Dawson Community Airport (GDV) – Glendive, MT

Airport Master Plan
Critical Aircraft, Facility Requirements & Airfield Alternatives
June 25, 2025

KLJ
ENGINEERING, REIMAGINED

1

Agenda

- Introductions
- Review Kickoff Items
- Parallel Taxiway
- Primary Runway Issues
- Crosswind Runway Issues
- Open Discussion
- Next Meeting





KLJ
ENGINEERING, REIMAGINED

2

Critical Design Aircraft

Aircraft Approach Category B

- Represents speed that aircraft approaches runway
- 91 to 121 Kts

Airplane Design Group II

- Represents wingspan and height of aircraft
- 49’ to 79’ wingspan

Taxiway Design Group 2A

- Represents pavement width and turning clearance needed by aircraft
- Main Gear Width – 15’ to 20’
- Cockpit to Main Gear – 20’ to 40’



Based on Cargo Aircraft

3

Existing Airfield

- Current ADG: Design Group A/B-II
- Primary Runway 12-30 at 5,704’ x 100’
  - Asphalt / Grooved / In “Good” Condition
  - RNAV / GPS Approach both ends
  - Runway Marking – Non-precision
    - REILs and VASIs on both ends
- Crosswind Runway 2-20 at 3,002’ x 60’
  - Asphalt in “Good” Condition
  - Runway Markings – Visual
    - PAPI on both ends



KLJ
ENGINEERING, REIMAGINED

4

Outreach Findings

- Most users expressed they do use the crosswind runway and to not shorten it.
- There was very little to be said about the location of the parallel taxiway.
- Not a dire need for hangar space right away though it sounds like if they were to be built, they would be utilized.
- Appreciate the available maintenance on site and would like a facility though understand there is not enough business for one.
- Only complaints were trouble reading the print on the credit card processing machine for fuel and the Runway 12 end is dark on the taxiway.

5

Items to Consider for Improvement

- Parallel Taxiway Separation
  - Open Up Options for Terminal Area expansion
- Crosswind Runway Length
  - Wind Coverage
  - Runway Visibility Zone
  - Land Control

KLJ
ENGINEERING, REIMAGINED

6

Parallel Taxiway Option – 240’



- 240’ centerline separation
- A/B-II 1 Mile Visibility
- 200’ Hold Line



7

Parallel Taxiway Option – 300’



- 300’ centerline separation
- C/D/E-II 1 Mile Visibility
- 200’ Hold Line for A/B-II (250’ for C/D/E-II)



8

Runway Length

Airport and Runway Data	
Runway 12-30 Length	5,704 feet
Airport Elevation	2,458.3 feet
Mean Daily Maximum Temperature of Hottest Month	87.7°F
Aircraft Classification	Recommended Runway Length
Small Airplanes 12,500 Pounds or less	
10 or more passenger seats	4,609 feet
Less than 10 passenger seats at 100 percent of fleet	4,623 feet
Less than 10 passenger seats at 95 percent of fleet	4,075 feet
SARLAT	
Cessna 150	3,363 feet
Cessna 172	3,448 feet
Cirrus SR 22	4,961 feet
Moony M20J	6,229 feet
Vans RV12	3,311 feet

- Runway 12-30 length based on Beechcraft 1900D
  - 4,300 feet needed for takeoff
- Runway 2-20 based on Cessna 150
  - 3,363 feet needed for takeoff

- FAA AC 150/5325-4B
- SARLAT data

Airport and Runway Data	
Runway 12-30 Length	5,704 feet
Airport Elevation	2,458.3 feet
Mean Daily Maximum Temperature of Hottest Month	87.7°F
Maximum Difference in Runway Centerline Elevation	4 feet (+40 feet)
Runway Condition	Wet and Slippery Runways
Aircraft Classification	Recommended Runway Length
Large Airplanes more than 12,500 Pounds but less than 60,000 Pounds	
75 percent of fleet at 90 percent useful load (Wet)	7,000 feet
75 percent of fleet at 90 percent useful load (Dry)	7,185 feet
75 percent of fleet at 60 percent useful load (Wet)	5,500 feet
75 percent of fleet at 60 percent useful load (Dry)	5,272 feet
Specific Aircraft (SARLAT and POH)	
Cessna 402B	5,973 feet
Cessna 421	7,022 feet
Beechcraft 1900D	4,300 feet
Beechcraft King Air B200GT	4,564 feet
Beechcraft King Air C90	4,093 feet
Cessna 208 Caravan	3,394 feet
Pilatus PC 12 NG	4,142 feet
Cessna 560 XL	6,964 feet

9

Weather Analysis

ALL-WEATHER WIND COVERAGE			
CONFIGURATION	CROSSWIND COMPONENT		
	10.5 KNOTS	13 KNOTS	16 KNOTS
RUNWAY 12-30	91.10%	96.53%	98.89%
RUNWAY 2-20	81.69%	88.77%	93.93%
	-	-	-
COMBINED	97.70%	99.15%	99.78%
SOURCE: KGDV AWOS (2014-2023, HOURLY) FROM NATIONAL CLIMATIC DATA CENTER			
85,773 TOTAL OBSERVATIONS			

INSTRUMENT FLIGHT RULES (IFR) WIND COVERAGE			
CONFIGURATION	CROSSWIND COMPONENT		
	10.5 KNOTS	13 KNOTS	16 KNOTS
RUNWAY 12-30	80.30%	90.95%	96.97%
RUNWAY 2-20	83.09%	-	-
	-	-	-
COMBINED	97.76%	90.95%	96.97%
SOURCE: KGDV AWOS (2014-2023, HOURLY) FROM NATIONAL CLIMATIC DATA CENTER			
4,518 TOTAL OBSERVATIONS			
IFR = VISIBILITY LOWER THAN 3 MILES OR CEILING LOWER THAN 1,000 FEET			

Weather Condition	Percentage	Days Per Year	Hours Per Year
VMC	94.73%	345.8	8,299
Usable IMC	4.26%	15.5	373
Usability	**98.99%**	**361.3**	**8,672**
Below Weather Minimums	1.01%	3.7	88
Total	**100.00%**	**365.0**	**8,760**

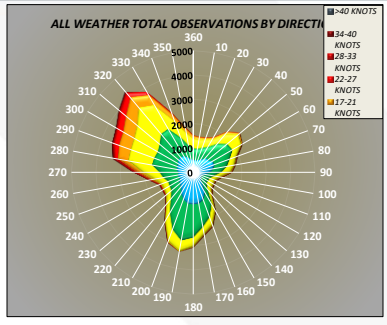


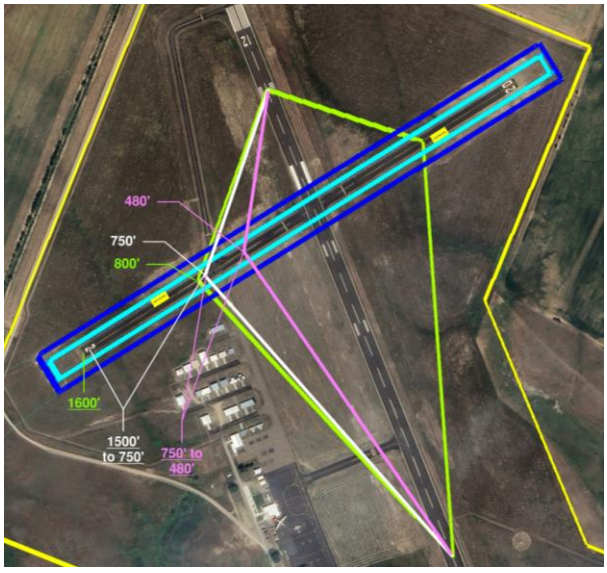
Table B-1. Allowable Crosswind Component per Runway Design Code (RDC)

RDC	Allowable Crosswind Component
A-I and B-I *	10.5 knots
A-II and B-II	13 knots
A-III, B-III, C-I through D-III D-I through D-III	16 knots
A-IV and B-IV, C-IV through C-VI, D-IV through D-VI	20 knots
E-I through E-VI	20 knots

Note: * Includes A-I and B-I small aircraft.

10

Runway Visibility Zone (RVZ)

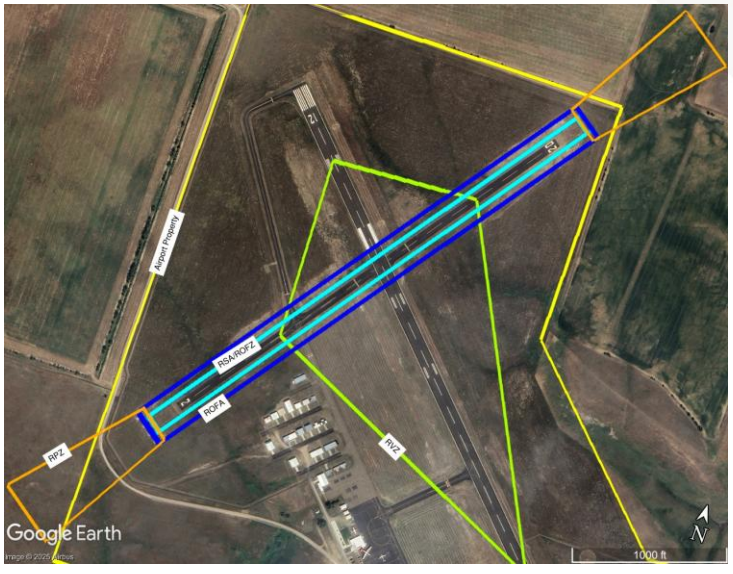


- Clear Line of Sight (LOS) from blocking the pilot's view to intersecting runways
- No buildings within the RVZ
- No parked aircraft within the RVZ
- Measurement
  - ½ distance from intersection to Runway End when distance is >1500'
  - 750' when distance is >750 and <1500'
  - End of Runway when <750'

KLJ
ENGINEERING, REIMAGINED

11

Current Crosswind Runway



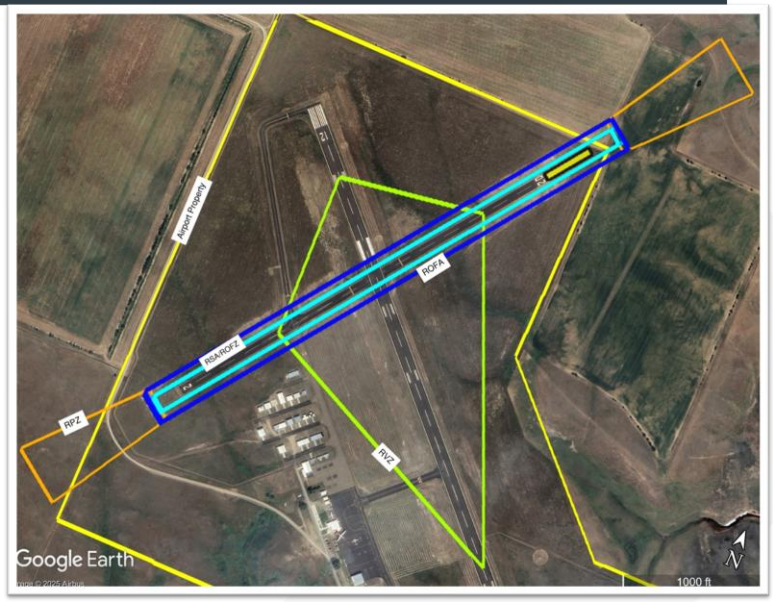
- Runway Designation 2-20
- 3,002' long x 60' wide
- Current Design Group A/B-I(S)
- RSA: 3,482' long x 120' wide
- ROFA: 3,482' long x 250' wide
- RPZ: 250' x 1,000' x 450'

KLJ
ENGINEERING, REIMAGINED

12

Option 1 – Recommended Length

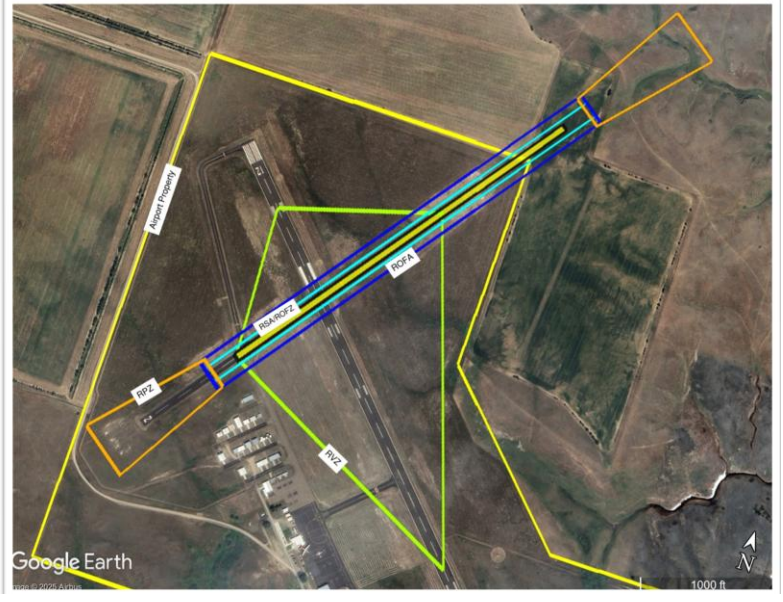
- + 361’ on Rwy 20
- Total length 3,363’
- Runway 2 End remains the same
- Runway 20 End
  - RPZ Extended
  - RSA & ROFA will require Property



13

Option 2 – Shift North

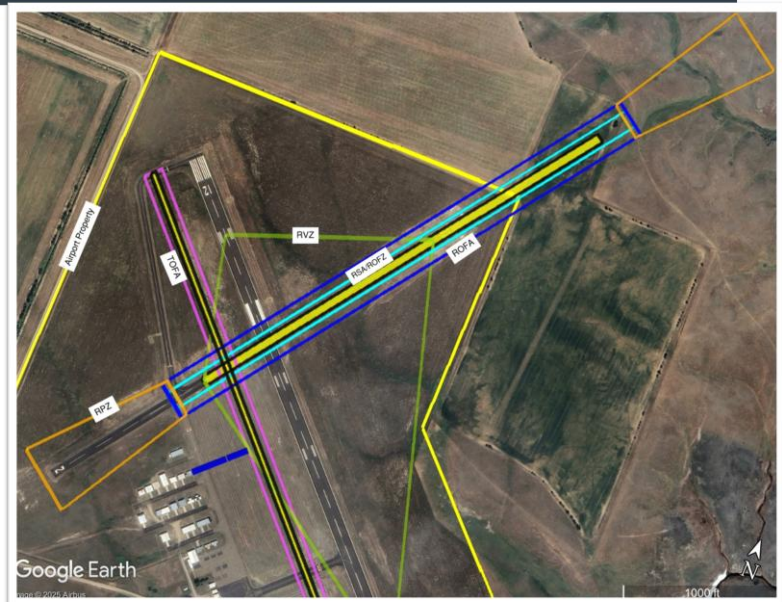
- Shift runway northeast 845’
- Length remains at 3,002’
- Minimal RVZ change
- Runway End 2 RPZ within current property and outside of the road
- Property and Easement required for Runway 20 End



14

Option 3 – RVZ Move for Terminal Expansion

- Runway length 2,995’
- Runway shift 1,125’ northeast
- Runway End 2 RPZ within current property
- Runway End 20 property and easement needed
- RVZ allows most expansion for terminal area development



15

Preferred Crosswind Runway

- Existing – 3,002’
- Recommended Runway Length – 3,363’
- Shift Runway to the Northeast – 3,002’
- Shifting the Runway to the Northeast to offer the most area for Terminal Expansion – 2,995’

KLJ
ENGINEERING, REIMAGINED

16

Open Discussion



ENGINEERING, REIMAGINED

17

Hangar Area Options



ENGINEERING, REIMAGINED

18

Typical Aircraft Hangar Attributes				
	T-Hangars	Small Storage Less than 6,000 sf	Large Storage More than 6,000 sf	FBO/SASO
Photo Examples				
Dedicated Apron	None	None	Equal to depth of hangar	Equal to depth of hangar (plus apron for services)
Airport Apron Access	No	No	No	Yes
Setbacks from Taxilanes	Yes - for Design Group (I or II)	Yes - for Design Group (I or II)	Yes plus Apron - for Design Group (II+)	Yes plus Apron - for Design Group (II+)
Airside Taxi Route	Yes - for Design Group (I or II)	Yes - for Design Group (I or II)	Yes - for Design Group (II+)	Yes - for Design Group (II+)
Public Road Access/Parking	No	Yes or No *	Yes*	Yes*

* Any business/corporate hangar located on an airport should have public road access and parking for customers/passengers. Particularly those customers/passengers who are not trained in driving on an airport.

19

Next Steps

- Next Meeting:
  - Airfield Alternatives Determination
  - Terminal Area Alternatives
- Website: **https://inputcentral.com/gdv-airportplan**

KLJ
ENGINEERING, REIMAGINED

20

Questions/Comments

Kent Penney, Principal Aviation Planner
kent.penney@kljeng.com
605.939.9535 m
605.872.5005 o

Amber Channel, Aviation Planner
amber.channel@kljeng.com
303.875.0357 m
605.600.3843 o

KLJ
ENGINEERING, REIMAGINED

21