CHAPTER 3: TERMINAL AREA & SUPPORT FACILITIES

Introduction

This Chapter of the Airport Master Plan is focused on the Terminal Area and Support Facilities which includes the aprons, taxilanes, hangars, and access roads. The chapter follows the Runway and Taxiway chapter where the primary aircraft movement takes place. This chapter addresses the existing and future facility needs at the Dawson Community Airport in Glendive (GDV).

This chapter analyzes the landside requirements necessary to support airport, aircraft, passenger and cargo operations. It will consider forecasted planning activity levels for based aircraft and operations. Alternative choices will be presented based on findings along with the decision on a preferred alternative. The following elements are provided for examining terminal area/support facilities:

- Planning Activity Levels
- Existing Terminal Area Uses
- Aircraft Storage
- Aircraft Parking & Movement
- Terminal Building
- Support Facilities
- Requirements Summary
- Alternatives
- Preferred Alternative

Planning Activity Levels (PALs)

These PALs are carried forward from Chapter 1 and are used later in this chapter to determine the requirements for facilities through the planning period. There are various airport activity measures used to determine airport facility requirements including annual operations, peak hour activity, and based aircraft. Airport activity can be sensitive to industry changes, national and local economic conditions. This results in difficulty in identifying a specific calendar year for demand-driven improvements.

For this study, PALs are used to identify demand thresholds for many recommended facility improvements. If an activity level is approaching a PAL, then the airport should prepare to implement the improvements. Alternatively, activity levels that are not approaching a PAL can allow improvements to be deferred. The demand forecasts developed in this study correspond to an anticipated planning level calendar year to each PAL (2029, 2034, 2039, 2044) from the preferred aviation forecasts as seen in **Table 3-1** and **Table 3-2**. Of the total operations in the tables, cargo activity makes up approximately 400 annual operations and airlines makes up approximately 1,000 annual operations.

Table 3-1 – Planning Activity Levels (PALs)

Key Activity Metrics	Base	PAL 1	PAL 2	PAL 3	PAL 4
Forecast Year	**2024**	**2029**	**2034**	**2039**	**2044**
Operations	3,100	3,322	3,559	3,813	4,086
Enplanements	2,117	2,183	2,252	2,323	2,396
Based Aircraft	17	18	18	19	20

Source: KLJ Analysis

Table 3-2 – Peak Airport Operations Forecast

Metric	Base	PAL 1	PAL 2	PAL 3	PAL 4
Annual Operations	3,100	3,322	3,559	3,813	4,086
Peak Month (15%)	465	498	534	572	613
Busy Day (15%)	17.8	19.1	20.5	21.9	23.5
Design Hour (15%)	2.7	2.8	3.1	3.3	3.5

Source:, KLJ Analysis

Existing Terminal Area Uses

Background

The Terminal Area contains a variety of activities. It is the point where all the interactions occur between aircraft movement and ground transportation. For GDV, this includes Airlines, Air Cargo and General Aviation (GA). GA includes all civil aviation activities except for commercial service. Providing necessary facilities and access for commercial and general aviation users at GDV will continue to be important for the vitality of the Glendive and Dawson County community.

AIRPORT TERMINAL BUILDING

A new airport terminal building was constructed in 2022 at GDV. The building primarily serves airline passengers arriving and departing at Glendive. It features airline ticket counters, TSA screening area, passenger holding areas and baggage claim. In addition, the terminal building provides a GA flight planning room. The building is approximately 4,895 square feet.

BUSINESS OPERATORS

Fixed Base Operators (FBOs) are commercial businesses providing multiple aviation services to the public, primarily for general aviation. Specialized Aviation Service Providers (SASOs) are commercial aviation businesses providing one or a few services. GDV does not have an FBO and the Airport Manager provides aircraft maintenance as a SASO.

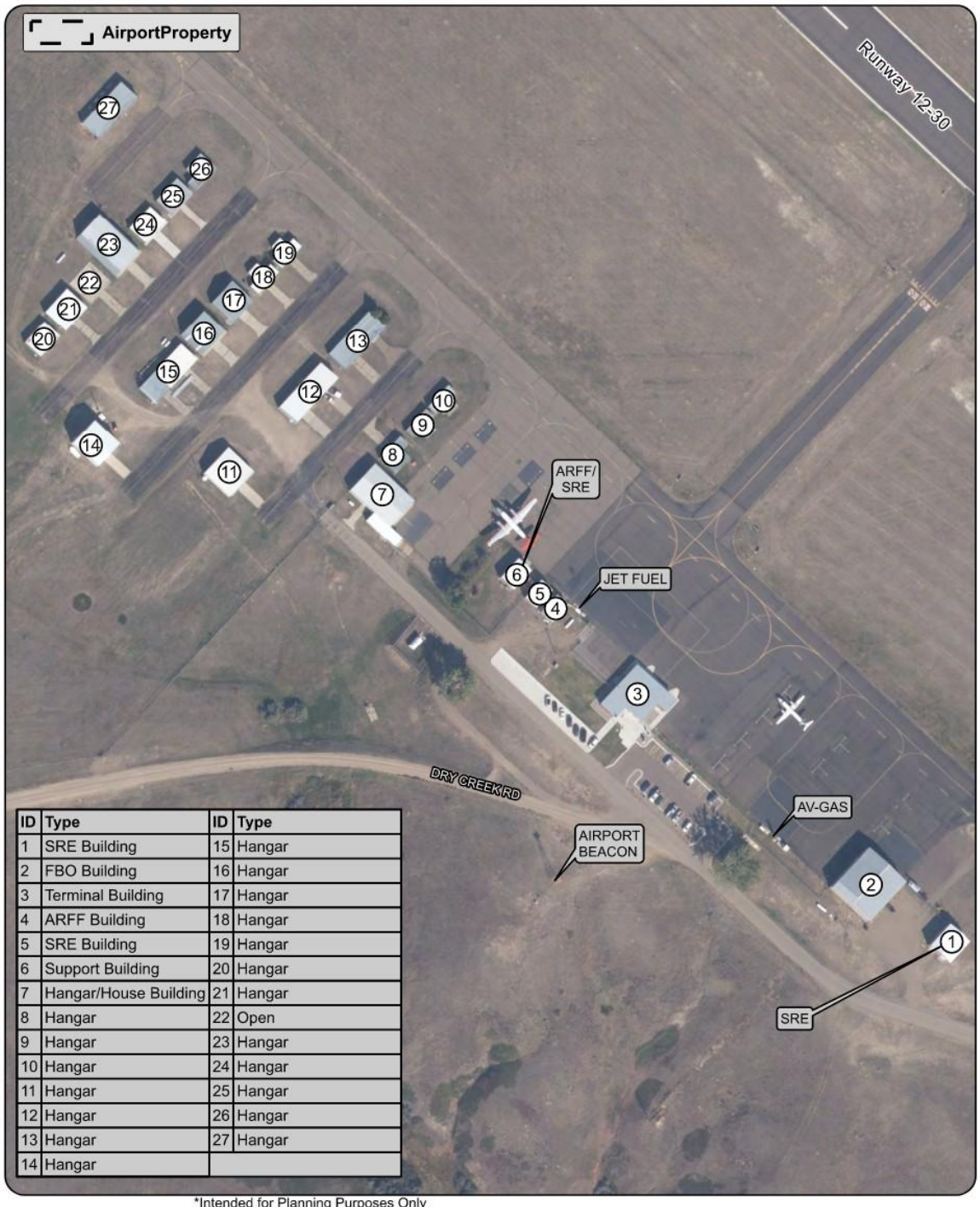
AIR CARGO

GDV handles an average of 400 operations per year of cargo flights to serve local area with Alpine Air carrying for UPS. Cargo operations require dedicated apron space to quickly transport cargo from the airplane to ground vehicles to save time. Ideally, these operations are to occur on a dedicated portion of the apron to accommodate other ongoing general aviation activity.



At GDV, no sorting or screening occurs at the airport. **If air cargo operations grow, it is recommended a dedicated portion of the apron area be considered to accommodate a large ADG-II aircraft next to a secure access point.** This could be co-located with a transient aircraft parking position. This will allow cargo ground operations to minimize interaction with other airport operations. These efforts will enhance safety and efficiency of ground personnel and overall air cargo operations without interfering with other ongoing airport operations.

Figure 3-1 – Terminal Area Facilities Map



ID	Type	ID	Type
1	SRE Building	15	Hangar
2	FBO Building	16	Hangar
3	Terminal Building	17	Hangar
4	ARFF Building	18	Hangar
5	SRE Building	19	Hangar
6	Support Building	20	Hangar
7	Hangar/House Building	21	Hangar
8	Hangar	22	Open
9	Hangar	23	Hangar
10	Hangar	24	Hangar
11	Hangar	25	Hangar
12	Hangar	26	Hangar
13	Hangar	27	Hangar
14	Hangar		

Aircraft Storage

Aircraft storage requirements are driven by operational requirements, aircraft size, local climate, and owner preferences. For based aircraft, the harsh winters in Eastern Montana areas drive all owners to seek aircraft storage facilities rather than outdoor parking on an aircraft parking apron. Owners prefer to have covered, secure storage for their aircraft with space for other aeronautical facilities including an office or maintenance/storage areas. All based aircraft at GDV are stored in aircraft storage hangars. Transient aircraft travel to airports for up to a few days at a time. These aircraft typically park on the apron or seek temporary hangar storage, especially during the winter season in addition to other adverse weather conditions.

A facility space model was developed to estimate aircraft storage hangar size needs. The model uses the based aircraft fleet mix forecast and estimates a size per aircraft type to determine recommended facility space. The GDV based aircraft forecast estimates another two based aircraft through the planning period (PAL 4) consisting of a fleet mix of 18 single-engine and two turboprop aircraft. Aircraft storage facilities are listed in **Table 3-3**.

Table 3-3 – Existing Aircraft Storage Facilities

Facility Number	Location	Description	Storage Area (SF)
1	South of Apron	SRE Building	1,600
2	Apron	FBO Hangar	5,385
3	Apron	Terminal Building	4,895
4	Apron	ARFF Building	700
5	Apron	SRE Building	700
6	Apron	Support Building	900
7	Apron Taxilane	Box Hangar	3,800
8	South Taxilane	Box Hangar	1,020
9	South Taxilane	T-Hangar	900
10	South Taxilane	T-Hangar	900
11	South Taxilane	Box Hangar	2,430
12	South Taxilane	Multi-Unit Box Hangar	2,890
13	South Taxilane	Multi-Unit Box Hangar	2,730
14	South Center Taxilane	Box Hangar	2,110
15	South Center Taxilane	Multi-Unit Box Hangar	2,850
16	South Center Taxilane	Box Hangar	1,555
17	South Center Taxilane	Box Hangar	1,700
18	South Center Taxilane	T-Hangar	980
19	South Center Taxilane	T-Hangar	980
20	North Center Taxilane	Box Hangar	1,235
21	North Center Taxilane	Box Hangar	1,810
22	North Center Taxilane	Box Hangar	1,740
23	North Center Taxilane	Box Hangar	2,830
24	North Center Taxilane	Box Hangar	1,390
25	North Center Taxilane	Box Hangar	1,390
26	North Center Taxilane	Box Hangar	1,200
27	North Taxilane	Multi-Unit Box Hangar	2,515
TOTAL		***Corporate/Airport Hangars***	*14,130*
		Box Hangars (21 units)	*35,195*
		T-Hangars (6 units)	*3,760*
		Grand Total	**53,085**

Source: KLJ Analysis

BASED AIRCRAFT STORAGE

All 17 based aircraft are piston aircraft and are currently stored in approximately 38,955 square feet of available aircraft storage space. The following factors are used for aircraft storage space requirements:

- Single-Engine Piston/Other/Ultralight: 1,600 SF
- Multi-Engine/Turboprop: 2,500 SF
- Additional 20 percent for general aeronautical storage and supplies

Using these factors with based aircraft forecasts, a projected need for based aircraft storage space is determined. It is important to understand that this projection provides a broad estimate of needed space into the future for facility planning. Actual space needs are demand-driven. For example, the presence of an FBO or SASO may require additional space for aircraft maintenance.

Table 3-4 – Based Aircraft Storage Requirements

Category	*Existing*	Base	PAL 1	PAL 2	PAL 3	PAL 4
Based Aircraft Forecast						
Piston (Single- Engine)	17	17	17	17	17	18
Turboprop	0	0	1	1	2	2
Based Aircraft Storage Space (SF)						
Aircraft Storage Space	*38,955*	27,200	29,700	29,700	32,200	33,800
Capacity/Deficiency	**-**	**11,755**	**9,255**	**9,255**	**6,755**	**5,155**

Source: KLJ Analysis. Note: RED indicates a deficiency to existing capacity.

The above analysis suggests sufficient aircraft storage space exists to accommodate based aircraft needs through this planning period. The alternatives will still evaluate where additional based hangar space should be placed if the need should occur. Hangars are constructed with public or private funds as demand warrants. The recommended hangar types to accommodate aircraft storage depend on airport and aircraft owner preferences and financial position. There are two main hangar types:

- T-Hangar: Nested small aircraft storage units within a rectangular building.
- Conventional Hangar: Commonly known as “box” hangars are square/rectangular.

TRANSIENT AIRCRAFT STORAGE

Transient aircraft storage is utilized on an as-needed basis as many aircraft require temporary storage. Aircraft types that require this type of storage are typically larger and more expensive airplanes such as turboprop and turbojet aircraft. Storage timeframes vary but can be for a few hours to several days.

The transient aircraft operations forecast was used based on peak periods and based on an average number of days an aircraft would need hangar storage. Transient aircraft storage should plan to accommodate one single-engine and one multi-engine/turboprop airplane through PAL 4. Total aircraft storage needs are summarized in **Table 3-5**.

Table 3-5 – Total Aircraft Storage Requirements

Category	*Existing*	Base	PAL 1	PAL 2	PAL 3	PAL 4
Total Aircraft Storage Space (SF)						
Based Aircraft	*38,955*	27,200	29,700	29,700	32,200	33,800
Transient Hangar	*5,385*	4,100	4,100	4,100	4,100	4,100
Total	*44,340*	31,300	33,800	33,800	36,300	37,900
Capacity/Deficiency	**-**	**13,040**	**10,540**	**10,540**	**8,040**	**6,440**

Source: KLJ Analysis. Note: RED indicates a deficiency to existing capacity.

Aircraft Parking & Movement

GA aircraft parking is utilized by transient or based aircraft. With all the based aircraft at GFK stored in hangars, the aircraft parking necessary for transient aircraft requiring parking for a few minutes to a few days. Itinerant aircraft will require either covered aircraft storage (based or transient) or apron parking space.

APRONS

Apron areas serve the loading, unloading, parking and maneuvering needs for commercial airlines, air cargo operators, and general aviation operations. **Table 2-5** provides a summary of the apron areas.

GDV currently has roughly 22,700 square yards (SY) of asphalt. There are currently 15 tiedown spots and a taxilane running parallel along the eastern edge of the apron that is a Taxiway Design Group (TDG) 2-A. Please see **Appendix B – Commercial Airports 101** for more information on TDG standards. The apron also currently houses the terminal building for Cape Air which provides passenger airline service through the Essential Air Service (EAS) Program and Alpine Air cargo loading and unloading, the P-2 Neptune directly south of the terminal building, the airport SRE and maintenance equipment buildings, firefighting equipment building, a large hangar, and Jet A and AVGAS fuel dispensers.

Table 3-6 – Apron Area Summary

Identifier	Purpose	Area (Square Yards)
Southern Area/Transient	Large hangar, eight tiedowns, AVGAS dispenser	7,200
Central Area/Airline & Cargo	Terminal, Neptune parking, equipment buildings, Jet A dispenser	7,000
Northern Area/Transient	Five tiedowns	3,600
	TOTAL	17,800

Source: KLJ Analysis & MT DOT 2024 SASP

AIRCRAFT DEMAND

General Aviation (GA) aircraft parking is utilized by transient and based aircraft. Transient aircraft may require parking for a period ranging from a few minutes to a few days. Itinerant aircraft will require either covered aircraft storage (based or transient) or apron parking space. The apron size is driven by the number and size of maneuvering and parked aircraft.

A general rule of thumb is to plan for the same number of tie-downs as the peak hour operations. Another method is to calculate transient aircraft parking space needs using the methodology contained in Appendix C of ACRP Report 113, *Guidebook on General Aviation Facility Planning.* In this example, a standard tie-down position accommodates one small multi-engine aircraft. Larger aircraft occupy additional space and can be accommodated with a nested tie-down configuration. The following aircraft size factors are used per ACRP Report 113:

- Single-Engine/Multi-Engine/Other: 1.00
- Helicopter: 2.00
- Large Piston/Turboprop: 2.50
- Turbojet: 3.00

The number of total and equivalent aircraft parking positions required at GDV is calculated below and identified in **Table 3-7**.

Table 3-7 – Aircraft Parking Requirements

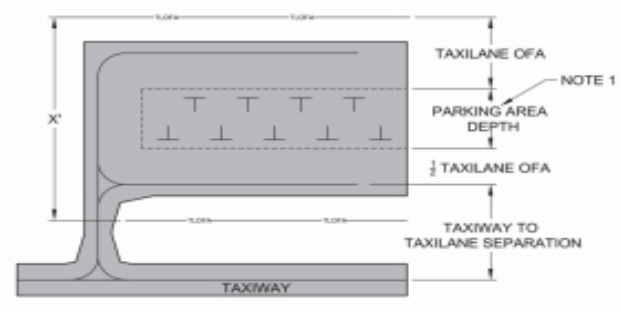
Category	*Existing*	Base	PAL 1	PAL 2	PAL 3	PAL 4
Transient Aircraft Parking						
Itinerant Operations	-	2,790	2,990	3,203	3,432	3,677
Busy Day Operations (15%)	-	16.0	17.2	18.4	19.7	21.1
Busy Day Arrivals (30%)	-	4.8	5.2	5.5	5.9	6.3
Total ADG-I Aircraft	-	3.2	3.5	3.7	4.0	4.2
Total ADG-II Aircraft (33%)	-	1.6	1.7	1.8	2.0	2.1
Total Aircraft Parking						
Total Equivalent Tie-Downs	-	7.2	7.7	8.3	8.9	9.5
Equivalent Tie-Downs (Rounded)	***15****	7	8	8	9	9

*Source: KLJ Analysis. Note: * Tie-downs do not allow ADG-II parking.*

Though there are currently 15 total tie-down spots available at the airport, seven spots on the northern part of the apron and eight on the southern part of the apron, they are only configured for ADG-I aircraft. The base number of seven tie-down spots was used for the possible removal/relocation of the northern tie-down spots for that area is ideal for future hangars to be placed. Through PAL 1 a total of eight equivalent aircraft tie-downs is needed to meet demand; this translates into four small aircraft and two larger aircraft parking positions. Minimum forecast aircraft tie-down needs through PAL 4 (9) is equal to the existing total number of tie-downs (15). But, with the critical design aircraft as ADG-II, **it is recommended that tiedowns be reconfigured in a nested "T" configuration so larger aircraft can park on ADG-I tie-downs without impeding on the taxilanes.**

SIZE & CONFIGURATION

The Single Engine aircraft position requires 330 SY of area. The apron area also includes at least one taxilane and therefore the total apron area can be calculated by multiplying the aircraft parking by 2.42 for ADG-I Taxilanes and by 3.00 for parking with ADG-II Taxilanes. Apron size must accommodate both the required aircraft parking positions and maneuvering standards. Aircraft maneuvering at GDV is required to accommodate safety setbacks for FAA Airplane Design Group (ADG) II wingspans for the design aircraft to access large aircraft parking positions, the fueling areas, and loading/unloading area. The current apron configuration meets maneuvering but not parking standards for the design aircraft.



Dual-Taxilane Apron Configuration (ACRP Report 96)

The preferred apron design for Design Group II aircraft is a dual-taxilane configuration to support taxi-in and taxi-out operations. Parking areas should be lighted with stand-alone flood lighting to enhance night operations and to improve security. A nested parking configuration 66-feet wide is flexible to accommodate four small aircraft or two large aircraft to accommodate PAL 1 demand. ADG-I aircraft can be accommodated with parking positions served from a single taxilane as is the case with the current aircraft parking configuration.

The transient apron size is based on the size and number of aircraft, as well as the design standards for the maneuvering taxilanes. Using ADG-I equivalent small aircraft and ADG-II taxilanes at GDV, a factor of 1,173 SY per aircraft was used. This is the average between ADG-I (960 SY) and ADG-II (1,385 SY) per aircraft size standards using historical FAA Central Region guidance. This figure includes apron taxilanes for maneuvering.

Based on this assessment, the existing apron is not sufficient to accommodate the existing and projected need. The general aviation apron space will require reconfigured tie-downs, additional parking spaces and additional apron space to meet ADG-II needs. It is also recommended all apron space continue to be lighted at all times with stand-alone flood lights around the terminal building area.

Table 3-8 – Transient Apron Size Requirements

Category	*Existing*	Base	PAL 1	PAL 2	PAL 3	PAL 4
Apron Area (SY)						
Equivalent Tie-Downs	***15****	7	8	8	9	9
Size Per Aircraft	*960*	1,173	1,173	1,173	1,173	1,173
Transient Apron Area	10,800	8,211	9,384	9,384	10,557	10,557
Capacity/Deficiency	-	**2,589**	**1,416**	**1,416**	**243**	**243**

*Source: KLJ Analysis. Note: RED indicates a deficiency to existing capacity. *Tie-downs do not allow ADG-II parking*

The center part of the apron is used for airline service provided by Cape Air and cargo loading and unloading by Alpine Air and is roughly 7,000 SY. There are two round trips a day for passenger service on a Tecnam P2012 which is an ARC B-I and cargo operations with one round trip a day, five days a week, operating a Beechcraft 1900C that is an ARC B-II. This apron space should accommodate both aircraft at once which equates to roughly 2,345 SY (960 SY for ADG-I and 1,385 SY for ADG-II, as stated above). The P2 Neptune display is also parked on the center apron, either south of the terminal or in front of the equipment buildings depending on the time of year; this aircraft requires roughly 1,060 SY of space. **The total area for the airline and cargo apron should be at least 3,408 SY. There are no definite plans to increase airline or cargo operations at GDV so the current and future apron space is adequate.**

TAXILANES

The taxilanes stemming from Taxiway A running between the tiedowns on the apron are all 25 feet wide as a TDG 1B. All current design standards are met for the taxilanes. **It is recommended for any future nested tiedowns that the taxilanes be planned for a TDG 2A which will widen them to 35 feet wide so ADG-II aircraft can maneuver.**

PAVEMENT CONDITION

From the Montana Department of Transportation 2024 State Aviation System Plan Pavement Condition Index (PCI) Map found in **Chapter 2**, **Figure 2-2**, the southern and central apron area have a PCI of 78 which is satisfactory. The northern part of the apron has a PCI of 60 which is categorized as fair. The airport should continue to maintain the southern and central apron in satisfactory condition. The northern part of the apron should be considered for major maintenance to get the PCI to a satisfactory condition.

Terminal Building

The size of the terminal building is based on the number of passengers and types of services. Although additional facilities can be provided, at a minimum the terminal building serving general aviation needs should include the following services:

- Passenger Waiting Area
- Security
- Restrooms
- Vending
- Pilots Lounge/Flight Planning
- Mechanical Room
- Storage Room
- Circulation



The terminal building should be located adjacent to the transient aircraft parking apron with good visibility to the airfield, and be in close approximately to the automobile parking and waiting area. In most cases the terminal building is located within or near a Fixed Base Operator (FBO) providing aeronautical services.

The terminal building at GDV is provided by the airport sponsor and recently finished construction in 2022. The terminal and is located center on the apron and there is 3,908 SF of terminal space usable for passengers. In general the terminal space needs are based on the following occupancy assumptions:

TSA Employees	4
Cape Air Pilots	2
Cape Air Ticket Agents	2
Passengers (Arr & Dep)	14
Other Customers	7
General Aviation	3
Total Number of People	32

Other customers include people dropping off or picking up passengers (0.5 meeters/greeters per passenger), general aviation includes a pilot and two passengers, and Cape Air passengers is for total number seats on the P2012 considering the arrival and departure occur at the same time. In conclusion, this is equated to the maximum terminal use at any given time. ACRP Report 113 determined that 100 square feet (SF) is necessary per passenger, this would equal 3,200 SF total space needed for the terminal area. The current terminal sufficiently meets passenger space. Future terminal space will be determined by Cape Air's aircraft and demand and when the building needs to be updated.

Passenger convenience elements for the pilots and passengers were reviewed. The proximity of the aircraft apron to the terminal is ideal to minimize outdoor exposure time. The automobile parking location adjacent to the terminal which is ideal to minimize outdoor exposure time. Two on-site airport courtesy cars are available for pilots, there is a Nissan which has instructions to access if the airport manager is away and a Honda which the airport manager must be present for a pilot to obtain.

COMMUNICATION FACILITIES

Communication facilities allow aircraft to transmit and receive clearances to air traffic control to navigate the national airspace system safely and effectively. GDV does not have an air traffic control

tower, so communication is up to the pilots to follow standard airspace procedures and practices on the Common Traffic Advisory Center (CTAF) and Universal Communications (UNICOM) on 122.8. The Air Route Traffic Control Center (ARTCC) is Salt Lake City Center and can be contacted through the Remote Communications Air/Ground (RCAG) at Watford City on 126.85 and Flight Service Station (FSS) is Great Falls on Remote Communications Outlet (RCO) on 122.2. Weather frequency for the AWOS-3PT is 135.075.

Support Facilities

Support facilities are necessary to support a safe and efficiently run airport supporting airport operations and the travelling public.

Airport Administration

GDV is owned and operated by the Dawson County Airport Authority. The airport manager is on location from 7:30 a.m. to 6:30 p.m. and can be contacted after hours for additional services. He is hired through Dawson County, and this arrangement is expected to continue and be sufficient. A small manager's office is in the large FBO hangar. **A small administration space should be considered in any future terminal, FBO hangar or equipment storage building, however it may not be eligible for FAA funding.**

Airport Maintenance & Snow Removal

Snow and ice control equipment typically required includes a carrier vehicle (i.e. dump truck or tractor), snow plows, snowbrooms, spreaders, sweepers, and rotary plows (snowblowers). For non-winter operations, grass cutting is accomplished with a carrier vehicle (i.e. tractor) and mower attachment. Smaller equipment is also used to facilitate snow removal or grass cutting. GDV currently has the following:

- Freightliner FL80 dump box with a 12-inch blade attachment
- John Deere 544J Tractor with a sweeper angle rotary broom, 3-yard dirt bucket, 5-yard snow bucket, snowblower, and sprayer cart attachments
- Unimog Case MB4/94 truck with a JRB skid, two blades, blower and loader attachments
- Kubota 4x4 RTV 520 that is owned by Cape Air
- 50-gallon deice cart owned by Alpine Air



Freightliner FL80

Equipment should be stored in a dedicated heated building for timely access and protection from the weather. North facing building doors should be avoided if possible to minimize prolonged snow and ice accumulation. There are currently three different storage buildings; an SRE building south of the apron (1,600 SF), and another SRE building (700 SF) and support building (900 SF) located next to each other north of the terminal on the apron, all buildings are unheated. See **Figure 3-1** for more details. The Freightliner, John Deere Tractor, Unimog, and Kubota are all stored inside along with the attachments except most of the Unimog attachments which sit outside. The deice cart is stored inside the FBO hangar.



South Storage Building – Equipment Storage



North Storage Buildings – One ARFF and Two Equipment Storage

AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF)

GDV currently has one ARFF storage building that is roughly 700 SF located north of the Jet A fuel dispenser on the apron. This building houses a Ford F550 with a 300-gallon mini pumper on the back and a sprayer cart. The truck has to be accessible at all times in the case of an emergency with a Cape Air operation. **It is recommended all ARFF equipment be stored with SRE and mechanical equipment.**

Total general MES space needs are determined by type of equipment planned to be stored. Per ACRP Report 113, *Guidebook on General Aviation Facility Planning*, the following space assumptions are made to estimate the size of an MES building:

- 3 equipment bays (dump truck, tractor w/ mower, equipment/material storage) (2,250 SF)
- 1 bay for ARFF (750 SF)
- 1 support bay for general storage at a medium airport (750 SF)
- 200 SF for office

A single storage facility at least 3,950 SF. This building should be placed somewhere with easy airside and landside access. It should be noted that not all areas described in this section may be eligible for FAA funding.

Fueling Facilities

The airport authority owns the airport fuel facilities. The 100 octane low lead (AVGAS) dispenser is located south of the terminal with an 8,000-gallon underground tank with delivery every 2-3 months. The jet fuel (JET A) dispenser is north of the terminal and has a 10,000-gallon tank located behind the dispenser and only gets a delivery for refueling the tank two times a year. Self-service fuel dispensing units are available 24-hours a day with a credit card for both fuel types. Aircraft access the fuel facilities in a designated apron space.

Fuel storage needs are driven by having sufficient supply to meet demand and by the size of the fuel delivery truck. An ideal fuel farm should provide a tank capacity of 10,000 gallons to accommodate a full tanker truck (8,000 gallons) to minimize the cost of deliveries. A split tanker with a half-delivery (4,000 gallons) for a 6,000-gallon tank is also acceptable. It has been stated a larger AVGAS storage tank would benefit the airport mostly due to the Cape Air P2012 operations needing a constant amount of fuel and to be able to take a full load of fuel. **It is recommended the AVGAS tank be updated to a 10,000 gallon above ground tank.** It should be noted that the FAA will not pay for any changes made to an existing fueling facility unless a new type of fuel is being added to the airport.

It is important to point out that the movement to achieve unleaded aviation fuel is a developing and changing trend. The FAA's goal is to convert the aviation fleet to unleaded by 2030 through the Eliminate Aviation Gasoline Lead Emissions (EAGLE) program. As of January 2026 the FAA released a Draft Transition Plan to Unleaded Aviation Gasoline – For Public Comment to give airports an idea of how a transition can be made. It should be noted the document states *"many of the factors that affect the ultimate transition are market driven… and the process of the transition will continue to evolve as 2030 approaches"*. The airport should continue to monitor the process needed to change current fuel tanks and how 100LL AVGAS and unleaded users needs will be met through the planning period.

Fencing, Security & Wildlife

SECURITY & FENCING

Security is an important consideration when operating a safe airport. Transportation Security Administration (TSA) updated their *Security Guidelines for General Aviation Airports and Users* document in 2025 providing recommended airport design guidelines.

The first line of security protection infrastructure is a perimeter fence. Perimeter fencing is not mandated at GDV though its installation would help prevent unauthorized persons from entering the airfield. A minimum 6-foot-high fence with added barbed wire is generally recommended at a minimum for security. Airfield access points should be minimized, however those that are needed should be controlled. Ideally, automated controlled access gates would be installed at the apron, hangar area and east access entry points. Locked field gates would be installed at other airfield access points.

Currently the airport has a 10-foot-high chain link fence with barb wire along the top round the airport perimeter. There is one automatic drive though gate north of the terminal next to the Jet A fuel dispenser. There rest of the gates are manual drive through gates; one leads to the individual box hangars at the end of Airport Road, the next sits south of the FBO building and the other one is before the automatic gate to the individual box hangars that leads to the northernmost tiedown spots. There are also latch gates to walk through, one is south of the main doors of the terminal building so pilots can access the parking lot from the apron area. The next one is south of the FBO and attached to the building. The airport should continue to maintain the fence and all gates in good condition.

WILDLIFE CONTROL & MITIGATION

Controlling wildlife on or near the airport helps mitigate existing and prevent the creation of potential new hazards to aircraft. The airport can take steps to help increase safety of the airfield as identified in the Wildlife Hazard Management Plan (WHMP). A 10-foot-high fence around the complete perimeter is a minimum service objective for a Key System Airport, which is triggered with a runway length of 5,000 feet or greater. This is currently met and is sufficient for larger mammals from accessing property. However, smaller animals such as porcupines, foxes, coyotes, and jack rabbits have been spotted around the airfield and need to be kept off the runways. This task can be difficult due to the size of the airfield

without exact known locations of where they are coming from. Some mitigation efforts can include relocation, trapping, hunting, and repellants.

Utilities

The airport is not currently connected to public water or natural gas utilities. There is a well for water and propane supplied by Crossroads Conoco. Electricity is provided by Montana-Dakota Utilities (MDU), and telecommunications and internet is through Mid-Rivers Communication.

DEICING

Deicing operations are critical to ensuring safe flight operations during winter weather. Deice fluid runoff has potential environmental implications when discharged into airport stormwater. This activity is regulated through Federal and State stormwater discharge permits.

No deicing operations occur today; the deice cart is owned by Alpine Air and is stored inside the FBO hangar. The pilots deice the aircraft when needed and the airport only uses in emergency situations. No larger-scale deicing operations are expected based on airport maintenance operations, fleet mix and expected airport businesses. Typically, a large FBO handling a large volume of transient corporate traffic would offer deicing capabilities. Any new deicing operations would have to be incorporated into an approved airport stormwater permit for compliance to be achieved.

GROUND ACCESS & CIRCULATION

The overall design objective is to provide ground vehicles with access to and from the terminal building and hangar facilities using a primary access road. To achieve this, access points should be secured to the apron, hangar area and any field access points to reduce undesired automobile access. The number of hangar access points should be limited to reduce the possibility of vehicle/aircraft incidents which improves safety. Fuel delivery trucks should have access to tanks without entering airside operations areas. Access roads should be paved to reduce the likelihood of foreign object debris (FOD) on the airside areas where it may become a hazard to aircraft.

The airport, terminal, and GA activity can be accessed via Airport Road from I-94 West. The pavement strength should be sufficient to accommodate a plow truck, fuel tanker and emergency equipment. The alignment of the access road should continue to provide controlled access to airside facilities.

Apron access is provided north of the terminal building after the parking area. **All access points should be secured, with the higher activity access points secured with a controlled access gate.** Ideally access points should require a turn from the end of a roadway to discourage inadvertent airfield access. Fuel tanks are currently accessed in the same area away from the active air operations area though the AVGAS trucks must drive through the airline loading and unloading area to get to the tanks. **It is recommended when AVGAS tanks are replaced, they be relocated to an area that tanker trucks can direct access with little need to drive on the apron**.

The FBO apron access is unpaved after turning off of Airport Road. The same goes for the access to the individual box hangar area once you gain access through a manual gate. The unpaved individual box hangar road goes though undeveloped lots and across the taxilanes, **it is recommended this road be reconfigured to go around all current hangars to keep vehicles off the taxilanes.**

Walking distances were reviewed from a passenger convenience perspective. Currently both the main landside automobile parking lot is located directly adjacent to the terminal building. This location is ideal to minimize passenger and visitor exposure to the outdoor elements.

AUTOMOBILE PARKING

Automobile parking at general aviation airports should accommodate landside access needed to serve aeronautical facilities. Facilities requiring automobile parking include the terminal building, aircraft storage hangars, administration, maintenance equipment storage buildings and FBOs. Vehicles should be discouraged from parking in airside areas. Both public and exclusive-use parking lots may be needed to serve all needs. Automobile parking lots should be sized for the demand and have appropriate number of handicapped accessible spaces. Circulation patterns and pick-up and drop-off points should also be considered. Lighting is recommended for night-time use and security.

During the design of the terminal building in 2021 the parking lot was included in that design. It was determined that 20 vehicles per day for 320 days each year at two passes per car for a total of 12,800 annual departures. This made for 24 parking stalls with two handicap spots directly southwest of the terminal that are asphalt as the main parking lot for airline passengers. An overflow parking lot was also planned further southwest of the terminal with 12 concrete spaces. The markings on the parking lots have been designed to comply with ADA requirements and standard parking lot design practices. Changes to operations, airline schedules and airline aircraft will affect the number of parking stalls needed and should be updated when changes to the terminal are made.

There is unmarked parking in the dirt lots south of the FBO building and south of the ARFF building and most tenants at GDV park their vehicles inside of their hangar.

Requirements Summary

This section identifies safety, capacity and development needs for the Dawson Community Airport based on forecasted activity levels. These recommendations provide the basis for formulating development alternatives to adequate address recommended improvements. The following summarizes the facility recommendations:

- A dedicated portion of apron be used for cargo operations to accommodate large ADG-II aircraft and close to a secure landside access point to mitigate FOD.
- Tiedowns should be reconfigured in a nested “T” configuration so larger aircraft can park without impeding on the taxilanes.
- The nested tiedowns taxilanes should be planned for a TDG-2A which will widen them to 35-feet for ADG-II aircraft to maneuver.
- A small administration space should be considered in any future terminal, FBO hangar or equipment storage building.
- A heated equipment storage facility at least 3,950 SF should be constructed to house all SRE, airfield maintenance equipment and ARFF equipment along with any attachments.
- The AVGAS tank should be updated to a 10,000 gallon above ground tank and relocated for easier landside access by tanker trucks to eliminate the need to drive on the apron.
- The access road going through the individual box hangar area should be reconfigured to go around all current hangars to keep vehicles off the taxilanes.

Alternatives

A wide range of alternatives are evaluated to determine the best solution for the airport to meet facility needs by the Planning Advisory Committee (PAC). In many cases the process is iterative to react to new information and input which created a narrower slate of alternatives for further review. Please refer to the alternative analysis process in **Chapter 1** for details on the factors considered. In the end a preferred alternative was selected and portrayed at the end of this chapter.

Four initial alternatives were drafted for the terminal area. Each layout presented offered the following components:

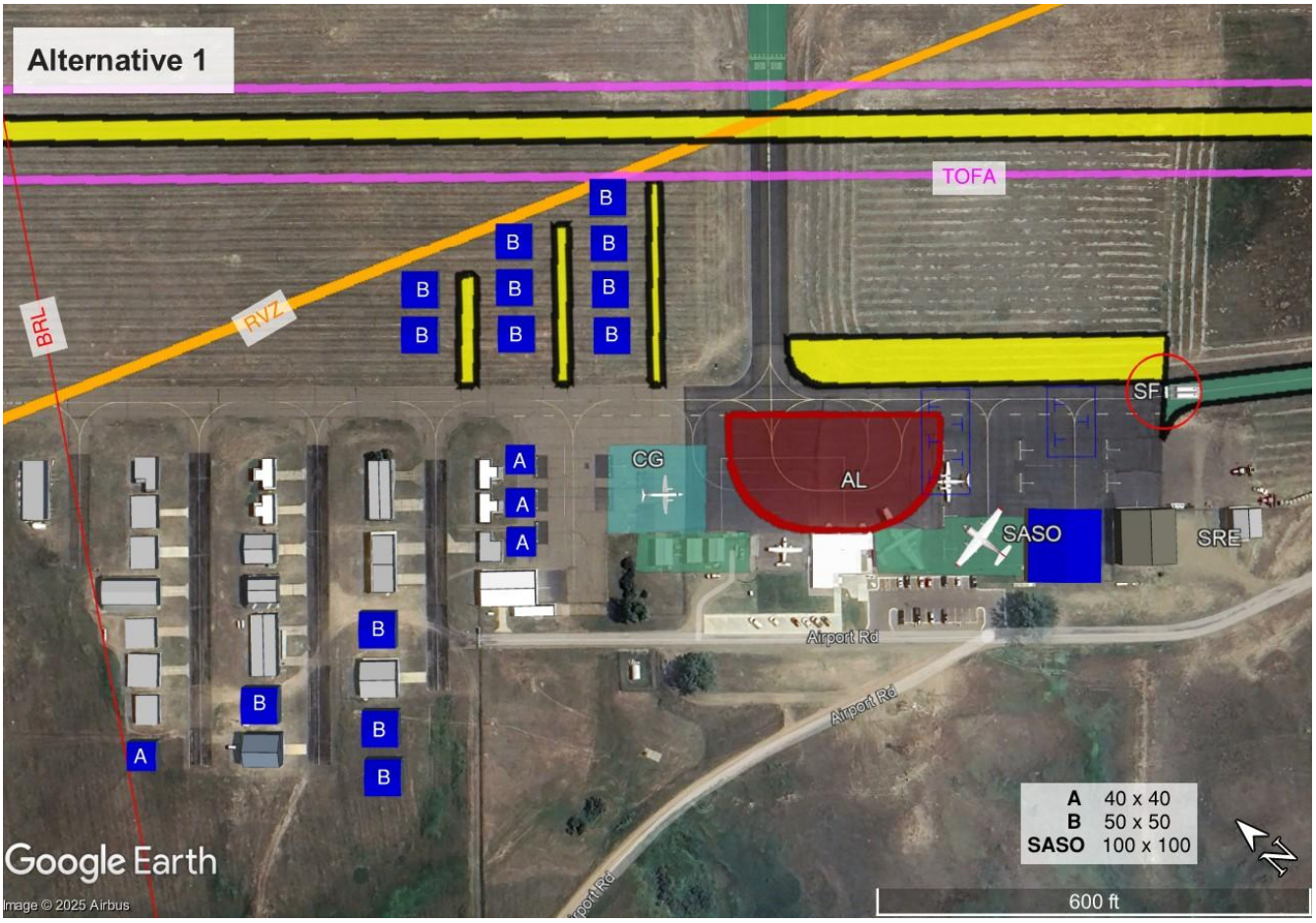
- Removal of taxiway connecting to the apron from the Runway 30 End for planned new parallel taxiway
- Specific apron areas for cargo and airline operations
- Nested tiedown configurations and layout
- Removal of the current three equipment storage buildings on the apron and one dedicated SRE, airfield maintenance, and ARFF building location
- Jet A and AVGAS fuel locations
- SASO options
- Fill in current individual box hangar are with 40’ x 40’ and 50’ x 50’ hangars
- Group I and II T-hangars and individual box hangars

Each of these components are laid out in different configurations along with additional changes for each alternative. Please see the following information for each alternative presented.

Alternative 1

- Nine 50’ x 50’ individual box hangars on three new taxilanes development north of the current taxiway
- Three 50’ x 50’ individual box hangars located on current north apron taxilane
- Cargo area located more center of the terminal area
- Move all equipment to the current SRE building south of the apron
- A 100’ x 100’ SASO located next to the current FBO Hangar on the apron
- Self-fueling on south edge of apron where current taxiway meets the apron from the 30 end
- Apron expansion along southeastern edge of the current apron
- Nine nested tiedowns reconfigured in current tiedown location

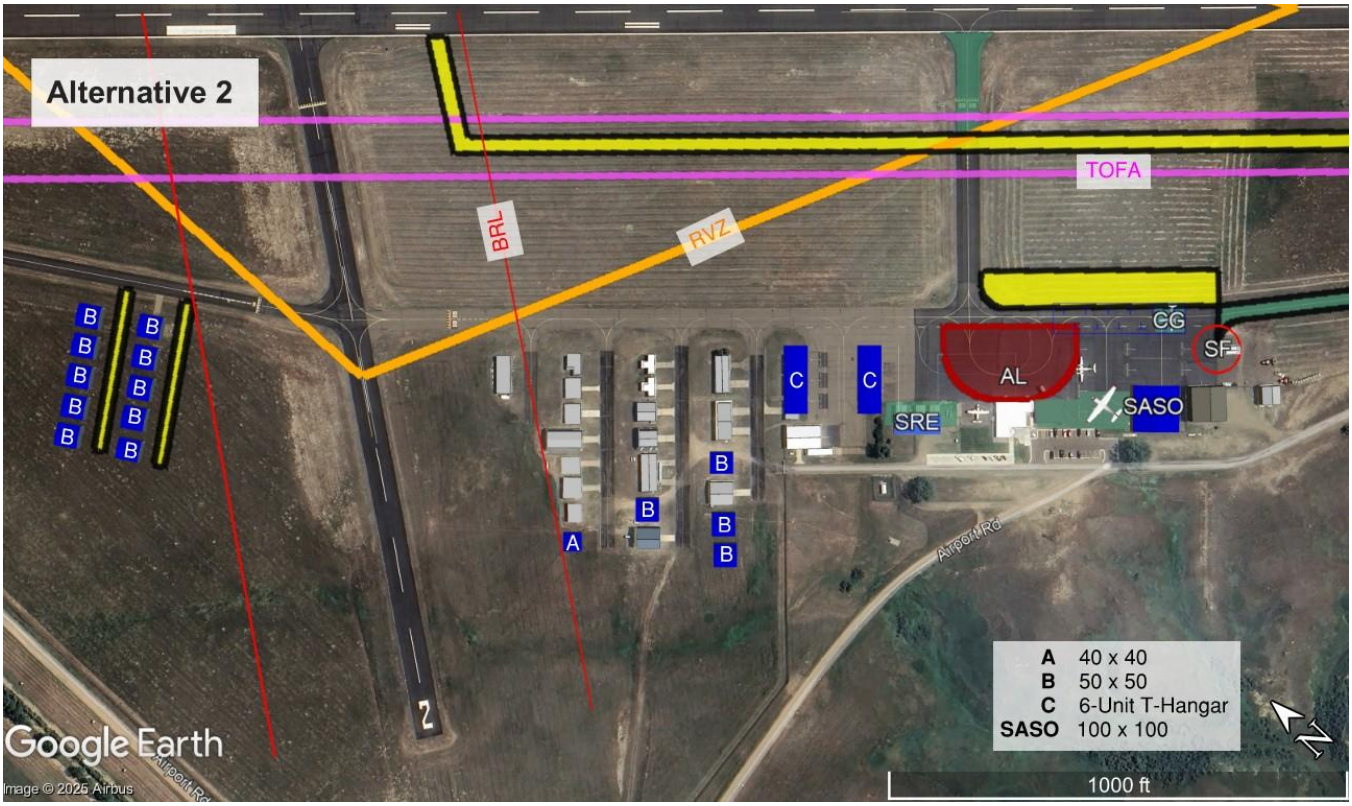
Figure 3-2 – Alternative 1



Alternative 2

- Ten 50’ x 50’ individual box hangars on two new taxilanes development west of Runway 2-20
- Two 6-unit T-hangars surrounding the current northern apron taxilane
- Cargo on the south area of the current apron
- New equipment building in current location of the three equipment buildings
- A 100’ x 100’ SASO building next to the current location of the FBO hangar
- Self-fueling on the south edge of the current apron
- Apron expansion along southeastern edge of the current apron
- Ten nested tiedowns along eastern edge of current southeastern apron

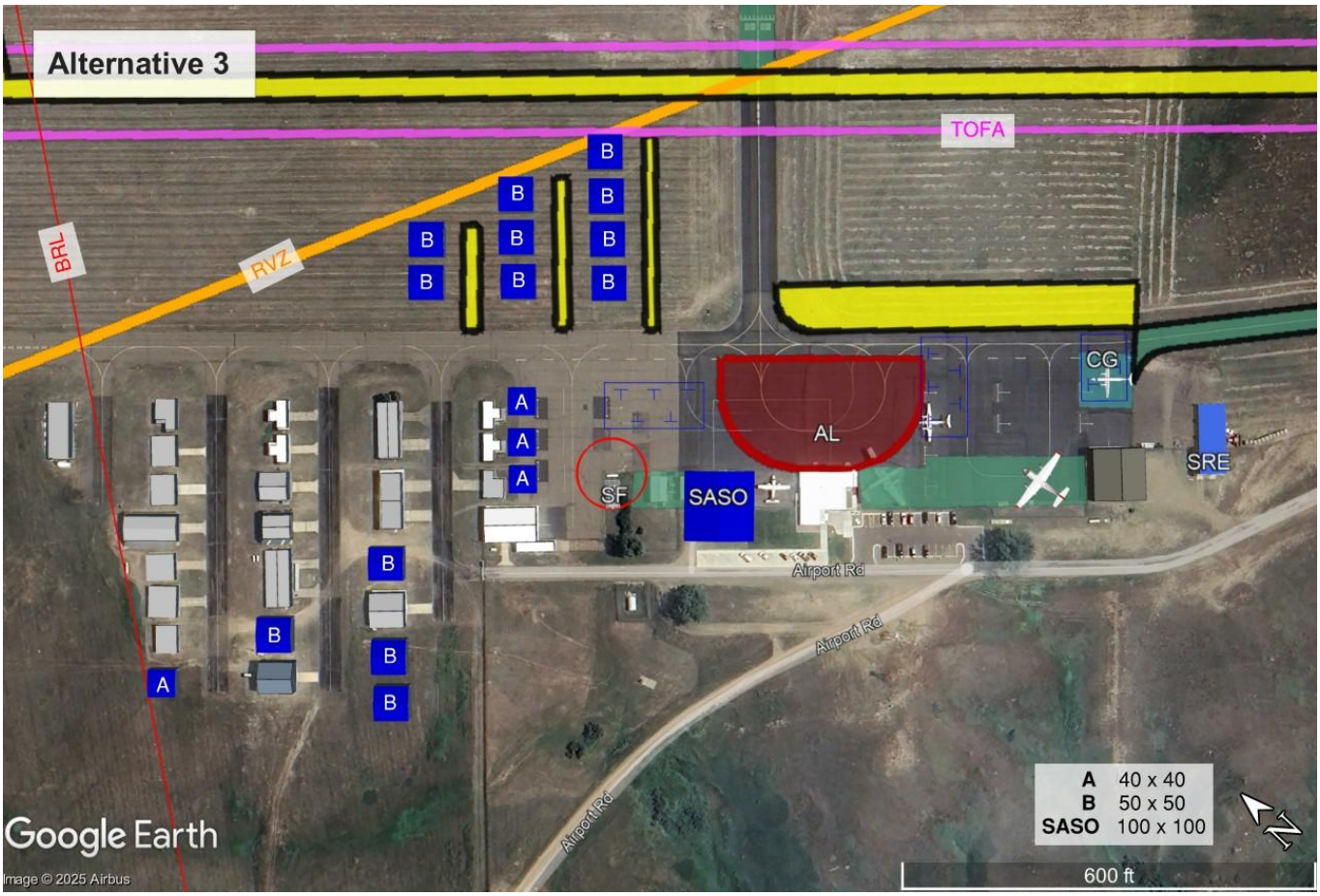
Figure 3-3 – Alternative 2



Alternative 3

- Nine 50’ x 50’ individual box hangars on three new taxilanes development north of the current taxiway
- Three 50’ x 50’ individual box hangars located on current north apron taxilane
- Cargo area on the south edge of the current apron
- Large equipment building constructed to replace the current SRE building south of the apron
- A 100’ x 100’ SASO building where the three current equipment buildings are
- Self-fueling north of new SASO building
- Apron expansion along southeastern edge of the current apron
- Ten nested tiedowns reconfigured in current tiedown location
- Five nested tiedowns east of the new SASO building and self-fueling location

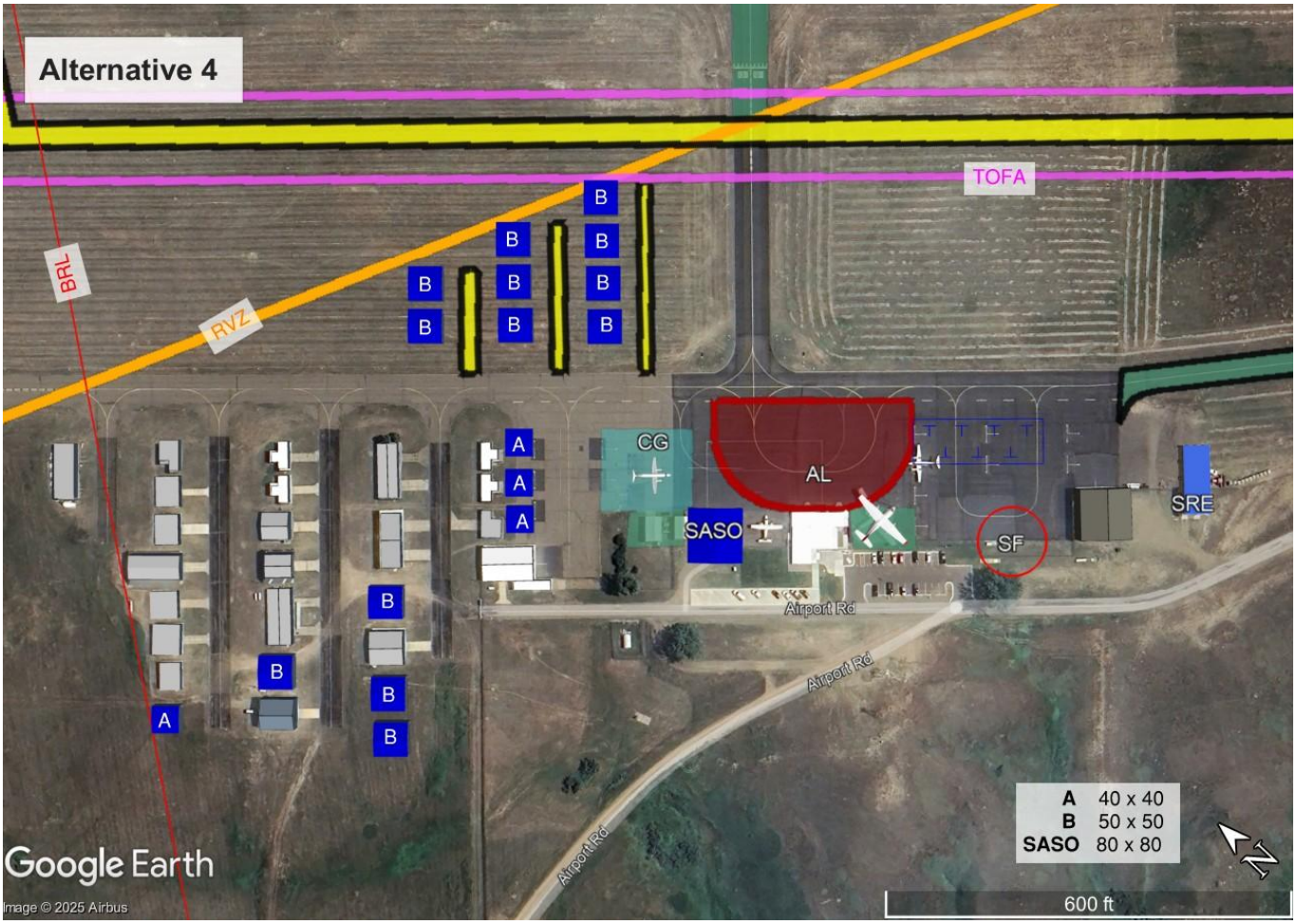
Figure 3-4 – Alternative 3



Alternative 4

- Nine 50’ x 50’ individual box hangars on three new taxilanes development north of the current taxiway
- Three 50’ x 50’ individual box hangars located on current north apron taxilane
- Cargo area located more center of the terminal area
- Large equipment building constructed to replace the current SRE building south of the apron
- An 80’ x 80’ SASO building where the three current equipment buildings are
- All self-fueling moved to the current AVGAS fueling location
- Seven nested tiedowns reconfigured in current tiedown location

Figure 3-5 – Alternative 4



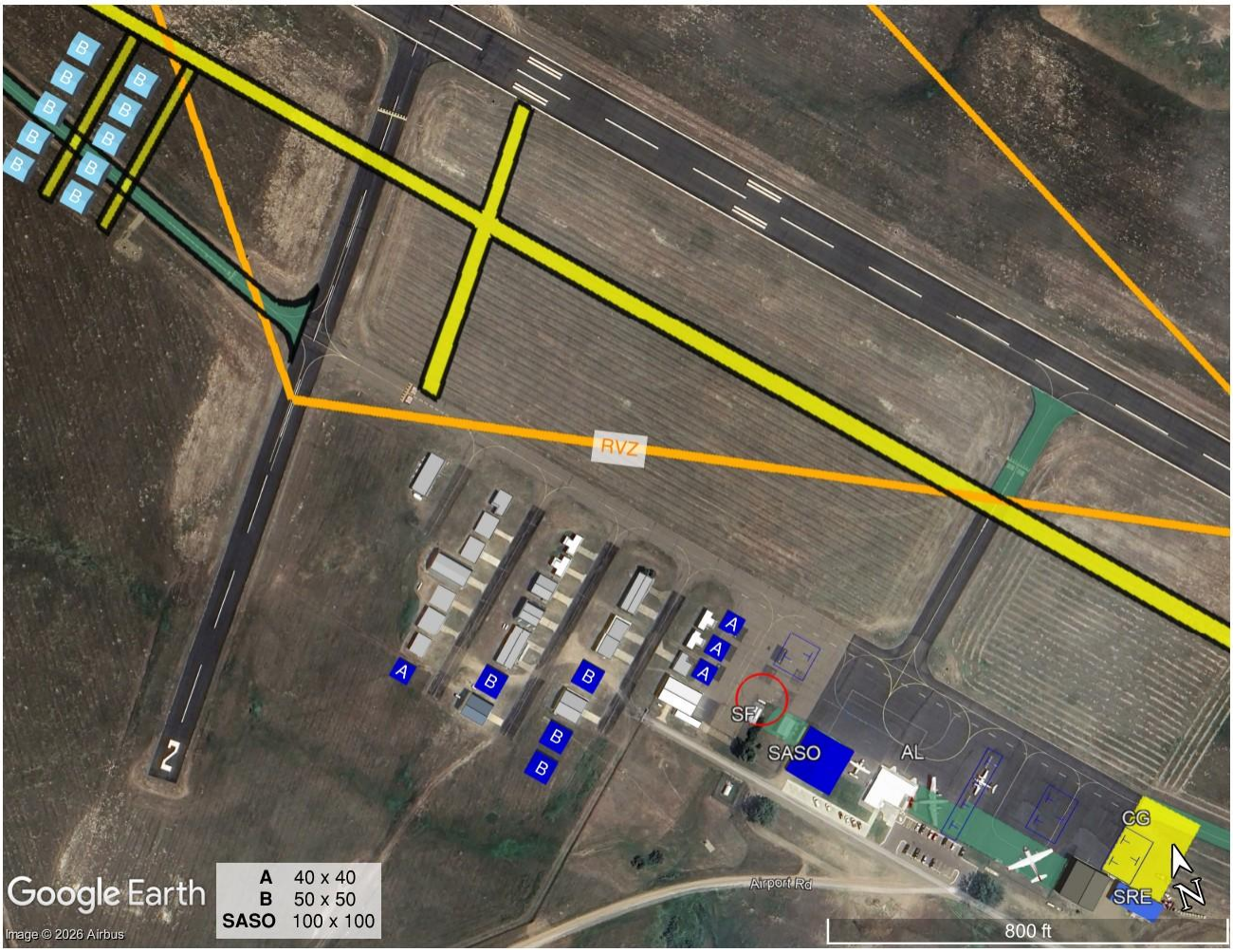
REVISED ALTERNATIVES

After presenting these options to the advisory committee, alternatives were refined based on the groups feedback. It was decided that Alternative 2 and Alternative 3 would be combined to make a Revised Alternative 3. Alternative 4 was also favored and refined.

Revised Alternative 3

- Ten 50’ x 50’ individual box hangars on two new taxilanes west of Runway 2-20
- Three 50’ x 50’ individual box hangars located on current north apron taxilane
- Cargo on the south apron expansion that will also be a part of additional tiedown location
- Large equipment building constructed to replace the current SRE building on the south apron expansion
- A 100’ x 100’ SASO building where the three current equipment buildings are located
- Self-fueling north of new SASO building
- Two nested tiedowns east of the new self-fueling location and reconfigure current southern wing-to-wing tiedown locations to be in a three nested tiedown configuration providing a total of 12 tiedown locations.

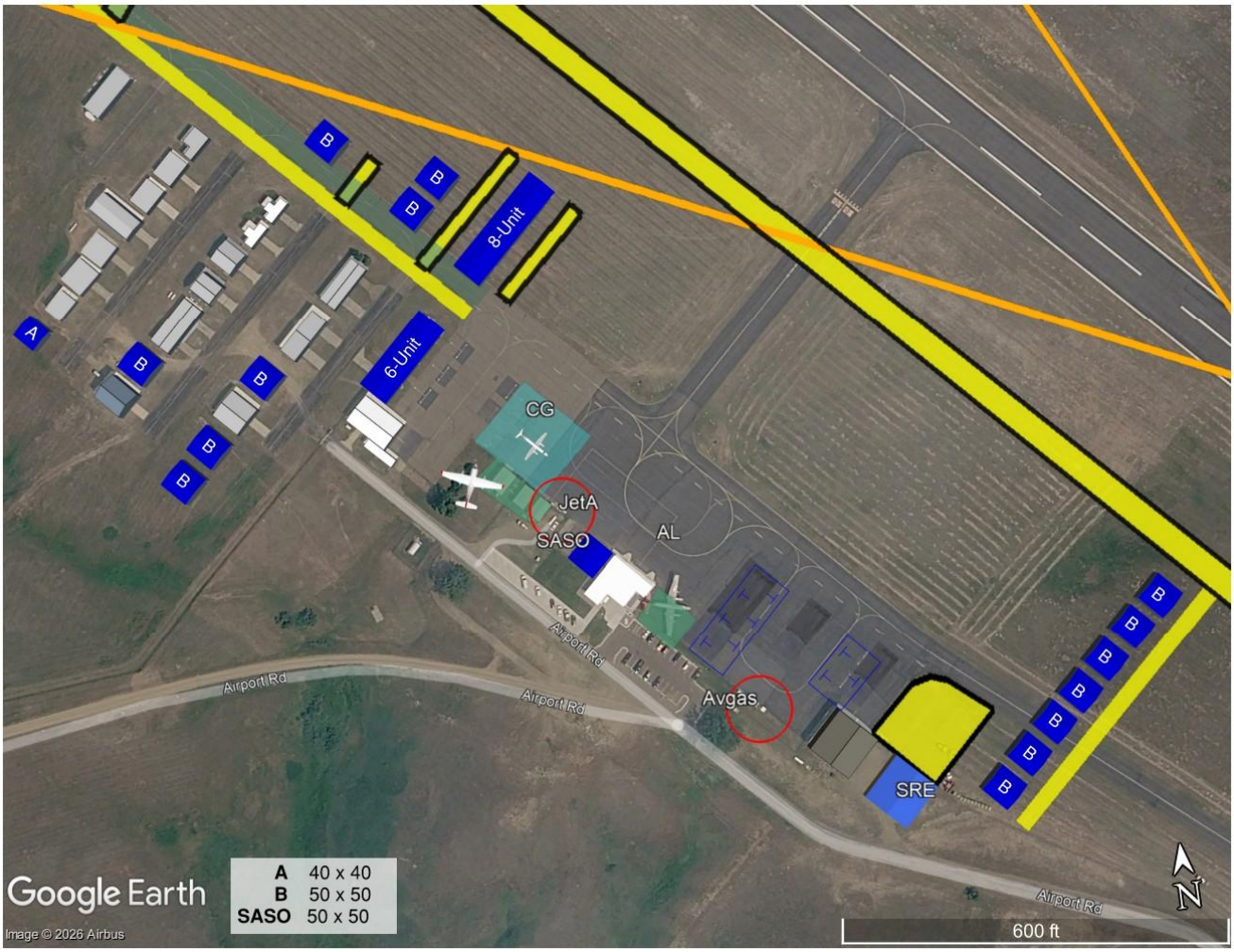
Figure 3-6 – Revised Alternative 3



Revised Alternative 4

- Relocate the current taxiway leading to the tenant hangar area closer to the current hangars
- Three 50’ x 50’ individual box hangars and an 8-unit T-hangar on three new taxilanes north of the current taxiway
- Seven 50’ x 50’ individual box hangars south of the terminal area on a new taxilane from the proposed parallel taxiway
- A 6-unit T-hangar located on the current northern apron taxilane
- Cargo area in its current location north of the terminal
- Large equipment building constructed to replace the current SRE building with apron expansion to the south
- A 50’ x 50’ SASO building directly north of the terminal building
- Self-fueling locations stay in their current positions
- Nine nested tiedowns reconfigured in current tiedown location

Figure 3-7 – Revised Alternative 4



Preferred Alternative

Further evaluation of the revised alternatives was discussed to develop the preferred alternatives, as shown in **Figure 3-8**. The following items were decided for the terminal alternative.

- Relocate the current taxiway leading to the tenant hangar area closer to the current hangars
- Four 50’ x 50’ individual box hangars south of the terminal area on a new ADG-II taxilane from the current taxiway leading to the Runway 30 End
- A 6-unit T-hangar located on the current northern apron taxilane
- Cargo area in its current location just north of the terminal
- Large equipment building constructed to replace the current SRE building with apron expansion to the south
- A 50’ x 50’ SASO building north of the current Jet A fueling location
- Self-fueling locations stay in their current positions
- Two tiedowns west of the proposed cargo area and nine nested tiedowns reconfigured in current tiedown locations
- Install an automatic gate between the proposed SRE building and current FBO hangar

Figure 3-8 – Preferred Alternative

