



---

APPENDIX E  
Airport Layout Plans



## **Appendix E**

### **AIRPORT LAYOUT PLANS**

#### ***Airport Master Plan***

#### ***Topeka Regional Airport***

---

As part of this Airport Master Plan, the Federal Aviation Administration (FAA) requires the development of a set of technical drawings that provides a graphic representation of the long-term development 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 development of the Airport. These drawings will be delivered to the FAA for their review and approval. The FAA will review the drawings from a technical perspective to be sure all applicable federal regulations are met. FAA approval of the ALP indicates that the existing facilities and proposed development depicted on the ALP conforms to the FAA airport design standards in effect at the time of the approval or that an approved modification to standard has been issued. Such approval also indicates that the FAA finds the proposed development to be safe and efficient.

The five primary functions of the ALP that define its purpose are provided in Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, as follows:

- 1) 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.
- 2) 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.

- 3) 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.
- 4) The ALP can be a working tool for the airport sponsor, including its development and maintenance staff.
- 5) An approved ALP is necessary for the airport to receive financial assistance under the terms of the *Airport and Airway Improvement Act of 1982*, as amended, and to be able to impose and use Passenger Facility Charges. An airport must keep its ALP current and follow that plan because 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.

The FAA requires that any planned changes to the airfield (i.e., runway and taxiway system, etc.) be represented on the drawings. However, the ALP drawing set is not intended to provide design engineering accuracy.

## ***AIRPORT LAYOUT PLAN DRAWING SET***

The ALP drawing set for the Airport Master Plan includes several technical drawings which depict various aspects of the current and future layout of the airport in accordance with the ALP Drawing set guidelines listed in AC 150/5070-6B, *Airport Master Plans*, Change 2, and *FAA Standard Operating Procedures for FAA Review of and Approval of Airport Layout Plans (ALPs)* (2.0 dated 10.1.2013). The following is a description of the ALP drawings included with this Airport Master Plan.

### **AIRPORT LAYOUT PLAN DRAWING**

An official ALP drawing has been developed for Topeka Regional Airport, a draft of which is included in this appendix. This draft ALP will be submitted to the FAA for approval. The ALP drawing graphically presents the existing and future airport facilities and layout plan. The ALP drawing includes, but is not limited to, such elements as the physical airport features, wind data tabulation, location of airfield facilities (i.e., runways, taxiways, navigational aids), and 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 subsequent planning and design efforts, and can be easily updated in the future to reflect new development and more detail concerning existing conditions as made available through design surveys.

## TERMINAL AREA PLAN DRAWING

The Terminal Area Plan drawing presents a large-scale depiction of areas with significant terminal facility development. This drawing is an enlargement of a portion of the ALP. The drawing includes the passenger terminal area as well as the supporting infrastructure, including access roads and parking facilities. The terminal area drawing includes the aircraft apron areas.

## FAR PART 77 AIRPORT 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 Airport Airspace drawing included in this Airport Master Plan is a graphic depiction of this regulatory criterion. The FAR Part 77 Airport 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 Airport Airspace drawing can be a critical tool for the airport sponsor's use in reviewing proposed development in the vicinity of the airport.

The FAR Part 77 Airport 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 airport sponsor should do all in their power to ensure development stays below the FAR Part 77 surfaces to protect the role of the airport. The drawing includes a table detailing the penetrations to any of the FAR Part 77 surfaces. A recommended action or disposition is also presented for each penetration.

Penetrations of the FAR Part 77 surfaces indicate an obstruction. Once an obstruction is identified, the FAA determines if the obstruction is a hazard to air navigation. When an obstruction is determined to be a hazard, a variety of actions can be taken to mitigate the hazard. The table included on the drawing presents a recommended action or disposition; however, the FAA is responsible to make the final determination as to what course of action should be taken. Potential mitigating measures include removing the hazard, lowering the hazard, adding an obstruction light, increasing instrument approach visibility minimums, or displacing runway landing thresholds. The following discussion will describe those surfaces that make up the recommended FAR Part 77 surfaces at Topeka Regional Airport.

**Primary Surface:** The Primary Surface is longitudinally centered on the runways and 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. The Primary Surface for both runways is 1,000 feet wide as centered on the runways.

**Approach Surface:** An Approach Surface is also established for each runway end. The Approach Surface begins at the end of the Primary Surface, extends upward and outward, and is centered along an

extended runway centerline. The dimensions of the Approach Surface leading to each runway is based upon the type of instrument approach available (instrument or visual) or planned.

Runway 31 is equipped with a precision instrument landing system (ILS); therefore, the Approach Surface extends a horizontal distance of 10,000 feet at a 50:1 slope with an additional 40,000 feet at a slope of 40:1. The outer width of the Approach Surface is 16,000 feet. With visibility minimums of lower than 1-mile but not lower than ½-mile, the Approach Surface to Runways 13, 3, and 21 extend a horizontal distance of 10,000 feet at a 34:1 slope. The outer width of the Approach Surface is 4,000 feet.

**Transitional Surface:** Each runway has a Transitional Surface that begins at the outside edge of the Primary Surface at the same elevation as the runway. The Transitional Surface also connects with the Approach Surfaces of runways with a precision approach, such as Runway 31. The Transitional Surface rises at a slope of 7:1, up to a height 150 feet above the highest runway elevation. At that point, the Horizontal Surface begins where the Transitional Surface ends.

**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 10,000 feet from the end of the Primary Surfaces of each runway.

**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 DRAWING

The runway profile drawing presents the entirety of the Approach Surface to the runway ends. It also depicts the runway centerline profile with elevations. This drawing provides profile details that the Part 77 Airport 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.

## **INNER APPROACH SURFACE DRAWING**

The Inner Approach Surface drawing provides greater detail of penetrations to the Approach Surface and the Threshold Siting Surface within a few thousand feet of the runway end. Any penetrations are documented in the obstruction tables. The obstruction table includes a description of the object, its top elevation, the depth of penetration, and a recommended disposition to mitigate the penetration.

## **DEPARTURE SURFACE DRAWING**

For primary runways supporting instrument operations, a separate drawing depicting the Departure Surface is required. The Departure Surface, when clear, allows pilots to follow standard departure procedures. The Departure Surface emanates from the departure end of the runway to a distance of 10,200 feet. The inner width is 1,000 feet and the outer width is 6,466 feet. The slope of the Departure Surface is 40:1.

Obstacles frequently penetrate the Departure Surface. Where object penetrations exist, the departure procedure can be adjusted by:

- a) Non-standard climb rates, and/or
- b) Non-standard (higher) departure minimums.

Therefore, it is important for the airport sponsor to identify and remove Departure Surface obstacles whenever possible in order to enhance takeoff operations at the airport. The airport sponsor should also prevent any new obstacles from developing.

## **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, which 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 Topeka Regional Airport, the airport property was divided 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 following land use categories are identified on the Airport Land Use drawing:

**Airfield Operations:** Airport property that encompasses the major airside elements, such as the runways, taxiways, runway safety area, runway object free area, runway obstacle free zone, runway protection zones, taxiway safety area, navigational aid critical areas, and the runway visibility zone (applies only to crossing runways).

**Aviation Development:** Those areas that are planned to be reserved for future aviation development. Development in this area should be reserved for those uses needing access to the runway and taxiway systems. Typical uses include aircraft hangars, terminal buildings, air cargo facilities, and other businesses needing access to the runways. The Aviation Development category is further defined with the following subcategories:

- **Passenger Terminal Area:** Property in this area is reserved for uses necessary to support the passenger terminal functions. It includes the terminal building, terminal apron, vehicle parking lots, and surface access roads.
- **Support Services Area:** These areas are located throughout the airport and they identify specific functions, such as the fuel farm, administration building, ARFF station, and equipment storage.
- **Charter Apron Area:** This apron serves a unique and important role at the airport as charter operations by large transport aircraft are common at the airport.
- **General Aviation Area:** This area encompasses certain apron areas, hangars, and other general aviation business functions.
- **Aviation Reserve:** Undeveloped areas immediately adjacent to the runway system to be reserved for future aviation development. Aviation development refers to those operations that will require access to the runway and taxiway system. While these areas may not be needed for development in the next 20 years, they must be reserved for aviation development as long as the airport exists.

**Non-Aviation Revenue Support:** These areas are available for both aviation and non-aviation uses that are compatible with airport operations. Generally, activities in this area do not need access to the runway and taxiway system. Airports may encourage development of non-aviation land in order to generate additional revenue to the airport which, in turn, contributes to the self-sustainability goal for airports as described in FAA Grant Assurances.

**Open Reserve:** This area is located in the southeast quadrant of the airport. This area encompasses a decommissioned landfill. It is recommended that the area remain open and vacant because if the Airport were to disturb the land, they risk assuming the environmental responsibility for the property from the U.S. Army Corp of Engineers.

## **AIRPORT PROPERTY MAP – EXHIBIT A**

The Airport Property Map (Exhibit A) provides a drawing depicting the airport property boundary, the various tracts of land that were acquired to develop the airport, the method of acquisition, and other information on the property under airport control that is 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 ac-

quired with federal funds. The Exhibit A - Property Map has been prepared in accordance with *FAA Standard Operating Procedures for FAA Review of Exhibit 'A' Airport Property Inventory Maps* (3.0 dated 10.1.2013).



This page intentionally left blank



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

Central Region  
Iowa, Kansas,  
Missouri, Nebraska

901 Locust  
Kansas City, Missouri 64106  
(816) 329-2600

November 2, 2016

Mr. Eric Johnson  
President of MTAA  
Topeka Regional Airport  
6510 SE Forbes Ave Suite 1  
Topeka, KS 66619

Dear Mr. Johnson:

ALP Conditional Approval  
Topeka Regional (FOE), Topeka, KS  
AIP No. 3-20-0113-034-2015

The Topeka Regional Airport Layout Plan (ALP), prepared by Coffman Associates, Inc., and bearing your signature, is approved. A signed copy of the approved ALP is enclosed.

Although future structures on or near the airport may be in conformance with the ALP, all future alterations or new structures will be subject to the notice provisions of Federal Aviation Regulations (FAR) Part 77. An aeronautical study (no.2016-ACE-3504-NRA) was conducted on the proposed development. This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

The FAA has only limited means to prevent the construction of structures near an airport. The airport sponsor has the primary responsibility to protect the airport environs through such means as local zoning ordinances, property acquisition, aviation easements, letters of agreement or other means.

**The approval, indicated by my signature, is given subject to the condition that the following may not be undertaken without environmental approval by the Federal Aviation Administration:**

- 1) Land Acquisition**
- 2) Obstruction Removal**
- 3) Taxiway Alpha and Bravo Reconstruction**

All items of development shall comply with the requirements of the National Environmental Policies Act of 1969 (P.L. 91-190). Approval of the plan does not indicate that the United States will participate in the cost of any development proposed. AIP funding requires evidence of eligibility and justification at the time a funding request is ripe for consideration.

When construction of any proposed structure or development indicated on the plan is undertaken, such construction requires normal 45-day advance notification to FAA for review in accordance with applicable Federal Aviation Regulations (i.e., Parts 77, 157, 152, etc.). More notice is generally beneficial to ensure that all statutory, regulatory, technical and operational issues can be addressed in a timely manner.

One set of the of conditionally approved ALP drawings is enclosed. We are keeping one set of the conditionally approved ALP drawing sets for the official FAA files. Copies of this letter with sets of conditionally approved ALP drawings are being furnished to the KDOT Division of Aviation and your consultant.

If you have any questions, you may contact me by telephone at (816) 329-2646 or via email at [jason.knipp@faa.gov](mailto:jason.knipp@faa.gov).

Sincerely,



Jason Knipp  
Airport Planner - Kansas

Enclosure: ALP Drawing Set

CC: Patrick Taylor, Coffman Associates, Inc.  
Merrill E. Atwater, KDOT Division of Aviation



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

Central Region  
Iowa, Kansas,  
Missouri, Nebraska

901 Locust  
Kansas City, Missouri 64106  
(816) 329-2600

October 27, 2016

Mr. Eric Johnson  
President of MTAA  
6510 SE Forbes Ave Suite 1  
Topeka, KS 66619

Dear Mr. Johnson:

Airspace Analysis Determination – No Objection  
Topeka Regional (FOE), Topeka, KS  
14 CFR Part 77 – Airspace Case No. 2016-ACE-3504-NRA

We conducted a review of the subject Airport Layout Plan (ALP) based on considerations relating to the safe and efficient utilization of airspace, factors affecting the control of air traffic, conformance with FAA design criteria, and Federal grant assurances or conditions of a Federal property conveyance. Our determination of No Objection is derived from the analysis of information supplied in the ALP. We conclude that the proposal will not adversely affect the safe and efficient use of navigable airspace by aircraft provided the conditions are met as explained in the enclosed FAA Memorandum dated October 26, 2016.

We have reviewed the proposal from an airport's planning viewpoint and the effect on airport programs. We have coordinated the proposal with the appropriate FAA offices, and their comments are contained in the enclosed FAA Memorandum. We have reviewed the ALP for structures that may adversely affect the flight or movement of aircraft, cause electromagnetic interference to NAVAIDs, communication facilities, or, when applicable, derogate the line-of-sight visibility from a control tower. There is potential that future proposed hangars could require a detailed line-of-sight study at the time of airspace submittal. Any other comments on objects that exceed the obstruction standards of 14 CFR Part 77 are enclosed (if applicable). Comments on the development of the ALP, which are based on requirements contained in FAA Advisory Circular (AC) 150/5070-6, *Airport Master Plans*, and AC 150/5300-13A, *Airport Design*, have already been provided.

This determination does not constitute a commitment to provide Federal financial assistance to implement any development contained on the ALP. An ALP is a graphic depiction of the existing and future airport facilities showing the clearance and dimensional requirements to meet applicable standards. The ALP serves as a record of aeronautical requirements and is used by the FAA in its review of proposals that may affect the navigable airspace or other missions of the FAA.

This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing

airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

The FAA cannot prevent the construction of structures near an airport. The airport environs can only be protected through such means as local zoning ordinances, acquisitions of property in fee title or aviation easements, letters of agreement, or other means.

As a reminder, the sponsor is advised to coordinate the completion of project construction with the cycle of FAA publications, and to notify the FAA with the required information before the cut-off date coinciding with the next publication cycle.

This determination does not constitute a commitment of Federal funds and does not indicate that the proposed development is environmentally acceptable in accordance with applicable Federal laws. An environmental finding is a prerequisite to any major airport development project when Federal aid will be granted for the project. This approval is given subject to the condition that any proposed airport development shall not be undertaken without prior written environmental approval by the FAA.

If you have any questions regarding this project please call me at (816) 329-2646 or via email at [jason.knipp@faa.gov](mailto:jason.knipp@faa.gov).

Sincerely,



Jason Knipp  
Airport Planner – Kansas

Enclosure: ALP Airspace Memo to FAA Planner

cc: Patrick Taylor, Coffman Associates



# Memorandum

## U.S. Department of Transportation Federal Aviation Administration

---

Date: October 26, 2016

Subject: TOPEKA REGIONAL (FOE) – TOPEKA, KS  
Aeronautical Study Number: 2016-ACE-3504-NRA  
Airport Layout Plan Update

From: Airports Airspace Specialist, ACE-620F      Reply To: John D. Karrasch, ext 2617

To: Mr. Jason Knipp, ACE 611C

We have completed an airspace analysis of:

**Revisions of Airfield Geometry to meet current design standards.**

**Layout of new hangars near the Air Traffic Control Tower.**

**Revisions of airfield taxiway system.**

Our aeronautical study has determined that the proposed updates will not adversely affect the safe and efficient use of airspace by aircraft. Therefore, we have no objection to the proposal.

Future structures and/or construction equipment were not evaluated as part of this study. These must be submitted separately in accordance with 14 CFR Part 77.

This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making the determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA) and known natural objects within the affected area would have on the airport proposal. This aeronautical study was not circulated to the public for comments.

The FAA cannot prevent the construction of structures near an airport. The airport environs can only be protected through such means as local zoning ordinances, acquisitions of property in fee title or aviation easements, letters of agreements, or other means. This determination in no way preempts or waives any ordinances, laws, or regulations of any government body or agency.

This aeronautical study was not circulated to the public for comments.



[www.coffmanassociates.com](http://www.coffmanassociates.com)

**KANSAS CITY**  
**(816) 524-3500**

---

237 N.W. Blue Parkway  
Suite 100  
Lee's Summit, MO 64063

**PHOENIX**  
**(602) 993-6999**

---

4835 E. Cactus Road  
Suite 235  
Scottsdale, AZ 85254