Facility Requirements & Airfield Alternatives

Gordon Municipal Airport (GRN)

January 21st, 2026

ENGINEERING | REIMAGINED

Agenda

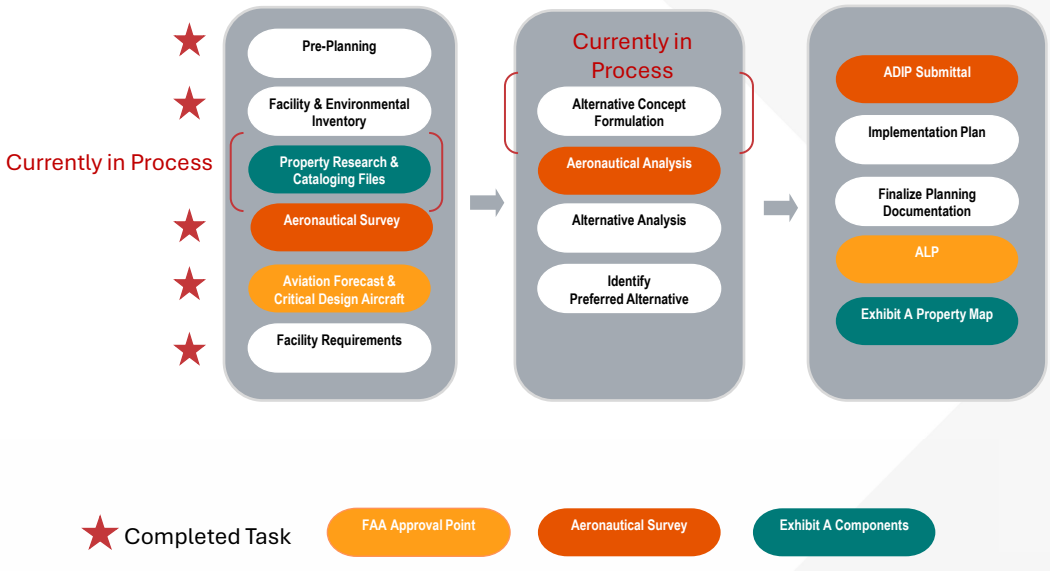


- Introductions
- Project Workflow & Progress to Date
- Aviation Activity/ Critical Design Aircraft
- Wind and Weather Conditions
- Instrument Conditions Analysis
- Runway Length Analysis
- Alternative Exhibits
- Open Discussion
- Questions

PAC Participants

- KLJ Project Team
  - Kent Penney- Lead Aviation Planner
  - Brooke Barber- Aviation Planner
  - Kevin Ensor- Airport Engineer
- Agencies Involved
  - FAA, Central Region
    - Sadie Robb, Planner
  - NDOT, Aeronautics
    - Anna Lannin, Engineer
- Planning Advisory Committee
  - Scott Fleming-City Manager
  - Glen Spaugh- Retired City Manager
  - Mark Kruger- Airport Board Chairman
  - Mike Winter- Airport Board Member
  - Amanda Kehn- Gordon Memorial Health
  - Clark Thorsen- Pilot/Farming & Ranch Community

Project Workflow & Progress to Date



Verified Aircraft Operations

Category	2020	2021	2022	2023	2024
A/B-I	40	80	51	39	**50**
A/B-II	100	132	153	131	**358**
C/D-I	1	0	0	0	**0**
C/D-II	0	0	0	0	**0**
ADG-III	0	0	0	0	**0**
Total	141	212	204	170	**408**

ID	Make	Model	Type	AAC	ADG	TDG	MTOW (lbs.)	10-Year Ops	2024 Ops
710P	Thrush	710P	Turboprop	A	II	2-A	14,150	-	250
PC-12	Pilatus	PC-12	Turboprop	A	II	2-A	10,450	609	90
RV-10	VANS	RV-10	Piston	A	I	1-A	2,700	49	10
BE9L	King Air C90	King Air C90	Turboprop	B	II	1-A	10,100	294	12
TBM9	Socata	TBM-900	Turboprop	A	I	1-A	7,395	7	8
SR22	Cirrus	SR-22T	Piston	A	I	1-A	3,400	18	4
PA24	Piper	PA-24 Comanche	Piston	A	I	1-A	3,200	76	4
BE35	Beechcraft	Super King Air 350	Turboprop	A	I	1-A	3,400	86	4
	Various			A/B	I			450	24
	Various			A/B	II			341	2
								Total Verified Annual Operations	408

Baseline Operations Forecast

Verified Operations only capture flights which have filed an Instrument Flight Plan and as such, all visual flights are not recorded. Verified flight information was utilized to interpolate a baseline of actual annual operations.

Category	Verified 2024	% not Verified	Baseline Total Operations
A/B-I	50	95%	1,000
A/B-II	358	15%	420
Total	408		1,420

Forecast Method	2024	2029	2034	2039	2044	CAGR
Historical TAF Growth Rate	1,420	1,244	1,088	954	834	-2.62%
NE SASP		1,486	1,556	1,630	1,706	0.92%
Per Capita Income		1,505	1,596	1,694	1,796	1.18%
FAA GA Fleet		1,450	1,482	1,514	1,548	0.43%
FAA Turbine Fleet		1,568	1,732	1,914	2,114	2.01%
Composite CAGR	1,420	1,502	1,588	1,680	1,778	1.13%

Critical Design Aircraft

Critical design aircraft of A/B-II (Small) and TDG 2-A was approved by the FAA on December 19,2025

Aircraft Approach Category
A/ B

- Represents aircraft approach speed r
- 91 to 120 Kts

Airplane Design Group
II (Small)

- Represents wingspan and height of aircraft
- 49' to 78' wingspan

Taxiway Design Group
2A

- Represents pavement width and turning clearance needed by aircraft
- 35' wide taxiway pavement

AAC		ADG		TDG		MTOW	
A/B	408	I	54	1-A/B	308	< 12,500 lbs	158
C/D	0	II	354	2-A/B	100	≥ 12,500 lbs	250

Wind and Weather Conditions

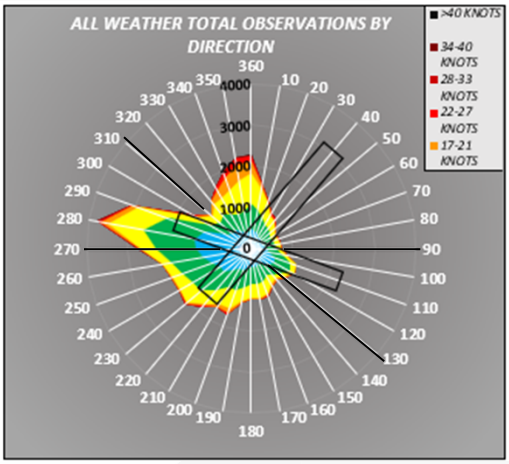
ALL-WEATHER WIND COVERAGE				
CONFIGURATION	CROSSWIND COMPONENT			
	10.5 KNOTS	13 KNOTS	16 KNOTS	20 KNOTS
RUNWAY 4-22	87.92%	93.59%	97.10%	99.01%
RUNWAY 11-29	88.67%	94.66%	-	-
COMBINED	95.96%	98.23%	97.10%	99.01%

SOURCE: GRN AWOS (April 2017-March 2025, HOURLY) FROM NATIONAL CLIMATIC DATA CENTER
66,688 TOTAL OBSERVATIONS

INSTRUMENT FLIGHT RULES (IFR) WIND COVERAGE				
CONFIGURATION	CROSSWIND COMPONENT			
	10.5 KNOTS	13 KNOTS	16 KNOTS	20 KNOTS
RUNWAY 4-22	81.20%	87.92%	93.58%	97.43%
RUNWAY 11-29	-	-	-	-
COMBINED	81.20%	87.92%	93.58%	97.43%

SOURCE: GRN AWOS (April 2017-March 2025, HOURLY) FROM NATIONAL CLIMATIC DATA CENTER
4,910 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	92.64%	338.1	8,115
Usable IMC	5.19%	18.9	455
Usability	**97.83%**	**357.1**	**8,570**
Below Weather Minimums	2.17%	7.9	190
Total	**100.00%**	**365.0**	**8,760**



Instrument Conditions Analysis

- Current: RW 4/22 Instrument Approach
  - 1.25-mile visibility & 400-foot ceiling.
  - Airport is accessible 97.83% of the time under current conditions
    - 92.64% VMC
    - 5.19% Usable IMC
- Scenario 1: Improve RW 4/22
  - 1-mile visibility and a 300-foot ceiling
  - Additional 3 days of usability per year
- Scenario 2: Improve RW 4/22 and IFR 11/29
  - RW 4/22: 1-mile visibility and a 300-foot ceiling
  - Results in 970 observations compared to 4,910 total IFR observations
  - Additional 3.4 days of usability per year

Only 0.4 days per year gained by IFR on 11/29

Current Conditions			
Weather Condition	Percentage	Days Per Year	Hours Per Year
VMC	92.64%	338.1	8115
Usable IMC	5.19%	18.9	455
Usability	**97.83%**	**357.1**	**8570**
Below Weather Minimums	2.17%	7.9	190
Total	1	365.0	8760

1: 4/22 at least 1-mile & 300' Additional All Observations				
	Percentage		Days Per Year	Hours Per Year
Rwy 4	Calm	Rwy 22	3	72
0.57	0.10	0.15		

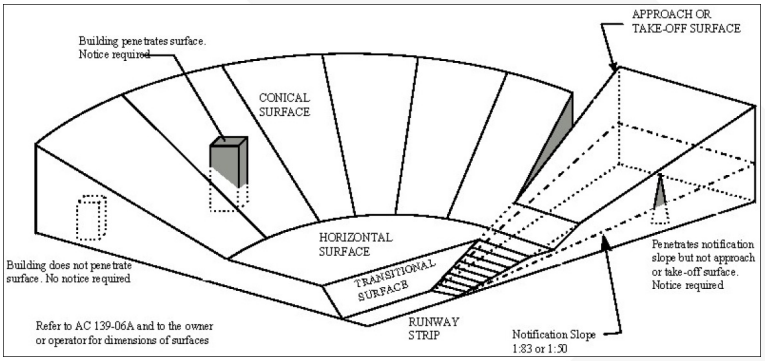
2: 4/22 at least 1-mile & 300' Additional Observations for Crosswind Range 90°-130°& 270°-310°				
	Percentage		Days Per Year	Hours Per Year
Rwy 4	Calm	Rwy 22	3.4	82
0.62	0	0.19		

Runway Length Analysis

Airport Data		
Airport Elevation	3,562.4	
Mean Max Temp	87.4°F	
Runway Grade	RW 4/22	RW 11/29
	1.7%	0.3%
Existing Runway Length	5,196 ft	2,283 ft
Small Aircraft 12,500 lbs or less		
Aircraft with more 10 or more passenger seats	5,250 ft	
Aircraft with Less than 10 passenger seats: 95 % of fleet	4,800 ft	
Aircraft with less than 10 passenger Seats: 100 % of fleet	5,250 ft	
SARLAT Recommended Runway Length	Dry Conditions	Wet Conditions
Pilatus PC 12	4,645 ft	5,342 ft
Beech King Air B200	4,286 ft	4,929 ft
Cessna 182 (Runway 11/29)	2,242 ft	2,578 ft
Cessna 172 (Runway 11/29)	2,380 ft	2,737 ft

14 CFR Part 77- Safe Efficient Use of Airspace

Part 77 stems from the Code of Federal Regulations (CFR) and is intended to preserve airspace from obstructions and potential hazards. Part 77 surfaces refers to a set of invisible boundaries that extend outward and upward from a runway, intended to protect aircraft during critical times of operation, namely takeoff and landing. Dimensions vary for each runway based on the runway approach, utility, and visibility minimums.



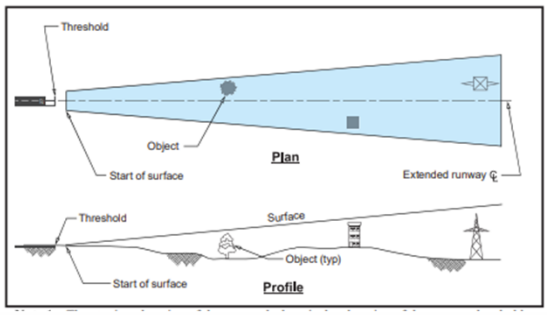
	Runway 4/22	Runway 11/29
Runway Type	NPI Utility	Visual Utility
Approach Slope	20:1	20:1
Dimensions	500' x 2,000' x 5,000	250' x 1,250' 5,000'

Approach & Departure Surfaces

Approach and Departure surfaces extend outward and upward from a runway end. These areas are intended to be free of obstacles to ensure safe climb during takeoff and descent during landing, as well as maintain the minimums of an instrument approach for safe operations under an IFR flight plan.

The Approach/Departure surface is specific to each runway end and varies based on runway and approach type

Figure 3-3. Standard Approach Surface



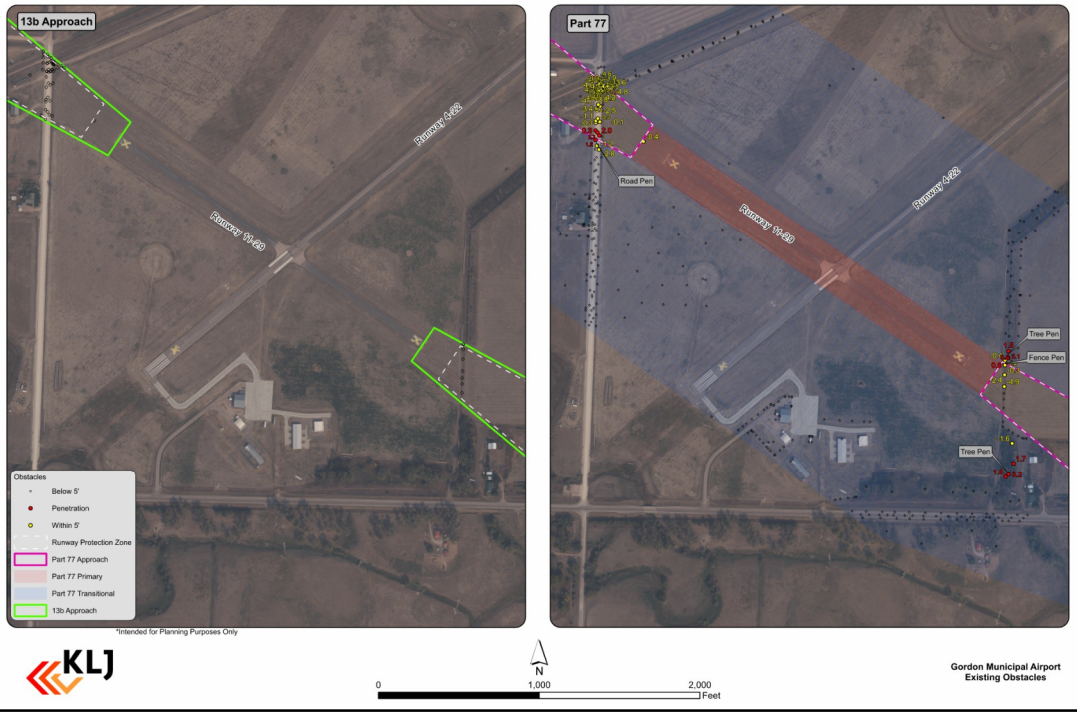
	Runway 4/22	Runway 11/29
Runway Type	NPI approach with > ¾ mile minimums	Visual approach serving aircraft with approach speed of ≥ 50 kts
Approach Surface	Surface 5	Surface 2
Length	10,000 ft	5,000 ft
Inner Width	400 ft	250 ft
Outer Width	3,400 ft	700 ft
Slope	20:1	20:1

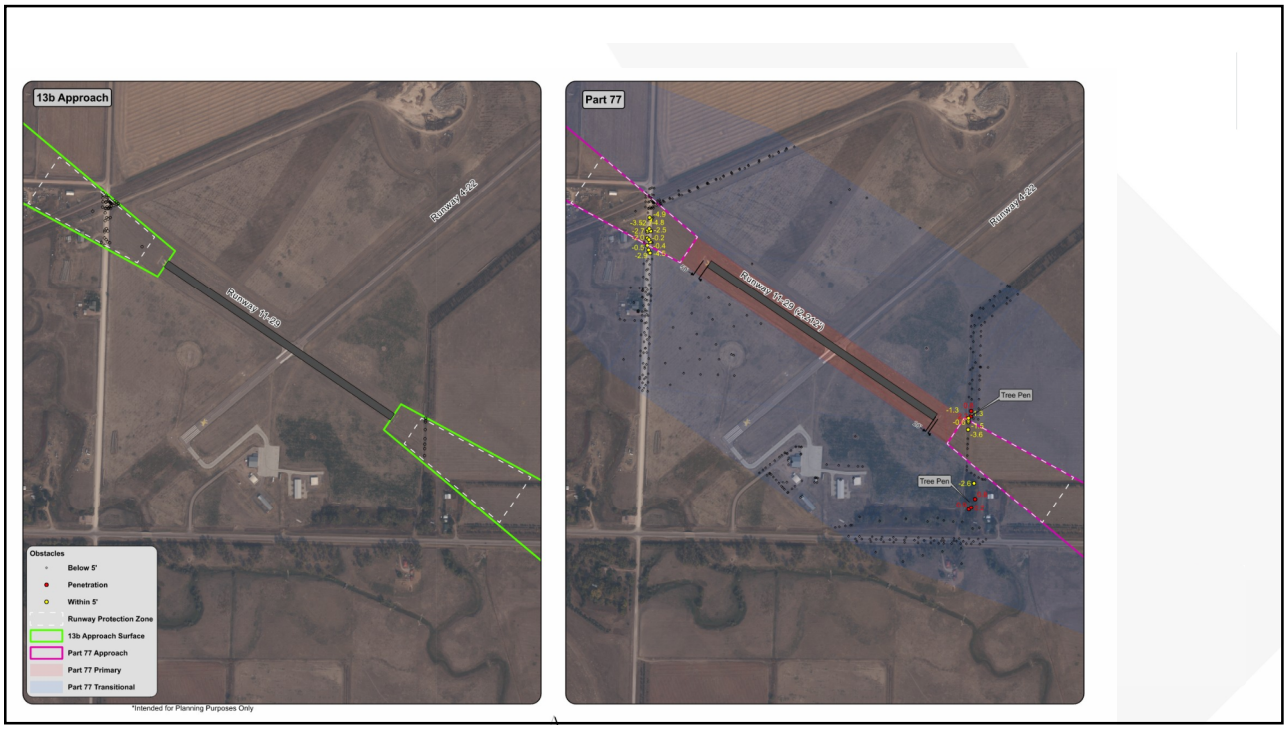
Crosswind Runway Alignment Options

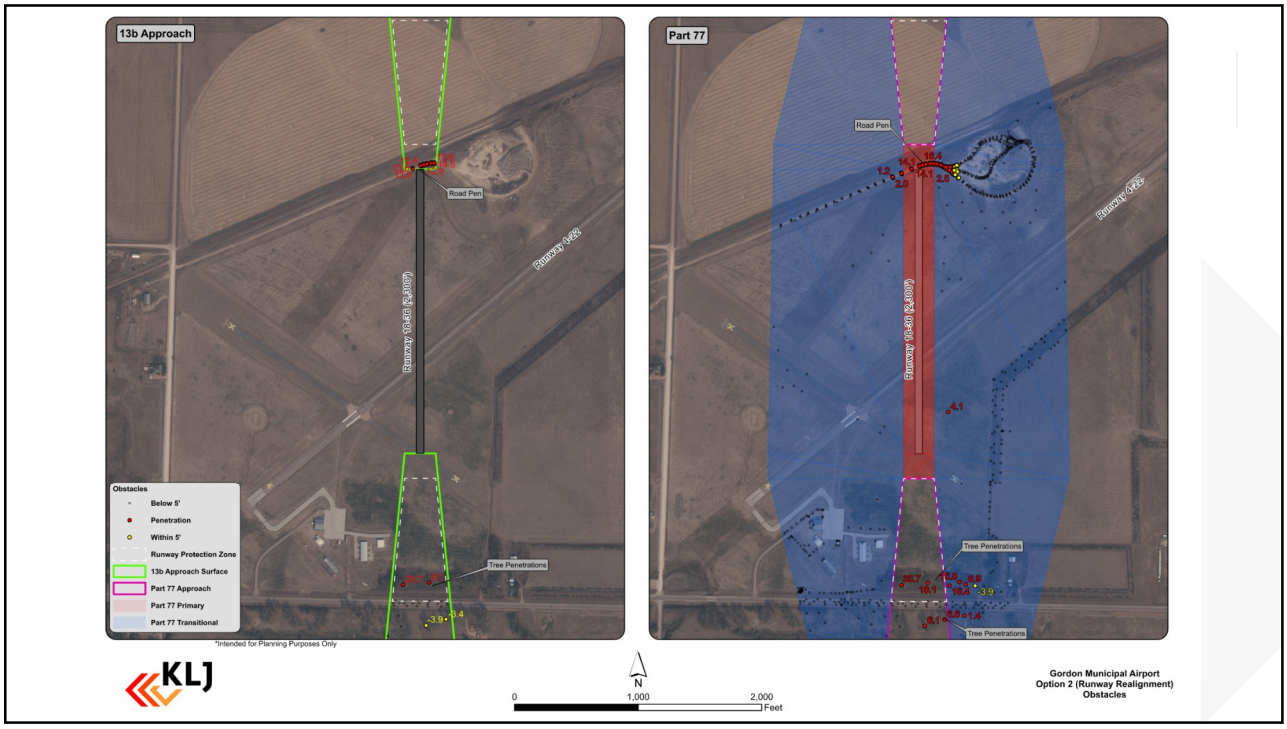


- Crosswind Runway Alignment Compass Headings for 95%
  - 117 to 011 degrees
  - 191 to 297 degrees
- Avoid Residences
- Current 11/29 Alignment is within 95% coverage range

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13b Approach
Runway 4-22
Runway 13-31
Obstacles
Below 5'
Penetration
Within 5'
Runway Protection Zone
13b Approach Surface
Part 77 Approach
Part 77 Primary
Part 77 Transitional
*Intended for Planning Purposes Only
Part 77
Runway 4-22
Runway 13-31 (4,200')
Tree Pen
Tree Pen


13b Approach
Road Pen
Runway 4-22
Runway 13-31 (4,200')
Tree Penetrations
Obstacles
Below 5'
Penetration
Within 5'
Runway Protection Zone
13b Approach Surface
Part 77 Approach
Part 77 Primary
Part 77 Transitional
*Intended for Planning Purposes Only
Part 77
Road Pen
Runway 4-22
Runway 13-31 (4,200')
Tree Penetrations
Tree Penetrations
KLJ
N
0
1,000
2,000
Feet
Gordon Municipal Airport
Option 2 (Runway Realignment)
Obstacles

Open Discussion / Talking Points

- Airfield Preferred Alternatives
- Landside Challenges
- Terminal / Infrastructure / Equipment Needs
- Demand for Hangars/Operators
- Any over-the-horizon challenges?



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Next Steps

- Ch. 2: Draft Airside Alternatives Narrative
- Ch. 3: Terminal Area and Support Infrastructure
- Draft Landside Alternatives

- **Project Website:** https://inputcentral.com/grn-airportplan

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Get in touch with your KLJ Team



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