



2. INVENTORY

The first step in the airport master planning process, as outlined in Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, involves gathering information about the airport and its environs. An inventory of current conditions is essential to the success of a master plan since the information also provides a foundation, or starting point, for subsequent evaluations.

The inventory serves as a foundation or starting point for the master plan.

2.1 Airport Overview

Akron is the county seat in Washington County, in the northeast corner of Colorado. It is home to approximately 1,700 people, making it the largest municipality in the County. The Town sits at the intersection of Colorado Highway 63 and US Highway 34. Interstate 76, located 30 miles west of Akron, enables travel across the country.

Colorado Plains Regional Airport (AKO or the Airport) is 4,715 feet above sea level. Located less than a mile from the center of town, the Airport is easily accessed on Cedar Avenue (Colorado Highway 63), a main street that runs through town.



Akron, Colorado

AKO is a general aviation airport owned and operated by the Town of Akron. A general aviation airport is defined as a public-use airport that does not have scheduled airline service or has less than 2,500 annual passenger boardings¹. As the owner and Airport sponsor, the Town is responsible for operating and maintaining AKO in a safe condition and leasing properties within the Airport boundary.

FIGURE 2-1: AIRPORT LOCATION MAP



Source: JVIation

¹ www.faa.gov



2.1.1 Airport History

AKO’s facilities were originally established southeast of town in the early 1930s as part of the “Green Six” airway and a very early low frequency range location, making it one of Colorado’s first six instrument approaches. When the very high frequency omni-directional range (VOR) system was implemented by the FAA, AKO was selected as an early site, and maintained its instrument weather capability. The Airport has had continuous on-site weather observations since the early 1930s. AKO was home to the Civil Aeronautics Authority (CAA) and FAA Flight Service Stations until 1988 when they were consolidated into another location. The Airport has always been a regional facility, serving the needs of aviation beyond the boundaries of Akron.

AKO was relocated to its current location in 1958. The Airport’s main structures were constructed in 1989, including the terminal building (pre-existing), hangars, and the runway. Two airport master plan (AMP) updates were completed in 1995 and 2005. An Airport Layout Plan (ALP) update was completed in 1998; this planning tool depicts an airport’s existing facilities and planned development.

Additional information related to the development of AKO over the past 10 years can be seen by examining the history of FAA Airport Improvement Program (AIP) grants issued to the Town, as shown in **Table 2-1**.

TABLE 2-1: AKO AIP GRANT HISTORY

Year	Purpose	Amount
2005	Construct Taxiway	\$800,000
2008	Rehabilitate RWY 11/29	\$38,760
2008	Rehabilitate RWY 11/29	\$111,240
2009	Install Perimeter Fencing	\$48,693
2009	Install Perimeter Fencing	\$101,307
2013	Install Perimeter Fencing	\$230,000
2015	Rehabilitate Apron, Rehabilitate Taxiway	\$374,321
2016	Repair Precision Approach Path Indicator (PAPI) System for Runway 11/29	\$120,000

Source: FAA Grant Histories

2.1.2 Financial Structure

Regarding the financial condition at airports, the FAA sponsor grant assurances state: “It (i.e. the airport sponsor) will maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, considering such factors as the volume of traffic and economy of collection.”

Because AKO is owned and operated by the Town of Akron, the fiscal responsibility of the Airport resides with the Town and Airport Management. Airport finances are managed through an Airport General Fund. Airport revenue is generated from aviation fuel fees as well as rentals and leases of property.

The Town collects fees each month from various sources, listed in **Table 2-2**. The Airport is not fully self-sufficient and receives subsidies through the Town of Akron.

The majority of facilities on the Airport, including all of the hangar structures, are privately owned. Owners of the facilities lease property from the Town of Akron and pay a lease rate for the property. The facility owners are also taxed at the prevailing property tax rate, and these property taxes generate additional revenue. The combined Mill levy for this area is 128.662 mills for the 2016 tax year or the decimal equivalent rate of .128662. This is applied to the “Assessed Value” to calculate the tax amount. The assessed value is 29 percent of the appraised value.

Table 2-3 details AKO’s annual expenditures. Refer to **Chapter Seven, Program Implementation Plan** for additional information on the Airport’s financial structure.

TABLE 2-2: AKO RATES AND FEES

Source/Service	Fee
Land Lease	\$.02/sq ft/yr
Fuel Flowage fee	\$.05/gallon
Transient Overnight Tie Down Fees	No Charge
Landing Fees	No Charge

Source: Town of Akron 2016 Budget, 2014, Airport Administration

TABLE 2-3: AKO ANNUAL OPERATING AND MAINTENANCE EXPENDITURES

Source/Service	Annual Cost
Operating Supplies and Expenses	\$29,385
Utilities and Lighting	\$2,409
Insurance and Bonds	\$7,719
Capital Outlay	\$13,098

Source: Town of Akron 2016 Budget, 2014 Actual Expenditures

2.1.3 Airport Economic Impact

The Colorado Department of Transportation, Division of Aeronautics (CDOT) conducted an Economic Impact Study for Colorado airports in 2013. The economic contributions of AKO stem from on-airport activities and off-airport spending by visitors who arrive in Colorado via the Airport. The economic contributions of these activities are measured through jobs, associated payroll, and economic output.¹ Capital improvement projects at AKO also support jobs and payroll over the duration of the project. On-airport activities include tenants and AKO activity such as administration, operations, and maintenance.

According to CDOT, approximately 5,000 visitors arrive in Colorado via AKO. The spending analysis of the visitors on food, lodging, transportation, entertainment, and retail purchases results in support of local jobs and payroll. The capital improvement, Airport, tenant, and visitor impacts, in conjunction with multiplier effects, represent

¹ [2013 Economic Impact Study for Colorado Airports](#)



total economic contribution at AKO of \$4 million, including 40 jobs with an annual payroll of \$1 million.

Airport management noted that aviation businesses situated on AKO are not replicated at most Colorado airports and not anywhere in eastern Colorado, and therefore represent a significant element to Akron’s and Washington County’s economic development.

2.1.4 Airport Role

Airports play a variety of functional roles and contribute at varying levels in meeting the transportation and economic needs on national, regional, state, and local levels. Identifying and understanding the various roles that an airport plays is essential for that airport to be developed with facilities and services appropriate to fulfilling its respective roles. FAA and CDOT classify AKO as a general aviation (GA) airport.

Every two years, the FAA classifies airports in the National Plan of Integrated Airport Systems (NPIAS) in a report to Congress. The NPIAS includes approximately 3,400 airports that FAA considers vital to the nation’s aviation transportation system, and are eligible for federal grants. Classifying the airports enables funding to be distributed according to formulas set by Congress and distributed through FAA’s Airport Improvement Program (AIP). FAA lists AKO as a “Basic” GA airport in the most recent NPIAS report. FAA’s 2012 report, *General Aviation Airports: A National Asset*, provides “Local” and “Basic” classifications for GA airports, and lists AKO as a “Local” airport. These roles are defined as:

- **Local Airports:** located near larger population centers but not necessarily in metropolitan areas.
- **Basic Airports:** fulfill the principal role of a community airport providing a means for private general aviation flying, linking the community with the national airport system, and making other unique contributions.

Individual states also define the roles of airports within their borders through statewide aviation system plans. Colorado’s 2011 Aviation System Plan update labels AKO as an “Intermediate” airport. AKO was previously listed as a “Major” airport in terms of operational demand/capacity, however, the recommendation to downgrade the category was based on an annual decline of 1.9 percent.

Table 2-4 provides a summary of the primary data elements for AKO.

TABLE 2-4: PRIMARY AIRPORT DATA

Data Element	Colorado Plains Regional Airport
FAA Designation	AKO
Airport Sponsor	Town of Akron
Associated Town	Akron, CO
Date Established	1930s
Airport Management	Agreement with FBO Manager
Airport Roles	FAA NPIAS: Local/Basic CDOT: Intermediate



Data Element	Colorado Plains Regional Airport
Universal Communication (Unicom)	122.8
Airspace Classification	Class G (surface-699 AGL), Class E (700-17,999AGL)
Automated Surface Observation System Frequency/Phone Number	135.475 / 970.345.2320
Airport Reference Point	N 40° 10' 32.3000" W 103° 13' 19.3000"
Elevation	4,715.8 MSL
Acreage	631
Sectional Chart	Cheyenne
Area Mean Maximum Temperature	88°F

Source: AKO Form 5010, AirNav.com, Cheyenne Sectional, AKO Chart Supplement
 Note: AGL = Above Ground Level, MSL = Mean Sea Level

2.2 Airside Facilities

Airside facilities are the portions of the airport that accommodate the movement of aircraft and encompass runways, taxiways, airfield lighting, and other facilities necessary to support flight activity.

2.2.1 Runways

AKO currently has one runway (11/29). **Table 2-5** provides detail about Runway 11/29. Runway orientation is discussed in **Chapter Four**.

Although they do not meet critical aircraft threshold criteria, military aircraft train at the Airport, including National Guard and Reserve C-130s as well as contract training and flight testing by Sierra Nevada Corp in support of Middle East operations involving C-146s, among others. AKO is the only airport in eastern Colorado beyond the Front Range capable of safely handling larger corporate aircraft.



AKO Location and Runway Hold

TABLE 2-5: AKO RUNWAY 11/29 DATA

Item	Detail
Dimensions	7,001 ft x 100 ft
Runway Markings	Non-Precision Instrument
Runway Surface Type	Asphalt
Runway Strength	<ul style="list-style-type: none"> – Single Wheel: 65,000 lbs – Double Wheel: 85,000 lbs – Double Tandem: 125,000 lbs
Runway End Elevations	4,715.8/4,670.6 MSL
Visual Approach Slope Indicator	Precision Approach Path Indicator (PAPI)
Effective Gradient	-0.6%/0.6%
Runway Design Code (RDC)	B-II
Critical Aircraft	Citation Excel. Airport management notes that AKO also accommodates Guard aircraft such as C-130s

Source: AKO Form 5010, AKO FAA Survey

2.2.2 Taxiways

Taxiways are paved areas over which airplanes move from one part of the airfield to another. One of their more important uses is to provide access between the terminal/hangar facilities and the runways. There are three types of taxiways: parallel, entrance/exit, and access. Taxiways that are parallel to runways generally provide a route for aircraft to reach the runway end. Entrance/exit taxiways, which usually connect runways to parallel taxiways, provide paths for aircraft to enter the runway for departure or leave the runway after landing. Access taxiways provide a means for aircraft to move among the various airside components of an airport including aircraft hangar and storage areas, fueling area, and aircraft parking and aprons.



AKO Taxiway

AKO has one partial-length parallel taxiway, A, serving Runway 11/29. The distance between the Taxiway A and Runway centerlines is 400 feet. Access to the Runway is provided by entrance/exit Taxiways A1 and A2 located at the Runway 29 threshold (A1) and approximately 2,200 feet from the Runway 29 threshold (A2). There are turnaround taxiways, A3 and A4, that aircraft utilize to taxi and turn around for departure on Runway 11. **Table 2-6** details information about each taxiway.

TABLE 2-6: TAXIWAY DETAILS

Taxiway	Type	Width	Condition
A	Partial Parallel	35 ft	Fair
A1	Access	35 ft	Good
A2	Access	40 ft	Good
A3	Turnaround	35 ft	Fair
A4	Turnaround	35 ft	Fair

Source: Jviation

2.2.3 Aprons

An aircraft apron is used for aircraft movement and positioning, vehicle movement and parking, and aircraft tiedowns. AKO has one aircraft apron located adjacent to the fixed-base operator (FBO) and approach end of Runway 29. The 88,000-square-foot concrete apron can accommodate approximately 17 aircraft of varying sizes.

Airport management noted that aircraft parking on the apron is often challenging. With only a few aircraft on the ramp, helicopter fueling, which are often serviced “hot” (i.e. refueled with the engine running but the rotor stopped), impacts the space available to park aircraft. In addition, helicopters frequently generate rotor wash turbulence when they hover taxi, and takeoff and land, and the rotor wash impacts fixed-wing aircraft. Larger aircraft are often pinched on the east end of the apron due to the close proximity of the based aircraft tiedowns.

In general, transient aircraft prefer power-in, power-out parking versus nested tiedowns that require towing an aircraft into and out of each parking position. However, power-in, power-out parking requires more space than nested tiedowns. AKO’s apron is designed to accommodate both types of parking (**Figure 2-2**).

FIGURE 2-2: AIRCRAFT APRON



Source: Google Earth

2.2.4 Pavement Condition and Strength

FAA AC 150/5380-6B, *Guidelines and Procedures for Maintenance of Airport Pavements* recommends conducting a detailed pavement inspection that follows the American Society for Testing and Materials (ASTM) D5340, Standard Test Method for Airport Pavement Condition Index Surveys.

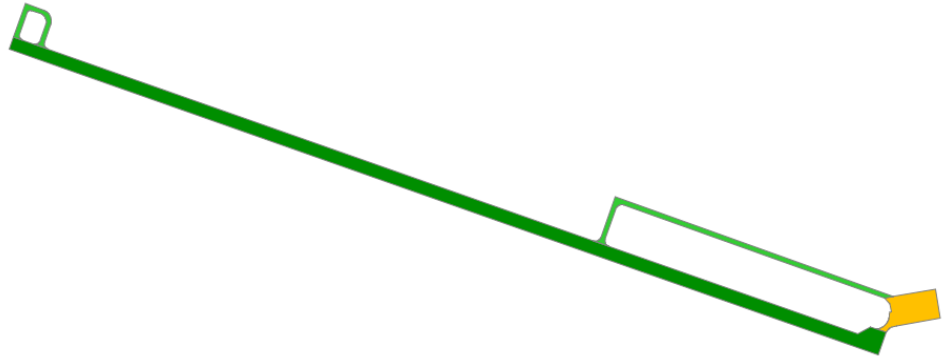
A detailed pavement inspection is conducted for airport pavements to employ a visual rating system for pavement distress. This condition and strength value is the Pavement Condition Index (PCI). The PCI scale ranges from a value of zero (representing a pavement in a failed condition) to a value of 100 (representing a pavement in excellent condition).

CDOT Aeronautics completed a PCI study for AKO in 2016. Overall, the surfaces at AKO range from a PCI of 41-55 (orange) to 86-100 (green) as shown in **Figure 2-3**. AKO's airfield pavement is predominately considered to be in "good" condition. AKO's lowest PCI values, indicating pavement in "fair" condition, are limited to the aircraft apron.

The weight-bearing capacity of Runway 11/29 is listed in FAA's Airport Facility Directory (chart supplement) as: S-65 (single-wheel 65,000 pounds), D-85 (dual-wheel 85,000 pounds), 2D-125 (two dual wheels in tandem type landing gear 125,000 pounds).



FIGURE 2-3: AKO PAVEMENT CONDITION INDEX



Source: CDOT 2016 System Update, Pavement Evaluations & Management

2.2.5 Airfield Lighting

Identification Lighting

A rotating beacon identifies the Airport’s location at night and during periods of poor visibility. This beacon projects alternating green and white beams from dusk to dawn. When activated during daylight hours, the beacon signals Instrument Flight Rule (IFR) conditions. AKO’s beacon is located north of the aircraft parking apron.

Runway Lighting

Lighting aids are necessary to provide pilots with critical takeoff and landing information concerning runway alignment, lateral displacement, rollout operations, and distance remaining. AKO’s runway lighting is detailed in **Table 2-7**.

A Precision Approach Path Indicator (PAPI) is a series of lights that provides visual guidance during a runway approach. Runway 11/29 has a two-light PAPI system.

AKO’s runway edge lighting is classified as Medium Intensity Runway Light (MIRL) and consists of a single row of white lights bordering each side of the Runway. The runway lights are activated remotely by pilots over the Unicom (CTAF) frequency of 122.8. Once activated, the lights remain on for 15 minutes and then automatically shut down.

Runway End Identifier Lights (REIL) are high intensity white strobe lights located on each end of Runway 11/29 to enable rapid identification of the runway threshold, particularly at night and during periods of poor visibility.

TABLE 2-7: AKO RUNWAY LIGHTING

Lighting	Runway 11	Runway 29
Approach Lighting	PAPI	PAPI
Runway Edge Lighting	MIRL	MIRL
Centerline Lighting	None	None
Runway End Identifier Lights	Yes	Yes

Source: Jviation

Taxiway Lighting

Taxiway edge lights provide visual guidance in low visibility or night conditions to pilots and ground service/maintenance vehicles accessing the taxiway. AKO does not have a taxiway lighting system, though blue reflectors mounted on short poles along the edge of the Taxiway guide aircraft from the Runway to the apron area.

Visual Aids

Additional visual aids and instrumentation at the Airport assist pilots in arriving or departing. The Airport’s segmented circle and integrated lit wind cone provide pilots with traffic pattern and wind direction/velocity information. The segmented circle is located south of the Runway.

Additionally, the Airport has an Automated Surface Observation System (ASOS) that automatically records and broadcasts important weather information such as barometric pressure, wind speed and direction, temperature, visibility, sky condition, cloud ceiling height, and precipitation.

Airfield signage gives pilots visual guidance information for all phases of movement on the airfield. AKO is equipped with lighted signs to indicate connector taxiways and runway ends; the signage is standard and in good condition.



Segmented Circle

2.3 Landside Facilities

AKO’s landside development includes a terminal building, FBO facilities, maintenance hangar facilities, fuel storage, and access roadways.

2.3.1 General Aviation Areas

Hayes Aviation is the Airport’s FBO, located on Cedar Avenue (Highway 63), north of the approach end of Runway 29.

Hayes Aviation offers multiple services including aircraft fueling, catering, maintenance, and aircraft painting. The company also offers a courtesy car for pilots and passengers. The aircraft power plant, airframe, and propeller maintenance are among the major services offered to aircraft operators.



Hayes Aviation, FBO/Terminal Building

The FBO occupies the single-story terminal building, and houses a pilot briefing room, lounge area, restrooms, and 24-hour vending. The FBO has approximately 15 auto parking spaces for Airport visitors.

Per Airport management, the terminal building was originally constructed in 1946, but was transformed into a space for airport public-use space and the FBO in 1989. The building elevation was not sufficiently factored in during the development of the airside pavement, and the terminal regularly floods during heavy rains. The terminal also needs to be refurbished for energy efficiency and to meet the Americans with Disabilities Act requirements.

2.3.2 Hangars

Hangars are buildings used to store and maintain aircraft at airports. Hangars come in many shapes and sizes, but the two most common are T-hangars and conventional (or box) hangars. T-hangars are shaped like a “T” and typically accommodate piston-engine aircraft. They are one of the most common hangars at GA airports, and are usually the least expensive to construct. AKO currently has eight T-hangars, with an average size of 1,000 square feet.

Box hangars can be built to any size and are primarily used for aircraft storage and maintenance. There are currently eight box hangars at AKO, some of which are used for aircraft maintenance. The hangars vary in age and range in size from 1,200 to 6,000 square feet; most do not have paved taxilanes to the Runway or Taxiway.

As discussed previously, all the hangars are privately owned, but lease their land from the Town of Akron. Hangar owners pay both land lease and commercial property tax to the Town. **Figure 2-4** illustrates the locations of the hangars at AKO, and **Table 2-8** details hangar size.



AKO Hangars

FIGURE 2-4: HANGAR LOCATIONS



Source: Google Earth, Jviation

TABLE 2-8: HANGAR SIZE AND CONDITION

Hangar	Type	Square Footage
1	T-Hangar: 5 Units	5,000
2	T-Hangar: 3 Units	3,000
3	Box Hangar	6,000
4	Box Hangar	2,500
5	Box Hangar	2,000

Hangar	Type	Square Footage
6	Box Hangar	2,000
7	Box Hangar	1,200
8	Box Hangar	6,000
9	Box Hangar	6,800

Source: Aviation

2.4 Airport Support Facilities

2.4.1 Fuel Storage

Hayes Aviation provides fuel service to all transient and based aircraft at AKO and is responsible for ensuring the availability and quality of aviation fuel sold at the Airport. The Airport owns two 10,000-gallon above-ground fuel storage tanks, one for JetA and the other for 100LL. AKO also owns a 600-gallon 100LL fuel truck, and a 3,000-gallon JetA fuel truck. Aircraft operators in need of 100LL fuel may also use the self-serve fuel station 24 hours a day. The FBO services aircraft 24 hours a day.



Self-Serve Fuel Station

2.4.2 Snow Removal Equipment and Airport Grounds Maintenance

Used primarily during the winter months, snow removal equipment (SRE) is designed to keep the Airport safe during snow events. Grounds maintenance equipment is used to mow grass areas and fields adjacent to aircraft movement and public access areas. Because the Town of Akron owns AKO, the Town’s Public Works Department performs snow removal and grounds maintenance. This group focuses on clearing snow from the Runway, Taxiway, and aircraft parking ramp as well as cutting the grass near aircraft movement and public access areas. The SRE and maintenance equipment is stored off-airport.

2.4.3 Airport Access Roadways and Auto Parking

The Airport is accessible from the north/south via Cedar Avenue (Highway 63), which leads north from Akron. There is a gravel/dirt parking lot for Airport users, tenants, and Airport administration vehicles. Highway 63 connects with I-76 to the north, and via Highway 36 to I-70 to the south.

2.4.4 Fencing

Airport fencing is intended to prevent animals and unauthorized people from intruding on Airport property. Normally installed along the perimeter of Airport property, fencing provides increased safety and security for the Airport. AKO’s property boundary is surrounded by four-strand barbed wire. The terminal area is enclosed by an eight-foot chain-link fence topped with barbed wire to enhance security near the hangars and aircraft. The aircraft apron is accessible to pilots and tenants through a controlled access system of a gate located next to the parking lot.



2.4.5 Airport Utilities

Electrical power in Akron is provided by Y-W Electric Association, Inc. Gas services are provided by Kinder Morgan Energy Gas Company, and telephone/internet service is provided by CenturyLink Telecommunication Company. The Airport currently has access to three-phase electricity, natural gas, sewer lines, water, and telephone services. It is important to note that utility poles are located on the west side of Cedar Avenue, running north and south adjacent to the Airport.

AKO management has noted a need to improve to their internet access as this may be an added value to Airport tenants and is a desirable amenity for Airport users. Other service capacities for electric, gas, and telephone exceed the current requirements, accommodating expansion of the Airport.

2.5 Airspace System/Navigation and Communication Aids

AKO operates within the larger National Aviation System (NAS), which comprises a wide array of services, systems, and requirements for the airports and pilots that function within it. The following sections provide an overview of some of AKO's key considerations with respect to navigating and operating within the NAS.

2.5.1 Air Traffic and Aviation Communications

There is no air traffic control (ATC) tower at AKO. Aviation communication facilities associated with AKO include the Universal Communication (Unicom) station on frequency 122.8 MHz. As mentioned earlier, ASOS weather data for AKO is available via radio frequency 135.475 MHz, as well as by telephone at 970.345.2320. There is a remote communication outlet (RCO) to Denver Flight Service Station via 122.075. This allows pilots to file flight plans, obtain weather information away from AKO, and receive air traffic control clearances.

2.5.2 Airspace

To ensure a safe and efficient airspace environment for all aspects of aviation, the FAA has established an airspace structure through the Federal Aviation Regulations (FAR) that regulates and establishes procedures for aircraft that use the NAS. This airspace structure provides for two basic categories of airspace: controlled (classified as Class A, B, C, D, and E) and uncontrolled (classified as Class G).

AKO lies in Class E airspace, which extends up to 18,000 feet (Class A airspace). **Figure 2-5** shows a portion of the sectional aeronautical chart published by the FAA's National Aeronautical Charting Office for the airspace around AKO. Pilots are not required to obtain air traffic clearances to fly to, from, or near AKO during good weather (visual meteorological conditions – VMC). However, when the ASOS reports cloud ceilings of less than 1,000 feet and/or visibility less than three miles, pilots are required to obtain an ATC clearance to fly through the Class E airspace. The Class E airspace is shaped to protect aircraft flying the RNAV GPS Runway 11 approach.

FIGURE 2-5: AKO AIRSPACE



Source: www.vfrmap.com

2.5.3 Navigational Aids (NAVAIDS)

In addition to GPS, ground-based NAVAIDs are also available to pilots around AKO, located near the field and at other locations within the region. Many of these NAVAIDs are available for en route air traffic. They are used by pilots flying in the vicinity of AKO (Table 2-9).

A VOR/DME is a very high frequency omnidirectional range (VOR) station with distance measuring equipment (DME) transmitting very high frequency (VHF) signals, 360 degrees in azimuth oriented from magnetic north. The reception of a VOR is restricted because it does not follow the curvature of the earth. Because of this, the farther an aircraft is from the station, the higher their altitude must be to receive the signal. This DME is used to measure, in nautical miles (nm), the slant range distance of an aircraft from the NAVAID. AKO’s VOR/DME is 1.7 nautical miles from the Airport.

TABLE 2-9: NAVAIDS AROUND AKO

Type	FAA ID	Name	Frequency	Radial	Range
VOR/DME	AKO	Akron	114.4	289°	2.3 nm

Source: AirNav, AKO Approach Charts

There are three published instrument approaches at AKO: one for Runway 11 and two for Runway 29. All the instrument approaches are non-precision procedures, i.e. they do not provide vertical guidance.

Table 2-10 summarizes the approach and visibility minima of these approaches. Two of the approaches are for straight-in area navigation (RNAV) using GPS. Figure 2-6, Figure 2-7, and Figure 2-8 are the current approach charts for these published instrument procedures.

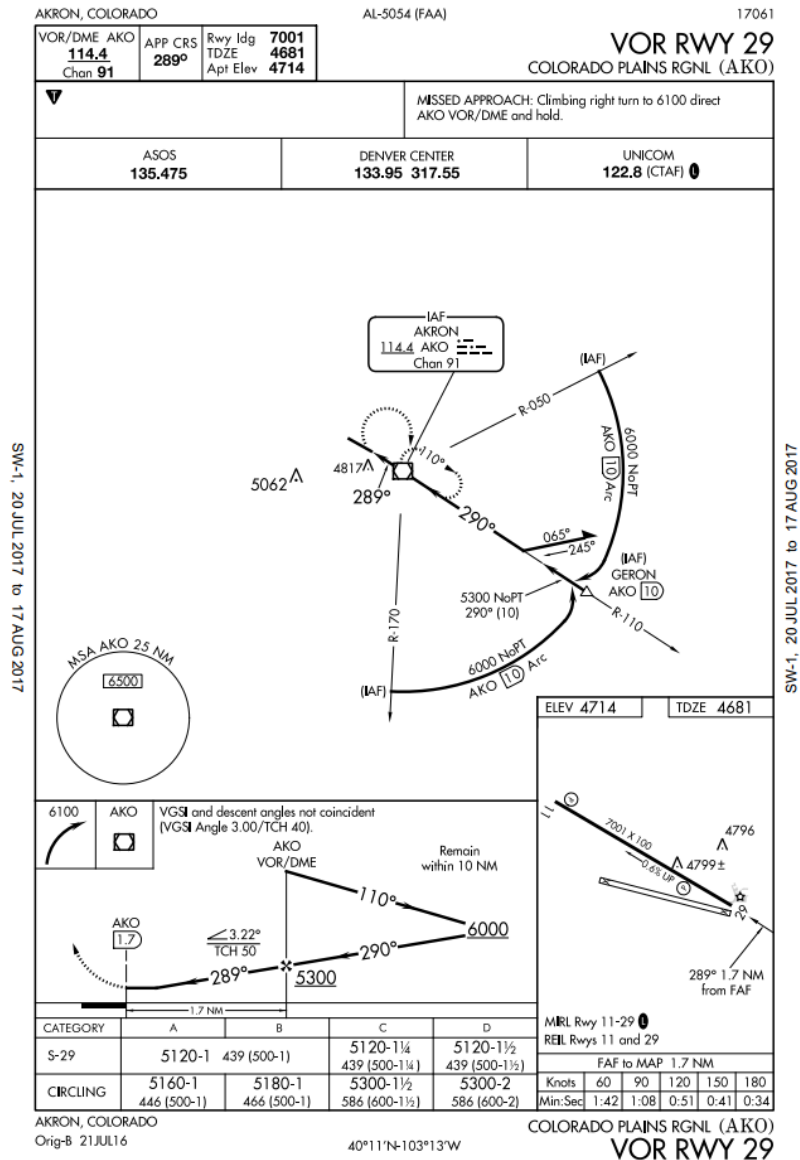


TABLE 2-10: LOWEST INSTRUMENT APPROACH MINIMUMS

Instrument Approach	Lowest Straight-in Approach		Lowest Circling Approach	
	Ceiling	Visibility	Ceiling	Visibility
VOR Rwy 29	439 AGL	1 nm	446 AGL	1 nm
RNAV GPS RWY 11	250 AGL	1 nm	404 AGL	1 nm
RNAV GPS RWY 29	250 AGL	1 nm	404 AGL	1 nm

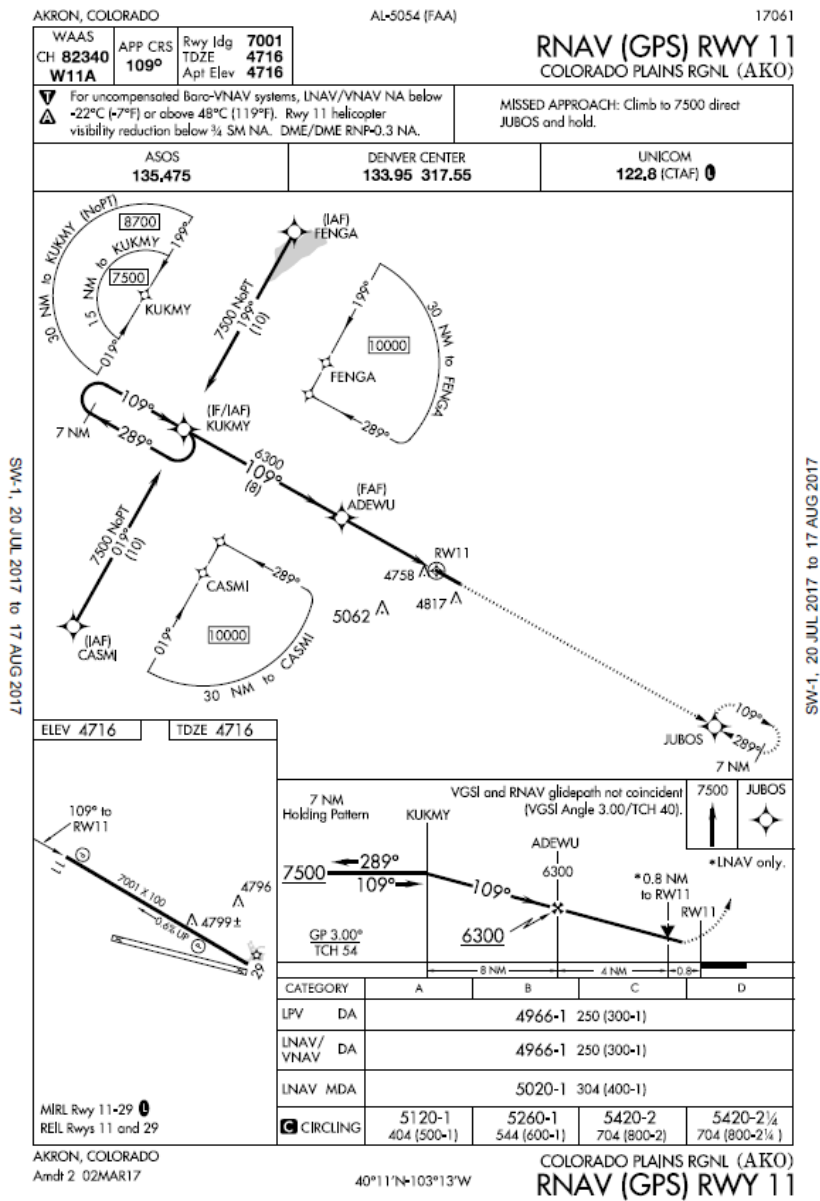
Source: <http://www.airnav.com/airport/KAKO>

FIGURE 2-6: VOR RUNWAY 29



Source: <http://www.airnav.com/airport/KAKO>

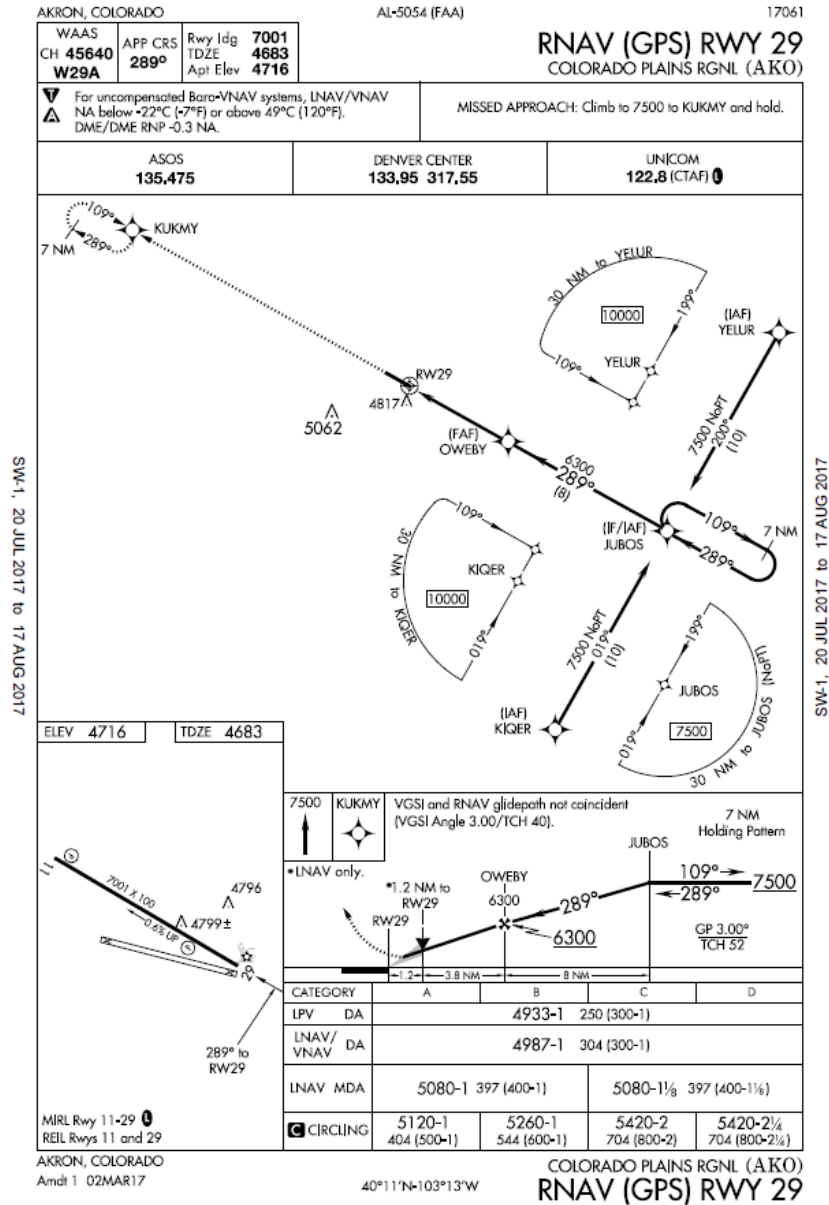
FIGURE 2-7: RNAV (GPS) APPROACH RUNWAY 11



Source: <http://www.airnav.com/airport/KAKO>



FIGURE 2-8: RNAV (GPS) APPROACH RUNWAY 29



Source: <http://www.airnav.com/airport/KAKO>

2.5.4 14 CFR Part 77 Airspace Surfaces

The FAA sponsor grant assurances require airport sponsors to protect the airspace over and in the vicinity of an airport. That airspace is described in 14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*. Part 77 is one tool used to protect the airspace over and around a given airport and each of its runway approaches from potential obstructions to air navigation. The Town of Akron and Washington County have zoning ordinances in

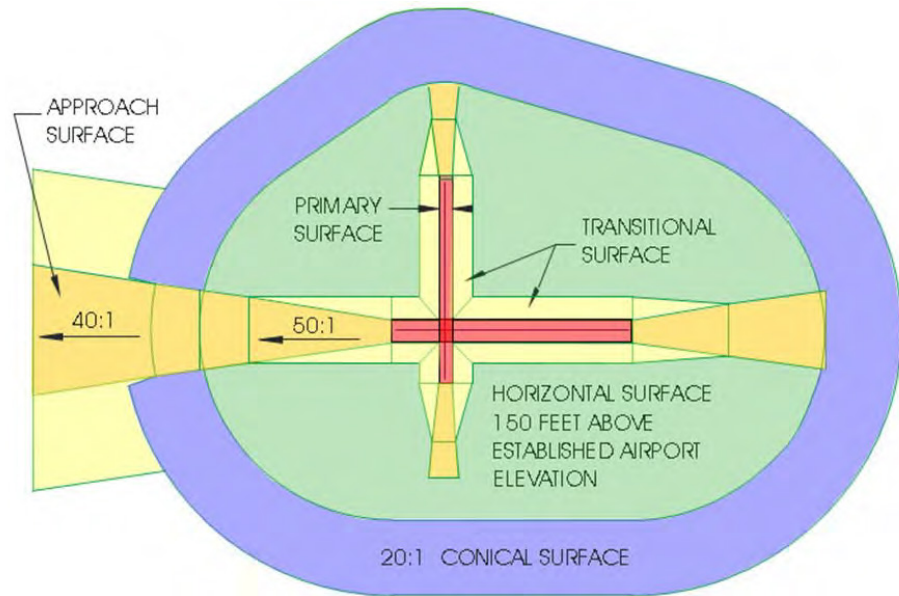
place¹ to protect the Part 77 airspace, as well as the approach surfaces to Runway 11/29. The ordinance protects the airspace extending from the thresholds of the respective ends.

To determine whether an object is an obstruction to air navigation, Part 77 describes five imaginary airspace surfaces in relation to an airport and to each runway end. The dimensions and slopes of these surfaces depend on the classification of each runway (utility or other-than-utility), and the instrument approach categories of the airport's runway system. The size of the imaginary surfaces depends largely upon the type of approach to the runway in question. Any penetration to an imaginary surface is defined by FAA as an obstruction. FAA requires airport sponsors to either lower, remove, or light the obstruction. FAA AC 70/7460-1L, *Obstruction Marking and Lighting*, provides guidance to airport sponsors. The five imaginary surfaces are described below and illustrated in **Figure 2-9**.

- **Primary Surface:** Longitudinally centered on the runway at the same elevation as the nearest point on the runway centerline.
- **Horizontal Surface:** Located 150 feet above the established airport elevation, the perimeter of which is established by swinging arcs of specified radii from the center of each the primary surface end, connected via tangent lines.
- **Conical Surface:** Extends outward and upward from the periphery of the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.
- **Approach Surface:** Longitudinally centered on the extended centerline, and extending outward and upward from each runway end at a designated slope (e.g. 20:1, 34:1, 40:1, and 50:1) based on the runway approach.
- **Transitional Surface:** Extends outward and upward at a right angle to the runway centerline at a slope of 7:1 up to the horizontal surface.

¹ Source: Akron Town Code, Zoning Regulations, Title 11, Zoning Regulations, Chapter 4 General Design and Use Requirements, 11-4-3, Akron-Washington County Airport Clear Zone.

FIGURE 2-9: PART 77 PLAN VIEW



Source: FAA

A full representation and analysis of all current and future Part 77 surfaces as they relate to AKO are depicted on the ALP drawing set in **Chapter 6**. FAA requires that digital mapping be acquired to FAA Airports Geographic Information System (AGIS) standards; this AGIS mapping serves as the base mapping for the ALP drawings. The AGIS mapping identifies objects and their elevation on and in the vicinity of AKO and serves as the basis for determining the penetrations to the imaginary surfaces. The AGIS mapping is also used by FAA Flight Procedures to examine the instrument approach procedures to AKO and determine if the approach minimums should be adjusted, and if the runway qualifies for different types of GPS approaches, such as an LPV approach with vertical guidance.

2.6 Airport Environs

The purpose of the following sections is to establish the broader context for AKO within its community and regional setting. Airports are multi-modal transportation facilities designed to provide access to communities, and therefore must efficiently serve the needs of the community as well as be a good neighbor. This section includes demographic and economic considerations in Akron and a brief discussion of other factors such as land use and environmental considerations.

2.6.1 Community Overview

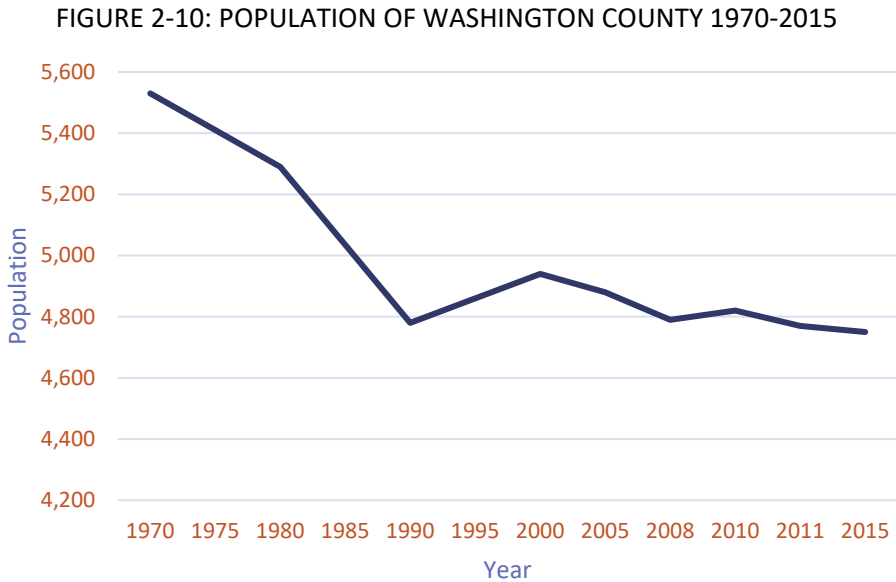
Akron and Washington County have a rich history of farming. As noted on the Town’s history web page¹, Akron was a “frontier town on the prairie” and is currently one of the largest agricultural producing areas in Colorado. This area is known for its

¹ <http://www.townofakron.com/history.htm>

production of dairy, beef, wheat, millet, milo, corn, and sunflowers. Oil and gas exploration and extraction are also major components of the County’s economy.

2.6.2 Area Demographics

Between 1970 and 2015, the population of Washington County decreased an average of .34 percent each year (**Figure 2-10**). In 2015, the population was approximated at 4,750.



Source: Woods and Poole 2014 Complete Economic and Demographic Data Source

2.6.3 Area Economy

Washington County’s unemployment rate was approximately 2.5 percent in 2015. For the same year, the national unemployment rate averaged between 5 and 5.7 percent. The top industries/employment centers in the region surrounding Akron are shown in **Table 2-11**.

TABLE 2-11: TOP INDUSTRIES IN WASHINGTON COUNTY

Industry	Employment
Farming	1,060
State and Local Government	470
Retail Trade	220
Forestry, Fishing and Other	180
Wholesale Trade	130
Finance and Insurance	130

Source: Woods and Poole 2014 Complete Economic and Demographic Data Source

The 2015 per capita personal income for the Washington County was estimated to be \$46,997, just above the national average of \$46,411.

2.6.4 Existing Land Use and Zoning in the Airport Environs

The FAA recommends that airport sponsors protect the areas surrounding an airport from incompatible development, which includes land uses that would be sensitive to aircraft noise or overflight, such as residences, schools, churches, hospitals, as well as uses that could attract wildlife and cause a hazard to aircraft operations such as landfills, ponds, and wastewater treatment facilities.

As noted previously, the Town of Akron and Washington County have zoning ordinances in place to protect the Part 77 airspace surfaces, as well as the approach surfaces to Runway 11/29.

AKO is surrounded on three sides by open space, primarily agricultural land uses (**Figure 2-11**), which are considered to be compatible with airport and aircraft operations. Akron is located less than a mile south of the Airport, and the nearest residence is approximately 600 feet from the Runway 29 threshold.

FIGURE 2-11: RESIDENTIAL LAND USE PROXIMITY



Source: Google Earth, 2016

There is unincorporated property located within Washington County. The remainder of the property adjacent to the Airport and the Airport property is incorporated in the Town of Akron.

The Town of Akron established Title 17, Zoning, as part of the Town General Plan. These regulations were enacted to promote health, safety, morals, convenience, order, prosperity, and welfare for the present and future inhabitants of Akron.

As part of this ordinance, Chapter 17.40.030, specifically refers to the airport clear zone. This clear zone was established to prevent the development of any structure around the Airport that would represent an incompatible land use according to FAA rules and regulations. This section also prohibits the establishment of new landfills or treatment plants within 10,000 feet of any runway at AKO. However, the regulation does not specifically identify the dimensional criteria associated with the clear zone.

2.6.5 Local Comprehensive Planning

A local comprehensive plan is a strategic long-range document that addresses land use and zoning as it relates to growth and development of a municipality. With respect to an airport that lies within a community, it is critical that local comprehensive planning efforts acknowledge and address the issue of land use compatibility near an airport.

A Master Plan for Washington County was written in 2002. The Washington County Plan does not specifically address land uses around AKO, rather, the Plan proposes various land uses to encourage their development goals of “community identity, growth and development, viability, amenity, adaptability, and diversity.”

2.6.6 Environmental Setting and Considerations

Current information from federal, state, and local agencies concerning environmental conditions on and near AKO were reviewed as part of this AMP update. FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and Order 5050.4B, *National Environmental Policy Act: Implementation Instruction for Airport Actions* address specific environmental categories that are evaluated in environmental documents in accordance with the National Environmental Policy Act (NEPA). The following section inventories the applicable environmental categories.

The following environmental categories are not discussed as they are not relevant to AKO: Coastal Resources; Climate; and Socioeconomic, Environmental Justice, and Children’s Environmental Health and Safety Risks.

Air Quality

Air quality analysis for federally funded projects must be prepared in accordance with applicable air quality statutes and regulations that include the Clean Air Act (CAA) of 1970¹, 1977 Clean Air Act Amendments², 1990 Clean Air Act Amendments³, and National Ambient Air Quality Standards⁴ (NAAQS). Specifically, the air pollutants of concern in the assessment of impacts from airport-related sources include six “criteria pollutants:” carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM-10 and PM-2.5), and sulfur dioxide (SO₂).

Areas within Colorado are designated with respect to the NAAQS as being in attainment, nonattainment, maintenance, or unclassifiable. An area with air quality better than the NAAQS is designated in attainment, while an area with air quality worse than the NAAQS is designated nonattainment. An area may also be designated unclassifiable when there is a lack of data to form a basis of attainment status. Washington County is designated as being in attainment for all criteria pollutants⁵.



AKO Aircraft Parking Ramp

¹ U.S. Code. The Clean Air Act of 1970. U.S. Congress, Public Law 91-604, 42 U.S.C. §7401

² U.S. Code. The 1977 Clean Air Act Amendments, U.S. Congress, Public Law 95-95, 42 U.S.C. §7401

³ U.S. Code. The 1990 Clean Air Act Amendments, U.S. Congress, Public Law 101-549, 42 U.S.C. §7401

⁴ 40 CFR Part 50, Section 121, National Ambient Air Quality Standard

⁵ Environmental Protection Agency, Green Book National Area and County- Level Multi-Pollutant Information https://www3.epa.gov/airquality/greenbook/anayo_co.html



Biological Resources

Requirements are set forth by the Endangered Species Act¹, Sikes Act², Fish and Wildlife Coordination Act³, Fish and Wildlife Conservation Act⁴, and Migratory Bird Treaty Act⁵, for the protection of fish, wildlife, and plants of local and national significance. The U.S. Fish and Wildlife Service’s (USFWS) Information, Planning, and Conservation (IPaC) System is used to identify species of concern. It is found that five species listed by the USFWS as being threatened, endangered, or candidates may be found near Akron. Identified species are depicted in **Table 2-12**.

TABLE 2-12: THREATENED AND ENDANGERED SPECIES

Species	Scientific Name	Status
Bird: Least Tern	<i>Sterna antillarum</i>	Endangered
Bird: Piping Plover	<i>Charadrius melodus</i>	Threatened
Bird: Whooping Crane	<i>Grus americana</i>	Endangered
Fish: Pallid Sturgeon	<i>Scaphirhynchus albus</i>	Endangered
Flowering Plant: Western Prairie Fringed Orchid	<i>Plantanthera praeclara</i>	Threatened

Source: Department of the Interior, U.S. Fish and Wildlife Service. IPAC System – Natural Resources of Concern, Accessed 2016

Section 4(f) Resources

The Department of Transportation (DOT) Act, Section 4(f) provides that the:

Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance unless there is no feasible or prudent alternative and the use of such land includes all possible planning to minimize harm resulting from the use⁶.

The FAA has adopted the regulations from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issued in March 2008 (23 CFR Part 774)⁷ to address project-related effects on Section 4(f) resources. For Section 4(f) purposes, a proposed action would eliminate a resource’s use in one of two ways, physical use or constructive use.

Physical Use: Action physically occupies and directly uses the Section 4(f) resource. An action’s occupancy or direct control (via purchase) causes a change in the use of the Section 4(f) resources. For example, building a

¹ Endangered Species Act of 1973, U.S. Congress, Public Law 93-205, 16 U.S.C §1531-1544

² Sikes Act, Amendments of 1974, U.S. Congress, Public Law 93-452

³ Fish and Wildlife Coordination Act of 1958, U.S. Congress, Public Law 85-624, 16 U.S.C §661-666c

⁴ Fish and Wildlife Conservation Act of 1980, U.S. Congress, Public Law 96-366, 16 U.S.C §2901-2912

⁵ Migratory Bird Treaty Act of 1981, 16 U.S.C §703-712

⁶ U.S. Department of Transportation Act, section 4(f), recodified and renumbered as § 303(c) of 49 U.S.C.

⁷ Vol. 73 Federal Register, page 13395, Mar. 2008.

runway safety area across a fairway of a publicly-owned golf course is a physical taking because the transportation facility physically used the course by eliminating the fairway.

Constructive Use: Action indirectly uses a Section 4(f) resource by substantially impairing the resource’s intended use, features, or attributes. For example, a constructive use of an overnight camping area would occur when project-related aircraft noise eliminates the camping area’s solitude. Although not physically occupying the area, the project indirectly uses the area by substantially impairing the features and attributes (i.e., solitude) that are necessary for the area to be used as an overnight camping area.¹

The Town of Akron has multiple land uses considered to be section 4(f) properties. **Table 2-13** lists parks and other 4(f) properties within the vicinity of AKO. The closest 4(f) property is Akron High School, approximately one mile southeast of the Airport.

TABLE 2-13: SECTION 4(F) PROPERTIES NEAR AKO

Site	Type	Distance to AKO
Akron Gymnasium	Historic Property	1 mile
Akron High School	School	1 mile
Akron Cemetery	Cemetery	2 miles
Washington County Event Center	Recreation Area	2.4 miles
St. Joseph Catholic Church	Church	2.1 miles
Peace Evangelical Lutheran Church	Church	2.1 miles
First Baptist Church	Church	2.2 miles
Akron United Methodist Church	Church	2 miles
First Presbyterian Church- Akron	Church	1.9 miles
Akron Foursquare Church	Church	2.3 miles

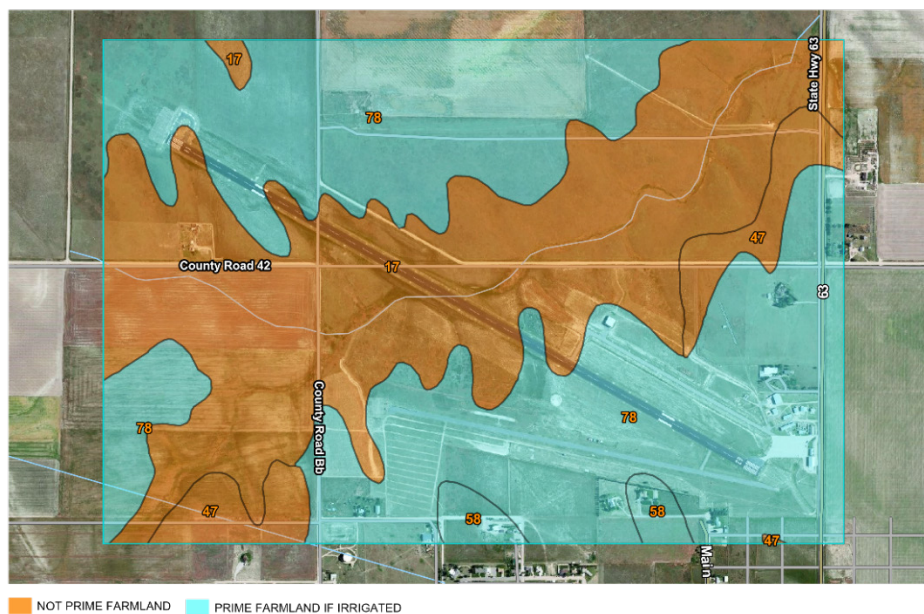
Source: National Register of Historic Places
<http://www.nationalregisterofhistoricplaces.com/co/washington/state.html>, Google Maps

Farm lands

The Farmland Protection Policy Act (FPPA) regulates federal actions that may impact or convert farmland to a non-agricultural use. FPPA defines farmland as “prime or unique land as determined by the participating state or unit of local government and considered to be of statewide or local importance.” **Figure 2-12** details land classified as prime farmland if irrigated and non-prime farmland at AKO.

¹ A de minimis use cannot occur if a project constructively uses a Section 4(f) property. This is because the substantial impairment associated with a constructive use is more severe than the minor effects to which de minimis provisions apply.

FIGURE 2-12: FARMLAND DESIGNATION AT AKO



Source: Jviation, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Hazardous Materials, Solid Waste, and Pollution Prevention

Hazardous Materials, Pollution Prevention, and Solid Waste at the Airport are regulated under the following Federal and State statute and regulations:

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (amended by Superfund Amendments and Reauthorization Act of 1986 and Community Environmental Response Facilitation Act of 1992) [42 U.S.C. 9601-9675]; 40 CFR parts 300, 311, 355, and 370.
- Pollution Prevention Act of 1990; CEQ Memorandum on Pollution Prevention and the National Environmental Policy Act, January 1993.
- Toxic Substances Control Act of 1976, as amended (TSCA) [15 U.S.C. 2601-2692] [PL 94-469]; 40 CFR parts 761 and 763.
- Resource Conservation and Recovery Act of 1976 (RCRA) [amended by the Solid Waste Disposal Act of 1980 (SWDA), PL 96-482, the Hazardous and Solid Waste Amendments of 1984, PL 98-616, and the Federal Facility Compliance Act of 1992, (FFCA) PL 103-386]; 40 CFR parts 240-280.
- Executive Order 12088, Federal Compliance with Pollution Control Standards, October 13, 1978 (43 FR 47707), amended by Executive Order 12580, January 23, 1987 (52 FR 2923) January 29, 1987.
- Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements (58 FR 41981, August 3, 1993).
- Executive Order 12580, Superfund Implementation, amended by Executive Order 13016 and 12777.

To determine the potential for encountering soils contaminated from historical releases or former land development practices, the U.S. Environmental Protection

Agency (EPA) Envirofacts database was searched. The system reported no potential for encountering soil contamination near the Airport.

The National Priorities List (NPL) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation. According to the NPL, no sites are located on or near AKO¹.

Historical, Architectural, Archeological and Cultural Resources

The National Historic Preservation Act² and the Archaeological and Historical Preservation Act³ regulate the preservation of historical, architectural, archaeological, and cultural resources. Federal actions and undertakings are required to evaluate the impact on these resources.

For the purposes of this AMP, historic, archaeological, and cultural resources are districts, sites, buildings, structures, objects, landscapes, and Native American Traditional Cultural Properties (TCPs) that are on or eligible for listing on the National Register of Historic Places (NRHP) are shown in **Table 2-14**.

TABLE 2-14: HISTORIC RESOURCES IN AKRON

Site	Type	Distance to AKO
Akron Gymnasium	Historic Property	1 mile

Source: National Register of Historic Places

<http://www.nationalregisterofhistoricplaces.com/co/washington/state.html>

Aircraft Noise and Compatible Land Use

A number of federal agencies including FAA, Housing & Urban Development (HUD), and EPA, among others, have adopted guidelines for noise exposure and compatible land uses. The noise metric commonly used is the Day-Night Noise Exposure Level (DNL). The FAA developed a computer model to develop DNL noise contours based on aviation activity, the Aviation Environmental Design Tool (AEDT). The FAA and HUD have stated that certain types of land uses located within 65 DNL or higher noise contours are not considered to be compatible. Noise-sensitive land uses include residential, institutional (schools, hospitals, etc.), outdoor recreational, etc.

An analysis of the noise contours on and around AKO was completed in the previous AMP. The analysis reported that the 65 day-night average DNL contours were entirely on Airport property and would continue this pattern for the 20-year forecasted period. Since that time, aircraft activity has decreased, indicating the noise levels have remained the same or decreased.

¹ <https://www.epa.gov/superfund/search-superfund-sites-where-you-live#basic>

² U.S. Code, 1966, National Historic Preservation Act of 1966, Public Law 89-665

³ U.S. Code, 1974, Archaeological and Historical Preservation Act of 1974, 16 USC 469



Visual Effects Including Light Emissions

Federal regulations do not specifically regulate airport light emissions; however, the FAA does consider airport light emissions on communities and properties near the Airport. A significant portion of light emissions at airports are a result of facilities as well as safety and security equipment.

The existing lighting at AKO includes runway lighting (medium intensity on Runway 11/29) and lighting used for navigation/visual aid. The approach lighting system includes two-light PAPIs and REILs on each end of Runway 11/29. There is terminal, parking lot, apron, and hangar lighting.

All sources of light aid in the safety of operations at AKO and produce an insignificant amount of light beyond the Airport boundary.

Water Resources (Wetlands, Floodplains, Surface/Ground Waters)

Water resources are vital to society and include wetlands, floodplains, surface waters, ground waters, and Wild and Scenic Rivers. They provide drinking water and support recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. These resources act together as one integrated natural system. Impacts to one resource can disrupt the entire system. Water resources near AKO are summarized in the following sections.

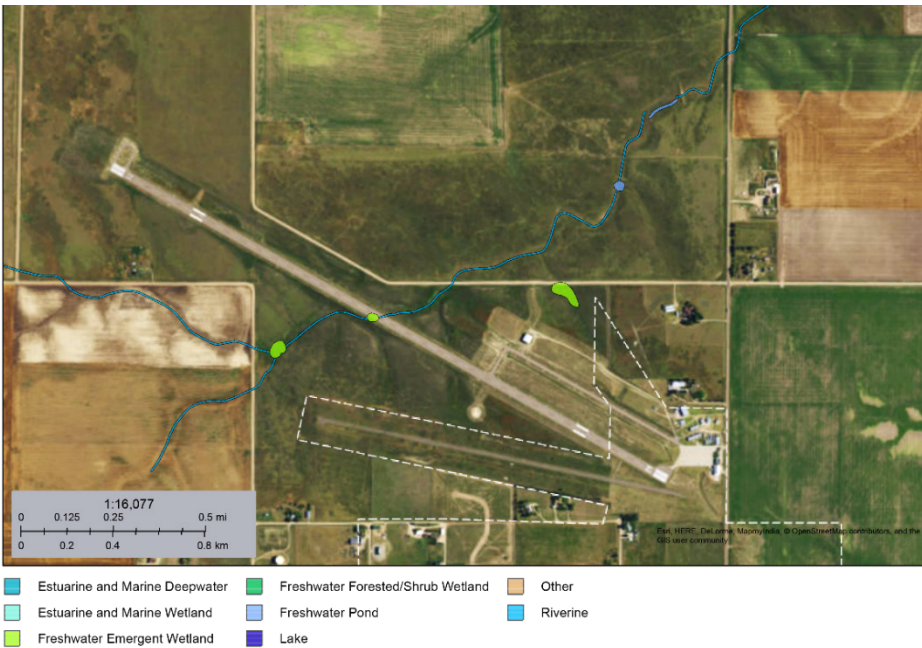
Wetlands

Executive Order 11990, Protection of Wetlands, defines wetlands as “those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.”¹ Federal agencies are required to minimize the destruction, loss, or degradation of wetlands.

According to the National Wetlands Inventory (NWI), one Freshwater Emergent Wetland and one Riverine have been identified or delineated on AKO property. In addition, two wetlands are located near the Airport. One is located north of the Airport and the other is south. **Figure 2-13** shows the location of the three freshwater emergent wetlands and riverine. If future airport development were to extend in these directions, a survey would need to be completed prior to development to determine if any new wetlands may be impacted.

¹ Executive Order 11990, Protection of Wetlands, 1977 – Section 7, Paragraph C

FIGURE 2-13: WETLAND AREAS AROUND AKO



Source: National Wetlands Inventory Mapper, Jviation

Floodplains

Executive Order 11988, Floodplain Management, directs federal agencies to “avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.”¹

The FEMA Flood Map indicates that this area is not printed and that AKO is not in a Special Flood Hazard Area.

Surface and Ground Waters

The Federal Water Pollution Control Act, as amended by the Clean Water Act² and the Safe Drinking Water Act, as amended, protect and regulate Federal actions that have the potential to impact surface and ground waters³.

According to the EPA, Akron is located within the North Fork Republican watershed⁴. This watershed is located throughout northeastern Colorado, and parts of Nebraska and Kansas.

¹ Executive Order 11988, Floodplain Management, 1977 – Introduction

² 33 U.S.C. Chapter 26.

³ 42 U.S.C. 300.f.

⁴ https://cfpub.epa.gov/surf/huc.cfm?huc_code=10250002

Wild and Scenic Rivers

The Wild and Scenic Rivers Act, as amended, designates rivers and those eligible to be designated in the Wild and Scenic Rivers System. Wild and scenic rivers are designated as “rivers having remarkable scenic, recreational, geological, fish, wildlife, historic, or cultural values.”¹ The Department of the Interior (National Park Service, U.S. Fish and Wildlife Service, and Bureau of Land Management) and the Department of Agriculture (U.S. Forest Service) are the oversight agencies for the Wild and Scenic Rivers System. Federal agencies with jurisdiction over lands that border upon, or are adjacent to any designated rivers, are required to take the necessary actions to protect the rivers, as stated in Section 12 of the Wild and Scenic Rivers Act.

Colorado has approximately 107,403 miles of river, but less than 1 percent are designated Wild and Scenic Rivers. Parts of the Cache la Poudre River are considered Wild and Scenic, but do not pass through AKO.

Spill Prevention, Control, and Countermeasure Plan

All facilities that store or have the potential to store more than 1,320 gallons of oil are required, per 40 CFR 112, to have a Spill Prevention, Control, and Countermeasure Plan (SPCC) in place². The SPCC is designed to provide preventative measures to ensure that any oil spills are contained and avoid oil spills reaching navigable waters. AKO has developed and implemented an SPCC, as the aboveground storage capacity meets the minimum requirements of 1,320 gallons of oil.



Aviation Fuel Farm & Containment Area

Storm Water Management Plan

Under the EPA, National Pollutant Discharge Elimination System (NPDES) permits are required for any discharge of storm water from municipalities and industrial sites. The Airport is required to obtain an Industrial Stormwater Permit. The Airport has a Storm Water Management Plan (SWMP) which addresses potential pollutant sources at the facility/site, and Best Management Practices to reduce or eliminate the risk of pollution from those sources.³

¹ National Wild and Scenic Rivers System; <https://www.rivers.gov/wsr-act.php>

² https://www3.epa.gov/region10/pdf/npdes/stormwater/msgp_faq_aug2015.pdf

³ <https://www.codot.gov/business/designsupport/design-docs/stormwater-management-plan-swmp>