



## Chapter 1

# Introduction & Inventory

The Elko Regional Airport (EKO or Airport) is a thriving, primary commercial service airport serving the aviation demand of northeast Nevada. Airport management was recently engaged in a comprehensive Airport Master Plan process with an aviation consulting firm leading the effort. A final Master Plan document was produced which included an updated Airport Layout Plan (ALP) that documented both existing airport conditions and planned future capital improvements. The ALP was submitted to FAA for their required review. During the FAA's review of the ALP, it was noted that certain existing runway design elements are nonstandard, and the ALP did not provide a potential mechanism for these elements to meet design standards. A Modification to Standard (MOS) was submitted to FAA, however the MOS also did not identify an adequate solution to the nonstandard conditions. The FAA then directed the airport sponsor to undertake this Focused Planning Study, to specifically revisit the existing non-standard conditions at the Airport and to provide documentation, with alternatives, for improving or rectifying the non-standard conditions. The FAA provided 100 percent funding for this study.

Following FAA guidance in FAA AC 150/5100-14E, *Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects*, a qualifications-based consultant selection process was undertaken by the airport sponsor. National airport consulting firm, Coffman Associates (Consultant), was selected to lead the Focused Planning Study.



## OBJECTIVES

The Consultant, the Airport Sponsor (City of Elko), and FAA, agreed upon a detailed scope of services which outline the following study objectives:

- Document the various complex issues creating a need for this planning effort.
- Offer justification for any proposed development through review of aviation demand as well as associated technical, economic, and environmental investigation of concepts and alternatives.
- Provide an effective graphic presentation of the development of the Airport.
- Establish a realistic schedule for the implementation of the development proposed in the plan.
- Provide sufficient project definition and detail for subsequent environmental evaluations that may be required before the project is approved.
- Present a plan that adequately addresses the issues and satisfies local, state, and federal regulations.
- Set the stage and establish the framework for a continuing planning process. Such a process should monitor key conditions and permit changes in plan recommendations as required.
- To research and evaluate socioeconomic factors likely to affect the air transportation demand in the region.
- To determine projected facility needs associated with commercial service and general aviation aeronautical demand as well as support facilities to accommodate these activities (i.e., Aircraft Rescue and Firefighting [ARFF]).
- To analyze safety design standards specific to RPZ and ROPFA constraints associated with Runway 6-24 at the Airport.
- To recommend improvements that will enhance the airport's safety capabilities to the maximum extent possible.
- To produce current and accurate airport base maps and ALP drawings.
- To establish a schedule of development priorities and a program for the improvements proposed in this study.
- To develop a productive public involvement program throughout the planning process.
- To conduct an aeronautical survey that is compliant with Airport Geographic Information System (AGIS) standards and includes airspace and obstruction information submitted to and approved by FAA.

To properly address the objectives detailed above, a comprehensive assessment of the following is included in the Focused Planning Study:

- Determine existing and long-range (20-year timeframe) airfield facilities, activities, and needs.
- Determine the overall airfield configuration and its ability to facilitate and maximize future demand, desired activities, and economic impact.
- Overall assessment for the development of a regional ARFF training facility to include site analysis, future usage and need, and overall functionality and implementation.
- Overview of existing and future land use and economic development conditions.

- Determine existing and future commercial service and general aviation aeronautical needs.
- Assessment of commercial terminal and general aviation facility need.
- Development of a future comprehensive capital project list with associated costs for future implementation.
- Comprehensive analysis of existing runway, taxiway and apron configurations and the proposed future optimization of runway orientation and length.

This Focused Planning Study will provide recommendations from which the Airport Sponsor may take action to improve the Airport and all associated services important to safety, public needs, convenience, and economic growth. The plan will benefit all residents of the area by providing a single, comprehensive plan, which supports and balances airfield safety, continued growth of aviation activities, and the environmental preservation of the surrounding environs.

## **INVENTORY/BASELINE CONDITONS**

Elko Regional Airport is located within the city limits of the City of Elko, Nevada which is the county seat for Elko County. As of 2020, the City of Elko had a population of 20,564, and the total county population was 52,778. The City of Elko is the largest population center within a 160-mile radius. Salt Lake City is approximately 225 miles to the east. Twin Falls, Idaho is 160 miles to the north. Reno is 290 miles to the west, and Las Vegas is 420 miles to the south. Elko is the largest and most active commercial service airport within the range of these cities. **Exhibit 1A** presents a location map for EKO and the generalized catchment area for potential passengers. The catchment area represents approximately 55,000 people.

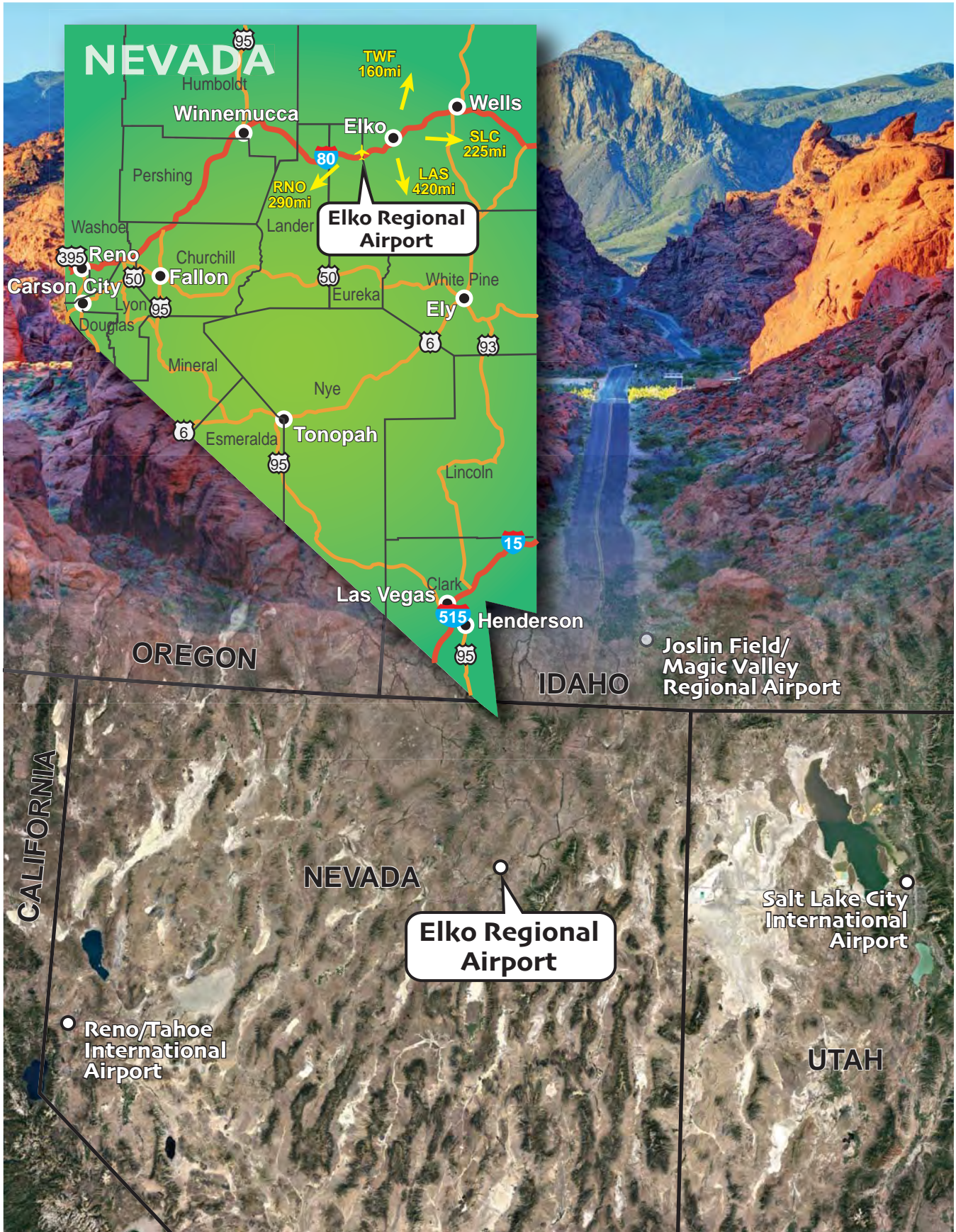
Elko Regional Airport is classified as a primary commercial service airport meaning there are more than 10,000 passenger enplanements (boardings) annually. The 10,000-passenger enplanement threshold is an important benchmark because airports that exceed this threshold receive at least \$1.0 million in entitlement funding from the FAA via the Airport Improvement Program (AIP) for capital improvement projects. The Airport is further classified as a Nonhub primary commercial service airport. Of the 396 primary commercial service airports in the U.S., 266 of them are classified as Nonhub airports. These airports typically have a significant general aviation component, much like EKO, which has an estimated 77 based general aviation aircraft.

The Airport is situated at an elevation of 5,140 feet above mean sea level. The airport property encompasses approximately 545 acres of land. The average high temp of the hottest month is 90.9°F. The City of Elko averages 38.9 inches of snowfall annually.

## **PART 139 CERTIFICATION**

An airport must have an Airport Operating Certificate (AOC) if it experiences operations by scheduled air carrier aircraft with more than nine seats or unscheduled air carrier aircraft with more than 30 passenger seats. 14 Code of Federal Regulations (CFR) Part 139 (Part 139) describes the requirements for obtaining and maintaining an AOC. This includes meeting various Federal Aviation Regulations (FARs) now codified under the CFR.







Airports are classified in the following categories based on the type of air carrier operations served:

- **Class I Airport** – an airport certificated to serve scheduled operations of large air carrier aircraft that can also serve unscheduled passenger operations of large air carrier aircraft and/or scheduled operations of small air carrier aircraft.
- **Class II Airport** – an airport certificated to serve scheduled operations of small air carrier aircraft and the unscheduled passenger operations of large air carrier aircraft. A Class II airport cannot serve scheduled large air carrier aircraft.
- **Class III Airport** – an airport certificated to serve scheduled operations of small air carrier aircraft. A Class III airport cannot serve scheduled or unscheduled large air carrier aircraft.
- **Class IV Airport** – an airport certificated to serve unscheduled passenger operations of large air carrier aircraft. A Class IV airport cannot serve scheduled air carrier aircraft regulated under CFR Part 121.

Elko Regional Airport is currently classified as a Class I CFR Part 139 commercial service airport. Part 139 regulations (which implemented provisions of the *Airport and Airway Development Act of 1970*, as amended on November 27, 1971) set standards for: the marking and lighting of areas used for operations; firefighting and rescue equipment and services; the handling and storing of hazardous materials; the identification of obstructions; and safety inspection and reporting procedures. It also requires airport operators to have an FAA-approved Airport Certification Manual (ACM).

*Elko Regional Airport is currently classified as a Class I CFR Part 139 commercial service airport.*

The ACM defines the procedures to be followed in the routine operation of the airport and for response to emergency situations. The ACM is a working document that is updated annually as necessary. It reflects the current condition and operation of the airport and establishes the responsibility, authority, and procedures as required. There are required sections for the ACM covering administrative and procedural detail. Elko Regional Airport has a current, approved ACM.

Currently, the Airport is served by SkyWest Airlines (regional carrier for Delta) utilizing the 50-seat Canadair Regional Jet.

## **AIRFIELD FACILITIES**

Airfield facilities consist of the runways, taxiways, navigational aids, weather systems, and any associated facilities and procedures. Elko Regional Airport has a two runways system consisting of Primary Runway 6-24 and secondary Runway 12-30. Runway 6-24 is available for commercial service aircraft which are prohibited from using Runway 12-30. Runway 12-30 is reserved for operations by small general aviation aircraft and helicopters. **Table 1A** summarizes the airfield facilities and **Exhibit 1B** shows the airfield facilities map.

**TABLE 1A | Airside Facilities**

Airfield Element	Runway 6-24	Runway 12-30
Runway Length	7,454'	3,015'
Runway Width	150'	60'
Runway Surface	Asphalt/Grooved/In Good Condition	Asphalt/In Good Condition
Pavement Markings	Precision	Basic
Weight Bearing Capacity		
Single Wheel Weight Bearing Capacity	78,000 lbs.	12,000 lbs.
Dual Wheel Weight Bearing Capacity	105,000 lbs.	N/A
Double Dual Weight Bearing Capacity	170,000 lbs.	N/A
Runway Pavement Condition Index (PCN)	63/F/B/X/T	4/F/B/Y/T
Runway Edge Lighting	Medium Intensity	N/A
Runway End Identifier Lights (REILs)	N/A	N/A
Displaced Threshold	<b>Rwy 24</b> Displaced 1,036'	<b>Rwy 12</b> Displaced 906' <b>Rwy 30</b> Displaced 143'
Declared Distances	<b>Rwy 6:</b> TORA/TODA/ASDA/ LDA - 7,217' <b>Rwy 24:</b> TORA/TODA/ASDA - 7,454'; LDA - 6,418'	<b>Rwy 12:</b> TORA/TODA/ ASDA - 3,015'; LDA - 2,106' <b>Rwy 30:</b> TORA/TODA/ASDA - 3,015'; LDA - 2,871'
Precision Approach Path Indicator Lights (PAPI)/Glide Path	<b>Rwy 6</b> PAPI-4L/3.0 degree <b>Rwy 24</b> PAPI-4L/3.25 degree	N/A
Approach Lighting System	Rwy 24 MALSR	N/A
Instrument Approaches	VOR/DME-B (Circling) <b>Rwy 6</b> RNAV (GPS) <b>Rwy 24</b> RNAV (GPS) <b>Rwy 24</b> LDA/DME	N/A
Special Procedures	-	<b>Rwy 12</b> Takeoff Only <b>Rwy 30</b> Landing Only
Weather/NAVAIDS	Lighted Wind Indicator, Supplemental Windcones, Segmented Circle, Beacon, CTAF/UNICOM, ASOS, Localizer Antenna (offset 5.97°)	

MALSR: Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights

VOR: Very High Frequency Omnidirectional and Range

RNAV: Area Navigation

GPS: Global Positioning System

LDA: Localizer Type Directional Aid

DME: Direction Measuring Equipment

Source: FAA Airport Master Record (Form 5010-1)

## RUNWAY 6-24 DETAIL

Runway 6-24 is 7,454 feet long and 150 feet wide. It is constructed of asphalt and has a grooved surface treatment to expedite precipitation drainage from the runway. The runway is classified by FAA as being in good condition. Both ends of the runway are marked with precision markings which include the threshold bar, runway designation, threshold stripes, aiming point, touchdown zone, edge line, and centerline.

The strength of the runway pavement is an important consideration for the utility of the runway. Two methods are currently employed to measure pavement strength. The first considers the load bearing capacity for repeated use of the runway by aircraft with certain landing gear configurations. The pavement strength rating for Runway 6-24 is published as 78,000 pounds single wheel loading (S), 105,000 pounds dual wheel loading (D), and 170,000 pounds for double dual wheel loading (DD).







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The second and newest method for stating the pavement strength utilizes the Pavement Classification Number (PCN), which is the international standard. The PCN is a five-part code described as follows:

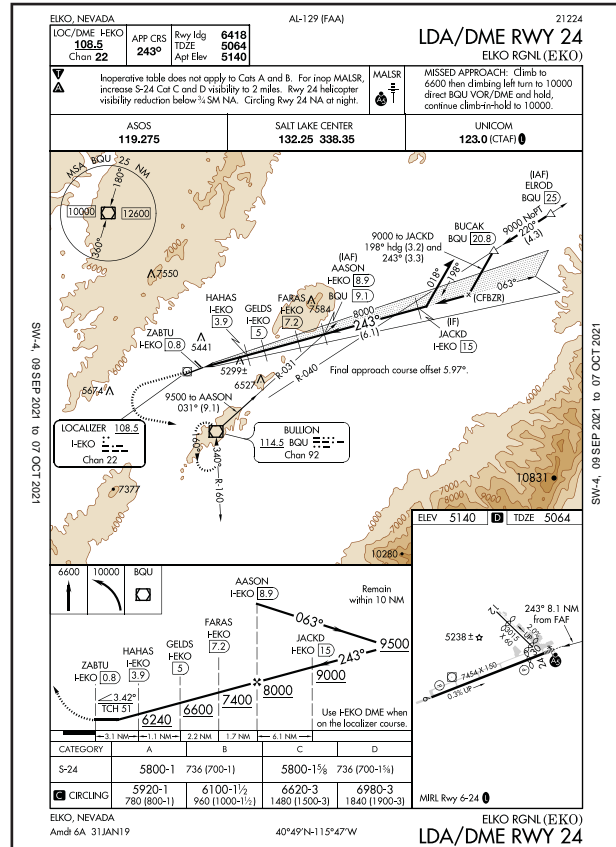
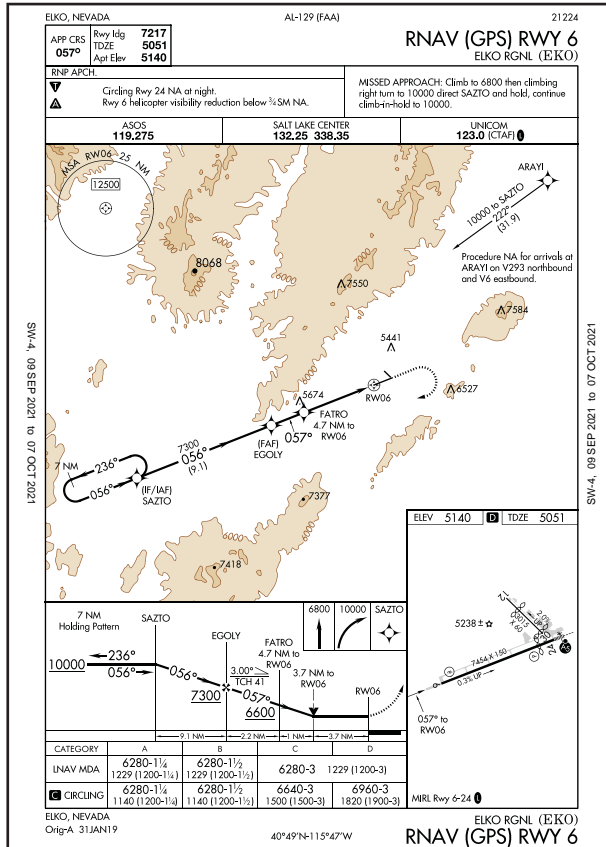
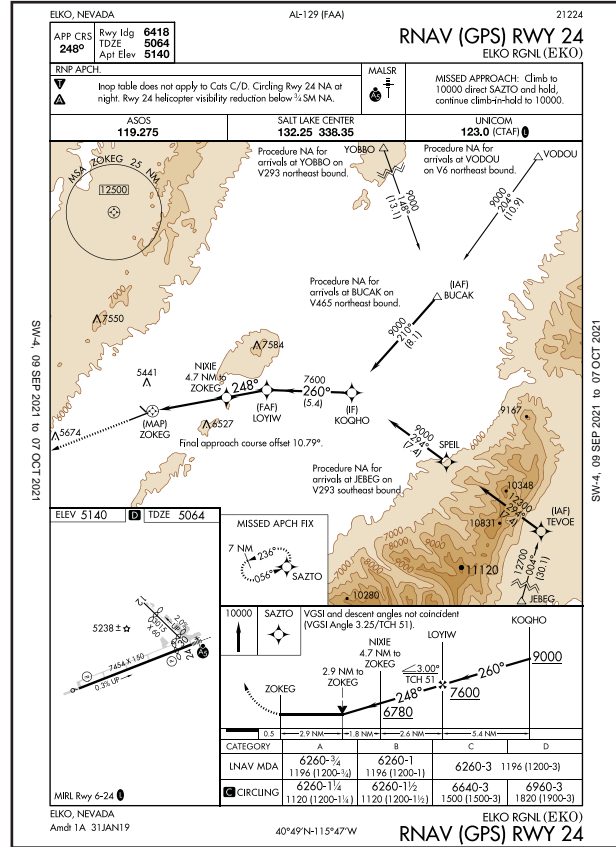
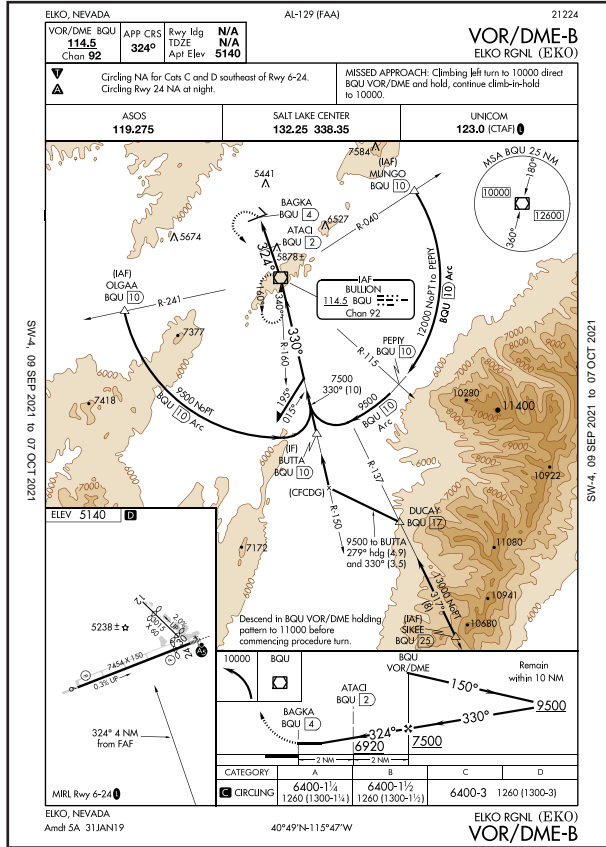
- 1) *PCN Numerical Value*: Indicates the load-carrying capacity of the pavement expressed as a whole number. The value is calculated based on several engineering factors, such as aircraft geometry and pavement usage.
- 2) *Pavement Type*: Expressed as either R for rigid pavement (most typically concrete) or F for flexible pavement (most typically asphalt).
- 3) *Subgrade Strength*: Expressed as A (High), B (Medium), C (Low), or D (Ultra Low). A subgrade of A would be considered very strong, like concrete-stabilized clay, and a subgrade of D would be very weak, similar to uncompacted soil.
- 4) *Maximum Tire Pressure*: Expressed as W (Unlimited/No Pressure Limit), X (High/254 psi), Y (Medium/181 psi), or Z (Low/72 psi), this indicates the maximum tire pressure the pavement can support. Concrete surfaces are usually rated W.
- 5) *Process of Determination*: Expressed as either T (technical evaluation) or U (physical evaluation), this indicates the method of pavement testing.

The PCN for Runway 6-24 is expressed as 63/F/B/X/T. This means that the underlying pavement value has a load-carrying capacity of 63 (unitless), is flexible (asphalt), is medium subgrade strength, has high allowable tire pressure capability, and was calculated through a technical evaluation.

The weight bearing capacity of the runway provides an indication of the weight limit of aircraft regularly using the runway without causing excessive wear. Aircraft that exceed the weight bearing capacity can operate at the Airport, but excessive activity may shorten the useful life of the pavement.

Runway 6-24 is equipped with medium intensity edge lights. Both ends of the runway have a precision approach path indicator (PAPI) system. These four-light systems provide pilots with a visual indicator of being above, below, or on the correct glidepath to the runway. The PAPI serving approach to Runway 6 is set to the standard 3.0° glide path. The PAPI glide path to Runway 24 is set to 3.25°, and it does not provide obstruction clearance beyond 6.5 nautical miles from the Runway 24 landing threshold. Runway 24 is equipped with a medium intensity approach lighting system with runway alignment indicator lights (MALSR). Several of the lights associated with the MALSR are imbedded in the pavement due to the displaced landing threshold.

Runway 6-24 has instrument approach procedures which are a series of pre-determined maneuvers that pilots follow when approaching to land. These procedures allow pilots to proceed with the approach when visibility and cloud ceiling conditions are less than visual. The instrument approach with the lowest visibility minimum is the RNAV (GPS) approach to Runway 24 which provides for visibility minimums of ¾-mile; however, this is available for small aircraft only (Category A). The lowest visibility minimums available for commercial aircraft (categories C and D) are available when following the procedures outlined in the LDA/DME approach for Runway 24. This approach utilizes the off-set localizer antenna on the airfield and provides visibility minimums as low as 1½-mile. **Exhibit 1C** presents the instrument approach plates for the Airport.





The landing threshold to Runway 24 is displaced by 1,036 feet from the physical end of the runway. This displacement is in place to provide adequate clearance over potential obstructions on the approach to the runway and requires publication of declared distances.

Declared distances are the runway lengths the airport owner declares available for turbine powered aircraft, with FAA approval. Declared distances may be used to obtain additional runway safety area (RSA) and/or runway object free area (ROFA) prior to the runway's threshold and/or beyond the stop end of the runway, to mitigate unacceptable incompatible land uses in the runway protection zone (RPZ), to meet runway approach and/or departure surface requirements, in accordance with airport design standards, or to mitigate environmental impacts.

Declared distances represent the maximum length available and suitable for meeting takeoff, rejected takeoff, and landing distance performance requirements for turbine-powered aircraft. The declared distances are defined by the FAA as:

- *Takeoff run available (TORA)* - The distance to accelerate from brake release to lift-off, plus safety factors.
- *Takeoff distance available (TODA)* - The distance from brake release past lift-off to start of takeoff climb, plus safety factors.
- *Accelerate-stop distance available (ASDA)* - The distance to accelerate from brake release to takeoff decision speed ( $V_1$ ), and then decelerate to a stop, plus safety factors.
- *Landing distance available (LDA)* - The distance from the threshold to complete the approach, touchdown, and decelerate to a stop, plus safety factors.

The four declared distance parameters for Runway 6 are all declared to be 7,217 feet. For Runway 24, the TORA, TODA, and ASDA are 7,454 feet, while the LDA is 6,418 feet due to the displaced landing threshold. **Exhibit 1D** graphically shows the declared distances for both runways.

Runway 24 is the designated calm wind runway. When wind intensity is less than six knots, pilots are encouraged to use Runway 24.

## RUNWAY 12-30 DETAIL

Runway 12-30 is 3,015 feet long and 60 feet wide. It is oriented perpendicular to Primary Runway 6-24, thus *servicing* as a crosswind runway. A crosswind runway configuration is common in locations with variable wind patterns and is recommended to meet local wind conditions, if needed. For the operational safety and efficiency of an airport, it is desirable for the primary runway to be oriented as close as possible to the direction of the prevailing winds which reduces the impact of wind components perpendicular to the direction of travel of an aircraft that is landing or taking off.

FAA AC 150/5300-13B, *Airport Design*, recommends a crosswind runway when the primary runway orientation provides for less than 95 percent wind coverage for specific crosswind components. The 95 percent wind coverage is computed based on wind not exceeding a 10.5-knot (12 mph) component for runway design code (RDC) A-I and B-I, 13-knot (15 mph) component for RDC A-II and B-II, 16-knot (18 mph) component for RDC A-III, B-III, C-I through C-III, and D-I through D-III, and 20 knots for larger wingspans.

**Exhibit 1E** presents both the all-weather and IFR wind rose for EKO. A wind rose is a graphic tool that gives a succinct view of how wind speed and direction are historically distributed at a location. The table at the top of the wind rose indicates the percent of wind coverage for each runway at specific wind intensity. The wind rose is constructed based on the most recent 10 years of data from the on-airport weather sensor (e.g., the ASOS). As can be seen on the exhibit, Primary Runway 6-24 provides greater than 95 percent wind coverage; therefore, it is oriented in the proper direction.

According to FAA Order 5100.38D, *Airport Improvement Handbook*, only one runway at any NPIAS airport is eligible for on-going maintenance and rehabilitation funding unless the FAA Airport District Office (ADO) has made a specific determination that a crosswind or secondary runway is justified. A runway that is not a primary runway, crosswind runway, or secondary runway, is an *additional* runway, which is not eligible for FAA funding. It is not unusual for a two-runway airport to have a primary runway and an additional runway, and no crosswind or secondary runway. **Table 1B** presents the eligibility requirements for runway types.

**TABLE 1B | Runway Eligibility**

For the following runway type...	Must meet all the following criteria...	And is...
Primary Runway	1. A single runway at an airport is eligible for development consistent with FAA design and engineering standards.	Eligible
Crosswind Runway	1. The wind coverage on the primary runway is less than 95%	Eligible if justified
Secondary Runway	1. There is more than one runway at the airport. 2. The non-primary runway is not a crosswind runway. 3. Either of the following: a) The primary runway is operating at 60% or more of its annual capacity. b) FAA has made a specific determination that the runway is required.	Eligible if justified
Additional Runway	1. There is more than one runway at the airport. 2. The non-primary runway is not a crosswind runway. 3. The non-primary runway is not a secondary runway.	Ineligible

Source: FAA Order 5100.38D, AIP Handbook

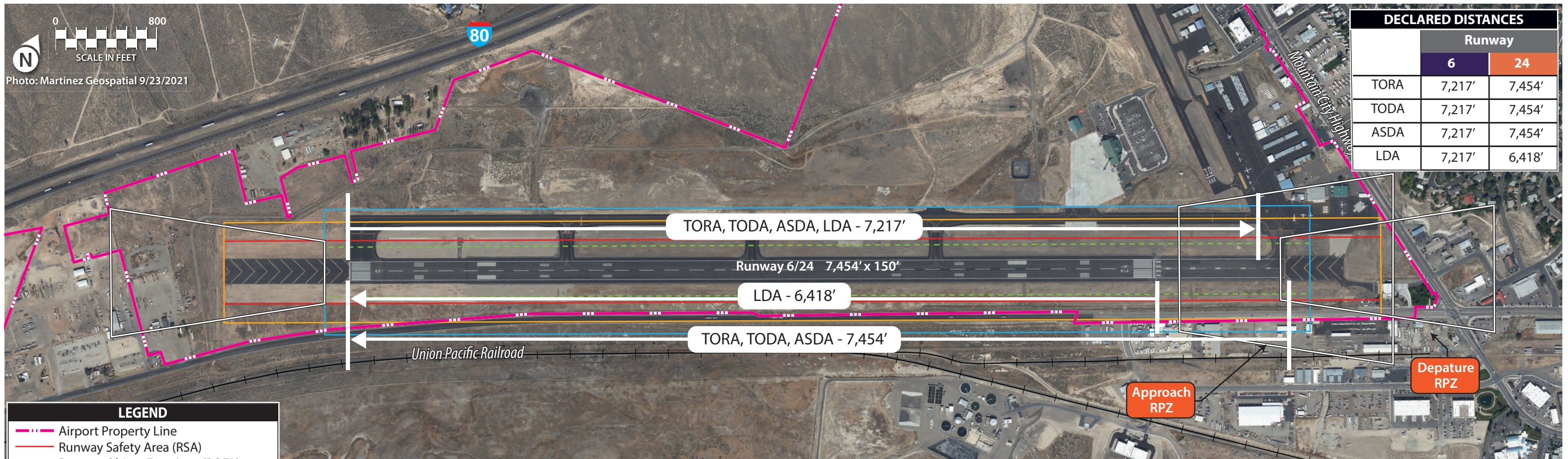
Because the wind coverage on Runway 6-24 exceeds the 95 percent threshold, Runway 12-30 is not eligible for federal funding as a crosswind runway. For Runway 12-30 to be eligible for federal maintenance and rehabilitation funding, the FAA must make a specific determination that the runway is a secondary runway. In the recent past, the FAA has provided grant funds for the maintenance of Runway 12-30; however, it is the prerogative of the FAA if they wish to make any future investments. If they choose not to then it would be designating it as an *additional* runway. Local airport sponsors are free to maintain additional runways, in compliance with FAA design standard, with their own funds.

Runway 12-30 is constructed of asphalt and is in good condition according to FAA records. This runway has basic markings which include the threshold bars, runway designation, and runway centerline. The runway is strength rated at 12,000 pounds SWL and has a PCN of 4/F/B/Y/T. The runway does not have edge lights. There are no direct instrument approaches to this runway; however, pilots may circle to land using an instrument approach procedure to navigate to the airport in visual conditions.





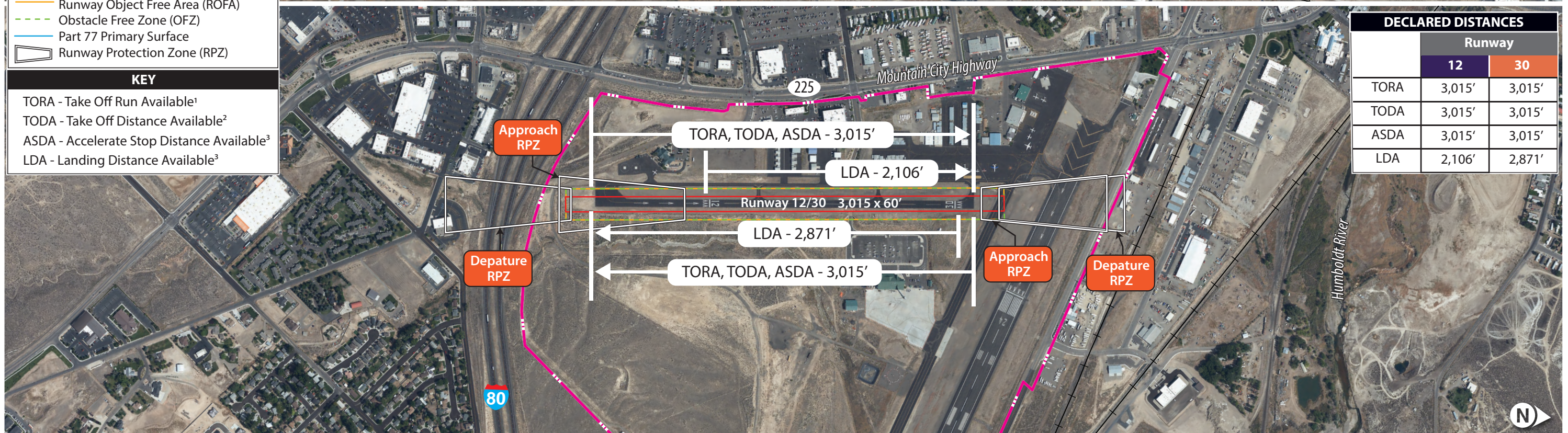
Photo: Martinez Geospatial 9/23/2021



	DECLARED DISTANCES	
	Runway	
	6	24
TORA	7,217'	7,454'
TODA	7,217'	7,454'
ASDA	7,217'	7,454'
LDA	7,217'	6,418'

LEGEND	
	Airport Property Line
	Runway Safety Area (RSA)
	Runway Object Free Area (ROFA)
	Obstacle Free Zone (OFZ)
	Part 77 Primary Surface
	Runway Protection Zone (RPZ)

KEY	
TORA	- Take Off Run Available <sup>1</sup>
TODA	- Take Off Distance Available <sup>2</sup>
ASDA	- Accelerate Stop Distance Available <sup>3</sup>
LDA	- Landing Distance Available <sup>3</sup>



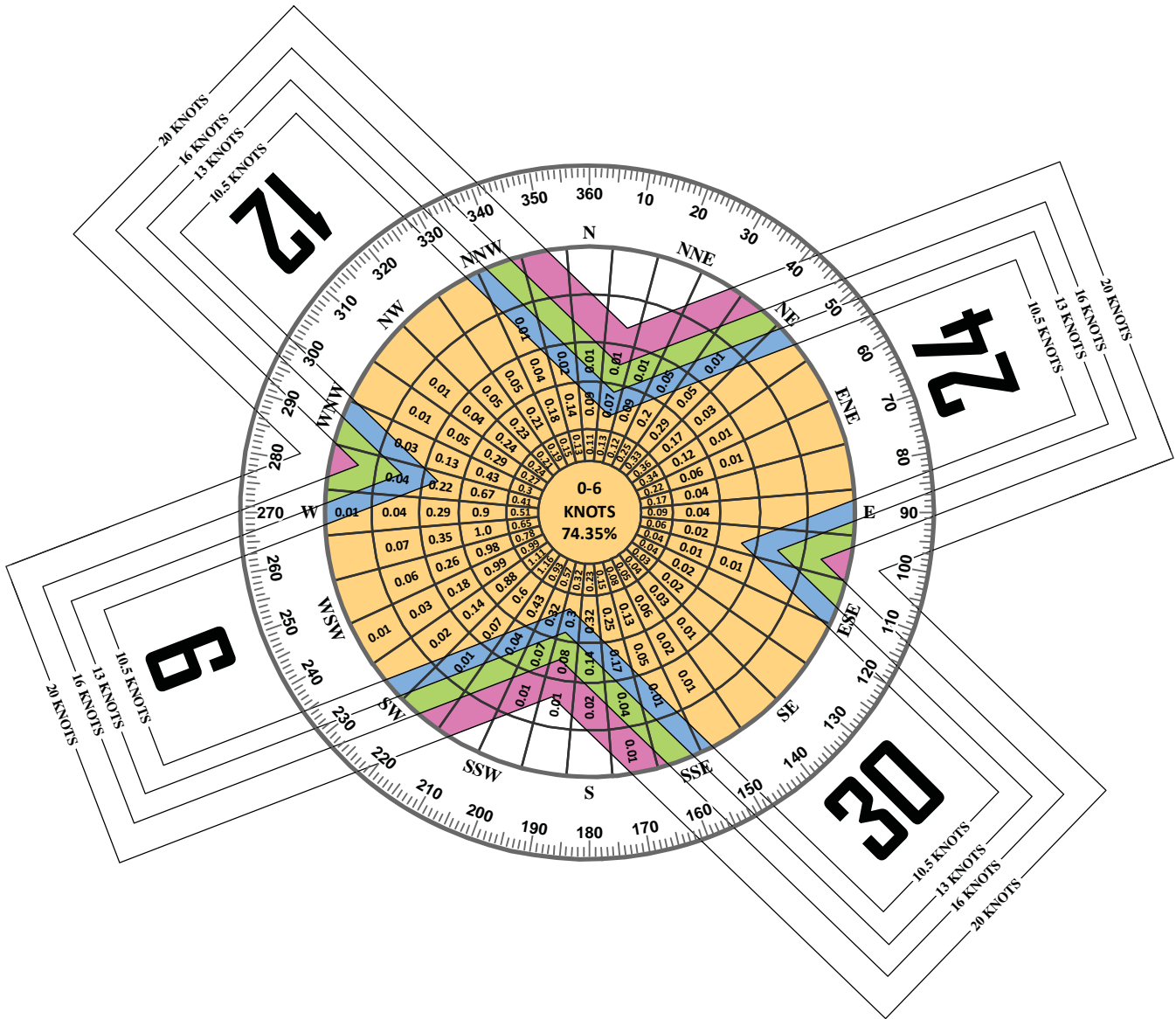
	DECLARED DISTANCES	
	Runway	
	12	30
TORA	3,015'	3,015'
TODA	3,015'	3,015'
ASDA	3,015'	3,015'
LDA	2,106'	2,871'

<sup>1</sup> Departure RPZ begins 200 feet from the end of the TORA. <sup>2</sup> TORA cannot be longer than TODA. Departure surface is set on TODA. TODA can be shortened to mitigate departure surface penetrations; if so, TORA is shortened, too. If present, a clearway is included in the TODA. <sup>3</sup> Available runway length plus RSA. Approach RPZ set 200 feet from the landing threshold.



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ALL WEATHER WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 6-24	96.16%	97.82%	99.15%	99.77%
Runway 12-30	91.44%	95.08%	98.52%	99.67%
All Runways	98.59%	99.54%	99.89%	99.99%



SOURCE:  
NOAA National Climatic Center  
Asheville, North Carolina  
Elko Regional Airport  
Elko, NV

OBSERVATIONS:  
94,253 All Weather Observations  
Jan. 1, 2011 - Dec. 31 2020



The landing threshold to both runway ends of Runway 12-30 are displaced. To Runway 12, the landing threshold is displaced 906 feet, and to Runway 30 it is displaced 143 feet. The displacements are for obstacle clearance. For Runway 12, the TORA, TODA, and ASDA are 3,015 feet. The LDA is 2,106 feet. For Runway 30 the TORA, TODA, and ASDA are 3,015 feet. The LDA is 2,871 feet.

A special operating procedure is implemented for this runway due to the proximity of nearby high terrain. Runway 12 is available for takeoffs only, and Runway 30 is available for landings only. Touch and go operations are not permitted using Runway 12-30.

## LOCAL OPERATING PROCEDURES

The airport publishes various notifications to pilots via the Airport Facility Directory which include the following:

- Runway 24 is designated as the calm wind runway.
- Surface conditions are not monitored between the hours of 9:00 p.m. and 4:00 a.m.
- Take off only on Runway 12; Landing only on Runway 30.
- Runway 12-30 closed to scheduled operations with more than nine passenger seats or unscheduled operations with more than 31 passenger seats.
- No taxiway edge lighting on Runway 12-30.
- Steep slope/gradient upward for Runway 30. Upward south to north.
- Prior permission needed for aircraft over 100,000 pounds.

## AIRFIELD NAVIGATIONAL AIDS

The airport makes available several aeronautical facilities that are not tied to a specific runway. These are described as follows:

*Lighted Wind Indicator and Segmented Circle:* The primary windcone is located to the immediate west of the terminal building approximately 615 feet from the runway centerline. Windcones provide a visual indication of wind direction and intensity to pilots. It is positioned within a segmented circle that indicates to pilots the traffic pattern. Runway 6 has a right traffic pattern, and Runway 24 has a left traffic pattern. Runway 12 has a right traffic pattern, and runway 30 has a left traffic pattern.

*Supplemental Windcones:* A supplemental windcone is installed near both ends of Runway 6-24. There is also an unlit seasonal windcone located near the BLM helipad located northeast of Runway 30. Mountain West Aviation also maintains an unlit windcone on the northwest corner of the airport fuel farm.

*Airport Beacon:* The location of the Airport at night is universally identified by a rotating beacon. The rotating beacon projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon is atop a steel lattice structure located atop a hill in the northwest corner of airport property. The beacon operates sunset to sunrise.

*Communication Aids:* EKO does not have an airport traffic control tower (ATCT), therefore pilots must communicate their intentions via the common traffic advisory frequency (CTAF), 123.0 MHz. The Airport also has a remote transmitter/receiver (RTR) that pilots can use to obtain IFR clearances on the ground at AAO via radio frequency 125.0 MHz.

*Weather Reporting Aids:* Weather information can be obtained from the ASOS by utilizing the radio frequency 119.275 MHz or by calling 775-778-9639. The ASOS reports weather observations 24 hours per day. The system updates weather observations every minute, continuously reporting significant weather changes as they occur. The ASOS system reports cloud ceiling, visibility, temperature, dew point, wind direction, wind speed, altimeter setting (barometric pressure), and density altitude (airfield elevation corrected for temperature). The ASOS equipment is located midfield at approximately 256 feet south of the Runway 6-24 centerline and 800 feet west of the Runway 24 landing threshold. It should be noted that the ASOS was previously located on the north side of the runway but was relocated with an FAA grant to its current location.

*Localizer Antenna:* The airport has a localizer antenna that is positioned 660 feet north of the Runway 6-24 centerline and approximately 1,570 feet from the Runway 6 landing threshold. The presence of this system directly benefits instrument approach procedures to Runway 24 by providing course guidance which results in lower visibility minimums. The localizer antenna is offset by 5.97° to avoid high terrain east of Runway 24.

*Pilot Controlled Lighting:* Utilizing their transponder on the CTAF frequency, pilots can activate the MALSR approach lights and the runway edge lights for Runway 6-24. The PAPI systems operate continuously.

## TAXIWAYS

Runway 6-24 has a 50-foot wide, full-length parallel taxiway designated Taxiway A which is positioned on the north side of the runway. Taxiway A is separated from the runway centerline by 400 feet. Taxiway A has full length yellow edge and centerline marking. Taxiway A has hold short bars painted on it in proximity to Runway 30. Pilots are to hold short if another aircraft is on final approach to Runway 30 or departing runway 12. An ILS hold marking is on Taxiway A in proximity to the localizer antenna. Pilots should hold short if another pilot is on final approach to Runway 24.

Connecting Taxiway A1 provides access to the Runway 24 threshold, and it is 75 feet wide. This connecting taxiway and all connecting taxiways to Runway 6-24 have enhanced centerline markings leading to the hold line as well as white on red runway designation markings. Connecting Taxiways A2, A3, A4 are both 65 feet wide. Threshold Taxiway A5 is 175 feet wide.

The hold position marking on Taxiways A1, A2, A3, and A4 are 301.4 feet from the Runway 6-24 centerline based on the airplane design group, taking into account an elevation adjustment and the precision runway markings.

Localizer critical area markings are located on Taxiway A in accordance with Part 139.311(a) and AC 150/5340-1, *Standards for Airport Markings*.

Taxiway B is the full-length parallel taxiway to Runway 12-30 and is marked with a yellow centerline. The south portion of Taxiway B (between connecting taxiways B3 and B4) is 200 feet from the runway centerline. The remaining portion of Taxiway B (north of Taxiway B3) is 150 feet from the runway centerline. The south portion of Taxiway B abuts the general aviation aircraft parking apron and is marked with a yellow dashed edge line to make this distinction.

Connecting Taxiways B2, B3, and B4 are each 25 feet wide and have hold lines that are 125 feet from the runway centerline. Taxiway B1 provides access to the Runway 12 departure location. The pavement in this area is extremely wide, measuring 175 feet in width at the hold line. A yellow centerline marking extending to the runway helps pilots maintain position on the taxilane.

### AIRFIELD SIGNAGE

The Airport has a full complement of airfield signage that meets FAA guidelines for a commercial service airport.

### AIRCRAFT APRONS

There are several aircraft parking aprons at the airport. The commercial apron adjacent to the terminal building is approximately 21,000 square yards in size. A 2,300 square yard portion of the commercial apron is reserved for deicing activities. The commercial apron is currently marked with yellow centerline stripes that permit aircraft to pull in and out without the need for a tug. There are no marked parking positions (other than at the gate), so this apron is reserved exclusively for commercial operations and remain overnight (RON) needs.

To the east are several aprons for general aviation aircraft. Immediately east of the Runway 30 threshold is the general aviation apron encompassing approximately 8,300 square yards (excludes circulation taxilanes) with 24 market tie-down positions. Further to the east is an 8,800 square yard apron area primarily utilized by FBO for transient aircraft. In the farthest east corner of the Airport is a 3,000 square foot apron utilized by one of the medical flight companies.

To the north, along Taxiway B, there are two smaller aprons. The first is approximately 700 square yards which is utilized by the other medical flight company, and at the far north end of Taxiway B is an apron that is approximately 3,900 square yards that is marked with two helicopter parking positions.

### AREA AIRSPACE

The *Federal Aviation Administration Act of 1958* established the FAA as the responsible agency for the control and use of navigable airspace within the United States. The FAA has established the National Airspace System (NAS) to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common



network of U.S. airspace, including air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; and personnel and material. The system also includes components shared jointly with the military.

## AIRSPACE STRUCTURE

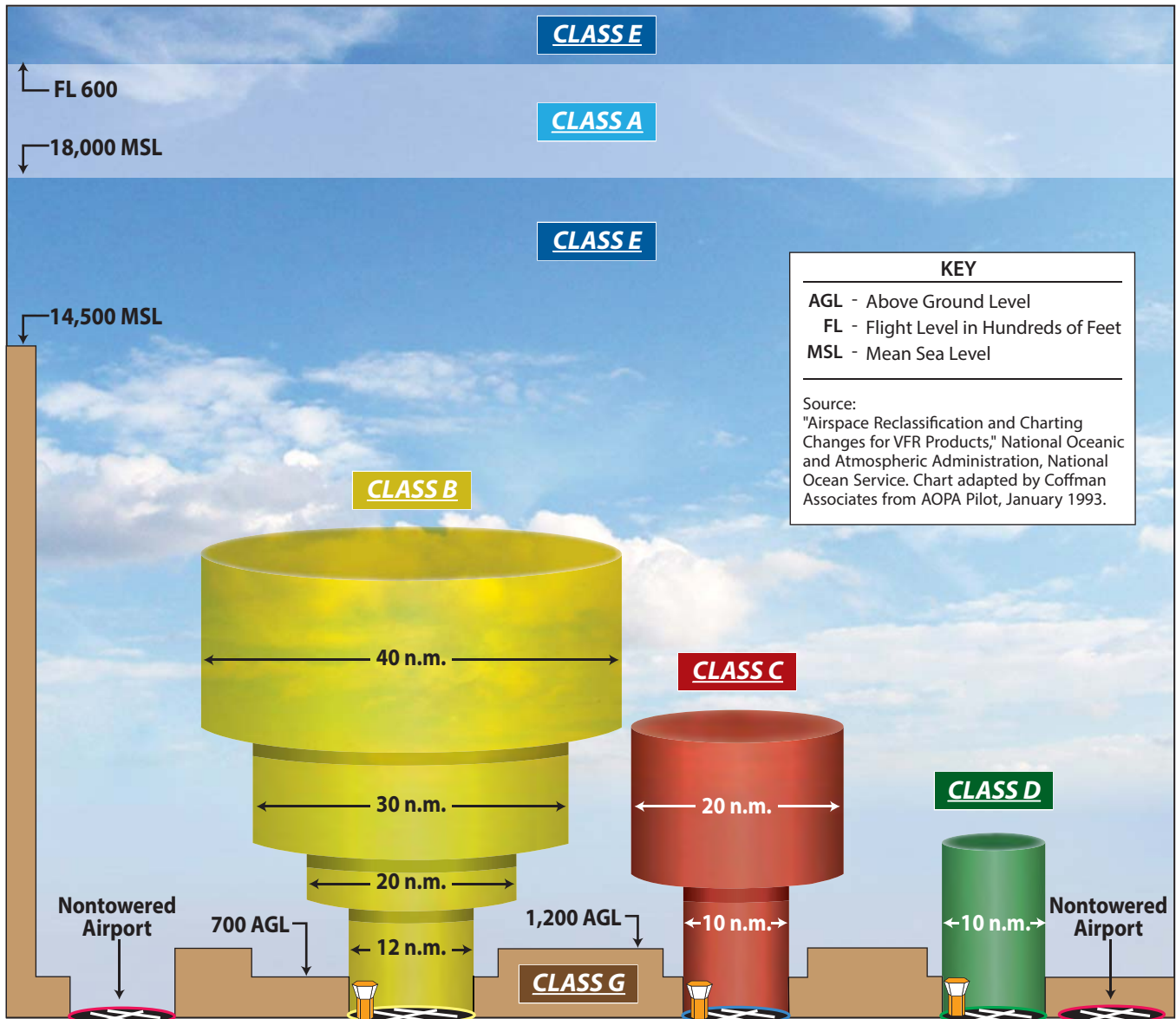
Airspace within the United States is broadly classified as either “controlled” or “uncontrolled.” The difference between controlled and uncontrolled airspace relates primarily to requirements for pilot qualifications, ground-to-air communications, navigation and air traffic services, and weather conditions. Six classes of airspace have been designated in the United States, as shown on **Exhibit 1F**. Airspace designated as Class A, B, C, D, or E is considered controlled airspace. Aircraft operating within controlled airspace are subject to varying requirements for positive air traffic control. Class G airspace is uncontrolled airspace.

**Class A Airspace:** Class A airspace includes all airspace from 18,000 feet mean sea level (MSL) to flight level (FL) 600 (60,000 feet MSL). This airspace is designated in FAR Part 71.193 for positive control of aircraft. The Positive Control Area (PCA) allows flights governed only under IFR operations. The aircraft must have special radio and navigation equipment, and the pilot must obtain clearance from an ATC facility to enter Class A airspace. In addition, the pilot must possess an instrument rating.

**Class B Airspace:** Class B airspace has been designated around some of the country’s busiest commercial service airports, such as the Salt Lake City International Airport (SLC). Class B airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance, passenger-carrying aircraft at busy commercial service airports. This airspace is the most restrictive controlled airspace encountered by pilots operating under VFR.

To fly within Class B airspace, an aircraft must be equipped with special radio and navigation equipment and must obtain clearance from air traffic control. Moreover, a pilot must have at least a private pilot’s certificate or be a student pilot who has met the requirements of F.A.R. Part 61.95, which requires special ground and flight training for Class B airspace. Helicopters do not need special navigation equipment or a transponder if they operate at or below 1,000 feet and have made prior arrangements in the form of a Letter of Agreement with the FAA controlling agency. Aircraft are also required to have and utilize a Mode C transponder within a 30-nautical-mile (NM) range of the center of Class B airspace. A Mode C transponder allows the ATCT to track the altitude of the aircraft.

**Class C Airspace:** The FAA has established Class C airspace at 120 airports around the country as a means of regulating air traffic in these areas. Class C airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance, passenger-carrying aircraft at some commercial service airports. To fly inside Class C airspace, the aircraft must have a two-way radio, an encoding transponder, and have established communication with the ATC. Aircraft may fly below the floor of the Class C airspace, or above the Class C airspace ceiling without establishing communication with ATC. The closest Class C airspace surrounds Boise International Airport (BOI).



**CONTROLLED AIRSPACE CLASSIFICATIONS**

- CLASS A** Generally airspace above 18,000 feet MSL up to and including FL 600 (60,000 MSL). All operations conducted under instrument flight rules (IFR)
- CLASS B** Generally multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports.
- CLASS C** Generally airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control.
- CLASS D** Generally airspace from the surface to 2,500 feet AGL surrounding towered airports.
- CLASS E** Generally controlled airspace that is not Class A, Class B, Class C, or Class D.

**UNCONTROLLED AIRSPACE CLASSIFICATIONS**

- CLASS G** Airspace that is not Class A, Class B, Class C, Class D, or Class E. Extends from the surface to the base of the overlying Class E airspace up to 14,500' MSL

**Class D Airspace:** Class D airspace is controlled airspace surrounding airports with an ATCT. Often, but not always, the ATCT at these airports is not open 24 hours a day. Battle Mountain Airport (BAM) is the closest Class D airspace, approximately 63 miles to the west. The Class D airspace typically constitutes a cylinder with a designated horizontal radius from the airport, extending from the surface up to a designated vertical limit, above the airport elevation. If an airport has an instrument approach or departure, the Class D airspace sometimes extends along the approach or departure path. During periods when the airport's ATCT is closed, Class D airspace typically reverts to Class E airspace.

**Class E Airspace:** Class E airspace consists of controlled airspace designed to contain IFR operations near an airport and while aircraft are transitioning between the airport and enroute environments. Unless otherwise specified, Class E airspace terminates at the base of the overlying airspace. Only aircraft operating under IFR are required to be in contact with air traffic control when operating in Class E airspace. While aircraft conducting visual flights in Class E airspace are not required to be in radio communications with air traffic control facilities, visual flight can only be conducted if minimum visibility and cloud ceilings exist. Elko Regional Airport falls within Class E airspace beginning at 700 feet above the airport elevation.

**Class G Airspace:** Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G, airspace. Air traffic control does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and the overlaying Class E airspace which begins 700 feet above ground level.

## SPECIAL USE AIRSPACE

Special use airspace is defined as airspace where activities must be confined because of their nature or where limitations are imposed on aircraft not taking part in those activities. The designation of special use airspace identifies for other users the areas where military activity occurs, provides for segregation of that activity from other fliers, and allows charting to keep airspace users informed. The following discusses special use airspace that may impact pilots operating around EKO.

**Military Operating Areas (MOAs):** This special use airspace is established outside positive control areas to separate/segregate certain nonhazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. MOAs are established to contain certain military activities, such as air combat maneuvers, air intercepts, acrobatics, etc. To the north are the Jarbridge, Owyhee, and Paradise MOAs. To the east and southeast are the Lucin, White Elk, and Gandy MOAs. To the southwest is the Fallon MOA. Each of these MOAs is approximately 40 miles from EKO.

**Military Training Routes:** Military training routes (MTRs) are designated airspace that has been generally established for use by high performance military aircraft to train below 10,000 feet AGL and in excess of 250 knots. There are VR (visual) and IR (instrument) designated MTRs. MTRs with no segment above 1,500 feet AGL will be designated with the VR or IR, followed by a four-digit number (e.g., VR1259). MTRs with one or more segments above 1,500 feet AGL are identified by the route designation followed by a three-digit number (e.g., VR209). The arrows on the route show the direction of travel. MTR VR1259 is to the south of EKO. IR275 is to the west of EKO.



**Victor Airways:** For aircraft arriving or departing the area using very high frequency omni-directional range (VOR) facilities, a system of Federal Airways, referred to as Victor Airways, has been established. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet AGL to 18,000 feet MSL and extend between VOR navigational facilities. The Bullion VOR/DME is located about five miles south of EKO; therefore, there are several Victor Airways that converge, including V32, V465, and V293.

**Restricted Airspace:** No person may operate an aircraft within a restricted area between the designated altitudes and during the time of designation without advanced permission of the using and controlling agency. There are several areas of restricted airspace in proximity to EKO including R6402, R6404, R6405, R6406, and R6407 which are approximately 80 miles to the east.

**Alert Areas:** Alert Areas are areas that may contain a high volume of pilot training or an unusual type of aerial activity, typically associated with military training. There is no alert airspace in proximity to APV.

**Exhibit 1G** shows the vicinity airspace (aeronautical sectional chart) surrounding Elko Regional Airport.

## LANDSIDE FACILITIES

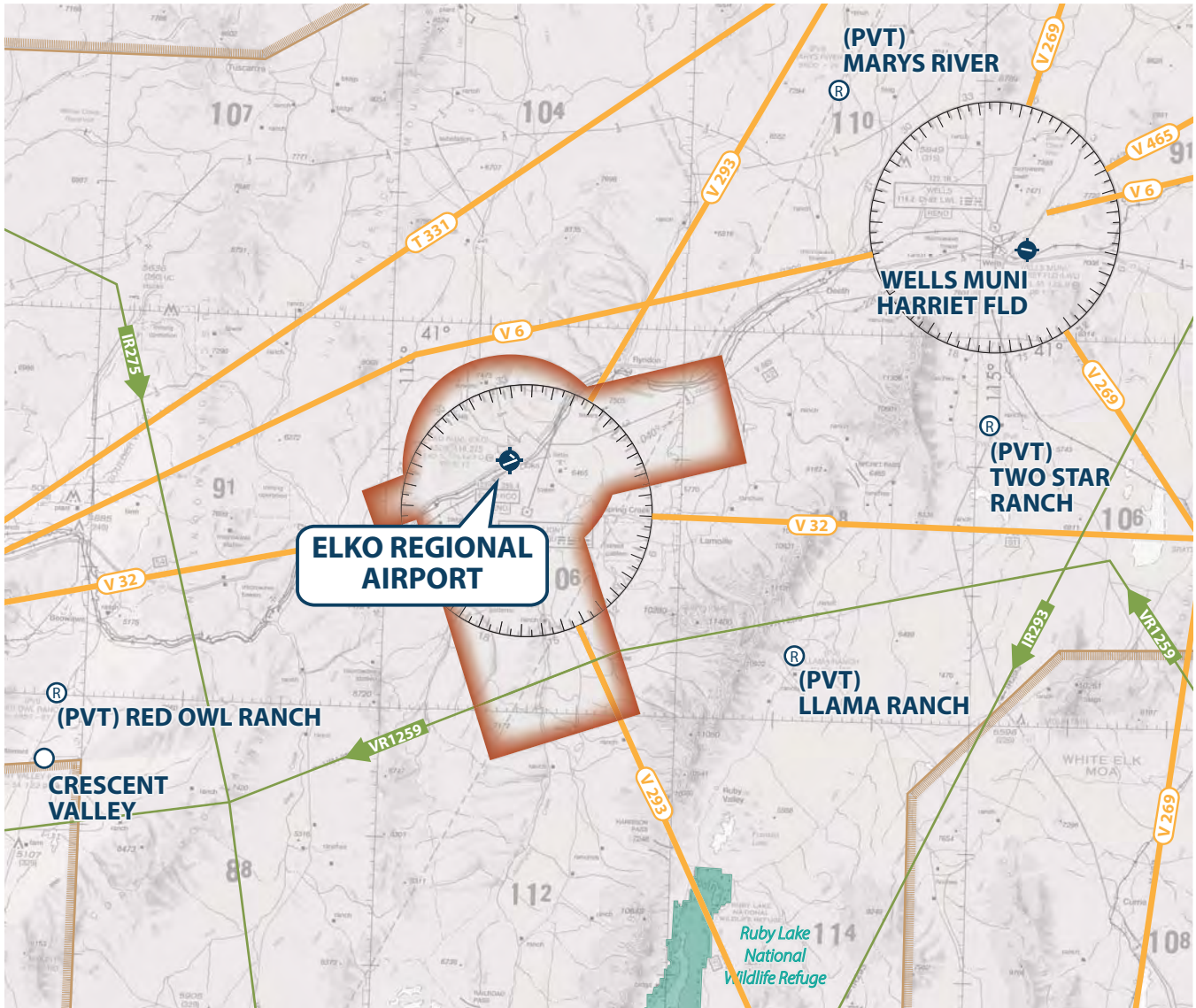
Landside facilities include all structures at the Airport and all support facilities. Included are the terminal complex, general aviation hangars, air cargo aprons, fueling facilities, and airport rescue and firefighting facilities (ARFF), among others. **Exhibit 1H** graphically shows the primary landside facilities.

## TERMINAL BUILDING AND PARKING

The terminal building was constructed in 2001 and encompasses approximately 24,000 square feet of space. It is centrally located to the west of Runway 12-30 and north of Runway 6-24. The terminal building and parking lot are accessed via Terminal Way, which passes under Runway 12-30 to an intersection with Mountain City Highway (State Highway 225). The functional areas within the terminal building include a large public lobby, airline ticket counters, airline back-office space and bag make up areas, Transportation Security Administration (TSA) security checkpoint, rental car counters, secure passenger hold room, a restaurant/deli space, and restrooms. The current configuration of the building provides for one gate area that has a jet bridge for passenger loading and unloading.

There are three parking lots around the terminal building. To the northeast is the main public parking lot providing a total of 254 spaces. The southeast portion of this parking lot (49 spaces) is sectioned off and reserved for rental car activities. To the north of the terminal building is the main rental car parking lot with 88 spaces. To the south of the terminal building are 43 employee parking spaces.

The terminal aircraft apron encompasses approximately 21,200 square yards of pavement, and it is dedicated to commercial aircraft activity. As currently marked and operated, aircraft pull in and park parallel to the terminal building. They then pull out under their own power. There is space on the apron for two commercial aircraft, and in the past one has utilized the apron to remain-over-night (RON).



## LEGEND

- |  |   |  |  |
|--|---|--|--|
|  | Airport with other than hard-surfaced runway  |  | Victor Airways/Canadian Victor Airways   |
|  | Airport with hard-surfaced runways 1,500' to 8,069' in length                                     |  | Class C Airspace   |
|  | Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069' |  | Class D Airspace   |
|  | Non-directional Radio Beacon (NDB)  |  | Class E Airspace   |
|  | VORTAC  |  | Class E (sfc) Airspace with floor 700 ft. above surface that laterally abuts 1200 ft. or higher Class E airspace |
|  | VOR-DME   |  | Military Training Route  |
|  | Compass Rose  |  | Alert Area and MOA   |
|  |   |  | Wildlife Refuge  |



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EXISTING LANDSIDE FACILITIES	
Building No.	Description
1	Terminal
2	Snow Barn
3	Infrastructure Technology Building
4	Mobile Control Tower (Inactive)
5	REACH Facility
6	Old Terminal (FBO)
7	FBO Hangar
8	FAA Building
9	Conventional Hangar
10	Conventional Hangar
11	Civil Air Patrol
12	T-Hangars
13	Box Hangars
14	T-Hangars
15	Conventional Hangar
16	Hangars
17	T-Hangars
18	T-Hangar
19	Box Hangar
20	T-Hangar
21	Box Hangar
22	Maintenance Hangar
23	Maintenance Hangar
24	T-Hangars
25	T-Hangars
26	Box Hangar
27	REACH Hangar
28	REACH Office
29	Box Hangar
30	Box Hangar
31	Box Hangar
32	Box Hangar
33	T-Hangars
34	T-Hangars
35	BLM Office/Dispatch
36	Aspen Plaza - Commercial
37	Office Building - Commercial
38	Gas Station - Commercial
39	Storage Building
40	ARFF/Firestation



Photo: Martinez Geospatial 9/23/2021



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## GENERAL AVIATION SERVICES AND HANGARS

General aviation facilities have a significant presence at the Airport and are located northwest of Runway 12-30. FBO services are available in this area, as are numerous taxilanes leading to hangar areas. Mountain West Aviation is the fixed based operator (FBO) at the Airport providing general aviation services including line services, fueling, maintenance and repair, and aircraft charters.

There are a variety of aircraft storage hangars at the airport. There are 48 T-Hangars encompassing approximately 63,000 square feet of space. There are 13 conventional clear span hangars encompassing approximately 63,000 square feet of space. Two of the conventional hangars encompassing 10,900 square feet are dedicated to aircraft maintenance activities. All hangars are privately owned for which the tenants pay a ground lease rate to the Airport.

There are several buildings on the Airport that are not for the storage or maintenance of aircraft. The Bureau of Land Management has their dispatch center on the airport at the north end of Taxiway B. Two helicopters operate from the adjacent apron. FAA has a building on the Airport next to the main FBO hangar. Reach Life Flight has a crew building on the west of the Airport. The Civil Air Patrol also has a building in the general aviation area.

## AIR CARGO

Ameriflight operates scheduled and on-demand air cargo services to Salt Lake City International Airport (SLC) on a daily basis. Ameriflight typically utilizes the Beechcraft 1900 and the Fairchild Metroliner to/from EKO. There is not a dedicated air cargo sort building on the Airport, instead, delivery trucks load and unload the Ameriflight aircraft on the general aviation apron.

## FUEL STORAGE

Mountain West Aviation provides fuel services at the Airport. They are responsible for ensuring fuel is available. The Airport collects a fuel flowage fee per gallon of fuel pumped. There is a static fuel farm located near the T-hangars. The fuel farm has five Jet A tanks, three of which have a 12,000-gallon capacity, one is 10,000 gallons, and one is 1,000 gallons. Two additional tanks store Avgas and have capacities of 10,000 and 12,000 gallons. There is also a 1,000-gallon unleaded (Mogas) tank for airport ground vehicles and equipment. The FBO also has several fuel trucks from which they fuel aircraft. Self-serve fuel service is available at the far east end of the FBO apron.

## SNOW REMOVAL EQUIPMENT (SRE) FACILITY

The Airport has a dedicated 7,000 square foot SRE building that is located on the commercial apron adjacent the terminal building. The following equipment is stored in the SRE building.



**TABLE 1E | Snow Removal Equipment (SRE)**

Type	Make	Model	Year	Condition
Plow	International	Snowplow	2003	Good
De-Icer	International	1,800-gallon Deicer/Plow	2003	Good
ATV	Kawasaki 650	4-Wheeler 4x4	2005	Good
Loader	Cat	Front End Loader	1985	Fair
Truck	Ford	Super Duty	2003	Good
Tractor	New Holland	Broom	2015	Excellent

Source: Airport Records

## DE-ICING FACILITY

A portion (2,000 s.y.) of the commercial apron, near the entrance to Taxiway A, is marked and dedicated for deicing application. SkyWest owns and operates their own deicing vehicle which is stored in the maintenance barn. A secure deicing drainage retention basin is located approximately 300 feet to the west of the commercial apron. Drains and underground piping direct all deicing fluids to the retention basin. The drainage basin is periodically serviced, and old deicing fluids are removed in an environmentally responsible manner.

## AIRCRAFT RESCUE AND FIREFIGHTING (ARFF)

Certificated Part 139 airports are required to provide aircraft rescue and firefighting (ARFF) services during air carrier operations that require a Part 139 certificate. Each certificated airport maintains equipment and personnel based on an ARFF index established according to the length of aircraft and scheduled daily flight frequency. There are five indices, A through E, with A applicable to the smallest aircraft and E the largest (based on length). Elko Regional Airport currently falls within ARFF Index A. As such, the Airport is required to maintain a fleet of equipment and properly trained personnel consistent with this standard. The Airport is required and meets ARFF Index A and has the equipment and personnel to meet Index C if needed.

The primary ARFF facility is in the south-eastern corner of airport property. This is a joint use facility that serves both the Airport and the community at large. In addition to city owned aerial pumper and rapid response vehicles, an airport-owned Oshkosh Striker 1,500-gallon ARFF vehicle is positioned at the ARFF station. The Airport also positions an E-1 Titan 1,500-gallon ARFF vehicle at the airfield snow barn/maintenance facility adjacent the terminal building, which serves as a back-up vehicle.

The ARFF station is located within the runway protection zone (RPZ) for Runway 24 (both approach and departure RPZs) which is a non-standard condition. The building is 20 feet from the end of the runway safety area (RSA). It is unusual for a building to be in such proximity to the end of the RSA. These issues will be addressed in the Facility Requirements and Alternatives chapters.

## AIRPORT SURFACE ROAD ACCESS

Primary access to the terminal building is via Terminal Way which extends from an intersection with Mountain City Highway to the terminal building. Terminal Way passes through a tunnel under Runway 12-30. Mountain City Highway is the primary thoroughfare extending from Interstate 80 to the city center, which is less than a mile from the Airport. I-80 defines the northern boundary of the airport, Mountain City highway the eastern boundary, and Idaho Street the southern boundary. Idaho Street extends from I-80 to an intersection with Mountain City Highway at the southeast corner of airport property. Both Mountain City Highway and Idaho Street are busy major arterial streets.

## AIRPORT SERVICE ROAD

The Airport has a perimeter service road that extends from the west edge of airport property, around the northside of the runways and through the general aviation area. A portion of the service road bridges Terminal Way adjacent Taxiway B. The service road over the bridge is in the Taxiway Object Free Area (TOFA) for Taxiway B.

## AIRPORT PERIMETER FENCING

The Airport has full perimeter fencing in conformance with Part 139 regulations.

## SUMMARY

The purpose of this Focused Planning Study is to provide an in-depth analysis of certain non-standard airfield design elements that exist today. This report will document the current conditions, review the forecast element of the Master Plan from 2016, and provide new forecasts of aviation demand as necessary, and then provide detailed alternatives to address the non-standard design elements. The existing conditions have been documented in this chapter.