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2.1 AIRFIELD

2.1.1 Airport Design Criteria

The FAA uses a classification system, known as the Airport Reference Code (ARC), to signify an airport’s highest Runway Design Code (RDC), which determines the design standards by which a runway is to be constructed or maintained. RDC consists of three components: Aircraft Approach Category (AAC), Airplane Design Group (ADG) relating to either the aircraft wingspan or tail height (whichever is more restrictive), and visibility minimums. An airport’s ARC is determined by taking the highest RDC minus the visibility component. It affects runway and taxiway dimensions, separation standards, pavement marking standards, and other safety standards. Furthermore, it is used for planning and design only and does not limit the aircraft that may be able to operate safely at an airport. The relationship between the ARC and design standards is further described in the FAA’s Airport Design Advisory Circular (AC) 150/5300-13B. The characteristics of the RDC are shown in **Table 2-1**.

Table 2-1 – Airport Reference Code & Airplane Design Group Characteristics

Airplane Approach Categories (AAC)			
Approach Category	VREF / Approach Speed (Knots)	Example Aircraft	
A	<91	Beechcraft-E33 Bonanza Cessna 152	
B	91 ≤ 121	CRJ-200, ERJ-135/140/145	
C	121 ≤ 141	A319, A321, B777, B787	
D	141 ≤ 166	A340, B767, B737	
E	166+	B-52H, B-2 Spirit	

Airplane Design Group (ADG)			
Design Group	Tail Height (feet)	Wingspan (feet)	Example Aircraft
I	<20	<49	Beechcraft-E33 Bonanza, Cessna 152
II	20-<30	49 ≤ 79	CRJ-700, ERJ-145
III	30-<45	79 ≤ 118	A319, A321, B737, CRJ-900
IV	45-<60	118 ≤ 171	A300, B757, B767
V	60-<66	171 ≤ 214	A330, B777, B787
VI	66-<80	214 ≤ 262	A380, B747-8

Source: FAA AC 150/5300-13B Airport Design, CHA, 2023.

An airport’s most demanding aircraft is commonly referred to as the ‘critical’, or ‘design’, aircraft which must regularly operate at that airport. According to FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, ‘Regular use’ aircraft are those that conduct a minimum of 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. The ARC consists of a letter designating the AAC and a Roman numeral designating the ADG (a classification of aircraft based on wingspan and tail height).

As shown in **Table 2-2**, the Airport facilitated more than 500 annual operations for AAC Category C and ADG Group III aircraft in 2022; therefore, based on the analysis of FAA’s Traffic Flow Management System Count (TFMSC) operations data, C-III represents the current ARC and current group of aircraft with similar characteristics, or the current critical aircraft grouping. An example of a ‘C-III’ aircraft would be E170 - Embraer 170.

Table 2-2 – EVV Operations by AAC Category and ADG Group (2022) – All Users

AAC & ADG		All Users (TFMSC Reported)
		2022
Subtotal by AAC	A	2,170
	B	3,935
	C	5,781
	D	332
Subtotal by ADG	I	3,436
	II	6,398
	III	2,377
	IV	8

Source: FAA TFMSC, CHA, 2023. ¹

2.1.2 Runway Systems

The existing airfield configuration at EVV consists of three runways. Of the runways that comprise the airfield, two runways on the west of the airport property intersect while the longest runway is located to the east of the property near the terminal. The airfield network includes connectors that accommodates access across the various aprons, taxi lanes, and parking areas. The Airport’s primary commercial service runway, Runway 4-22 is orientated to the east of the terminal with Taxiway A running parallel between the runway and the terminal. As **Table 2-3** indicates, Runway 4-22 is 8,021 feet long and 150 feet wide, without paved shoulders. Often, airlines request the use of Runway 4-22 due to the adjacency to the terminal, ILS, and for the longer landing distance available.

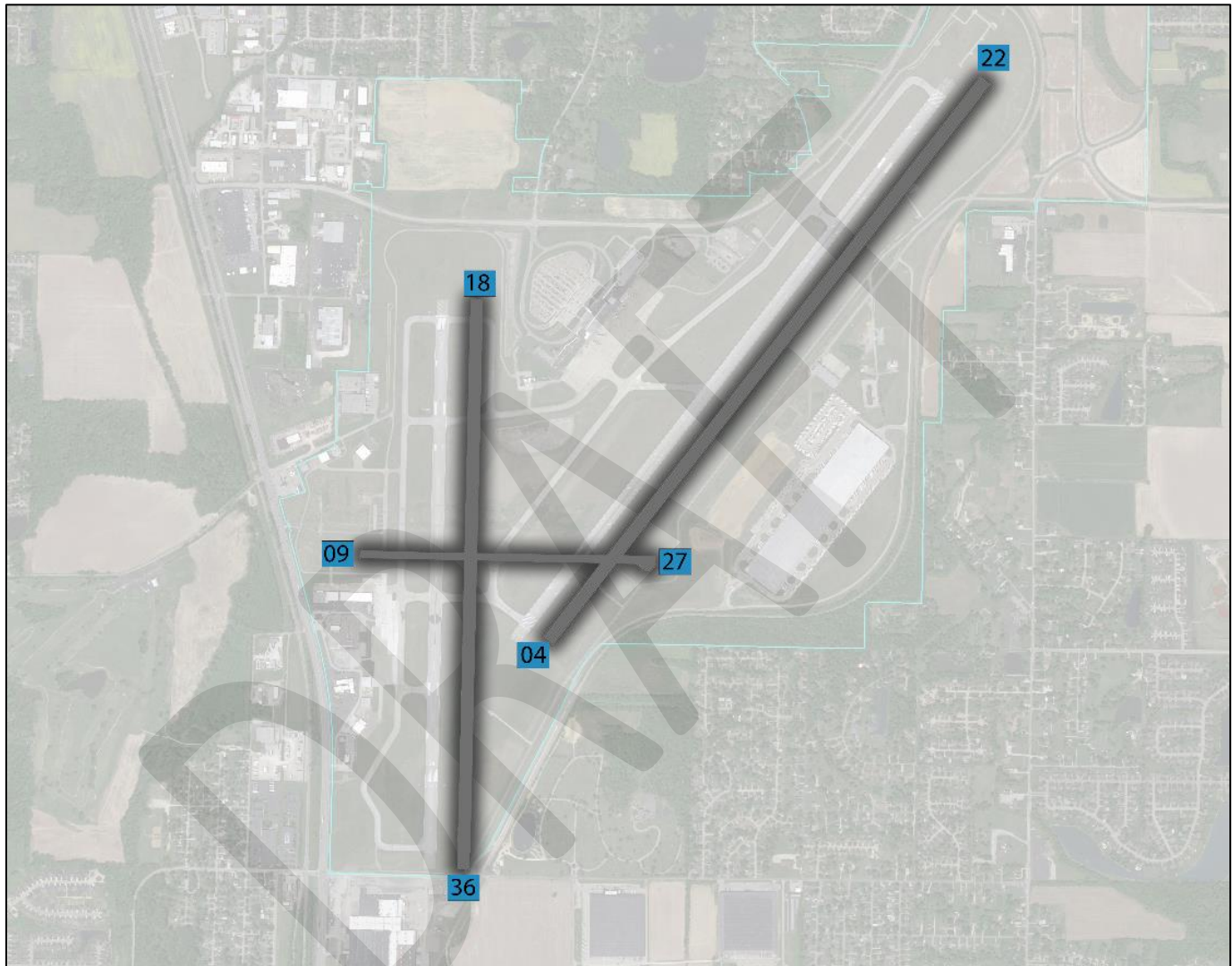
The Airport’s secondary runway is Runway 18-36, which is orientated a north/south direction. It is 6,286 feet long and 150 feet wide and also does not have paved shoulders. Declared distances are present on Runway 18-36 with a takeoff distance available (TORA), takeoff run available (TORA), accelerated stop distance available (ASDA), and a landing distance available (LDA) of 5,497 feet. Declared distances are present on Runway 18-36 so aircraft can clear obstructions within the approach to Runway 36 and to provide a standard runway safety area (RSA) and runway object free area (ROFA) at the departure end of Runway 18. Runway 18-36 is primarily used by general aviation (GA) aircraft or commercial service aircraft when Runway 4-22 is not available.

Lastly, the Airport has a GA crosswind runway, Runway 9-27, which is oriented in an east/west direction. It is 3,497 feet long and 75 feet wide without paved shoulders. Declared distances are

¹ The totals shown within this table only include those reported in the TFMS, or those with filed flight plans.

also present on Runway 9-27 to provide a standard RSA and ROFA on both ends. Runway 9-27 has an intersection in a designated hotspot; but this runway is usually utilized by commercial service aircraft as a taxiway and exit from Runway 22 on to Taxiway A. Aircraft that utilize Runway 9-27 as an exit are doing so to bypass the hotspot that is present between at the TWY C and TWY G intersection.

Figure 2-2 – EVV Runway Configuration



Source: CHA, 2023.

Table 2-3 – Existing Runway Configuration

Information	Runway 4-22	Runway 18-36	Runway 9-27
Runway Length (feet)	8,021'	6,286'	3,497'
Displaced Threshold (feet)	N/A	N/A/789'	529'/218'
Width (feet)	150'	150'	75'
Runway End Elevation (feet above MSL)	Runway 4: 382.8' Runway 22: 421.9'	Runway 18: 395.6' Runway 36: 382.8'	Runway 9: 381.5' Runway 27: 383.5'
Pavement Type	Asphalt/ Grooved	Asphalt/ Grooved	Asphalt/ Grooved
Pavement Load Bearing	100,000 lbs. (Single) 175,000 lbs. (Double) 300,000 lbs.(Double Tandem)	100,000 lbs. (Single) 175,000 lbs. (Double) 300,000 lbs.(Double Tandem)	30,000 lbs. (Single) 40,000 lbs. (Double) 60,000 lbs.(Double Tandem)
Effective Runway Gradient	0.5%	0.21%	0.07%
Aircraft Approach Category (AAC)	C	C	B
Airplane Design Group	IV	III	I
Runway Design Code (RDC)	C-IV	C-III	B-I-Small

Sources: AirNav.com; FAA Form 5010-1, Airport Master Record-May 2023, CHA, 2023.

2.1.3 Taxiway System

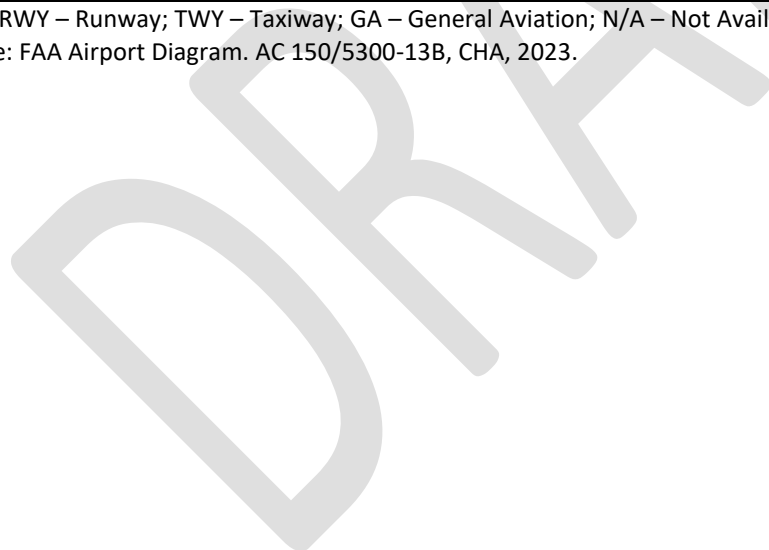
An airport’s taxiway system connects the runways to the terminal area, aircraft parking aprons, storage hangars, and other facilities. The Airport has nine (9) operative taxiways/taxilanes (A, B, C, D, D1, E, F, G, and H). Taxiways A, B, and C each have connector taxiways to provide access for aircraft that are either entering or exiting a runway. Taxiway F and Taxiway connectors T1 and T2 provide access to the terminal. **Table 2-4** provides the characteristics and specifications of each taxiway, and **Figure 2-3** illustrates the Airport’s existing taxiway system. EVV has two FAA-designated hotspots located at the intersection of Taxiway C and Taxiway G (HS1) and at the intersection of Taxiway A and Runway 9-27 (HS2). HS1 is due to the proximity of Runway 18-36 to the West Ramp and HS2 is due to the potential for aircraft not holding short prior to crossing Runway 9-27 on to Taxiway A.

Table 2-4 – Existing Taxiway/Taxilane Specifications

Taxiway/Taxilane	Description	Width (feet)	Airplane Design Group (ADG)	Taxiway Design Group (TDG)	Taxiway Shoulder Width (feet)
A	Parallel to RWY 4-22	75	IV	5	N/A
B	Provides access to RWY 18-36 and connects to TWY F.	75	III	3	N/A
C	Provides access to the West Ramp and RWY 18-36.	75	III	3	N/A

Taxiway/Taxilane	Description	Width (feet)	Airplane Design Group (ADG)	Taxiway Design Group (TDG)	Taxiway Shoulder Width (feet)
D (Taxilane)	Provides access to the Evansville Wartime Museum and GA Hangars. Connects to TWY C and TWY E.	35	II	2B	N/A
D1 (Taxilane)	Used as an exit/entrance on to RWY 9-27	35	II	2B	N/A
E (Taxilane)	Provides access to the T-hangars and connects to Runway 9-27 and TWY D.	45	II	2B	N/A
F	Connects to the terminal apron and TWY B. Provides a TWY crossing through RWY 18-36.	75	III	3	N/A
G	Provides a TWY crossing through RWY 18-36 and RWY 9-27. Also provides access to RWY 4-22.	75	IV	5	N/A
H	Used as an exit from RWY 18-36 on to TWY C.	75	III	3	N/A
T1	Used as an exit from TWY A to Terminal Apron.	100	III	3	N/A
T2	Used as an exit from TWY A to Terminal Apron.	100	III	3	N/A

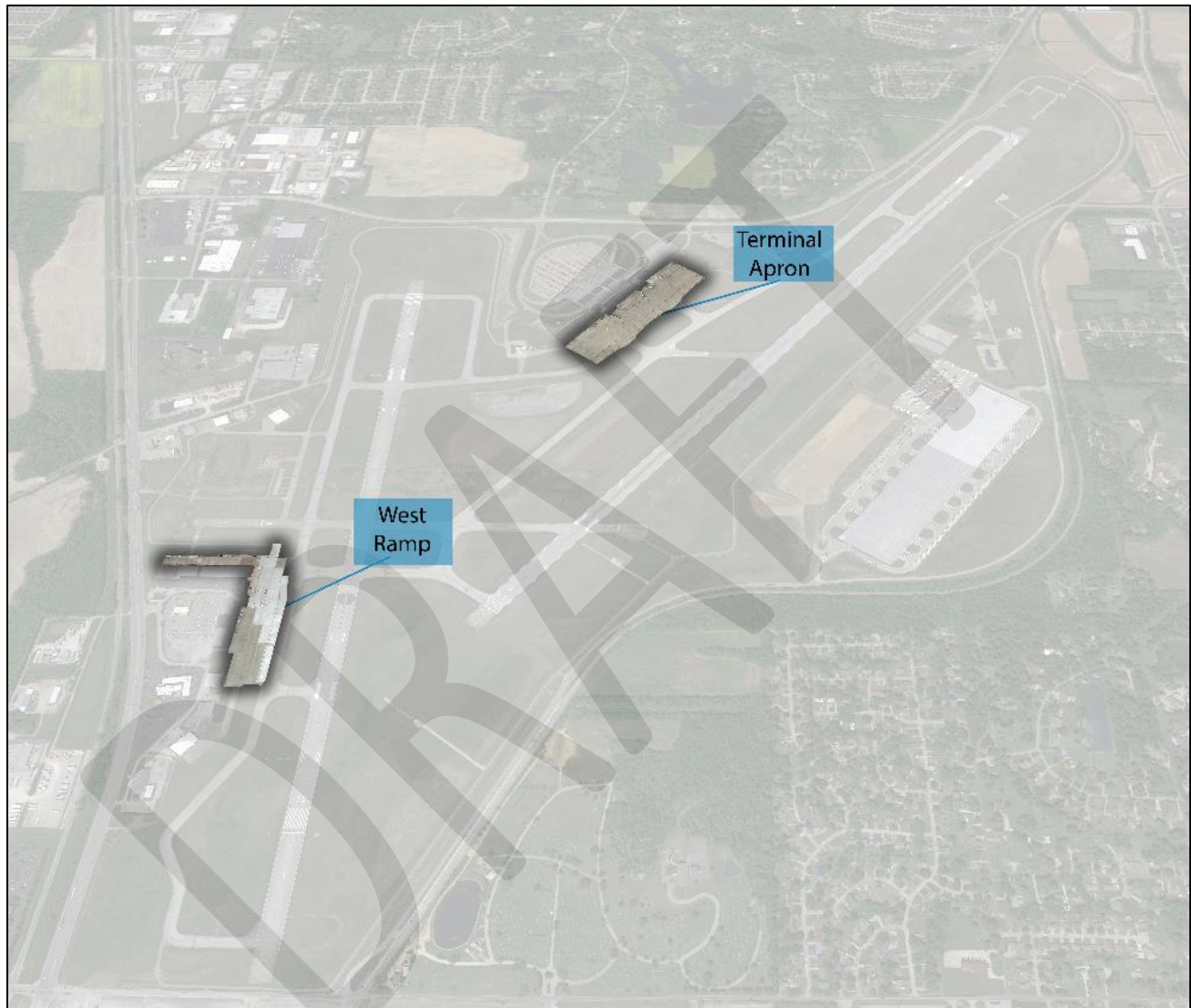
Note: RWY – Runway; TWY – Taxiway; GA – General Aviation; N/A – Not Available.
 Source: FAA Airport Diagram. AC 150/5300-13B, CHA, 2023.



2.1.4 Aircraft Parking Aprons

Airport aprons, also referred to as ‘ramps’, provide space for short-term and long-term aircraft parking and deicing operations, as well the loading/unloading of passengers and goods. The Airport contains two aprons; the West Ramp (used for GA activity), and the Main Terminal Apron depicted in **Figure 2-4** and described in the following paragraphs.

Figure 2-4 – Aircraft Apron Parking



Source: CHA, 2023.

Terminal Apron

The non-movement area of the terminal apron consists of approximately 36,500 square yards of Portland cement concrete (PCC). Terminal apron operations primarily consist of aircraft movement from commercial airline activity associated with the unloading/loading of passengers, cargo, and ground service operations. Located to the east of the terminal building, the terminal apron consists of 9 marked aircraft parking positions, associated with 9 gates: A1 – A4 and B1 – B5. At EVV there is no dedicated Remain Overnight (RON) or aircraft diversion parking areas.

However, the terminal ramp is presently used to accommodate the Airport’s RON and/or diversion parking when a need arises.


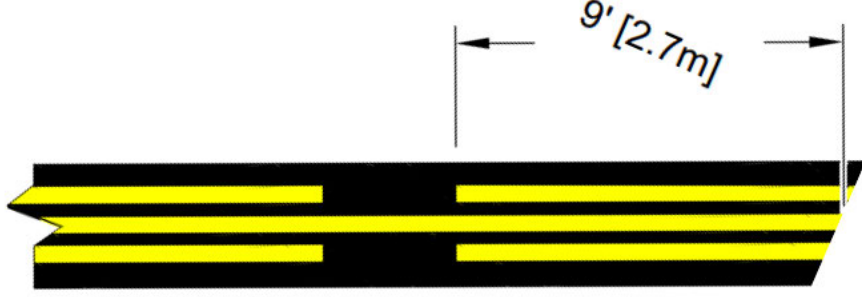
West Ramp

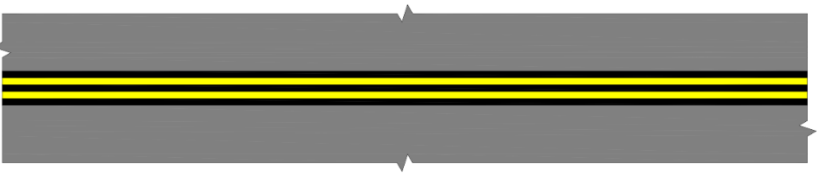
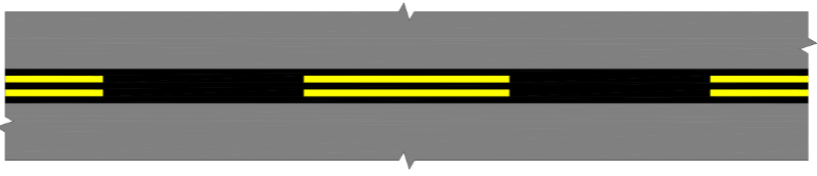
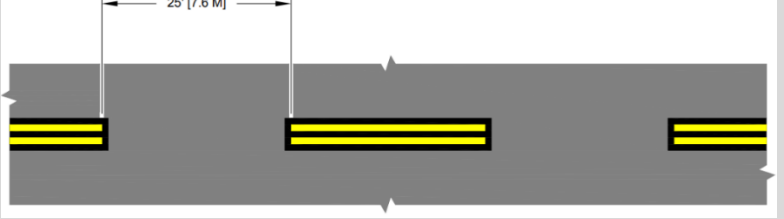
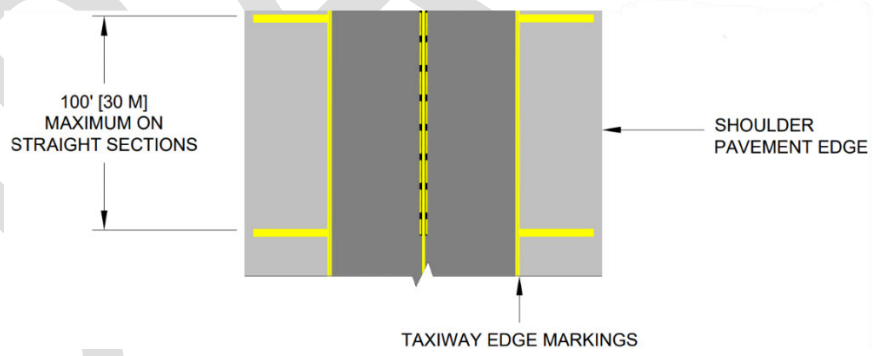
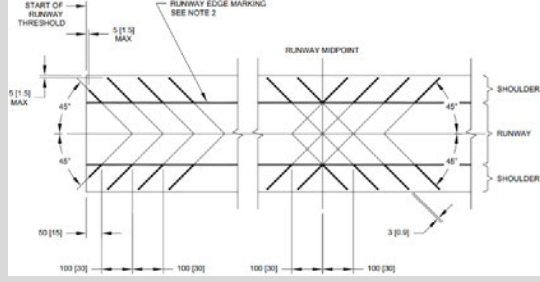
Located on the southwest side of the Airport, in between US 41 and Runway 18-36, the West Ramp accommodates the Airport’s general aviation aircraft activity with aircraft hangars and parking area. This a general aviation apron consists of approximately 36,000 square yards of PCC. The apron operations on the westside include aircraft movement and aviation activity from GA pilots, student-pilots, and any other aircraft classification under rotorcraft or lighter-than-air operations.






2.1.5 Pavement Markings

The FAA’s [Standards for Airport Markings, AC150/5340-1M](#), provides the standards for surface markings used on airfield roadways and airfield pavements, such as runways, taxiways, and aprons, assuming the surfaces are built in accordance with the standard dimensions and layouts set forth in FAA [AC 150/5300-13B, Airport Design](#) (this excludes privately-owned apron areas). These standards apply to all airports certified under [Title 14 CFR Part 139](#), which establishes certification requirements for airports serving scheduled air carrier operations in aircraft configured for more than nine passenger seats and unscheduled passenger-carrying operations of an air carrier operating aircraft configured for at least 31 passenger seats.

Table 2-5 – Standard Taxiway Markings

Type of Marking	Visual Representation of Marking Purpose of Marking
Normal Taxiway Centerline	 <p data-bbox="475 1335 1422 1367">Provides a visual cue to permit taxiing along a designated path</p>
Enhanced Taxiway Centerline	 <p data-bbox="475 1690 1422 1789">Intended to alert pilots of an upcoming runway holding position marking to minimize the potential for runway incursions; Required for Part 139 airport’s taxiways that intersect a runway centerline.</p>

Type of Marking	Visual Representation of Marking Purpose of Marking
Continuous Taxiway Edge Line Marking	 <p>Defines the taxiway edge from shoulder or other abutting paved surface not intended for use by aircraft</p>
Dashed Taxiway Edge Line Marking	 <p>Defines the taxiway edge from adjoining pavement intended for use by aircraft (i.e., parking aprons)</p>
Alternate Outlining Method for Dashed Taxiway Edge Line Marking	 <p>A secondary method to define the taxiway edge from adjoining pavement intended for use by aircraft</p>
Taxiway Shoulder Markings	 <p>Identifies paved shoulders (areas intended to prevent blast and water erosion); not intended for use by aircraft (may not be full-strength pavement)</p>
Runway Shoulder Markings	 <p>Intended to delineate a paved runway shoulder that pilots have mistaken as usable runway.</p>

Type of Marking	Visual Representation of Marking Purpose of Marking
Runway Holding Position	 <p data-bbox="475 457 1429 562">Indicates where aircraft are supposed to remain clear when approaching or departing a runway; Required for all taxiways that intersect a runway at Part 139 airport.</p>
Intermediate Holding Position Marking for Taxiway / Taxiway Intersections	 <p data-bbox="475 718 1429 751">Indicates where aircraft are to be held when approaching an intersecting taxiway</p>
Non-Movement Area	 <p data-bbox="475 919 1429 987">Delineates the movement areas under direct control by air traffic control (ATC) from non-movement areas that are not under ATC control.</p>
Surface Painted Holding Position Signs	 <p data-bbox="475 1171 1429 1270">Provides supplemental visual cues that alert pilots and vehicle drivers of an upcoming holding position location, intended to minimize the potential for runway incursions</p>
Surface Painted Taxiway Direction Signs	 <p data-bbox="475 1402 1429 1575">Provides directional guidance to pilots at taxiway intersections. Black box with yellow letter indicates the taxiway that the aircraft is on, and the yellow box with black letter indicates the approaching taxiway being intersected. These markings are required when it is not possible to provide a taxiway directional sign in accordance with <i>FAA AC 150/5340-18G</i>.</p>

Note: Some taxiway markings may not be present or be required at EVV.

Source: FAA AC 150/5340-1M, Standards for Airport Markings, CHA, 2023.

2.1.6 Airfield Signage

According to [Title 14, CFR Part 139.311, Marking, Signs and Lighting](#), certificated airports, like EVV, must provide and maintain signage systems for their air carrier operations that are authorized by the Administrator and consist of at least the following:








- Signs identifying taxiing routes on the movement area.
- Holding position signs.

- Instrument Landing System (ILS) critical area signs.

The holding position signs, as well as the ILS critical area signs, must be internally illuminated. [FAA AC 150/5340-18G, Standards for Airport Sign Systems](#), provides acceptable means of meeting the requirements pertaining to airfield signage for Part 139 airports, while specifications are contained in [FAA AC 150/5345-44L, Specification for Runway and Taxiway Signs](#). A further description of typical airfield signage is included in **Table 2-6**. See [FAA AC 150/5340-18G, Glossary of sign types](#), for additional sign type descriptions.

Upon visual inspection, lighted airfield signage currently found on the Airport’s airfield consists of all required signage for a Part 139 certificated airport including airfield location/directional signage, mandatory instruction signage, and runway hold position signage. Additional signage may be required to accommodate future improvements or additions to airfield pavements.

Table 2-6 – Airfield Signage

Type of Sign	Sign Visual Description/Example Purpose of Sign
Mandatory Instruction Sign	 Denote taxiways and runway intersections, ILS critical areas, Precision Obstacle Free Zone (POFZ) boundaries, runway approach areas, CAT II/III operations area, military zones, and no entry zones
Runway / Taxiway Location Signs	 Identify the taxiway or runway upon which the aircraft is located
Boundary Sign	 Identify the boundary of the RSA/OFZ or ILS critical are for a pilot wo is exiting a runway
Taxiway Ending Marker	 Indicates that a taxiway does not continue beyond an intersection
Directional Sign	 Indicate directions of other taxiways leading out of an intersection
Destination Sign	 Indicate the direction to a remote location
Runway Distance Remaining Sign	

Provide distance remaining information to pilots during takeoff and landing operations. Number represents how many thousands of feet of usable runway are available.

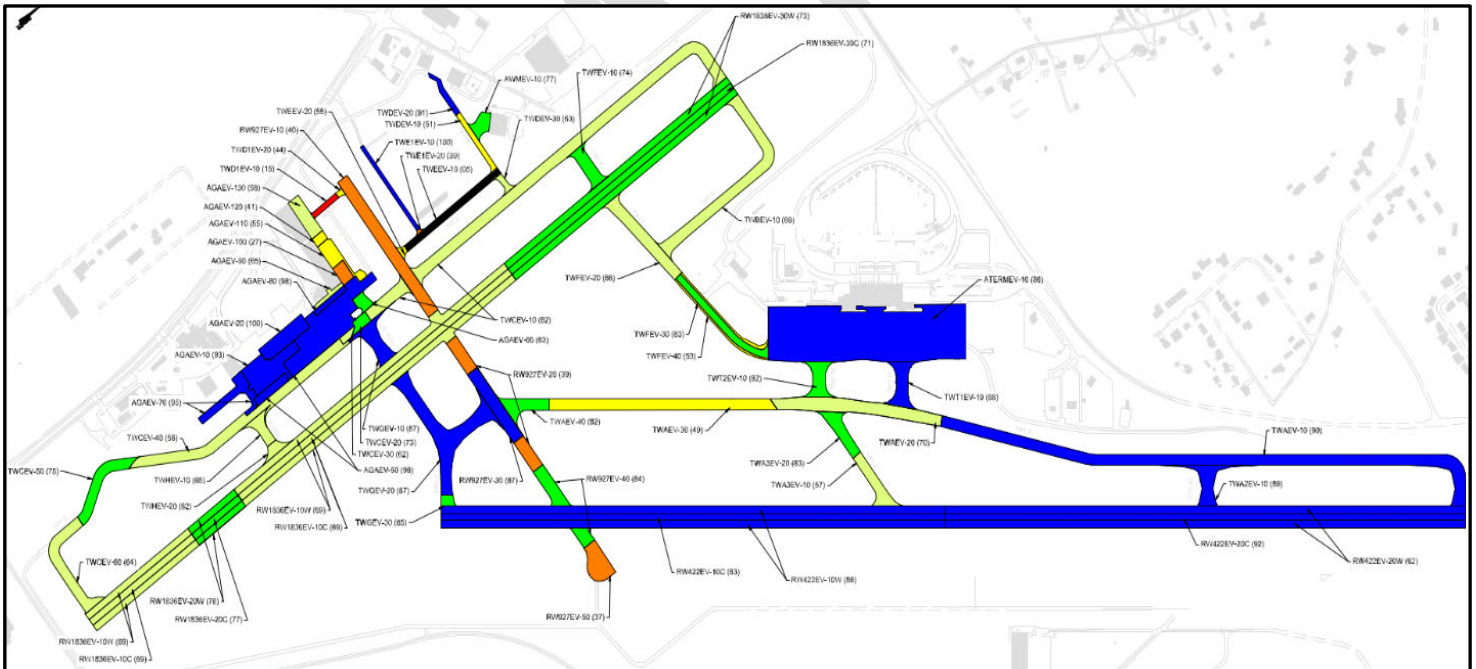
Note: Some airfield markings may not be present or be required at EVV.
Source: FAA AC 150/5340-1M, Standards for Airport Markings, CHA, 2023.

2.1.7 Runway Pavement Condition

The Office of Aviation, organized by the Indiana Department of Transportation (INDOT), conducts surveys of every airport in the state and documents any wear and erosion that is present on aprons, runways, and taxiways. In 2020, Applied Pavement Technology, Inc. (APTech), assessed the conditions of the Evansville Regional Airport using the Pavement Condition Index (PCI) procedure from the FAA. During a PCI inspection, the types, severities, and amounts of distress present on pavement surfaces were quantified. The 2020 review included 5,362,528 square feet of surface analysis. A rating was presented by APTech to INDOT disclosing the PCI ratings of the whole facility. A map of the survey areas is shown in **Figure 2-5**.

The analysis concluded that the overall condition of the pavement is a PCI of 77. Specifically, the Apron areas of EVV were given a PCI of 85, the Runways were given a PCI of 78, and the Taxiways were given a PCI of 72.² The Airport is due to receive an updated PCI in August of 2023.

Figure 2-5 – EVV PCI Ratings



Source: APTech, INDOT, 2020.

² <https://www.in.gov/indot/div/aviation/airport-details/docs/reports/evansville-report-2021.pdf>.

2.2 NAVIGATIONAL AIDS (NAVAIDS) AND INSTRUMENT PROCEDURES

Pilots utilize a variety of navigational aids (NAVAIDs) and instrument procedures, including Very High Frequency (VHF) Omni Directional Range (VORs), standard terminal arrival routes (STARs), instrument approach procedures (IAPs) and NAVAIDs, approach lighting systems (ALS), airfield lighting, and rotating beacons. By providing point-to-point guidance information or position data, NAVAIDs assist pilots in locating airports, land aircraft, taxi aircraft, and depart safely and efficiently from airports during nearly all meteorological conditions. **Table 2-7** summarizes the Airport’s existing IAPs, by runway, and the NAVAIDs that support such.

Table 2-7 – Existing NAVAIDs at EVV

Runway	Runway Markings	Navigational Aids	Lighting	Minimum Ceiling (AGL)/ Visibility	IAP Types
4	Precision	ILS/DME, RNAV (GPS), VOR	HIRL, PAPI-4, REIL	200 ft. / 3/4 mile	ILS or LOC, RNAV (GPS)
22	Precision	ILS/DME, RNAV (GPS)	HIRL, MALSR	200 ft. / 1/2 mile	ILS or LOC, RNAV (GPS)
9	Basic	N/A	MIRL	1,000 ft. / 3 mile	N/A
27	Basic	N/A	MIRL	1,000 ft. / 3 mile	N/A
18	Precision	RNAV (GPS)	HIRL, PAPI-4, REIL	200 ft. / 3/4 mile	RNAV (GPS)
36	Precision	RNAV (GPS)	HIRL, PAPI-4, REIL	200 ft. / 1/2 mile	RNAV (GPS)

Source: FAA Airport Master Record (Form 5010); AirNav; Accessed 2023.

AGL – Above Ground Level

DME – Distance Measuring Equipment

GPS – Global Positioning System

ILS – Instrument Landing System

RNAV – Area Navigation

MALSR – Medium Intensity Approach Lighting

PAPI-4 – Four-Box Precision Approach Path Indicator

MIRL or HIRL – Medium or High Intensity Runway Lights

REIL – Runway End Lights

2.2.1 Enroute NAVAIDs

Enroute NAVAIDs are ground-based and electronically emit signals that are received by aircraft on a specific radio frequency. They are almost always used in some manner by pilots operating on Instrument Flight Rule (IFR) flight plans, but can also be used during Visual Flight Rule (VFR) flights for position information. Runway end 4 is served by circling IAP ‘EVV VOR,’ which relies upon VOR/DME systems and are ground based enroute NAVAIDs.

2.2.2 Standard Terminal Arrival Routes (STARs)

Standard Terminal Arrival Routes (STARs) are preplanned IFR air traffic control arrival procedures that are published for pilot use. STARs serve as a critical form of communication between pilots and air traffic control (ATC) by providing a method and criteria for descent, routing, and communications when navigating to the destination after leaving the enroute structure. The STARs and approach procedures virtually connect to each other in such a way to create a seamless transition. Once a flight crew has accepted a clearance for a STAR, they have communicated with the controller what route, and in some cases what altitude and airspeed, they will fly during the arrival, depending on the type of clearance. Aircraft approaching the Evansville region currently do not have a STAR procedure, however aircraft must always remain in contact with the ATCT.

2.2.3 Instrument Approach Procedures (IAPs)

Based on current FAA classifications, there are four types of instrument approach categories:

- Visual (V) – Approaches performed under VFR only when meteorological conditions include a cloud ceiling height of 1,000 feet or greater and visibility of 3 miles or greater. Runway 9-27 is the only runway at the Airport that operates strictly under this category.
- Non-Precision Approach (NPA) – IAPs providing only lateral guidance with a ceiling minimum of 400 feet above the threshold. These can include VOR, non-directional beacon (NDB), area navigation (RNAV), lateral navigation (LNAV), localizer performance (LP), and localizer (LOC) equipment. All runways at the Airport with the exception of Runway 9-27 have an NPA IAP.
- Approach Procedure with Vertical Guidance (APV) – IAPs providing vertical guidance minimums of 250 feet above the threshold and visibility minimums as low as ¾ mile. These can include an ILS, LNAV/Visual Navigation Aids (VNAV), LP with Vertical Guidance (LPZ) or Area Navigation (RNAV) Required Navigation Performance (RNP). Only Runways 4-22 and 18-36 are equipped with this type of procedure.
- Precision Approach (PA) – IAPs providing vertical guidance less than 250 feet above the threshold and visibility minimums lower than ¾ mile. These can include an ILS, LPV, and Global Navigation Satellite System (GNSS) Landing System (GLS). This category applies to Runways 4 and 22 which both have ILS IAPs.

The precision level of an approach is one component that determines the minimum ceiling and visibility for each runway; other variables may influence the minimums such as obstructions to the approach, buildings, terrain, etc. The NAVAIDs that make up the ground-based equipment required to perform the approach procedures are divided into two categories: precision and non-precision. The NAVAIDs supporting traditional ground-based precision approaches are collectively called an Instrument Landing Systems (ILS). According to FAA Order 6750.16E, Siting Criteria for Instrument Landing Systems, an ILS provides guidance to instrument rated pilots of properly equipped aircraft to assist them in landing safely under conditions of reduced ceilings and lowered visibility. The Airport maintains ILS IAPs for Runways 4 and 22.

Two components of an ILS include: a localizer (LOC) and a glide slope (GS). A localizer is typically situated 1,000 feet past the departure-end of the runway that has an ILS approach and provides lateral positioning guidance to pilots. It utilizes radio frequencies (RF) to transmit signals to aircraft by focusing the RF beam down the centerline of the runway toward the approach end of the runway for approximately 10 miles, focusing within 35 degrees to the left or right of the runway centerline. The GS is located near the runway approach end at a distance from the threshold to provide optimum crossing height, with a preferred offset of 400 feet from the runway centerline. It transmits a signal for approximately 10 nautical miles, with a horizontal coverage of eight degrees on each side of the localizer course, measured from the origin of the glide slope beam. The glide slope must be established between 2.0 and 4.0 degrees and is typically established with a glide path angle of 3.0 degrees.

Additionally, Runways 4-22 and 18-36 are equipped with RNAV, Global Positioning System (GPS) IAPs, based on technology to enable vertically-guided instrument approach procedures with approach capabilities, like ILS approaches, without the need for the traditional ground-based ILS components.

Digital Airport Surveillance Radar (DASR)

The Airport is equipped with a Digital Airport Surveillance Radar-11 (DASR-11) tower which is portrayed in **Figure 2-6** and is located northeast of the Airport’s equipment storage building, in the Airport’s northeast quadrant. The ASR system consists of a primary surveillance radar that is secured to a tower frame and a secondary surveillance radar that is attached to the top of the primary surveillance radar. The primary surveillance radar measures the distance of aircraft in relation to the continuously rotating antenna. The secondary surveillance radar allows transmission of pertinent aircraft data to allow Air Traffic Controllers to verify the location of aircraft within a 60-mile radius, which is especially useful in the case of an aircraft emergency.

Figure 2-6 – EVV DASR-11



Source: Google Earth, 2023.

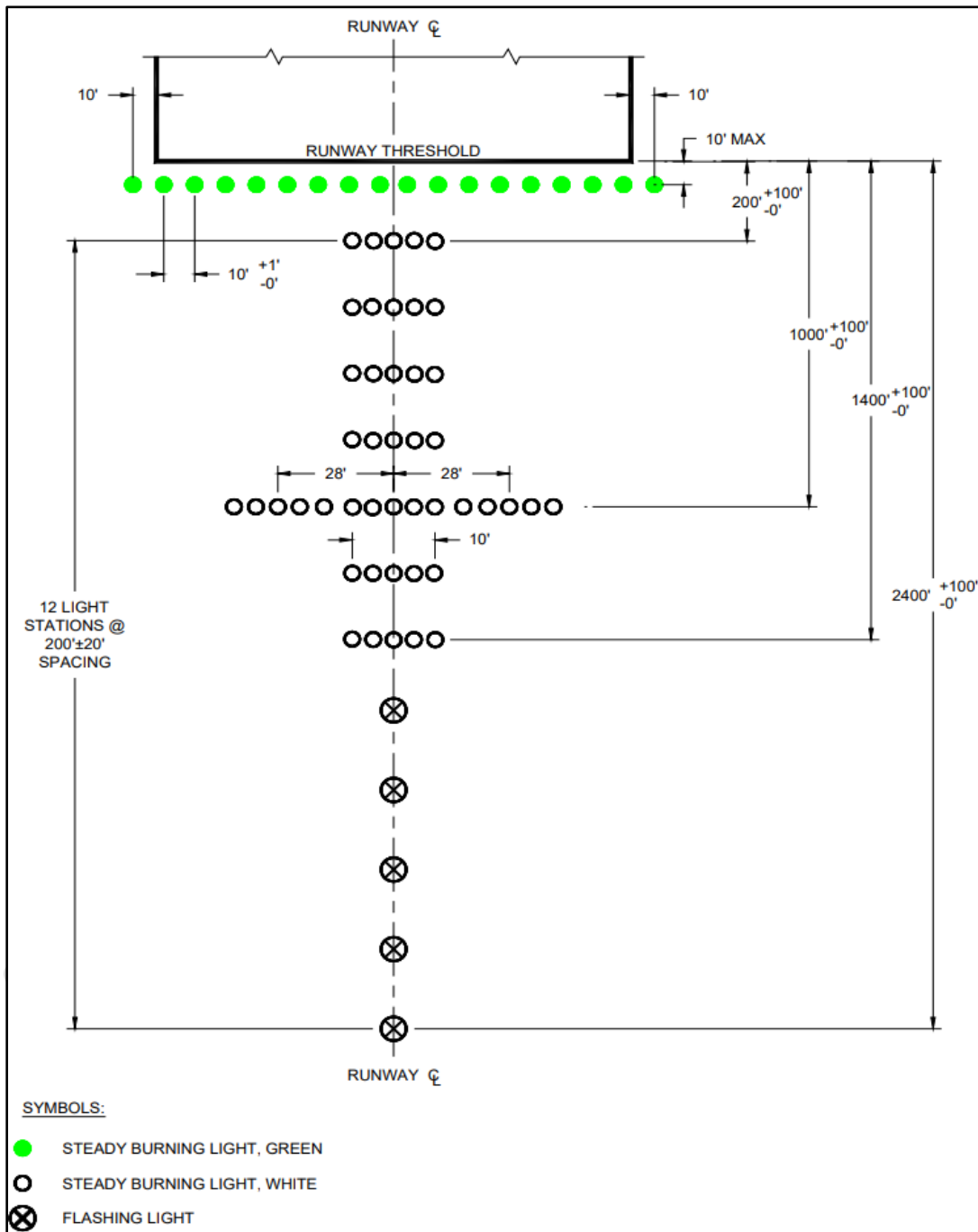
Approach Lighting Systems (ALS)

The third component of an ILS, in addition to the LOC and GS, is the approach lighting system (ALS). The ALS provides a lighted approach path along the extended centerline of the runway. Runway Alignment Indicator Lights (RAILs) flash in sequence as a series of white lights moving toward the runway threshold, which emphasize runway centerline alignment. Roll indication is emphasized by a single row of white lights located on either side of, and symmetrically, along the column of approach lights.

Typically, airports with non-precision approaches utilize Medium Intensity Approach Lighting Systems (MALs), along with RAILSs. Together, these systems form the Medium Intensity Approach Lighting Systems with Runway Alignment Indicator Lights (MALSR) that are utilized for precision runways, such as Runway 22 at EVV.

According to [FAA Order 6850.2C, Visual Guidance Lighting Systems](#), the MALSR consists of a threshold light bar and seven (7) five-light bars located on the extended runway centerline, the first bar being located 200 feet from the runway threshold, with the remaining bars each at 200-foot intervals out to 1,400 feet from the threshold (see **Figure 2-7**). Two additional five-light bars are located on either side of the centerline bar, 1,000 feet from the runway threshold, to form a 66-foot-long crossbar known as a roll bar. The individual lights in all bars are approximately 2½ feet apart and are aimed into the approach to the runway, away from the runway threshold. All lights in the MALSR system are steady burning white, except for the threshold lights, which have green filters. The threshold lights are a green row of lights separated 10-feet apart from each other parallel to the runway threshold.

Figure 2-7 – Typical MALS Configuration



Source: Figure 2-4 of [FAA Order 6850.2C, Visual Guidance Lighting Systems](#)

2.2.4 Standard Instrument Departures (SIDs)

Standard Instrument Departure (SID) routes, also known as departure procedures or SIDs, are published flight procedures followed by aircraft on an IFR flight plan immediately after takeoff from an airport. They provide a simple departure procedure to balance terrain and obstacle avoidance, noise abatement (if necessary), and other airspace management considerations. SIDs are always printed graphically, rather than textually. The Airport does not currently have any SIDs.

2.2.5 Airfield Lighting

In addition to the visual aids previously described, airfield lighting systems include: airport rotating beacon, Precision Approach Path Indicator (PAPI) lights, runway threshold lighting, runway edge lighting, Runway End Identifier Lights (REILs), runway centerline lights, Runway Touchdown Zone Lights (TDZLs), obstruction lighting, taxiway edge lighting, and apron lighting. Each of the lighting systems/types are described in the following paragraphs:

Airport Rotating Beacon

An airport rotating beacon functions as the universal indicator for locating an airport during nighttime operations. For a civilian airport, it has one clear and one green lens located 180 degrees apart and is generally visible within 10 miles of its associated airport. According to the [FAA’s Aeronautical Information Manual \(AIM\), May 2022](#), at Class C airports, the operation of the Airport beacon during daylight hours indicates that ground visibility is less than three miles, and/or the ceiling is less than 1,000 feet. The Airport’s rotating beacon is located adjacent to the airport equipment storage building as shown in **Figure 2-8**. The Airport is currently in discussions to potentially relocate the Airport Rotating Beacon.

Figure 2-8 – EVV Rotating Beacon



Source: Google Earth, 2023.

Precision Approach Path Indicator (PAPI) Lights

A PAPI is a system of lights located near a runway end. It provides pilots with visual glide slope guidance information during an approach to the runway. PAPIs typically have an effective visual range of at least three miles during the day and up to 20 miles at night and inform pilots if they are high, low, or on the correct approach descent path for the threshold. Runway ends 4, 18, and 36 are equipped with PAPI-4 (four-light unit) systems.

Runway Threshold Lighting

Runway threshold lighting consists of green lights outward from the runway and red lights toward the runway. The green lights indicate the landing threshold to arriving pilots, whereas the red lights indicate the end of the runway for departing aircraft. The red and green lights are usually combined into a single fixture and special lenses, or filters are used to emit the desired light in the appropriate direction. All runway ends contain runway threshold lights.

Runway Edge Lighting

Runway edge lights are white and used to outline the edges of a runway during periods of darkness or reduced visibility. Runway edge lights are positioned parallel to the runway centerline at least two feet from the edge of the full-strength pavement designated for runways not used by jet aircraft and 10 feet from the edge of the full-strength pavement designated for runways used by jet aircraft. The spacing of the light units must not exceed 200 feet. These systems are classified according to their intensity, or brightness: High-Intensity Runway Lights (HIRLs), Medium Intensity Runway Lights (MIRLs), and Low-Intensity Runway Lights (LIRLs). Some

airports utilize a pilot-controlled system where the light intensity can be changed, or stepped up or down, by clicking a button located on the radio system inside of the aircraft. Runway 4-22 and Runway 18-36 are equipped with HIRLs, while Runway 9-27 is equipped with MIRLs.

Runway End Identifier Lights (REILs)

The primary function of runway end identifier lights (REILs) is to provide rapid and positive identification of a runway end. REILs consist of two synchronized, unidirectional flashing white lights that are positioned on each corner of the runway landing threshold, facing the approach area and aimed at an angle of 10 to 15 degrees. Runways 4, 18, and 36 are equipped with REILs.

Runway Centerline Lights

Runway centerline lights are required for Category (CAT) II and III precision approach runways, as well as CAT I approaches, where the Runway Visual Range (RVR) is less than 2,400 feet. The lighting system consists of embedded lights located along the centerline equally spaced by 50 feet of longitudinal intervals. They are white, except for the last 3,000 feet; from 3,000 to 1,000 feet, the centerline lights consist of alternating red and white lights, and the last 1,000 feet are all red. Currently, none of the Airport's runways are equipped with runway centerline lights.

Runway Touchdown Zone Lights (TDZL)

Runway touchdown zone lights (TDZLs) indicate the touchdown zone when landing under adverse visibility conditions. They consist of two rows of transverse light bars disposed symmetrically about the runway centerline. The system consists of steady-burning white lights beginning 100 feet beyond the landing threshold and extend to 3,000 feet beyond the landing threshold or to the midpoint of the runway, whichever is less. Runways 4-22 and Runway 18-36 have touchdown point markings, however they are not equipped with TDZLs.

Taxiway Edge Lighting

Taxiway lighting delineates the taxiway's edge and provides guidance to pilots during periods of low visibility and at night. The most common type of taxiway lighting is a series of blue fixtures, which are sometimes supplemented by blue edge reflectors, set at 200-foot intervals along taxiway edges, but not more than 10 feet outward from the edge of the full-strength pavement. The Airport's taxiways are each equipped with Medium Intensity Taxiway Lighting (MITLs) systems except for Taxilane E, which is equipped with blue reflectors.

2.3 TERMINAL FACILITY

An assessment of the Airport’s terminal was completed based on site visits and tenant interviews. The intention of this effort is to develop a general understanding of the existing terminal facility, as seen in **Figure 2-10**.

Tenants Interviewed:

- Allegiant Air
- American Airlines
- Delta Air Lines
- Breeze Airways
- Enterprise/Alamo/National Car Rental
- Transportation Security Administration (TSA)

2.3.1 Terminal Facility Layout

The Airport’s terminal is divided into 2 levels, the upper level is used for landside access to the terminal, passenger processing (i.e., ticketing, security screening, baggage claim, holdrooms, aircraft boarding etc.) and airport administrative offices. The lower level is reserved for equipment storage, general storage, and baggage processing, this level is restricted to the public and limited to airport employees and TSA personnel only. The main entrance lobby also provides passenger amenities such as kiosks and a concierge desk as seen in **Figure 2-9**.

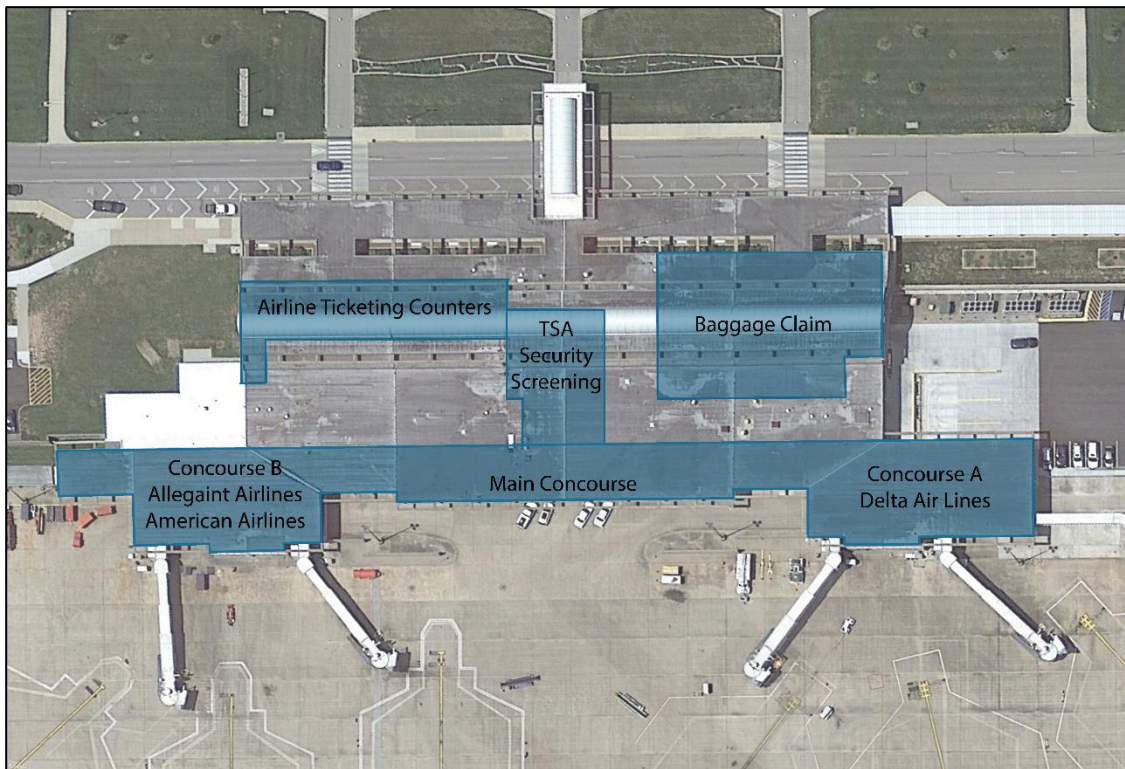
The main entrance to the Airport is where guests can inquire about tickets, rental cars, and proceed through TSA. The main lobby has ample resting areas and easily accessible restrooms. After proceeding through security screening checkpoints, passengers can access the business lounge, restaurant, additional restrooms, and children’s play area. Beyond these features are the gates, holdrooms, and airline counters.

Figure 2-9 – Main Lobby Kiosk and Information Desk



Source: EVV Site Visit, CHA, 2023.

Figure 2-10 – EVV Terminal Map

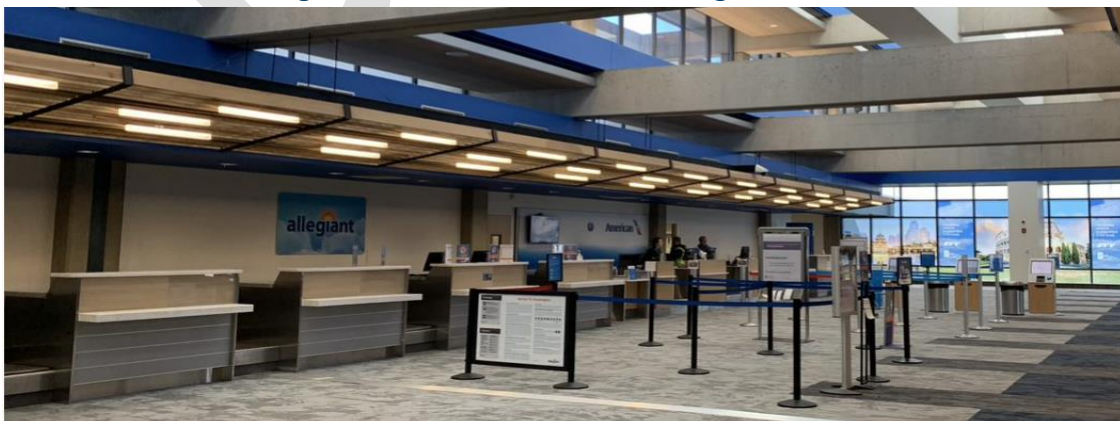


Source: CHA, 2023.

2.3.2 Airline Ticketing Lobby

The Airport’s airline ticketing lobby is located on the upper level of the terminal and serves as the primary space for departing passengers to check-in for departing flights, obtain boarding passes, and drop off baggage to be checked and screened prior to enplaning. The Ticketing Area of the lobby accommodates ten airline counters with baggage weighing stations; however Allegiant Air, American Airlines, and Delta Air Lines only use two airline ticket counters each. In addition, American Airlines and Delta Air Lines also provide self-service kiosks for passengers to check-in. A small lounge area for employees and office supplies storage is also present in the airline ticket lobby area.

Figure 2-11 – EVV Airline Ticketing Counters



Source: EVV Site Visit, CHA, 2023.

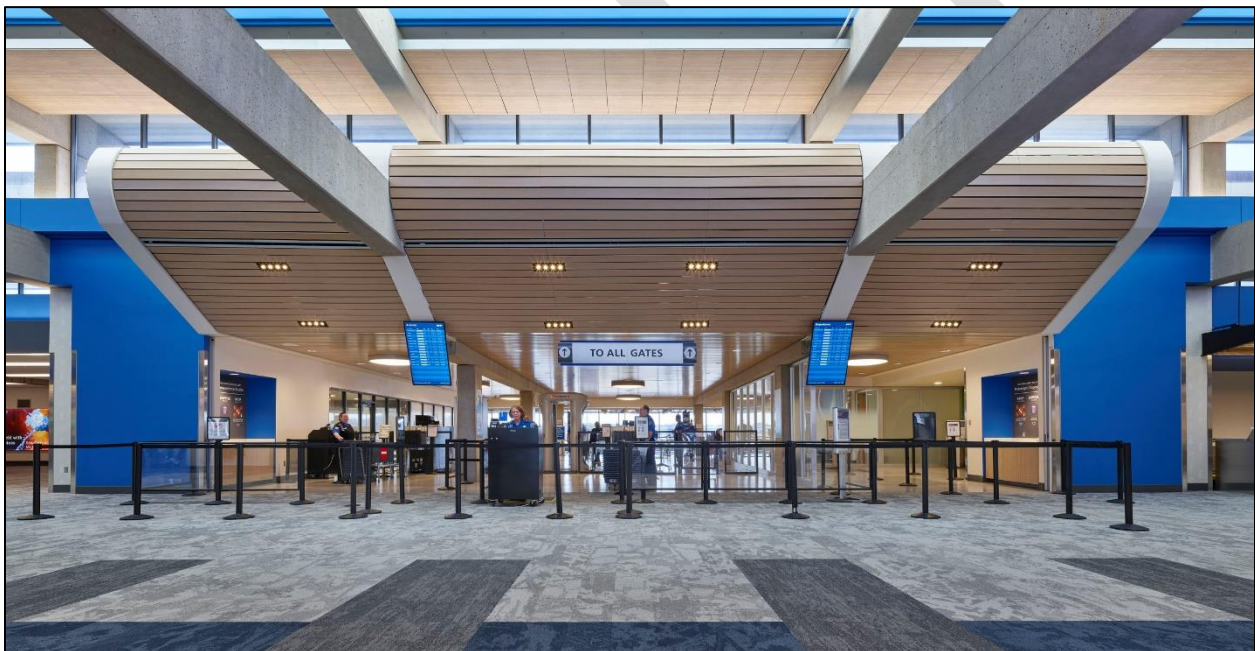
2.3.3 Checked Baggage Screening

To accommodate federally mandated requirements, all checked baggage must be screened by one of the two Explosive Detection System (EDS) machines which are owned and operated by the TSA. The in-line checked baggage processing system begins behind the airline counters on fixed belt loaders which automatically transport the luggage downward to the lower level for screening by TSA personnel. After being screened through the EDS machines, the airline personnel load bags onto luggage carts to be tugged out to their respective aircraft.

2.3.4 Passenger Security Screening

The Airport has a single centralized TSA passenger screening checkpoint that serves both Concourses A and B, as portrayed in **Figure 2-12**. Prior to accessing either concourse, all enplaning passengers must pass through the TSA security screening checkpoint (SSCP). The checkpoint has up to two pre-screening stands where passengers have their travel documents verified prior to proceeding through the SSCP. TSA pre-check passengers and employees/crews have separate lanes at the checkpoint that offer expedited access to one of the pre-screening stands.

Figure 2-12 – TSA Screening Entrance



Source: EVV Site Visit, CHA, 2023.

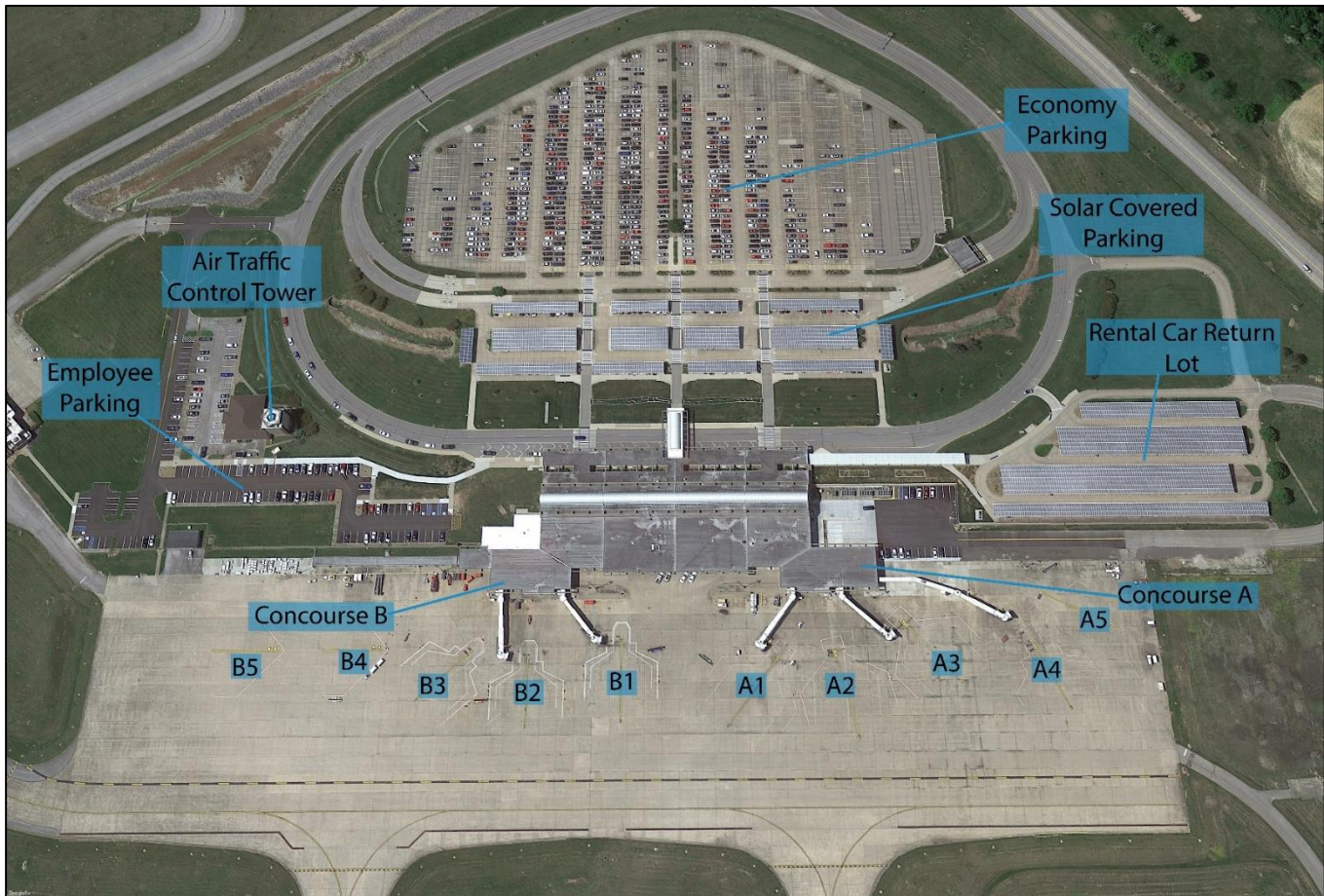
2.3.5 Airline Gates and Holdrooms

The Airport currently has ten (10) air carrier gates available to commercial service airlines, five (5) are served by passenger boarding bridge (PBB) and five (5) via ground boarding as shown on **Figure 2-13**. The existing gates are dispersed in two different concourses, A and B. Concourse A contains five gates of which two are utilized by Delta Air Lines (A1 and A3), three served by PBB's and two ground boarding position (A2 and A5). Gates A2, A4, and A5 are currently vacant. Concourse B contains five (5) gates, and they are currently utilized by American (B1 and B3), Allegiant (B4 – B5), and B2 is vacant. PBB's are available in Concourse B at B1 and B3 used by American Airlines. Gates B2, B4, and B5 are ground boarding positions. Allegiant passengers

utilize the holdrooms associated with Gates B1 – B3 prior to boarding their flight. **Figure 2-14** portrays the Concourse A and B holdrooms as they extend along the terminal.

As needed, both concourses offer a passenger bridge that can be shifted to additional positions as needed. Concourse A Gate A1 passenger bridge can be moved to accommodate positions at A2. Moreover, a similar movement is available on Concourse B where the B2 passenger bridge can extend to accommodate B3.

Figure 2-13 – EVV Main Terminal Gate Layout



Source: CHA, 2023

Figure 2-14 – Concourse A and B Holdrooms



Source: EVV Site Visit, CHA, 2023.

2.3.6 Baggage Claim

The lower level of the terminal adjacent to the terminal apron is used for inbound baggage processing of checked bags and general luggage to be retrieved by passengers at the baggage claim carousels as shown on **Figure 2-15**. Arriving passengers exit the sterile area through an exit adjacent to the security screening checkpoint and turn right to arrive at the baggage claim area across from the rental car counters to retrieve their bags. Currently, there are two baggage claim carrousel. The carousels are identified numerically: Carousel 1 and Carousel 2.

Figure 2-15 – Baggage Transport and Baggage Claim Area



Source: EVV Site Visit, CHA, 2023.

2.3.7 Passenger Amenities

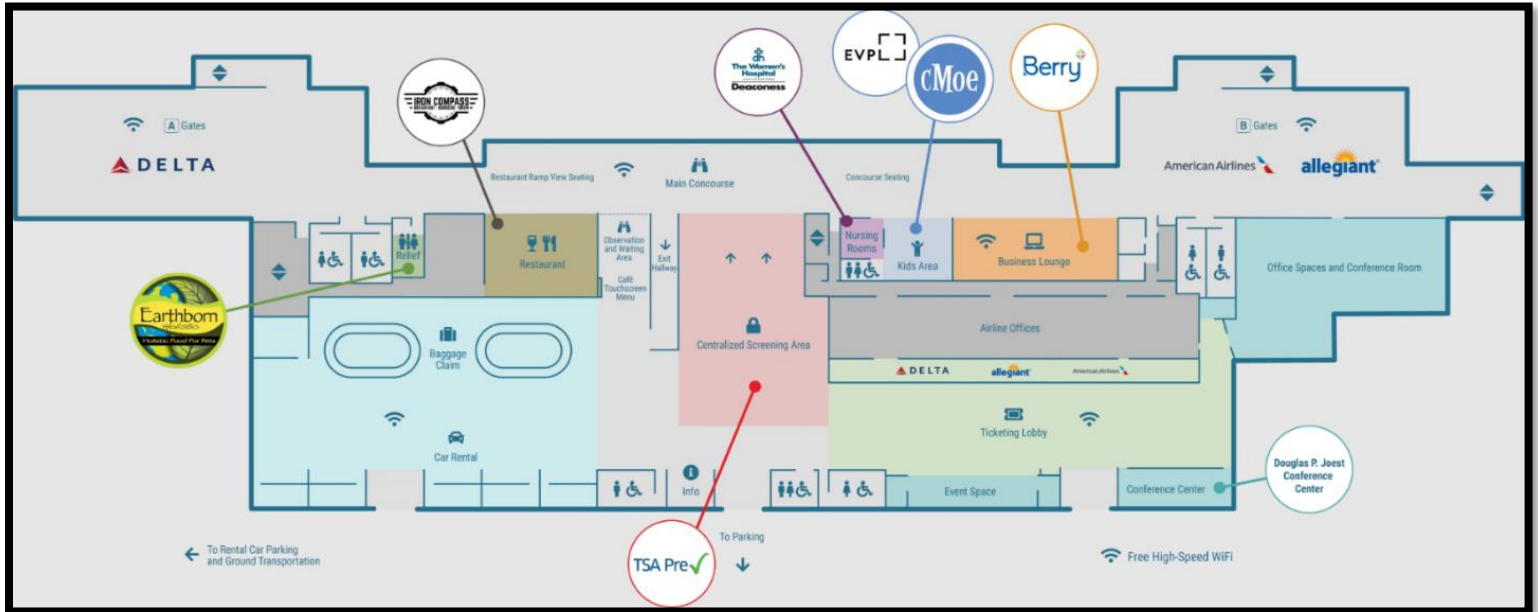
Concessionaires at an airport provide travelers and visitors in the sterile and non-sterile/non-secured areas, with amenities such as restaurants/food vendors, newsstands, and gift shops. The concessionaire spaces at EVV include the Iron Compass restaurant in the main terminal lobby once through the security checkpoint, which provides food, drinks, and grab and go snacks. Other amenities provided to passengers include a children’s play area, a business lounge (sponsored by Berry Global, Inc.), nursing room, and pet relief area.

Concessions

The Airport has one concessionaire, Iron Cross restaurant, which is located post-security adjacent to Concourse A. The Iron Cross provides passengers with food and beverage service, grab and go

snacks, and a gift shop. In addition, the Airport does have food and beverage vending machines pre-security in the meter and greeter waiting area.

Figure 2-16 – EVV Terminal Layout and Amenities



Source: Evansville Regional Airport (EVV), 2023.

Figure 2-17 – EVV Business Lounge and Children’s Play Area



Source: CHA Site Visit, 2023.

2.3.8 Airport Administrative Areas

During the renovation of the terminal, the Airport added administrative space to the upper level of the terminal through a building extension. Airport employees have access to the airport administration office space via the upper level of the terminal adjacent to the ticketing area. The administrative offices include office space, conference rooms, break rooms, and restroom facilities. In addition to the administrative office spaces on the upper level, the airport also has office space, breakrooms, and storage space at the lower level of the terminal predominantly used by custodial and maintenance personnel.

2.3.9 Back Office Space

The Airport’s terminal tenants, such as airlines, concessionaires, and rental car providers, each utilize back-office space within the terminal. Airline and concessionaire storage space is located in the secured areas of the terminal. Airline office space is located behind the ticket counters and provide airline employees office and breakroom space. Rental car offices are in the non-secured area of the terminal behind the rental car counters. TSA Administration office space is located on the terminal’s upper and lower levels. Only employees have access to their corresponding company’s back-office space. Airport tenant storage space is also provided in the lower level of the terminal.

2.3.10 Terminal Signage and Wayfinding

A main contributor to customer and passenger satisfaction is effective wayfinding. Therefore, the terminal’s signs and wayfinding should be clear, concise, and intuitive. Effective wayfinding systems create a sense of comfort and security. However, an abundance of signage and information can create confusion. Airport wayfinding systems include: directional signs, identification signs, informational signs, and regulatory signs. Signage and wayfinding regarding vehicular circulation and parking is discussed later in this chapter.

Once inside the terminal, signage increases to include information pertaining to it, as well as its relative functions. Enplaning passengers utilize signage to locate the airline ticketing counters, airport security, and their gate departure areas. Signage also depicts directions and information for various concessions and amenities including food and beverage providers, technology charging stations, ATM machines, conference centers, restrooms, etc. The terminal’s signage also includes regulatory information depicting prohibited areas. Deplaning passengers utilize airport signage in the terminal to locate their gate or to exit the concourse for baggage claim or ground transportation.

2.4 PARKING AND ACCESS

This section details the Airport’s existing vehicular parking facilities inventory, as well as the existing traffic conditions along the terminal’s curbside, according to previous airport studies and public data sources.

2.4.1 Roadway Access to Terminal

The Airport property is bordered by US Highway 41 and State Road 57 along the west and northern property boundary. The bordering highways have direct access roads that pose as the remaining property borders: Ossenber Lane and St. George along the southeast; and Ossenburg Lane access ends as a railed train track cuts off any further direct access. Along the fence line of the boundary roads there are several gates that allow for private, security-clearance entry. The public can gain access to the Airport terminal and rental car facilities via Bussing Drive on State Road 57; or, Flightline Drive on U.S. Highway 41. **Figure 2-18** depicts the Airport’s access roads. Once on Bussing Drive, passengers can access long term parking, short term parking, passenger pick-up and drop-off, and car rental pick-up and return. The access point along U.S. Highway 41 primarily serves the general aviation area.

Figure 2-18 - Airport Access Roads



Source: CHA, 2023.

2.4.2 Public Parking

EVV offers affordable parking options to passengers via an economy and a solar-covered parking lot. Both parking lots are located adjacent to the terminal providing convenient access to passengers. These lots offer a discounted price for the short-term parking. The solar-covered parking lot provides covered parking for vehicles while also benefiting the Airport by supplying up to 50 percent of the terminal’s power. Parking rates, mentioned generally in **Table 2-8**, for the solar-covered parking lot is \$17 per day with a maximum weekly rate of \$85. The economy lot is uncovered, but provides a lower parking rate at \$8 per day with a maximum weekly rate of \$40. The Airport’s solar-covered lot is depicted in **Figure 2-19**.

Rates	Economy Lot	Solar Covered Lot
First 4 Hours	Free	Free
Each Additional Hour	\$1.00	\$2.00
Maximum Daily Rate	\$8.00	\$17.00
Maximum Weekly Rate	\$40.00	\$85.00

Source: Evansville Regional Airport, 2023.

2.4.3 Additional Parking Functions

In addition to public parking locations, the Airport provides parking to employees, and rental car companies. A cell phone waiting area is also available along Bussing Drive prior to the terminal curb front. This lot enables patrons to park free of charge while waiting to pick up arriving passengers. This solar panel covered lot is the largest-sized solar parking canopy installation in the Midwest and the second largest in the U.S.

Figure 2-19 – EVV Solar-Covered Lot

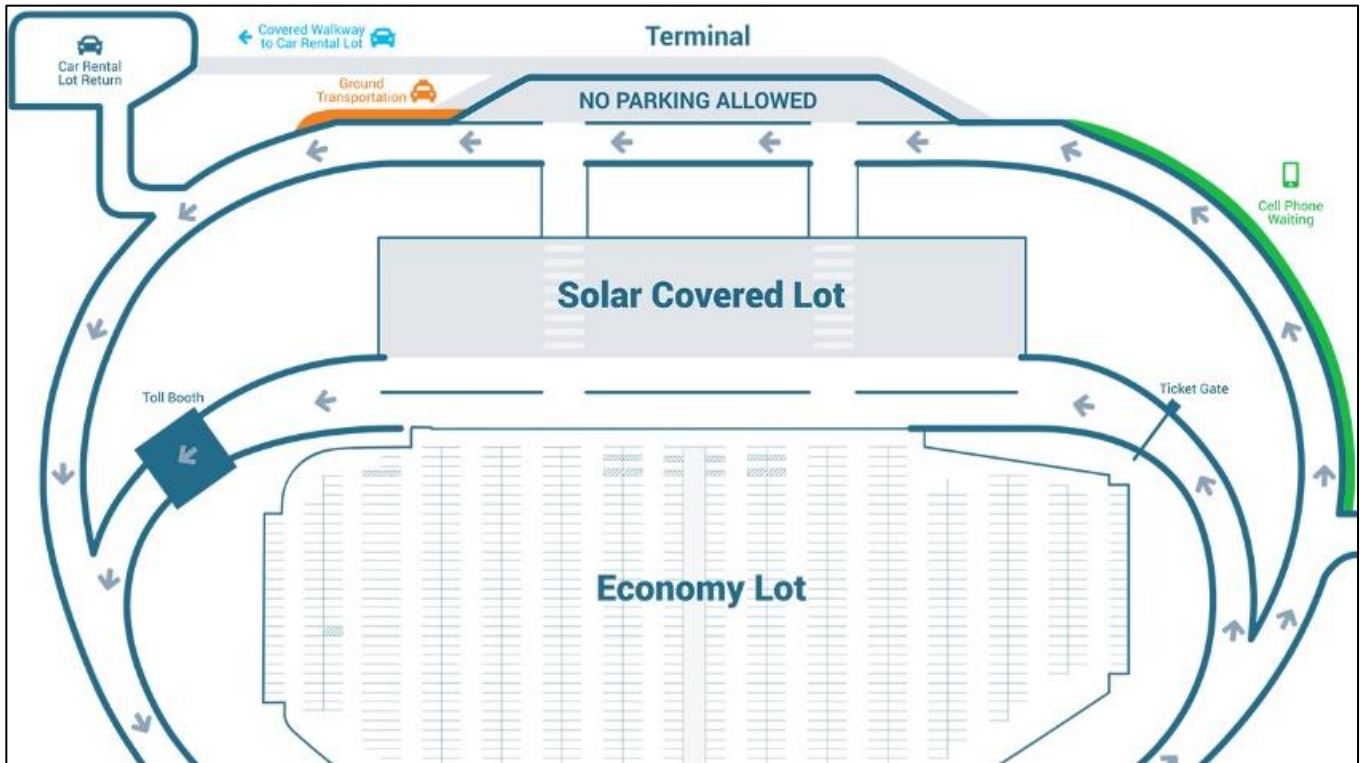


Source: Evansville Regional Airport, 2023.

2.4.4 Curb Front Traffic

Bussing Drive is the main road that passes by the Airport’s Terminal and connects to parking, the cell phone waiting area, passenger pickup and drop off, ground transportation area, and rental car return. Bussing Drive has an active lane that is available to passengers’ loading/unloading luggage, maneuvering lane, and two pass-through lanes. The curb front access areas are portrayed in **Figure 2-20**.

Figure 2-20 – EVV Curb Front and Parking Areas



Source: Evansville Regional Airport, 2023.

2.4.5 Rental Car Services

The Airport's rental car service counters are adjacent to the baggage claim area on the westside of the terminal. The Airport's rental car services provide pick-up and drop-off locations for rental cars via a solar-covered lot. The authorized rental companies consist of Alamo, AVIS, Budget, Enterprise, and National.

2.5 SUPPORT FACILITIES

Support facilities provide essential functions that are related to airport operations and include facilities such as the Airport Traffic Control Tower (ATCT), aircraft fueling, Aircraft Rescue and Fire Fighting (ARFF), airport equipment maintenance and storage, and snow and ice removal. Details of each are provided in the following sections.

2.5.1 Airport Traffic Control Tower (ATCT)

The FAA maintains an ATCT facility at the Airport, depicted in **Figure 2-21** which is located south of the terminal building. The ATCT is operated year-round, from 06:00 through 23:00 daily. When the ATCT is not available, pilots should communicate with Indianapolis ATCT. Pilots can communicate with the ATCT, known as ‘Evansville Tower’, via frequency 118.7, 257.8, or with ground control, ‘Evansville Ground,’ via frequency 121.9.

Figure 2-21 – Air Traffic Control Tower



Source: CHA Site Visit, 2023

2.5.2 Aircraft Fueling

The Airport’s fueling facility consists of an underground fuel farm that is owned and operated by Tri-State Aero, located on the Westside Development Area on Tri-State Aero’s leasehold. Tri-State Aero performs both commercial and general aviation fueling at the Airport. All commercial aircraft receive fuel at the Airport, and no carriers are known to transport fuel onboard from the airport of origin. For commercial operations, airlines contact Tri-State Aero and then fuel is trucked to the terminal apron to fuel aircraft. The fuel farm consists of four (4) underground fuel tanks and one (1) above ground waste oil tank which are detailed in **Table 2-9**.

Table 2-9 – Tri-State Aero Fuel Tanks

Tank	Product	Volume
1	Jet-A	20,000-gal
2	Jet-A	20,000-gal
3	Avgas	10,000-gal
4	Avgas	10,000-gal
5	Waste Oil	2,000-gal

Source: Tri-State Aero, 2023.

2.5.3 Aircraft Rescue and Fire Fighting (ARFF)

ARFF vehicles are available to provide an important service to the commercial and private users of the Airport and the passengers that they transport. The Airport is reliant on fire and rescue services during aircraft emergencies. These services include fire containment and suppression, airframe and cargo preservation, and passenger and crew rescue. They must be designed to perform certain tasks, constructed for longevity, and must be designed to fit the Airport’s specific needs. The Airport’s ARFF vehicle fleet inventory is provided in **Table 2-10**, a supporting image of

an ARFF vehicle in **Figure 2-23**, and the ARFF building is depicted in **Figure 2-22**, courtesy of the local news, WFIE.

Within three minutes from the initial alarm, a minimum of one required ARFF vehicle must be able to reach the midpoint of the furthest runway serving air carrier aircraft from its assigned post or must reach any other specified point of comparable distance on the movement area that is available to air carriers and begin

Figure 2-22 – EVV ARFF Facility Safety Drill



application of the extinguishing agent. Within four minutes from the initial alarm, all other required vehicles must be able to reach the previously stated location(s) and begin application of extinguishing agents. The Airport has one ARFF facility that is located to the south of the ATCT and terminal building. The location of the ARFF facility allows firefighting equipment to access any airfield pavement within the required time established by Federal regulations.

Table 2-10 – ARFF Vehicle Fleet Inventory

Year	Make	Model	Extinguishing Agent Capacities		
			Water	AFFF	PKP Dry Chemical
1996	Oshkosh	T-1500	1,500 gallons	200 gallons	500 pounds
2006	Oshkosh	Striker 1500	1,500 gallons	210 gallons	500 pounds
2022	Rosenbauer	Panther 4x4	1,600 gallons	200 gallons	500 pounds

Source: Evansville Regional Airport (EVV), 2023.

Figure 2-23 – EVV Rosenbauer Panther 4x4



Source: Rosenbauer America, 2023.

The document used to determine an airport’s ARFF index is [Title 14 CFR Part 139.315, Aircraft Rescue and Firefighting: Index Determination](#). Per that regulation, the Airport is assigned an ARFF Index B with D capabilities, with air carrier aircraft length at least 90 feet but less than 126 feet

in length. The requirements for ARFF vehicles to transport a specific quantity and type of firefighting agents are established by [Title 14 CFR Part 139.317, Airport Rescue and firefighting: Equipment and Agents](#). According to the criteria in that document, the Airport’s ARFF are required to provide either of the following:

- (1) One vehicle – carrying at least 500 pounds of sodium-based dry chemical, halon 1211, or clean agent and 1,500 gallons of water and the commensurate quantity of AFFF for foam production.
- (2) Two vehicles –
 - (i) One vehicle carrying the extinguishing agents as specified in paragraphs (a)(1) or (a)(2) of this section; and
 - (ii) One vehicle carrying an amount of water and the commensurate quantity of AFFF so the total quantity of water for foam production carried by both vehicles is at least 1,500 gallons

The resources and equipment at EVV can meet the requirement of that in an ARFF Index D rating.

2.5.4 Airport Maintenance and Equipment Storage

The Airport’s maintenance and equipment storage area is primarily located at the northwest quadrant of the Airport near the DASR. The site consists of two fully-enclosed, warehouse style structures with multiple bays with a combined space of approximately 21,000 square feet. Additional airport equipment storage takes place on the first floor of the terminal. The existing airport maintenance and equipment storage facilities are depicted in **Figure 2-24**. In addition, the Airport is currently constructing a Snow Removal Equipment Storage (SRE) and maintenance facility, which will be approximately 43,000 square feet adjacent to the terminal as depicted in **Figure 2-25**.

Figure 2-24 – Airport Maintenance and Equipment Storage Facilities



Source: Google Earth Pro, 2023.

Figure 2-25 – New Airport SRE and Maintenance Facility



Source: CHA, 2023.

According to [Title 14 Code of Federal Regulations \(CFR\) Part 139.313, Snow and Ice Control](#), each Part 139 airport located where snow and icing conditions occur must prepare, maintain, and carry out a snow and ice control plan. The Airport’s snow and ice control plan was updated in 2017. The Airport’s snow and ice control vehicle fleet inventory is provided in **Table 2-11**.

Table 2-11 – Airport Snow & Ice Control Vehicle Fleet Inventory

Vehicle	Year	Type	Usage
EVAAD 13	1998	Oshkosh Sweepster	Broom/Blower
EVAAD 14	2002	Chevrolet C8500	Dump Truck
EVAAD 15	1998	GMC C8500	Dump Truck
EVAAD 16	2007	Chevrolet C7500	Dump Truck
EVAAD 18	2000	GMC C8500	Dump Truck
EVAAD 19	2016	Kodiak Broom/Blower	Broom/Blower
EVAAD 22	2004	Chevrolet C7500	Dump Truck
EVAAD 53	2003	Batts De-Icer	De-Icer

Source: Evansville Regional Airport (EVV), 2023.

2.5.5 Aircraft Maintenance

Tri-State Aero, the Airport’s full-service FBO has one box hangar dedicated to aircraft maintenance and repair. **Figure 2-26** presents a picture of Tri-State Aero’s FAA-authorized repair and maintenance hangar. The services provided there include avionics installations, inspections, and repairs. Other service abilities provided there include aircraft annual/100-hour inspections, maintenance tracking, upgrading, installation, troubleshooting, and repair.

Figure 2-26 – Tri-State Aero Maintenance Hangar



Source: Tri-State Aero, 2023.

2.5.6 Aircraft Deicing

Aircraft deicing activity at the Airport is performed by the airlines with storage located between the commuter walkway and the lighting vault. No designated deicing areas exist at the Airport; however, aircraft are required to be away from passenger boarding bridges.

2.6 GENERAL AVIATION (GA) FACILITIES AND ACTIVITIES

General Aviation (GA) functions and activities at the Airport occur at the Westside Development Area on the West Ramp to the west of Taxiway C. The Westside Development Area is the location of the Airport’s only fixed-base operator (FBO), Tri-State Aero. Tri-State Aero’s leasehold on the West Ramp includes an FBO terminal, fuel farm, multiple hangars for aircraft storage, flight school, and aircraft maintenance and repair services.

2.6.1 Fixed-Base Operator (FBO)

As previously mentioned, Tri-State Aero is the Airport’s FBO, providing aviation services and amenities to the Airport’s GA users and pilots. The secondary terminal includes a pilot lounge, passenger lounge, and conference room. The services that are offered 24 hours per day include AVGas and Jet-A fueling, hangar and tie-down space, and corporate aircraft catering. The GA terminal also offers on-site rental car service. In addition, the Airport has just accepted a bid to construct a brand-new GA terminal for the Airport that will replace the existing terminal building as shown in **Figure 2-27**. Once complete, the GA terminal will be approximately 11,000 square feet.

Figure 2-27 – Airport New FBO Facility



Source: Hafer Design, 2023.

2.6.2 Aircraft Storage

Aircraft box and T-hangars serve the Airport’s various aircraft storage and maintenance needs. Aircraft hangars protect aircraft from the elements (i.e., dirt, rain, wind, ice, or snow) which in turn could reduce maintenance costs. **Table 2-12** lists the Airport’s hangar facilities, along with their respective building number and approximate area (square feet). A new hangar on Tri-State Aero’s leasehold is in the final design stage during the creation of this report, this proposed hangar was assumed to be completed prior to the completion of the Master Plan. The Wartime Museum hangar is not included below since its only available for static aircraft storage for the museum.

Table 2-12 – Hangar Facilities

Building	Year Built	Approximate Area (Sq. Ft.)
Tri-State Hangar 1	1960	12,000
Tri-State Hangar 2	1965	12,000
Tri-State Hangar 3	1970	12,000
Tri-State Hangar 4	1980	12,000
Tri-State Hangar 5	1984	17,500
Tri-State Hangar 6	2015	12,880
Tri-State Hangar 7	2007	12,880
Tri-State Hangar 8	N/A	11,800
T-Hangars	1960	9,344 (Total)
New Tri-State Hangar	2024	15,800
Petersburg Road Box Hangar 1	1997	8,500
Petersburg Road Box Hangar 2	1999	11,500

Source: Tri-State Aero, 2023; CHA, 2023.

2.7 NON-AERONAUTICAL ACTIVITIES

The Airport provides various leasing opportunities on the property. These spaces vary in size and contribute differently to the facility. The properties may be utilized by the public or owned by a private business. Leasing terms may vary, and most changes in this area of operations do not generally impact the existing capacity of the Airport or its operations.

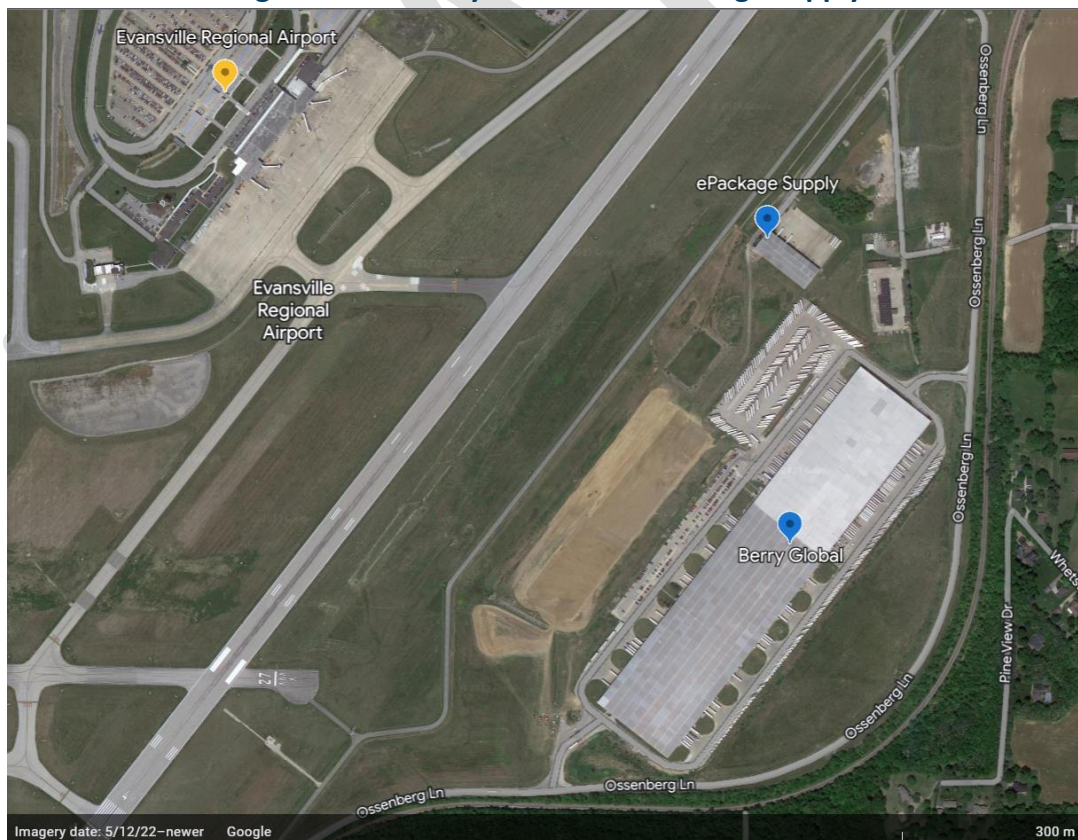
Berry Global, Inc.

Headquartered in Evansville, Berry Global is a Fortune 500 company and global manufacturer of plastic packaging products. Berry Global creates plastic containers and packaging for the healthcare, engineering, and consumer goods industries. A 1,000,000 square foot warehouse and 300,000 square foot distribution center is located on Airport property. As previously mentioned, Berry Global sponsors the Airport’s business lounge in the terminal.

ePackage Supply

ePackage Supply is a Veteran owned and operated company based in Evansville; the company provides packaging and containers for businesses. Located on the northwest side of the airport property, accessible from Ossenberg Lane, the Foreign Trade Zone Warehouse is the operation base for ePackage Supply.

Figure 2-28 – Berry Global and ePackage Supply



Source: Google Earth Pro, 2023.

United States Postal Service Facility

Along Highway 41, a public entrance is accessible for the United States Postal Service building.

Department of Corrections

To the south of the Airport property, along Highway 41, the Department of Corrections leases a facility that is operated as a parole office.

Figure 2-29 – Department of Corrections



Source: Google Earth Pro, 2023.

Evansville Wartime Museum

The Evansville Wartime Museum is a leased facility located on Airport Property, which contains World War II (WWII) artifacts. The Museum shares stories of Evansville’s key involvement in the WWII efforts with artifacts such as jeeps, tanks, and aircraft on display, as shown on **Figure 2-30**.³ Evansville played a key part in the production of military supplies and equipment which the Evansville Wartime Museum documents.

Figure 2-30 – Evansville Wartime Museum



³ Evansville Wartime Museum: Wartime Contributions, Retrieved from <https://www.evansillewartimemuseum.org/>

2.8 AIRSPACE ENVIRONMENT

The National Airspace System (NAS) is made up of a system of airports, technology, air navigation facilities, Air Traffic Control (ATC) facilities, along with appropriate rules and regulations to operate the system. The FAA created the NAS to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation within the United States. The NAS consists of a network of air navigation facilities, ATC facilities, airports, technology, and appropriate rules and regulations needed to operate the system. Airspace is broken down into two categories: regulatory and non-regulatory. The regulatory airspace category consists of two types: controlled and uncontrolled. Categories and types of airspace are defined based on their complexity or density of aircraft movements, or the nature of the operations conducted within the airspace, which dictates the level of safety required and the level of national and public interest.

2.8.1 Airspace Classification

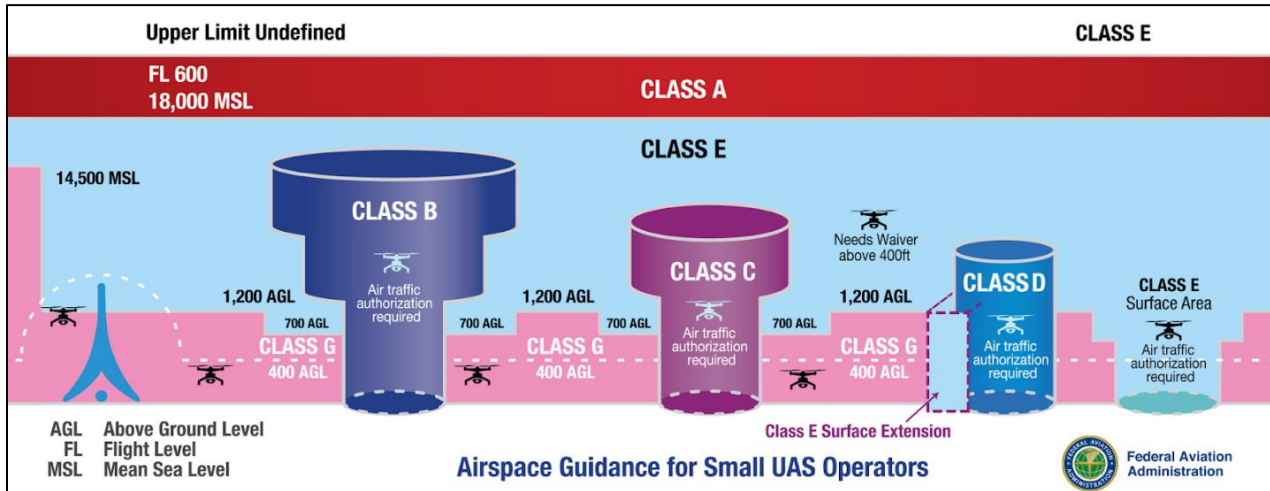
The purpose of controlled airspace is to provide adequate separation between instrument flight rules and visual flight rules aircraft. IFR services are available but are not required within all controlled airspace. Airspace designated as Class A, B, C, D, and E are controlled airspaces, and Class G is uncontrolled airspace, in which IFR services may or may not be available.

VFR aircraft operating in Class B, C, or D airspace must be in contact with ATC, which gives ATC the authority to manage VFR traffic in the proximity of busy airports; essentially protecting IFR aircraft from VFR aircraft. Controlled airspace designations do not affect IFR traffic as it is continuously cleared through controlled airspace by ATC.

Large sections of controlled and uncontrolled airspace have been designated as special use airspace. Special use airspace is further defined as prohibited, restricted, warning, military operations, and alert areas. Civil operations within special use airspace may be limited or even prohibited, depending on the area, as operations within these areas is considered hazardous to civil aircraft.

The Airport is located within Class C airspace, extending from the runway surface up to 4,000 feet above mean seal level (AMSL) for a 5-nm radius, and from 1,200 feet MSL to 4,000 feet AMSL for a 10-nm radius. Pilots are required to establish two-way radio communications with ‘Evansville Tower’ prior to entering their Class C airspace and are required to maintain those communications while inside the Class C boundaries. **Figure 2-31** depicts a graphic of the U.S. Airspace Classification Profiles.

Figure 2-31 – FAA NAS Airspace Classification Profiles

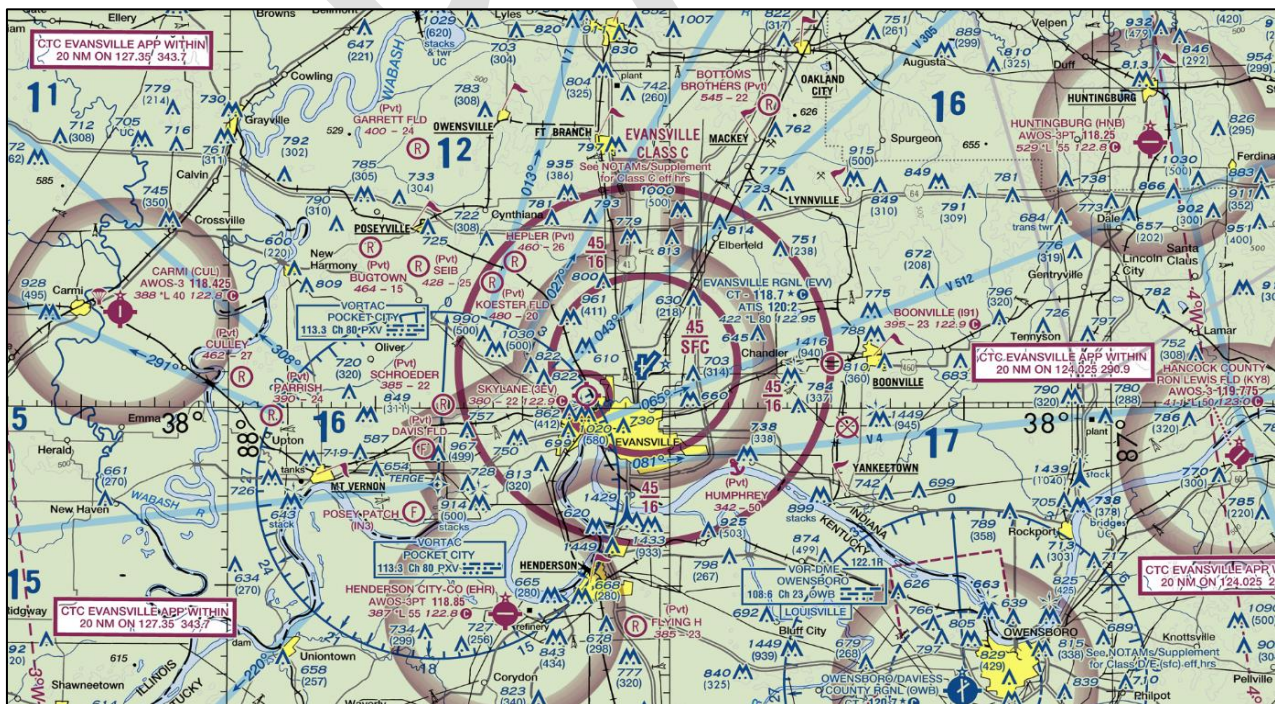


Source: Federal Aviation Administration, 2023.

2.8.2 Aeronautical Charts

The National Aeronautical Charting Office (NACO) of the FAA publishes special aeronautical charts used by pilots to navigate through the NAS; known as sectional charts. A sectional chart provides detailed information on airspace classes, ground-based NAVAIDs, radio frequencies, longitude and latitude, navigational waypoints, and routes. It offers topographical features, such as terrain elevations and ground features that are important to aviators, such as landmarks that are identifiable from a given altitude. The Airport and its features are depicted on the St. Louis sectional chart, as is depicted in Figure 2-32.

Figure 2-32 – FAA Aeronautical Sectional Chart



Source: https://aeronav.faa.gov/visual/04-20-2023/PDFs/St_Louis.pdf, 2023.

2.9 METEOROLOGICAL CONDITIONS

Meteorological conditions affect airport operations at an airport in many ways. Precipitation, temperature, and winds influence decisions pertaining to NAVAIDs, runway orientation, and required runway length. The Airport is equipped with an Automatic Surface Observation System (ASOS), a highly sophisticated weather data sensing, processing, and dissemination system that is designed to support weather forecast activities and aviation operations. While meteorological readings are taken every minute, 24-hours per day, for the entire year, these systems generally report at hourly intervals, but also report special observations if weather conditions change rapidly and cross aviation operation thresholds. Maintained, controlled, and operated by the National Weather Service, the ASOS automatically observes, formats, archives, and transmits observations.

When weather conditions exceed predetermined weather element thresholds, a special report is transmitted through an automated very-high-frequency (VHF) air band radio frequency (120.2 MHz) to pilots operating at or near the Airport. These messages are also available via phone by calling 812-436-4681.

2.9.1 Local Climate

The climate data for Evansville, Indiana was obtained from the U.S. Climate Data, which records that its average annual temperature is 56.5 degrees Fahrenheit (F). The average annual high and low temperatures are 67- and 46-degrees F, respectively. The hottest month in Evansville is July with an average temperature of 89 degrees F. The average monthly precipitation is 3.78 inches of rain while the average annual precipitation is 45.31 inches. The average snowfall between the months of December to March is 11 inches. The local climate requires the Airport to support snow removal and aircraft deicing services, as was previously reported in **Section 2-29**.

2.9.2 Wind Coverage

In addition to climate data, the Airport's ASOS collects wind speed and direction data, which can influence airfield development decisions on runway length and orientation. An airport's local wind conditions are a key factor in determining runway use. Aircraft operational safety and performance is enhanced when aircraft depart and land into the wind, therefore, runways that are not oriented to take advantage of the prevailing wind patterns are not utilized as frequently as those that are. According to [FAA AC 150/5300-13B, Airport Design](#), the desirable wind coverage for an airport is at least 95 percent of the time based on the total number of weather observations recorded for at least ten consecutive years. Wind coverage is calculated using highest crosswind component that is acceptable for the type of aircraft that is expected to use the runway system. Larger aircraft have a higher tolerance for crosswinds than smaller aircraft due to their size, weight, and operational speed. **Table 2-13** provides the standard crosswind component by aircraft size. **Table 2-14** outlines the weather classification criteria and the number of recorded observations at the Airport from the beginning of 2013 through the end of 2022.

Table 2-13 – Crosswind Components

Runway Design Code (RDC)	Maximum Crosswind Component
A-I and B-I aircraft	10.5 knots
A-II and B-II aircraft	13.0 knots
A-III, B-III, C-I through D-III	16.0 knots
D-I through D-III	
A-IV, B-IV, C-IV through C-VI, D-IV through D-VI	20.0 knots
E-I through E-VI	20.0 knots

Source: FAA AC 150/5300-13B, Airport Design, CHA, 2023.

Table 2-14 – Weather Classification Criteria

Weather Class	Recorded
	EVV Observations (2013-2022)
All Weather	123,396
IFR Conditions	17,984
VFR Conditions	93,127

Note: Visual Flight Rules (VFR), Instrument Flight Rules (IFR).

Source: NOAA, National Climate Center; Station 724320 (2013-2022), CHA, 2023.

The combination of the crosswind and the weather classification allows for the calculation of the Airport’s wind coverage for ‘All Weather’ (AW), VFR, and IFR weather conditions. Wind coverage is the percent of time crosswind components are below the acceptable velocity. The 95 percent wind coverage is computed based on crosswinds not exceeding 10.5 knots for RDC A-1 and B-1; 13 knots for RDC A-II and B-II; 16 knots for RDC A-III, B-III, and C-I though D-III and 20 knots for RDC A-IV through D-VI. The Airport’s calculated wind coverage shows that all runways exceed the 95 percent threshold when the crosswind speed is 13 knots, 16 knots, or 20 knots. The weather reports recorded by the FAA’s ADIP Wind Data tool references there is slight discrepancy in the three runways not meeting the 95-percent threshold condition. The references are minor in degree of change, and only occur in the 10.5 knots crosswind reports. Specifically, in AW, IFR, and VFR, all three runways are within a three-percent difference of the 95-percent expectation. The reported instances are reflected in italics in **Table 2-15**. However, the combined wind coverage for AW, IFR, and VFR does meet FAA Order 5100.35D and FAA Advisory Circular 150/5300-13B.

Weather observations are presented in a format that is specifically designated by the FAA to be useful for evaluating weather conditions at an airport. Wind direction is grouped according to a 16-point compass rose (N, NNE, NE, ENE, E, SE, SSE, S, SSW, SW, WSW, W, WNW, NW, and NNW). Wind speed is tabulated into groups of 0-3, 4-12, 13-15, 16-18, 19-24, 25-31 and 32 knots or greater. This data is typically displayed on a ‘wind rose’ for each weather classification. **Figure 2-33**, **Figure 2-34**, and **Figure 2-35** depict the AW, VFR, and IFR wind roses, respectively.

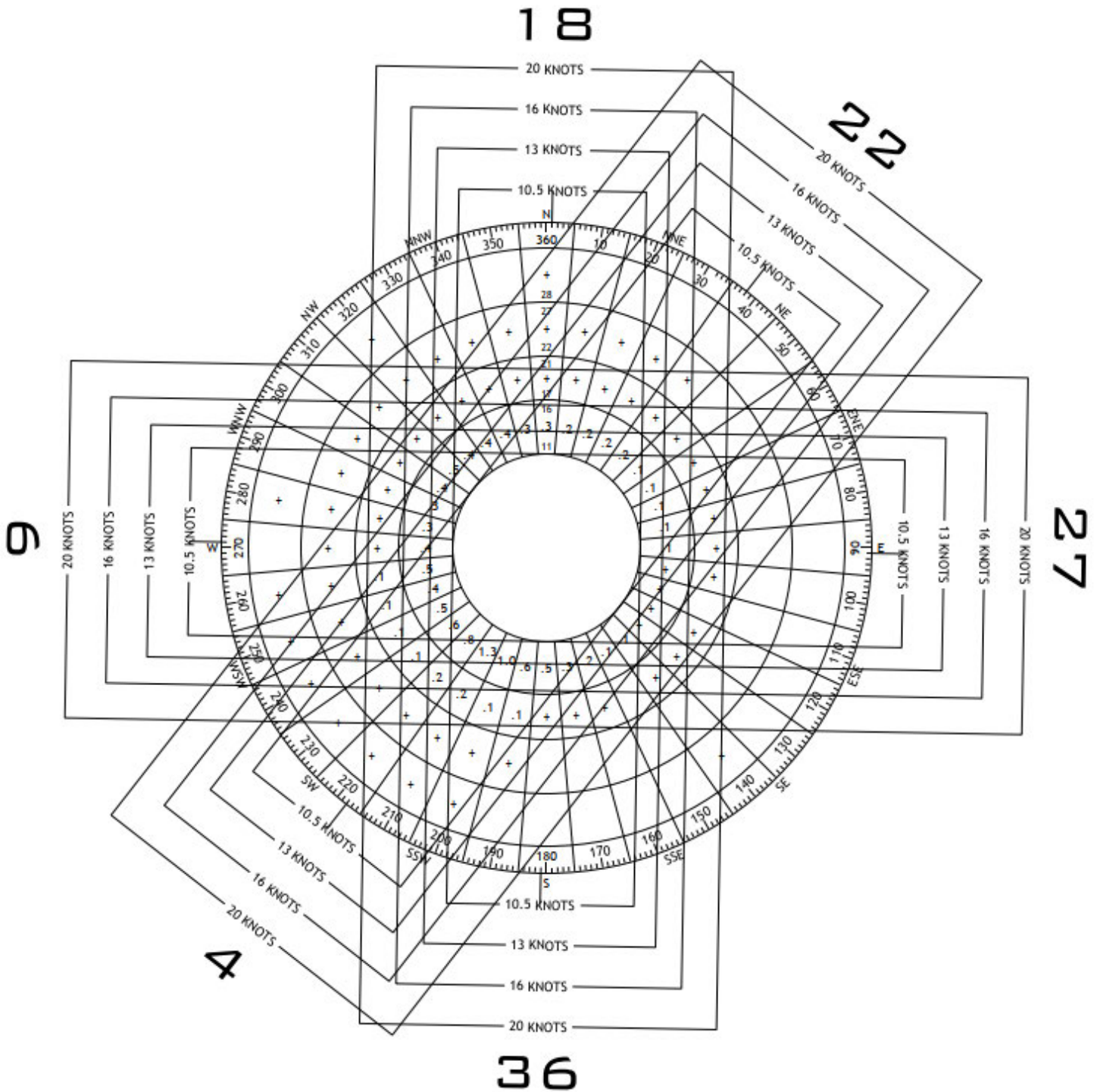
Table 2-15 – EVV Wind Coverage

Observation Type	Runway	10.5 Knots	13 Knots	16 Knots	20 Knots
All Weather (AW)	4 - 22	95.82%	97.96%	99.60%	99.93%
	9 - 27	92.60%	96.14%	99.21%	99.88%
	18 - 36	95.43%	97.73%	99.44%	99.88%
	AW Combined	99.78%	99.96%	99.99%	100%
Instrument Flight Rules (IFR)	4 - 22	94.18%	96.89%	99.20%	99.79%
	9 - 27	93.36%	96.54%	99.24%	99.83%
	18 - 36	94.75%	97.26%	99.14%	99.72%
	IFR Combined	99.56%	99.90%	99.99%	100%
Visual Flight Rules (VFR)	4 - 22	95.96%	98.07%	99.66%	99.95%
	9 - 27	92.30%	95.99%	99.20%	99.90%
	18 - 36	95.41%	97.75%	99.48%	99.91%
	VFR Combined	99.81%	99.97%	100%	100%

Source: NOAA, National Climate Center; Station 724320 (2013-2022).

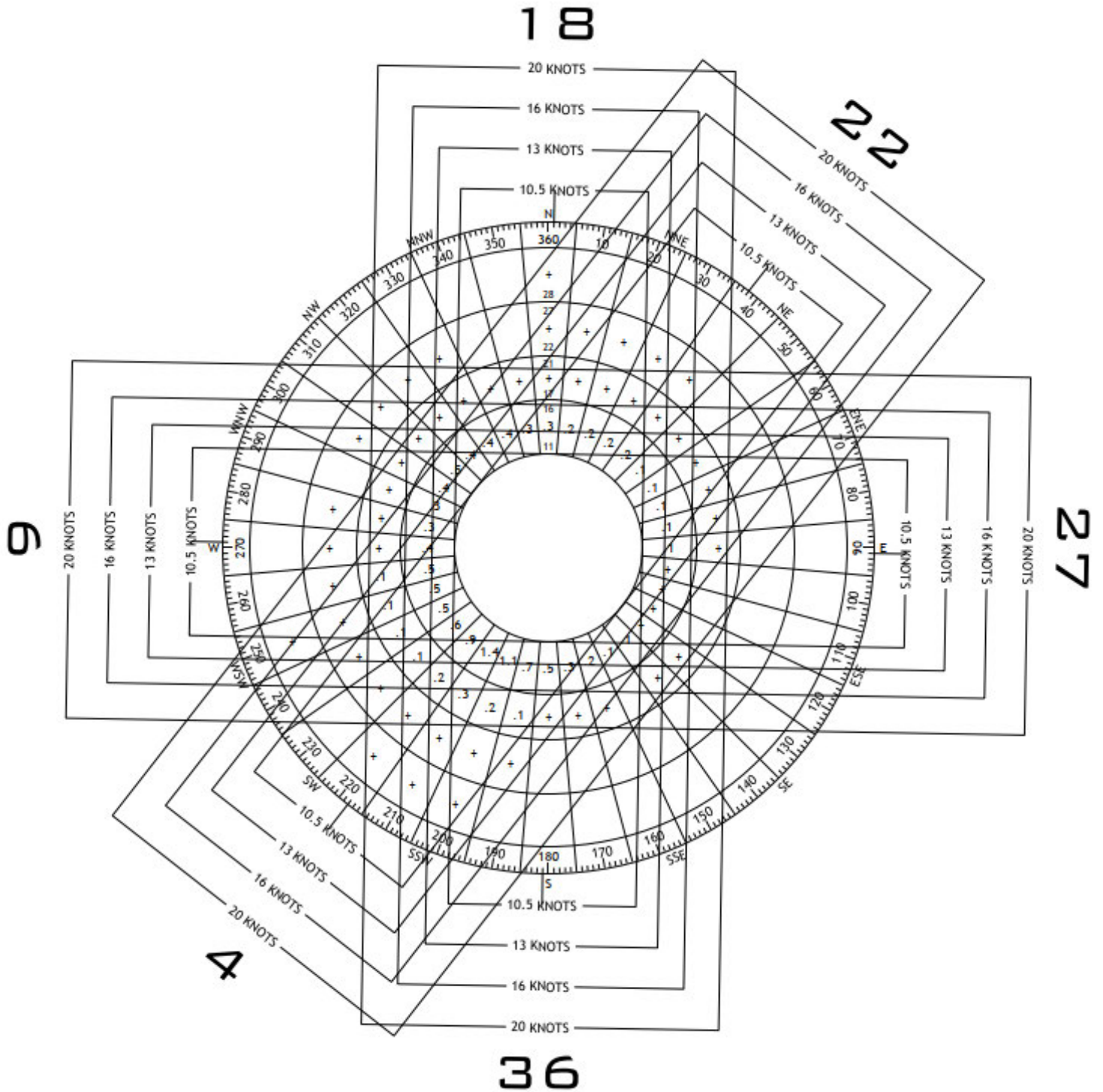
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Figure 2-33 – EVV All Weather Wind Rose



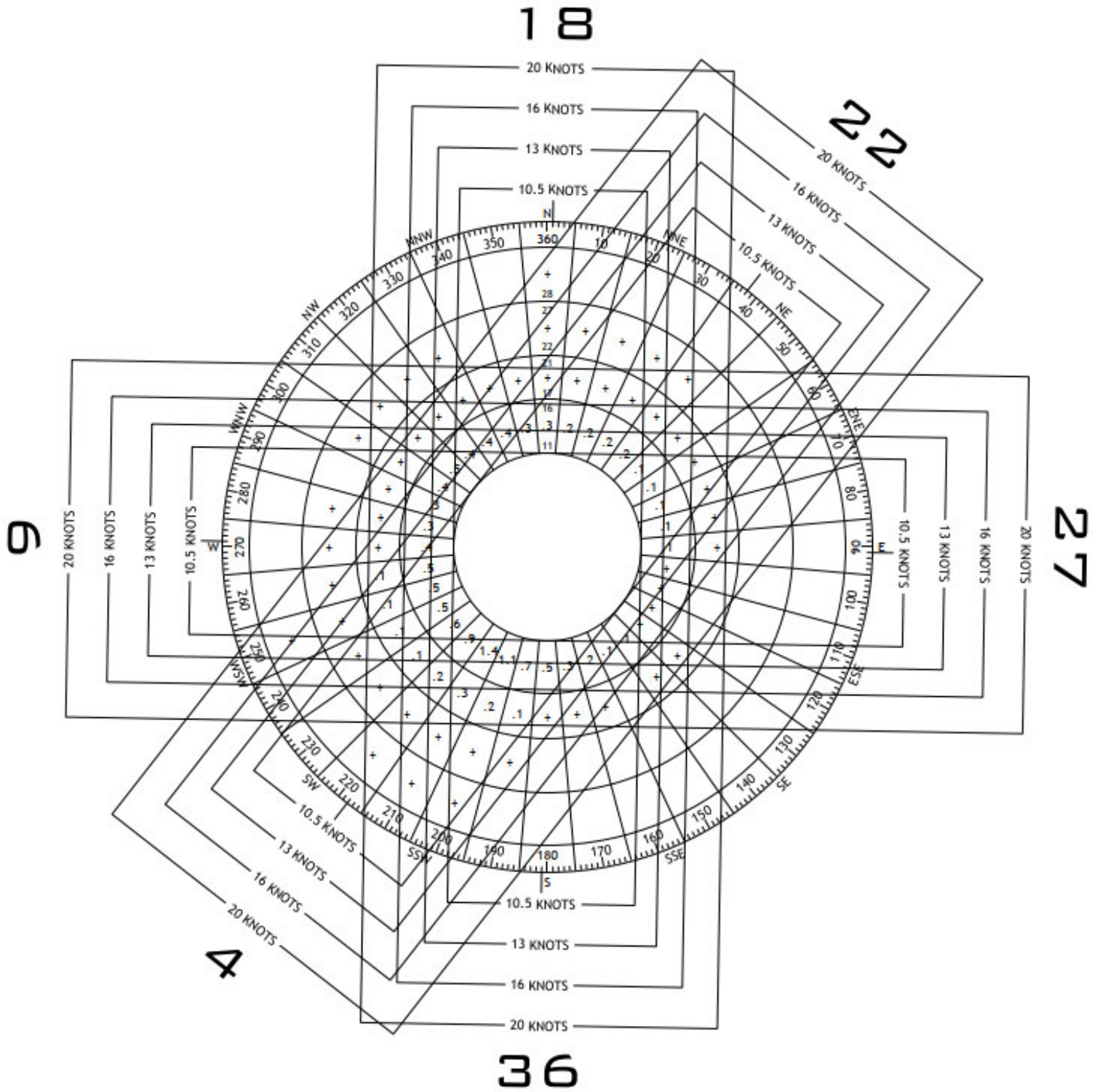
Source: ADIP; CHA, 2023.

Figure 2-34 – EVV IFR Wind Rose



Source: ADIP; CHA, 2023.

Figure 2-35 – EVV VFR Wind Rose



Source: ADIP; CHA, 2023.

2.10 UTILITY SYSTEMS

As part of this MPU, existing utility systems serving EVV will be identified through review of existing and past topographic mapping and record drawings provided by EVAAD. Utilities to be identified include water, sanitary sewer, storm sewer, electrical power, telephone, cable, fiber optic communication, natural gas, fuel lines, and deicing fluid storage and collection systems. The information will be compiled on the mapping prepared for the ALP and will be used in the alternative planning and recommendations that will be presented later as part of this MPU. Any new information on the location, condition, and capacity of any on-airport utilities is beyond the scope of this planning effort.

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2.11 SUSTAINABILITY BASELINE ASSESSMENT

In order to develop and implement sustainability goals and initiatives that are implementable, measurable, and EVV-specific, a baseline must first be established. The baseline assessments are specific to the five sustainability focus areas chosen by EVAAD and involve the collection of data to evaluate the current programmatic and operational environment at EVV. The data collected consists of both quantitative and qualitative information provided by EVAAD and Tri-State Aero for the years 2019 through 2022. Interviews with on-site staff completed during the site visit in June of 2023 were then used to support and further supplement the annual data, all images used were a courtesy of EVV and taken during scheduled site visits.

2.11.1 Focus Areas

A Sustainability Kickoff Meeting was held in March of 2023 in which five sustainability focus areas were identified that reflect the sustainability priorities and objectives at EVV. The five focus areas are presented in **Figure 2-36**.

Figure 2-36 – Sustainability Focus Areas



2.11.2 Energy, Emissions and Resilience

The FAA has set a net-zero emissions goal for the aviation industry by 2050. EVAAD has demonstrated a strong commitment to reducing the energy demand of its facilities through the development of on-site renewable energy generation and the use of energy efficient systems. As energy use and the generation of greenhouse gas emissions are closely linked, the purpose of the Energy, Emissions & Operational Resilience focus area is to evaluate current energy use by EVAAD controlled facilities, along with current Scope 1 and Scope 2 carbon emissions (in accordance with level 1 Airport Carbon Accreditation).

Furthermore, energy goals can be complimented through the incorporation of operational resilience goals. Sustainability can be defined as the airport’s ability to persist over time. Resilience goals further the airport’s ability to recover from chronic and acute stressors. This ability to recuperate furthers sustainability. While resilience can incorporate a vast range of goals and initiatives, this focus area is specific to energy redundancies that prevent operational disruptions.

CenterPoint Energy (formerly known as Vectren) is the primary provider of both electrical service and natural gas to the airport.

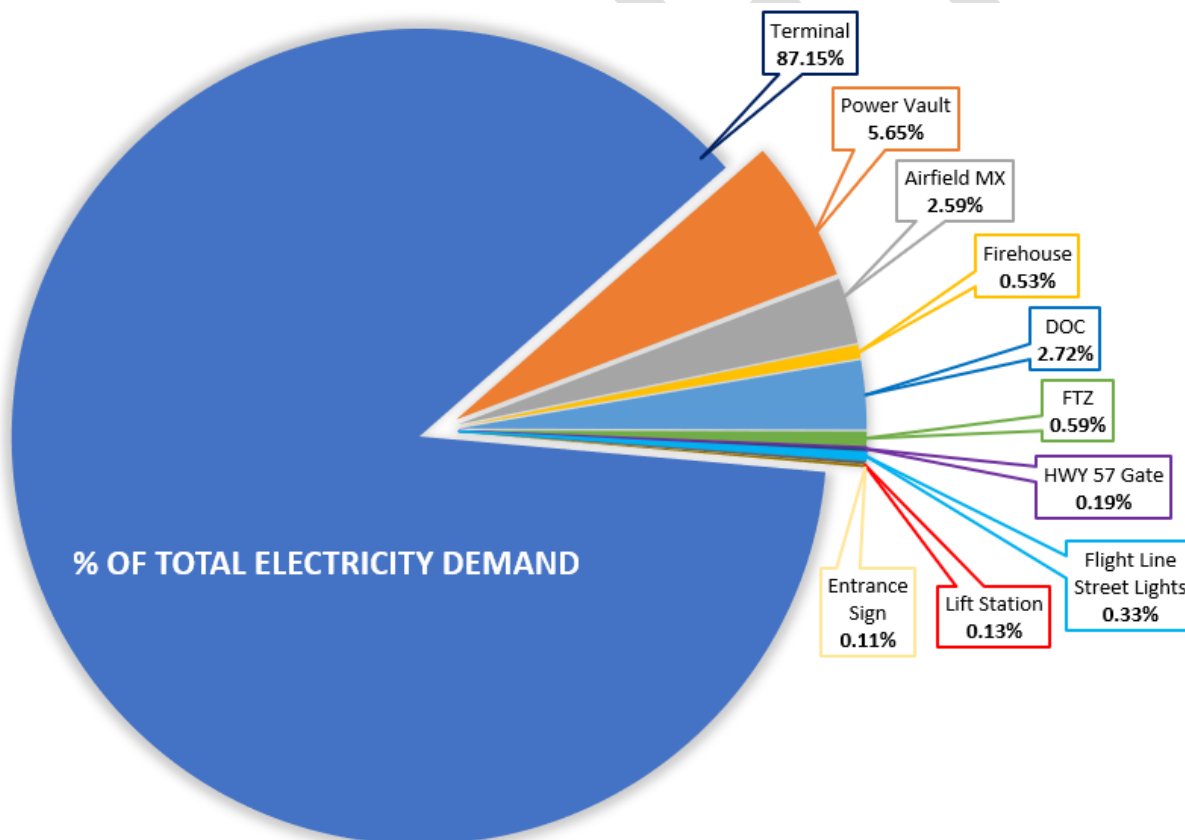
2.11.3 Facility Electricity Usage

EVV provided energy consumption data for the years 2019 through 2022. This data covered a total of nine (9) buildings and facilities that comprise the total usage of electricity at the airport. These facilities are as follows:

- Terminal
- Power Vault (airfield lighting)
- Airfield Maintenance
- Firehouse
- DOC (Department of Corrections)
- Combined streetlights and railroad crossing
- Highway 57 Gate
- Lift Station
- Entrance Sign

Data was also provided for the former Sheriff Command Center. However, as that facility was shut down in July of 2022, that data has been removed from the baseline analysis.

Figure 2-37 – Electricity Use Per Facility



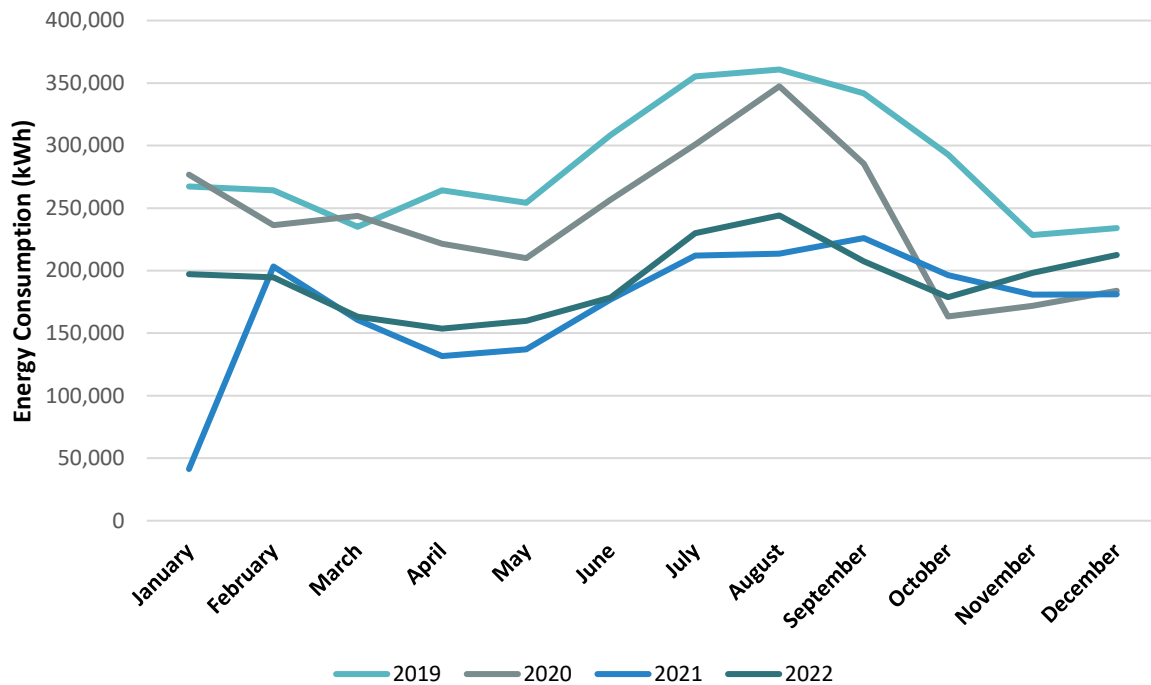
Source: Evansville Regional Airport (EVV), 2019 – 2022; CHA, 2023.

As can be seen in **Figure 2-37**, the percent of total electricity usage is sorted per reporting facility. Over 98 percent of the energy used at EVV is consumed by the terminal, the power vault, and the airfield maintenance building. As all three of these facilities are under the direct control of EVAAD

and represent such a large percentage of the energy use, these were the facilities carried through the remainder of the baseline analysis.

The variation in energy consumption at EVV over the calendar year correlates to the seasonal variation in outside temperature over the same period. Energy usage at the airport, particularly the HVAC usage within the terminal building, peaks during the later summer when external temperatures are at the highest. This seasonal variation can be seen in all four years' worth of data in **Figure 2-38**.

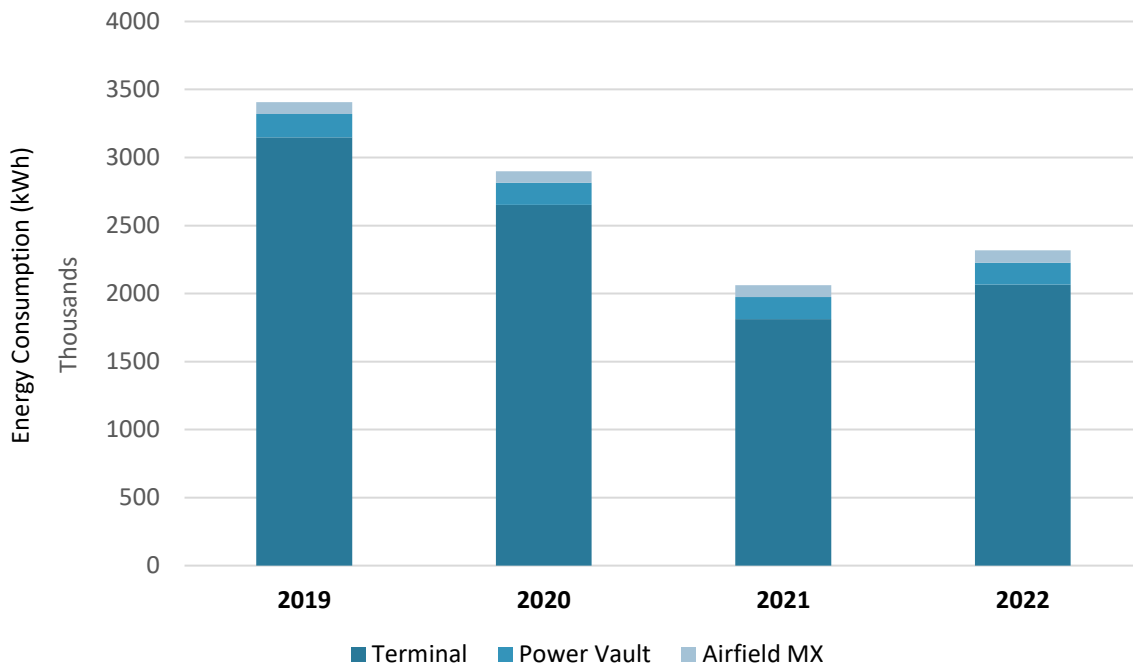
Figure 2-38 – Total EVV Monthly Electricity Consumption



Source: Evansville Regional Airport (EVV), 2019 – 2022; CHA, 2023.

The reduction in energy usage between 2019 and 2020, while partially explained by the global pandemic, also has another likely source. In September 2020, EVAAD completed the installation of a system of photovoltaic solar panels over the short-term parking area and rental car ready parking lot adjacent to the terminal building. This is reflected in the drop observed at the end of 2020 and the overall reduction in energy consumption carried through 2021 and 2022 when compared to the baseline of 2019. The scale of this reduction can be seen in the total energy usage by facility when compared year over year in **Figure 2-39**.

Figure 2-39 – Total Electricity Usage by Facility by Year



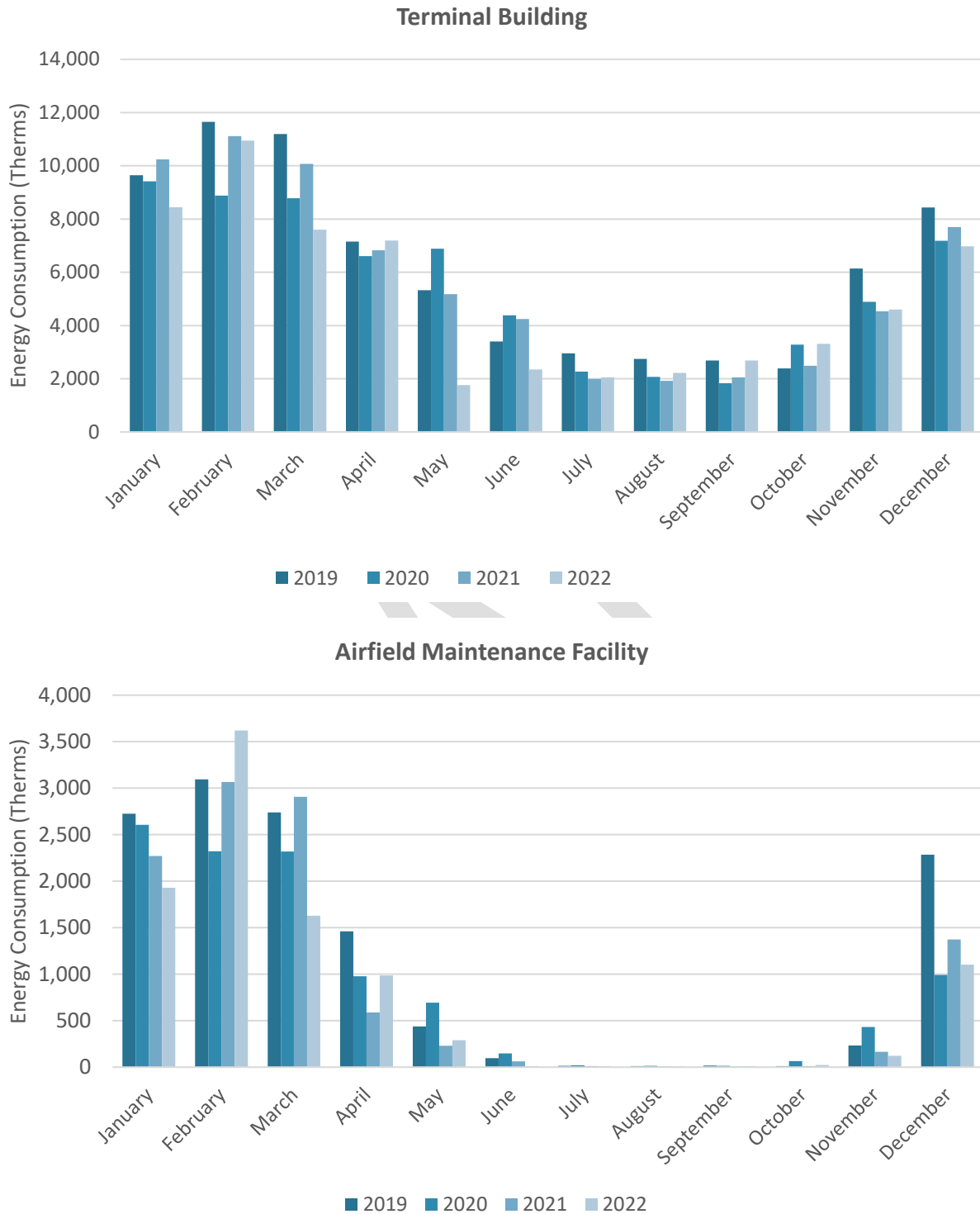
Source: Evansville Regional Airport (EVV), 2019 – 2023; CHA, 2023.

Due to regulatory limitations in the State of Indiana on the amount of solar generated electricity that can be sold back to the utility (known as net metering), the cost savings potentially available to EVV through surplus generation of power during the summer months cannot be realized.

2.11.4 Natural Gas Usage

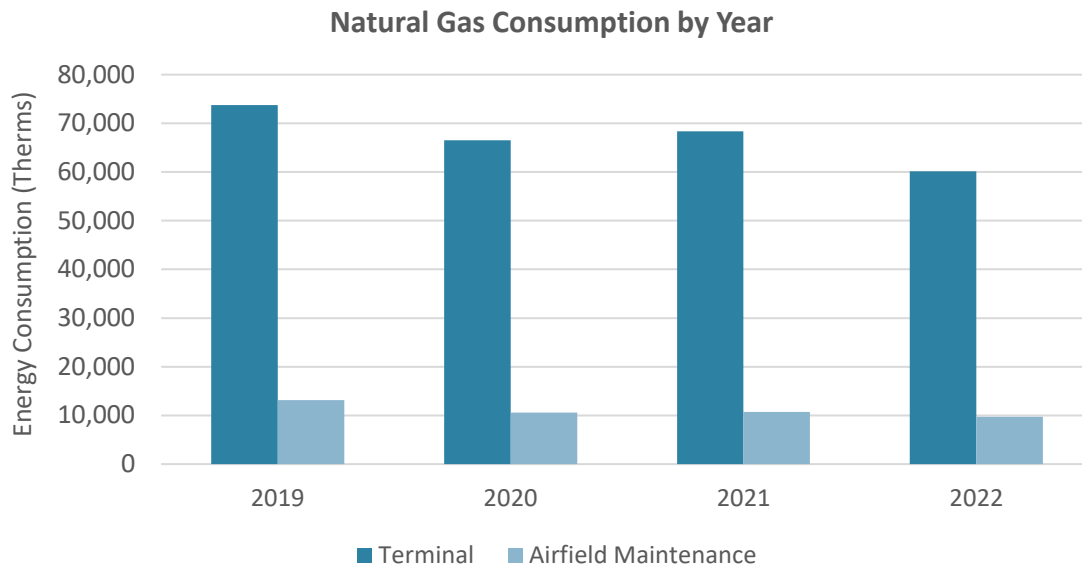
Natural gas is consumed at two EVV facilities, the terminal building and the airfield maintenance facility, and is utilized for heating the buildings. This is reflected in the variation in the monthly energy demand for each facility as indicated in **Figure 2-40**. Natural gas usage is highest during the coldest portion of the year.

Figure 2-40 – Total Natural Gas Usage by Facility by Year



Sources: Evansville Regional Airport (EVV), 2019 – 2022; CHA, 2023.

Figure 2-41 – Total Energy Usage by Facility by Year



Sources: Evansville Regional Airport (EVV), 2019 – 2022; CHA, 2023.

The natural gas usage at EVV is a component of the Scope 1 direct greenhouse (GHG) emissions at EVV.

2.12 LAND USE AND REVENUE

Based on discussions during the Sustainability Workshop, the Airport seeks the highest and best use of land it owns to accommodate development and encourage revenue growth. The MPU Land Use Chapter will include an analysis of available EVV property to accommodate future growth.

2.13 MATERIALS MANAGEMENT

The management and disposal of waste at an airport impacts finances, operations, environmental well-being, and the airport’s relationship with the community. Its significance was identified by the FAA in the FAA Modernization and Reform Act of 2012. Section 133 of the Act requires airports undertaking a master plan to also complete a recycling plan that includes and addresses the following:

- Minimization of solid waste generation
- Operational and maintenance requirements of the waste management program
- Review of waste management contracts
- A solid waste audit
- Feasibility of solid waste recycling
- Potential cost savings from changes or revenue generation

In 2013, the FAA prepared and published *Recycling, Reuse and Waste Reduction at Airports: A Synthesis Document* to assist airports in the development of these recycling programs. This

guidance outlines types and sources of airport waste and provides direction on establishing a comprehensive waste reduction and recycling program. The Recycling, Reuse and Waste Reduction Plan developed as part of this MPU for EVV can be found in Appendix XX.

The Materials Management focus area covers municipal solid waste (MSW), specialty waste diversion programs, spent fluids, and construction & demolition (C&D) waste. EVAAD janitorial staff manages all waste generated on site except in the areas operated by the primary FBO, Tri-State Aero, and other tenants such as the concessionaire and those in separate hangars.

2.13.1 Municipal Solid Waste



MSW at an airport generally consists of everyday items which can be legally disposed of in a landfill or equivalent state-permitted facility. A site visit was conducted on June 6, 2023, to assess current waste management practices at the Airport. The site visit included observations and discussions with EVAAD employees and a manager from Tri-State Aero. The following summarizes current MSW management practices at EVV.

EVAAD operates an effective waste management program. Combined waste and mixed recycling receptacles, pictured to the left, are found throughout the terminal building. During the terminal improvement project, which was completed approximately four years ago, all receptacles were replaced. The new receptacles are consistent throughout the terminal and offer colored labeling with graphics that depict which opening is designated as waste and recycling. However, the signage does not depict what is allowable in the mixed recycling waste stream. Black trash bags are inserted into each side of the receptacles. The recyclable side also has a clear trash liner over the black trash bag. Utilizing clear trash liners allow EVAAD janitorial staff to examine contents for contamination upon collection.

Republic Services (Republic) is currently contracted to provide dumpsters and hauling services at EVV. One eight (8) cubic yard (CY) mixed recycling dumpster and two eight (8) CY trash dumpsters are located outside of the terminal building at the loading dock. EVAAD janitorial staff are responsible for transporting most waste generated at EVV. At the time of the site visit, contamination of the recyclable dumpster did not appear to exceed 25 percent. EVAAD trash dumpsters are picked up on a set schedule (Monday, Wednesday, and Friday). When dumpsters are picked up on all designated days, the size of the dumpsters is adequate to accommodate waste. However, issues may occur when pick up is missed; overflowing waste can become a wildlife attractant and a foreign object debris (FOD) issue. Recyclable dumpsters are picked up two times per week. The waste hauler does not provide data on the volume of waste collected.

An eight (8) CY trash dumpster is located behind the Aircraft Rescue and Fire Fighting (ARFF) station. Airlines often dump their waste in the ARFF dumpster to avoid having to exit the airfield fence to dispose of waste at the loading dock. As shown in the photos, ARFF staff have their own recycling bins that are transported by ARFF personnel to the loading dock recycling dumpster when full. Yoshi's also has their own recyclable containers, pictured right, which are transported to the loading dock by their staff in addition to refuse. The current concessionaire does not recycle. While the current concessionaire may change, the lease agreement will remain for 8-10 more years. EVAAD does not anticipate altering the lease agreement within that time to include recycling requirements.



Waste at ancillary buildings is typically handled by those operating the facility. Employees at the current Airfield Maintenance facility transport waste each Friday to the loading dock. This facility does not have its own dumpsters. A new Airfield Maintenance building is currently under construction. Dumpsters have not been assigned to this facility. However, the new facility will be closer to the loading dock.

Tri-State Aero manages their own trash collection through a separate contract with Republic. Two eight (8) CY dumpsters are provided. A four (4) CY cardboard-only recycling dumpster is also utilized by the FBO.

Overall, an MSW recycling program is in place at EVV, appropriate infrastructure is provided, and staff is committed to recycling. Reported instances of contamination have not occurred.

Overall, an MSW recycling program is in place at EVV, appropriate infrastructure is provided, and staff is committed to recycling. Reported instances of contamination have not occurred.

2.13.2 Specialty Waste

Batteries, fluorescent light bulbs, and other electronics are classified as universal waste. Light fixtures at EVV are currently being converted to light-emitting diodes (LEDs). Spent light bulbs, batteries, and electronics are collected, stored, and sent for proper disposal or recycling when abundant. Rental car companies recycle car batteries through their vendors. Additionally, wood pallets are stockpiled at the loading dock and near the maintenance facility. Though there is no formal program, the pallets are often times picked up by someone locally for reuse.

2.13.3 Spent Oils & Fluids

Waste oils and petroleum-based fluids are subject to specific disposal and recycling requirements. At EVV, spent fluids are collected at the Airfield Maintenance facility and at Tri-State Aero's facility. A tote, estimated to hold approximately 300 gallons of fluid, is utilized at the Airfield Maintenance facility. The contents of the drum are pumped and disposed of when necessary. Tri-State Aero utilizes a 2,000-gallon underground storage tank (UST) with double-walled containment and cathodic protection that is used for contaminated fuels. When the tank reaches 1,000-gallons of fluid, Safety Clean pumps the fluid out and properly disposes of it.

2.13.4 Construction & Demolition Waste (C&D)

EVAAD does not have a formalized C&D waste diversion program. C&D diversion may occur as the result of contractor initiatives.

While materials have not been quantified, the qualitative evaluation of the Materials Management program at EVV will allow the airport to make improvements that further reduce landfill disposal and on-site pollution.

2.14 COMMUNITY AND CUSTOMER SERVICE

While EVV has a substantial social outreach program, the Community & Customer Service focus area will qualitatively document current efforts and set goals around furthering current initiatives. Community relations can help accommodate development at the Airport without conflict. Customer service improvements may help bolster revenue. Tenant initiatives are included as part of this focus area.

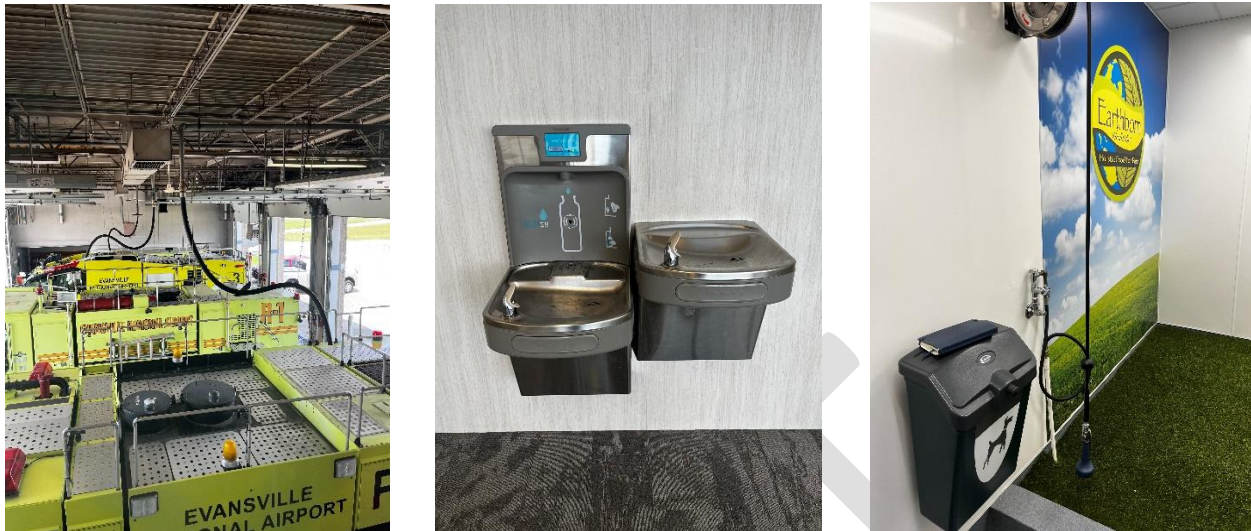
- Honor Flight Southern Indiana – Bi-annual Honor Flights, which include large Welcome Home Parade turnouts.
- 2nd Saturday Stories with Evansville Vanderburgh Public Library – Monthly Aviation-themed story time at EVV.
- Children’s Museum of Evansville (CMoE) Aviation-themed Science, Technology, Engineering, Arts and Math (STEAM) Camp – Annual camp experience with campers who visit EVV and Tri-State Aero to tour the facilities.
- EVV’s Festival of Trees – Annual Tree Decorating Program by 12 Area Non-profits who compete for Facebook Likes on their tree images posted on EVV’s Facebook page (program expanding to 14 trees in 2024).
- American Red Cross Month – Large scale media launch event and month-long Red Cross themed events at the airport
- Airport Tours – Airport staff facilitate and host several school and summer camp tours annually
- Salvation Army Toy Drive – Annual Collection

2.15 WATER CONSUMPTION

Potable water use at an airport may include human consumption, fixtures (sinks and toilets), industrial use, and landscaping amongst other uses and ranges from minor use to significant. Management of water consumption can reduce operational expenditures and dependency on crucial natural resources. Water utility bill data was provided by the Airport for years 2019 through 2022, including both usage and costs. Evansville Water & Sewer Utility (EWSU) is the water utility provider at EVV. The data provided was separated by meter and has been labeled with a corresponding facility. The facilities are identified as follows:

- Firehouse
- Terminal
- Department of Corrections (DOC)
- Sheriff Command
- Airfield Maintenance
- Parking Lot
- Keep Evansville Beautiful (KEB)
- Sprinkler (Lawn)
- Williams Brooks

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Water use at the Firehouse is associated with ARFF vehicle filling and indoor fixtures. Each vehicle is tested daily, thereby requiring daily water use. Airlines are also able to use the elevated water filling system to fill deicing trucks during deicing season. The terminal building utilizes fixtures for consumption and personal use. Water bottle filling stations are dispersed throughout the terminal. A pet relief area, which requires a water source for cleaning, is found on the secure side of the terminal. A hydrant system located at the terminal is also utilized during deicing season to fill deicing vehicles. Water use at the DOC facility and the Parking Lot is solely associated with fixtures. The Sheriff Command Post included water fixtures; however, the building was not operated during the monitoring period and was demolished in 2022, eliminating the need for a water line. Water usage at this facility was instead used to prevent pipes from bursting. The Airfield Maintenance building requires water use for vehicle washing and other general activities, and the KEB meter records landscaping water use. The Sprinkler (Lawn) meter line previously ran along the front of the terminal building. Because EVAAD did not want to install the required back flow preventer, the line was shut off in February of 2020. Lastly, the Williams Brooks meter is associated with a warehouse building. The previous tenant moved out in January of 2020, requiring the airport to assume control of the water bill between February and July of 2020 to prevent service failure until a new tenant occupied the facility.

An analysis of the airport’s overall water use between 2019 and 2022 is shown in **Figure 2-42**. This shows data from all facilities and the expenses that were correlated with water use paid for by EVAAD.

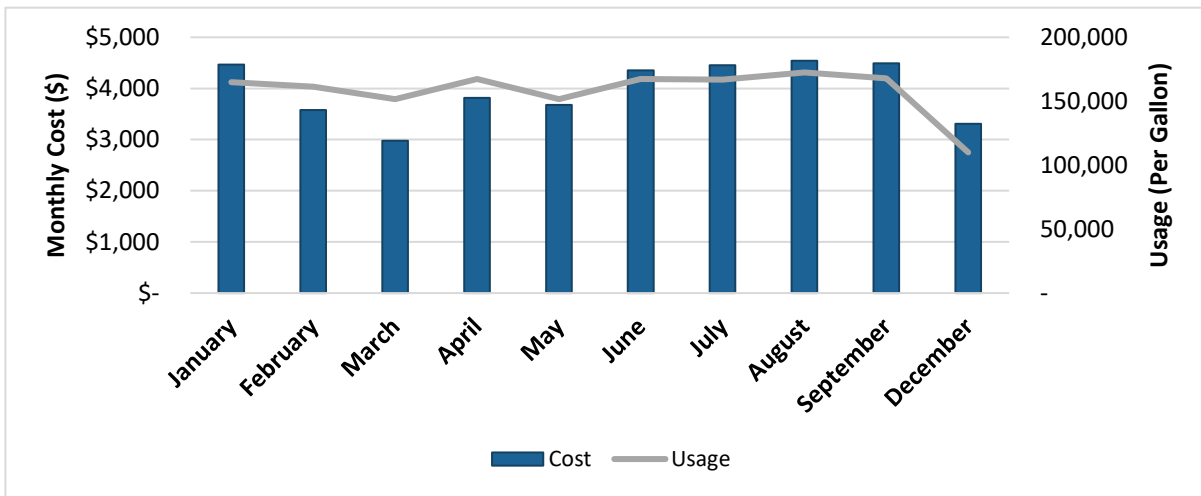
Figure 2-42 – Cost Analysis for EVV Water Use (2019 – 2022)



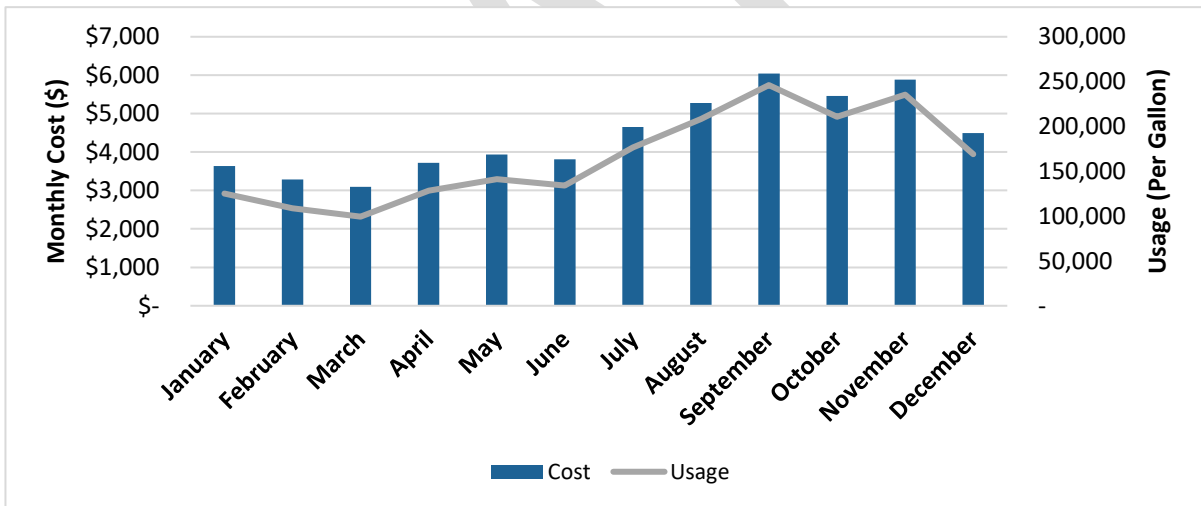
Source: EVV 2019-2022; CHA, 2023.

Cost Analysis for EVV Water Use (2019 – 2022) Continued

2021 Water Use

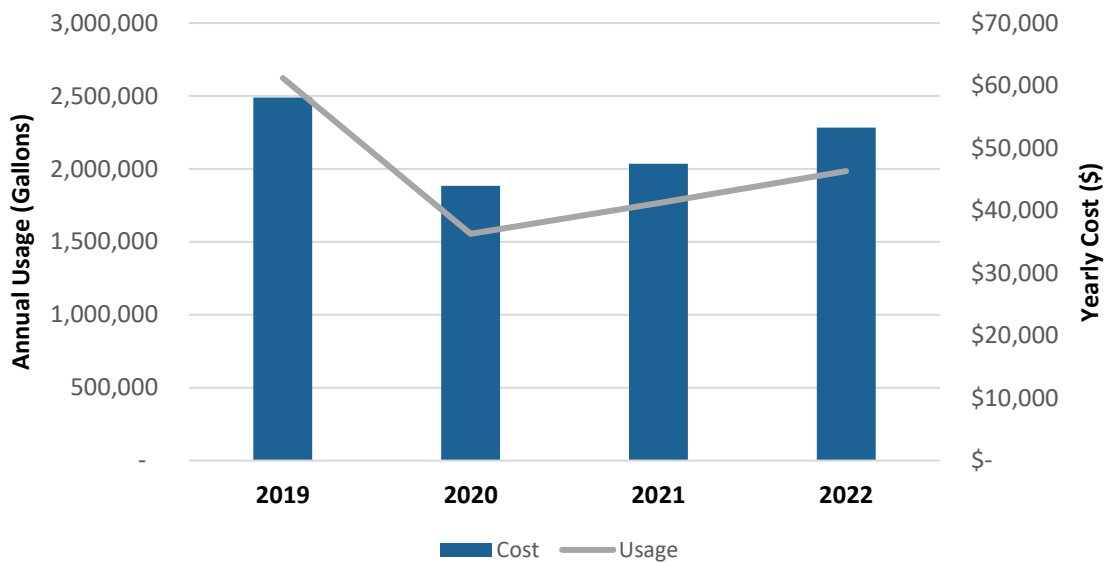


2022 Water Use



Source: EVV 2019-2022; CHA, 2023.

Figure 2-43 – Annual Rate of Water Service Cost & Water Usage

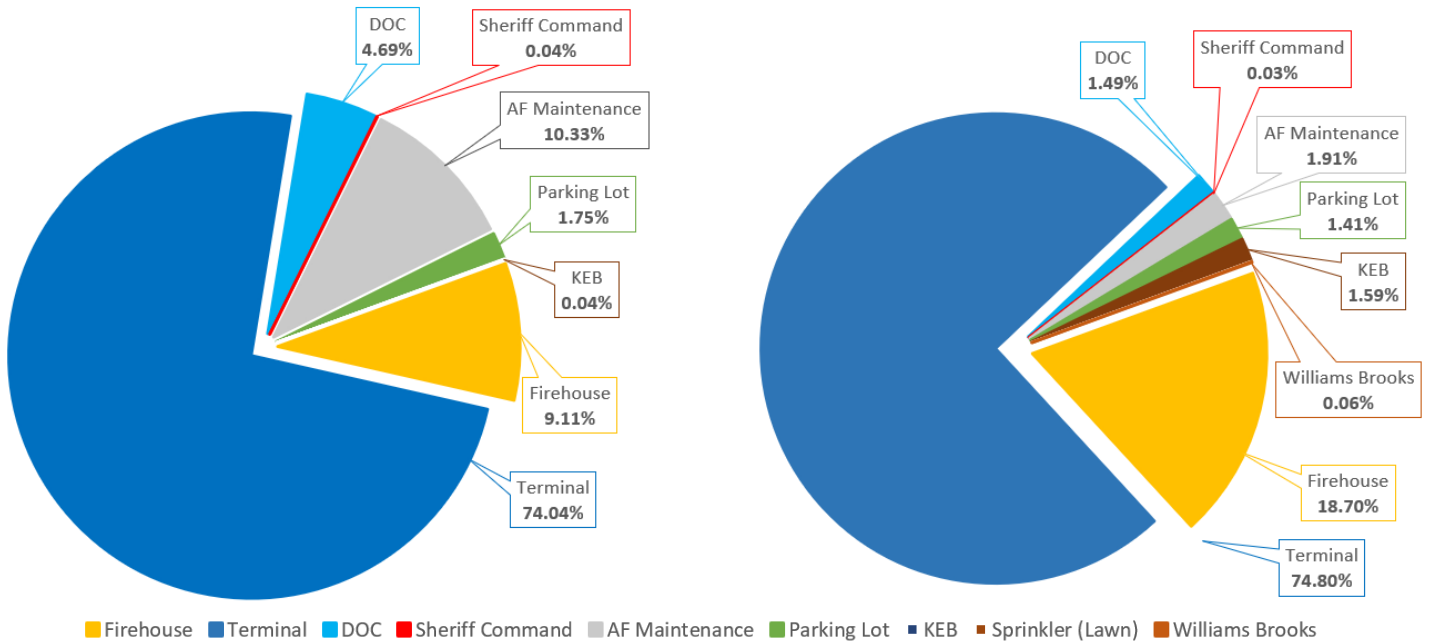


Sources: EVV 2019-2022; CHA, 2023.

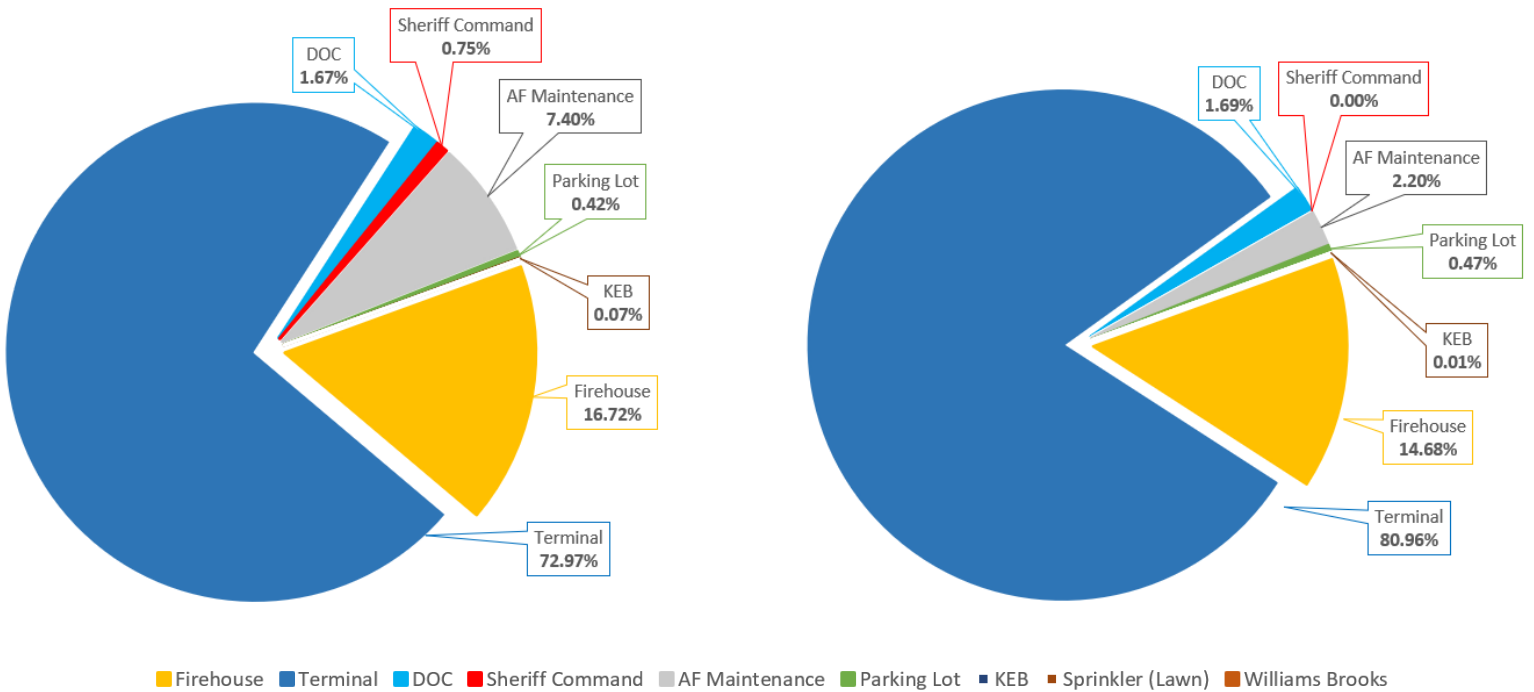
The abnormal increase in August of 2019 was due to an underground water leak at the Airfield Maintenance facility. Once detected, the leak was repaired within one month of discovery. A clear correlation between seasonal activities at EVV and water use is not evident. Overall, costs and usage are correlated. Water utility costs include service fees that are typically billed per meter and are included in total costs; these fees often include compensation for maintaining the provider’s distribution system, reading the meter, billing, and public fire protection.

Data was also assessed by individual meter. The facility associated with each meter is shown in **Figure 2-44**. The terminal building is associated with the most significant water use throughout the monitoring period. As a result, water use reduction initiatives have the most potential at the terminal. In 2019, the Airfield Maintenance Building used more water than the Firehouse, but the Firehouse can be attributed as the second largest consumer of water at EVV.

Figure 2-44 – Water Use Services Per Facility at EVAAD (in Gallons)
2019 EVAAD Water Use 2020 EVAAD Water Use



2021 EVAAD Water Use 2022 EVAAD Water Use

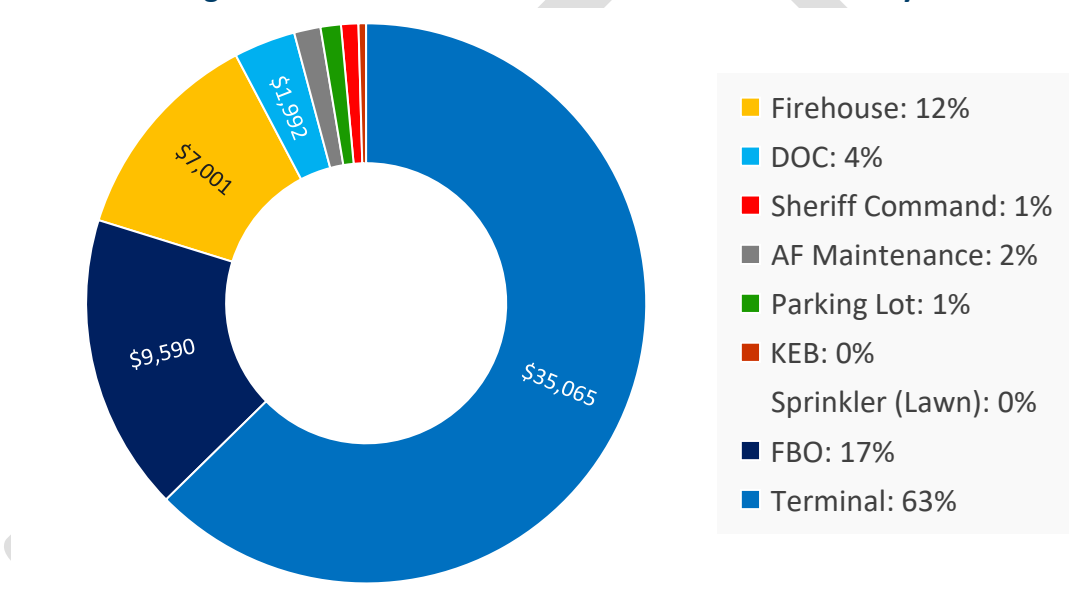


Source: EVV 2019-2022; CHA, 2023.

In addition to the data provided by EVAAD, data provided by Tri-State Aero for the months of March 2022 through December 2022 was reviewed. Only cost data was provided. No data was provided for January or February of 2022. Slightly higher water costs occurred within the summer months at the FBO’s facility in 2022.

FBO water use was added to the EVAAD facility data to perform an overall analysis. With January and February of 2022 taken out for comparison, the terminal building was still the most significant source of water use in 2022. However, the FBO became the second largest consumption source followed by the Firehouse and the Airfield Maintenance Building. The annual sum of the utility and facility water use services in 2022 was approximately \$56,000. The terminal at EVV contributed approximately \$35,000 towards water use services in 2022, which is approximately sixty-three percent (63%) of the total service fees. The percentage of total water utility costs per facility is displayed in **Figure 2-45**.

Figure 2-45 – Percent of Water Service Cost: Per Facility



Source: EVV, 2022; CHA, 2023.

While operational activities at EVV require water use, EVAAD can implement water efficiency measures or reduce water use altogether based on the data collected in this section. The consistency of data collection will allow EVAAD to monitor and track the efficacy of implementation.