable Airspace*, was established for use by local authorities to control the height of objects near airports. The FAR Part 77 Airspace Drawing included in this Master Plan is a graphic depiction of this regulatory criterion. The FAR Part 77 Airspace Drawing is a tool to aid local authorities in determining if proposed development could present a

hazard to aircraft using the airport. The FAR Part 77 Airspace Drawing can be a critical tool for the airport sponsor's use in reviewing proposed development in the vicinity of the airport.

The airport sponsors should do all in their power to ensure development stays below the FAR Part 77 surfaces to protect the role of the airport. The following discussion will describe those surfaces that make up the recommended FAR Part 77 surfaces at Lebanon State Airport.

The FAR Part 77 Airspace Drawing assigns three-dimensional imaginary surfaces associated with the airport. These imaginary surfaces emanate from the runway centerline(s) and are dimensioned according to the visibility minimums associated with the approach to the runway end and size of aircraft to operate on the runway. The FAR Part 77 imaginary surfaces include the primary surface, approach surface, transitional surface, horizontal surface, and conical surface. The FAR Part 77 drawing is based on the future condition of the airfield. Each surface is described as follows.

Primary Surface: The primary surface is an imaginary surface longitudinally centered on the runway. The primary surface extends 200 feet beyond each runway end. The elevation of any point on the primary surface is the same as the elevation along the nearest associated point on the runway centerline. Due to weight limitations, the runway is classified as "utility." There are no instrument approach procedures at this time. The primary surface for Runway 16-34 is 250 feet wide as centered on the runway. It should be noted that implementing non-precision instrument approaches to the runway will increase the width of the primary surface to 500 feet. This may introduce incompatibilities to the primary surface, such as future taxiways, and could be a limiting factor when considering instrument approaches.

Approach Surface: An approach surface is also established for each runway end. The approach surface begins at the same width as the primary surface, extends upward and outward from the primary surface end, and is centered along an extended runway centerline. The approach surface leading to each runway is based upon the type of approach available (instrument or visual) or planned.

The current approach surface based on visual approaches extends out to a distance of 5,000 feet and an outer width of 1,250 feet. If a non-precision instrument approach were implemented, then the inner width is 500 feet, the length is 10,000 feet, and the outer width is 2,000 feet. Under both scenarios the slope of the approach surface is 20:1.

Transitional Surface: The runway has a transitional surface that begins at the outside edge of the primary surface at the same elevation as the runway. The surface rises at a slope of 7:1, up to a height 150 feet above the highest runway elevation. At that point, the transitional surface is replaced by the horizontal surface.

Horizontal Surface: The horizontal surface is established at 150 feet above the highest elevation of the runway surface. Having no slope, the horizontal surface connects the transitional and approach surfaces to the conical surface at a distance of 5,000 feet from the end of the primary surface currently and 10,000 feet if non-precision instrument approaches are implemented.

Conical Surface: The conical surface begins at the outer edge of the horizontal surface. The conical surface then continues for an additional 4,000 feet horizontally at a slope of 20:1. Therefore, at 4,000 feet from the horizontal surface, the elevation of the conical surface is 350 feet above the highest airport elevation.

APPROACH SURFACE PROFILE DRAWINGS

The runway profile drawing presents the entirety of the FAR Part 77 approach surface to the runway ends. It also depicts the runway centerline profile with elevations. This drawing provides profile details that the Airspace Drawing does not.

The approach surface profile drawings include identified penetrations to the approach surface. Penetrations to the approach surface are considered obstructions. The FAA will determine if any obstructions are also hazards which require mitigation. The FAA utilizes other design criteria such as the threshold siting surface (TSS) and various surfaces defined in FAA Order 8260.3B, *Terminal Instrument Procedures* (TERPS), to determine if an obstruction is a hazard.

If an obstruction is a hazard, the FAA can take many steps to protect air navigation. The mitigation options range from removing the hazard to installing obstruction lighting to adjusting the instrument approach minimums.

TERMINAL AREA DRAWING

The terminal area drawing is a larger scale plan view drawing of existing and planned aprons, buildings, hangars, parking lots, and other landside facilities.

AIRPORT LAND USE DRAWING

The objective of the Airport Land Use Drawing is to coordinate uses of the airport property in a manner compatible with the functional design of the airport facility. Airport land use planning is important for orderly development and efficient use of available space. There are two primary considerations for airport land use planning. These are to secure those areas essential to the safe and efficient operation of the airport and to determine compatible land uses for the balance of the property which would be most advantageous to the airport and community.

In the development of an airport land use plan for Lebanon State Airport, the airport property was segmented into several large general tracts. Each tract was analyzed for specific site characteristics, such as tract size and shape, land characteristics, and existing land uses. The availability of utilities and the accessibility to various transportation modes were also considered. Limitations and constraints to development such as height and noise restrictions, runway visibility zones, and contiguous land uses were analyzed next. Finally, the compatibility of various land uses in each tract was analyzed.

The depiction of on-airport land uses on this drawing becomes the official FAA acceptance of current and future land uses. However, implementation of any non-aeronautical uses will require further FAA approval, even if the land is designated for non-aeronautical uses on this drawing. There are three different land uses identified for Lebanon State Airport: Airfield Operations, Aviation Development, and Revenue Support.

The Airfield Operations category includes the immediate runway and taxiway environment and includes the Navaid critical areas, runway visibility zone, runway and taxiway safety areas, and the runway protection zones. The Airfield Operations area is reserved for facilities critical to the safe operations of aircraft on the runways and taxiways.

The Aviation Development category reserves critical space adjacent to the Airfield Operations area for aviation-specific activity. This activity includes all facilities necessary for aviation-related functions including hangars, terminal buildings, and fuel farms. Essentially any facilities to be developed in the Aviation Development area must be intended for a function that requires access to the runway and taxiway system. It should be noted that other uses that are compatible with airport operations can be located in the Aviation Development area on a temporary basis, usually considered five years or less.

The Revenue Support category can include aviation facilities and non-aviation facilities. There is a small parcel outside of the Runway 16 RPZ on the north side of Oak Street that is considered as Revenue Support.

AIRPORT PROPERTY MAP

The Airport Property Map provides information on property under airport control and is, therefore, subject to FAA grant assurances. The various recorded deeds that make up the airport property are listed in tabular format. The primary purpose of the drawing is to provide information for analyzing the current and future aeronautical use of land acquired with federal funds.

FAA ALP APPROVAL

FAA will review the ALP submitted. It will be routed through various departments. Comments provided by FAA will be addressed and the ALP will be updated for final FAA approval. FAA approval of any ALP is subject to the condition that the improvements identified may not be undertaken without prior written environmental approval by the FAA. Approval of the ALP does not imply any commitment for federal funding or approval of future structures requiring notice under FAR Part 77.