

**KANAB**  
MUNICIPAL AIRPORT



# MASTER PLAN KICK-OFF

**JVIATION®**

**MASTER  
PLAN  
PROCESS**

**INVESTIGATION**

Pre-Planning  
Inventory  
Forecasts and  
Planning Activity  
Levels  
Facility  
Requirements

**PREPARATION**

**SOLUTIONS**

Alternatives  
Analysis  
Contingency  
Scenario  
Development  
Identification of  
Preferred  
Alternative

**EVALUATION**

**IMPLEMENTATION**

Financial Planning  
Improvement Plan  
(CIP)  
Final Master Plan  
Documentation  
Airport Layout  
Plan (ALP)

**DOCUMENTATION**

**P U B L I C O U T R E A C H**

# AIRPORT PLANNING PROCESS

**FAA Design Standards**

**Financial Resources**

**Aviation Demand**



**Community Goals**

**Environmental Requirements**

**Serve Business Community**





U.S. Department  
of Transportation

**Federal Aviation  
Administration**

# Advisory Circular

Consolidated AC includes Change 1

“This Advisory Circular (AC) provides guidance for the preparation of master plans for airports that range in size and function from small general aviation to large commercial service facilities. The intent of this AC is to foster a flexible approach to master planning that directs attention and resources to critical issues. The scope of each master plan must be tailored to the individual airport under evaluation.”

# THE MASTER PLAN PROCESS

The Master Plan is a **20 year plan** to understand the needs of current and future users of the airport. This is important to ensure that **safe and orderly development** occurs in a manner that is **reflective of the community's values and goals**. The plan is developed through a **purposeful, inclusive and educational process**.



# OVERVIEW

## ➔ Airport Master Plan

- Required by the FAA
- FAA does **not** approve Master Plan
- FAA **approves** forecasts and the Airport Layout Plan
- FAA approval of ALP conditional
- FAA approval for individual projects comes later

## ➔ Airport Layout Plan (ALP)

- Must be kept current
- Airport development must be consistent with ALP

➔ ***City Council decides whether and what to build –  
This is Your Plan***

# FAA REQUIREMENTS

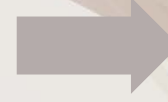
## Airport Master Plan

- Technical Report
- Coordination Process



## Airport Layout Plan (ALP)

- Existing & Future Facilities
- Designate property surplus for aeronautical purposes
- Compliance with FAA design standards



## Capital Improvement Plan (CIP)

- Identify specific projects + cost + funding sources + priority

# FAA REQUIREMENTS

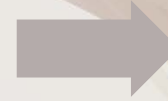
## Exhibit A Property Map

- Current legal Interests
- Compliance with Grant Assurances



## NEPA/ Environmental

- Compliance with NEPA
- Identify future assessments, approvals, permits (as needed)



## Airports GIS (AGIS) Mapping

- FAA Advisory Circulars



# MASTER PLAN – KEY FEATURES

- Planning is **not prejudicial**
  - FAA mandates against predetermined outcomes
  - The plan must be based on current conditions, community input, and forecasts
- ➔ **Master Plan Inclusions:**
  - Establish future facility needs
  - Measure aviation demand
  - Create the Airport Layout Plan set for FAA approval
  - Identify funding opportunities and strategies
  - Identify compliance issues/recommendations
- ➔ **Master Plan Exclusions:**
  - Marketing strategies or management of the airport
  - Formal business planning



**FAA  
Airports**

**ASSURANCES**  
**Airport Sponsors**

- 5. Preserving Rights & Powers**
- 6. Consistency with Local Plans**
- 20. Hazard Removal and Mitigation**
- 21. Compatible Land Use**
- 22. Economic non-Discrimination**
- 23. Exclusive Rights**
- 24. Fee and Rental Structure**
- 25. Airport Revenues**

# KNB AMP GOALS

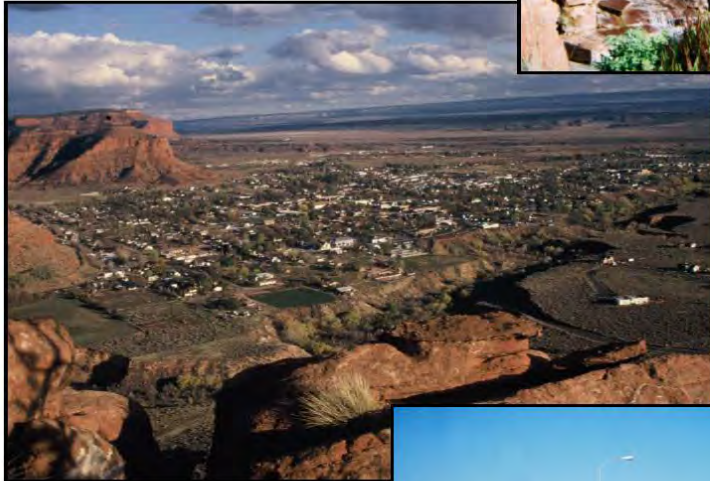
- **Guide KNB's development in a safe, efficient, and effective manner**
- **Ensure compliance with appropriate FAA design standards**
- **Ensure consistency with the City's General Plan:**
  - Promote our western heritage, culture and values
  - Retain a friendly small-town feel and charm,
  - Strive for a diversified economy and desirable development
  - Provide a healthy and happy atmosphere of enrichment for all residents through all stages of life,
  - Act as a destination and gateway to regional parks, monuments and open spaces, and
  - Ensure an environment that promotes the highest quality of life for living, working, visiting and playing.



# KANAB

## General Plan

2015



Adopted by the Kanab City Council  
February 24, 2015

### **Goal:** **Plan airport improvements.**

- Review and update Master Plan including needs for future air transportation in the region.
- Include the public and seek funding for improvements with transportation professionals.





# *A Vision for* Kanab



**KANAB**  
— UTAH —

**KANAB CITY MASTER PLAN**

# MASTER PLAN KEY ISSUES

- **Analyze existing and future aviation activity levels - corporate/business aircraft activity**
- **Prepare forecasts based on local airport users + regional economic trends**
- **Determine whether the current FAA design standard is appropriate for KNB**
- **Analyze the published instrument approach procedure to Runway 1**
- **Analyze the need for a new parallel taxiway**
- **Define the role of KNB in relation to the city's overall economic development program**
- **Assess the Airport's Minimum Standards and lease rates, and make recommendations**
- **Provide guidance on environmental requirements**

## ADDITIONAL STUDY COMPONENTS

- ➔ Airports Geographic Information System (GIS)
  - Geodetic Control
  - Aerial Photography
  - Aeronautical Survey



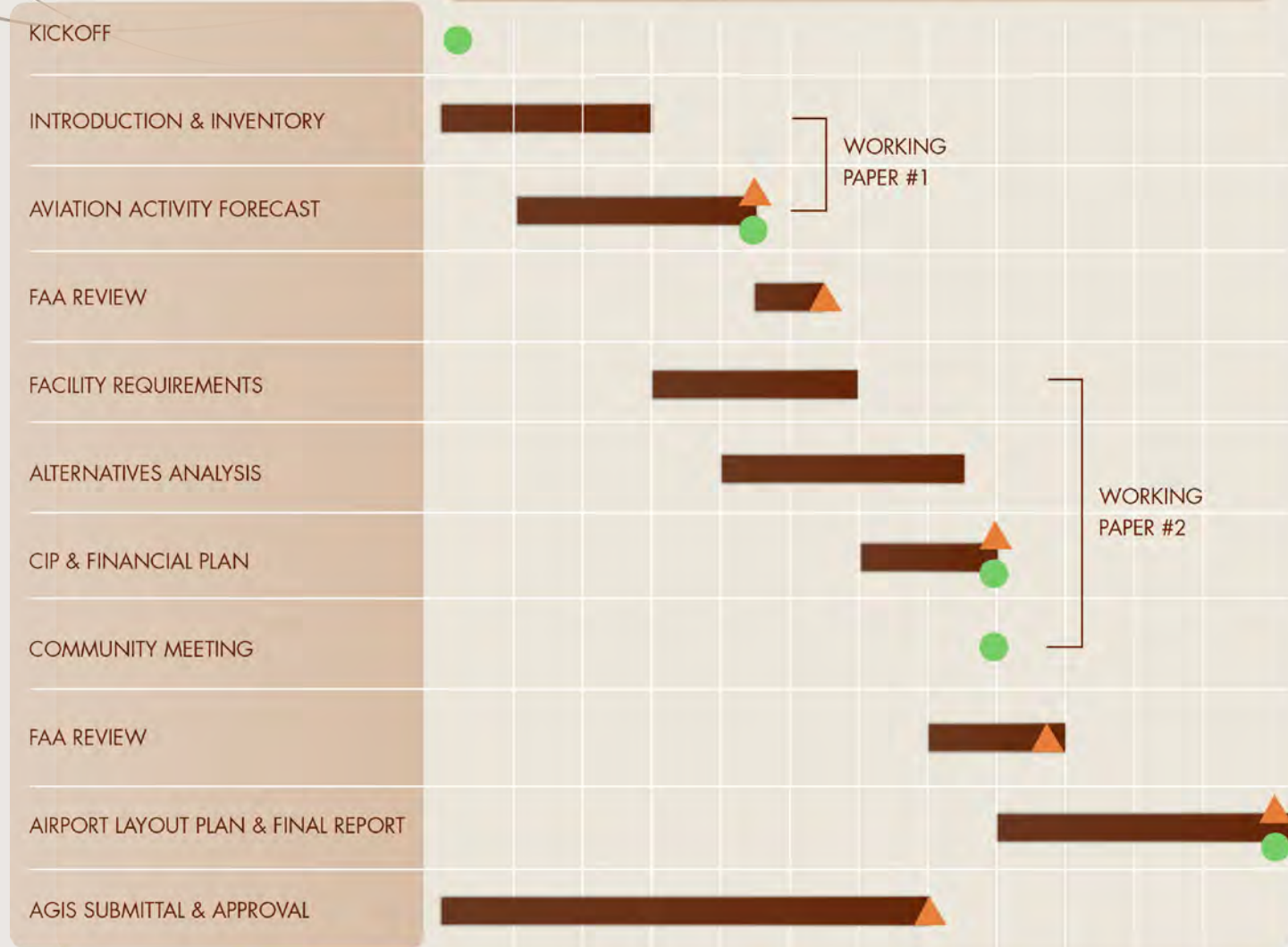


# PROJECT TIMELINE

KNB AIRPORT MASTER PLAN SCHEDULE

MONTHS

1 2 3 4 5 6 7 8 9 10 11 12





# KEY RELATIONSHIPS & ROLES



# RELATIONSHIP AMONG KEY PLAYERS

## FAA

Regulator  
Funder

## Tenants & Users

Demand Driver  
Revenue Source  
Requires Services

## Sponsor

Operator  
Regulator  
Landlord

## State

Booster  
Funder

# **CHAPTER 1 - INVENTORY**

- 1. Collect & Review Existing Documentation**
- 2. Airport Overview - Introduction**
- 3. Acquire Aerial Imagery and Base Mapping**
- 4. Assess Existing Airport Facilities**
- 5. Environmental Conditions**
- 6. Zoning & Land Use Plans**
- 7. Airport Financial Condition**

# INVENTORY SUMMARY & CONCLUSIONS



- KNB meets FAA design standards for GA & small corporate jets
- Current traffic is predominantly piston & small corporate aircraft
- Airfield capacity exceeds demand
- KNB accommodates variety of GA & corporate aircraft
- Runway 1-19 Length (6,193') adequate for type of aircraft



Currently  
B-II Traffic

Occasional  
larger  
aircraft  
operate at  
KNB

**SINGLE ENGINE**

Aircraft Design Group  
AI



Cessna 150



Cessna Caravan

→ Small aircraft typically used for flight training and personal use.

**MULTI ENGINE**

Aircraft Design Group  
AI-CI



Piper Navajo



Cessna 402

→ Aircraft having more than one engine but aren't jets.  
→ Typically larger and faster than single engine aircraft.  
→ Used for both personal and commercial operations.

**TURBO PROP**

Aircraft Design Group  
BI-BII



Pilatus PC-12



King Air 100

→ Can be both single and multi-engine aircraft.  
→ Rather than being powered by a piston, these aircraft have a propeller driven by a turbine engine.  
→ These aircraft are typically faster and more demanding than a piston powered airplane.  
→ Frequently used in commercial operations and as charter and business aircraft.

**SMALL-MEDIUM  
SIZED GA JETS**

Aircraft Design Group  
BI-DI



Cessna Citation Mustang



Cessna Citation 2

→ Aircraft that are powered by a jet turbine engine.  
→ These aircraft are faster and can travel further than propeller powered aircraft.  
→ Due to the speed airport facilities must be increased to accommodate their performance.  
→ These aircraft are commonly used in charter operations and corporate flight departments.  
→ Very rarely are they used for personal recreation.

**LARGE GA JETS**

Aircraft Design Group  
CII-DIII



Bombardier  
Challenger 605



CRJ-900

→ Similar characteristics as small and medium GA jets.  
→ These aircraft are typically faster and wider, increasing the demand on airport facilities.  
→ Used by large charter operations and found in large corporate flight departments.

**COMMERCIAL  
AIRLINERS**

Aircraft Design Group  
CIII-DVI



Boeing 757-200



Boeing 747

→ Aircraft typically seen at a commercial airport.  
→ These aircraft are very large and jet powered.  
→ Due to the large wingspan and heavy weight airport facilities are larger and require longer runways.



# INVENTORY SUMMARY & CONCLUSIONS



- KNB Meets FAA Design Standards for GA & small corp. jets
- Current Traffic is predominantly pistons & small corp. A/C
- Airfield Capacity Exceeds Demand
- KNB Accommodates Variety of GA & Corporate Aircraft
- Runway 1-19 Length (6,193') Adequate

# FAA AIRPORT DESIGN STANDARDS

Item	Existing KNB	C-II
<b>Runway :</b>		
Length	6,193'	As Needed
Width	75'	100'
<b>Runway Safety Area (RSA):</b>		
Length	300'	300'
Width	150'	150'
<b>Runway Object Free Area:</b>		
Length	300'	300'
Width	500'	500'
<b>Runway Protection Zone:</b>		
Length	1,000'	1,700'
Width (I + O)	500' x 700'	1,000' x 1,510'
<b>Runway Centerline To:</b>		
Parallel Taxiway	N.A.	240'
Aircraft Parking	475'	250'
<b>Taxiway Centerline To:</b>		
Aircraft Parking	N.A.	65.5'

## KNB Airport Activity vs. Capacity

	2015 KNB Operations	KNB Operational Capacity
<b>Annual Operations</b>	3,140	230,000
<b>Peak Hour Activity:</b>		
Visual (VFR) Ops	4	98
Instrument (IFR) Ops	2	54

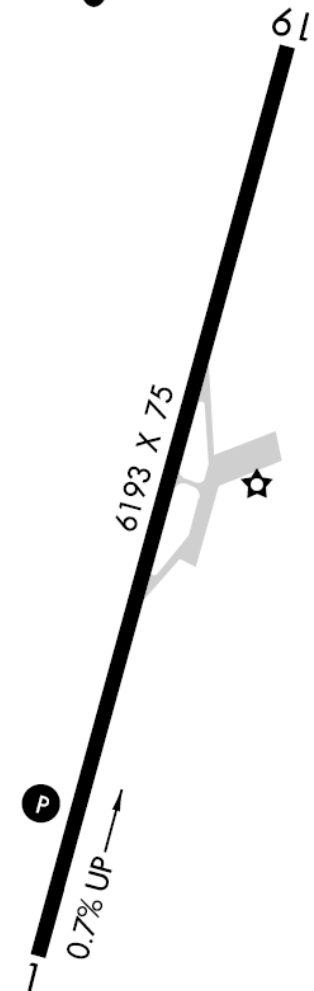
Sources:  
 FAA Terminal Area Forecast (TAF)  
 FAA Advisory Circular 150/5060-2

## KNB Condition

Facility	Condition
Runway 1-19	Fair
Aircraft Apron	Excellent
Terminal Building	New

MIRL Rwy 1-19 **L**

REIL Rwy 1





# INVENTORY SUMMARY & CONCLUSIONS



→ Few operational or airport facility constraints to General Aviation  
or Corporate/Business Aircraft  
operating at KNB

## **Existing Documentation**

1. KNB Airport Master Plan, 2002/2004
2. Airfield Improvements: Plans & Grant Awards
3. FAA Airport Master Record, Form 5010
4. FAA Terminal Area Forecast (TAF)
5. FAA Terminal Instrument Procedure Charts
6. State Aviation System Plan, UDOT
7. Kane & Coconino County Demographic Data
8. Kane & Coconino County Land Use Data
9. Sensitive Species Habitat Management Plan

# NEW MAPPING

## 1. Airports Geographic Information Systems (AGIS)

- Required by FAA
- Stringent Quality Standards
- Primarily to analyze Instrument Approaches
- Mapping completed & uploaded to FAA

## 2. Airport Layout Plan (ALP)

- Airspace Analysis
- Mapping completed





# KNB Airport Role

## Utah Continuous Airport System Plan 2007

### Regional Airports

Bountiful	Skypark	BTF	Regional	GA non-NPIAS
Brigham City	Brigham City Municipal	BMC	Regional	GA
Cedar City	Cedar City Regional	CDC	Regional	CM
Heber	Heber City Municipal	36U	Regional	GA
Hurricane	Hurricane	1L8	Regional	GA non-NPIAS
Kanab	Kanab Municipal	KNB	Regional	GA

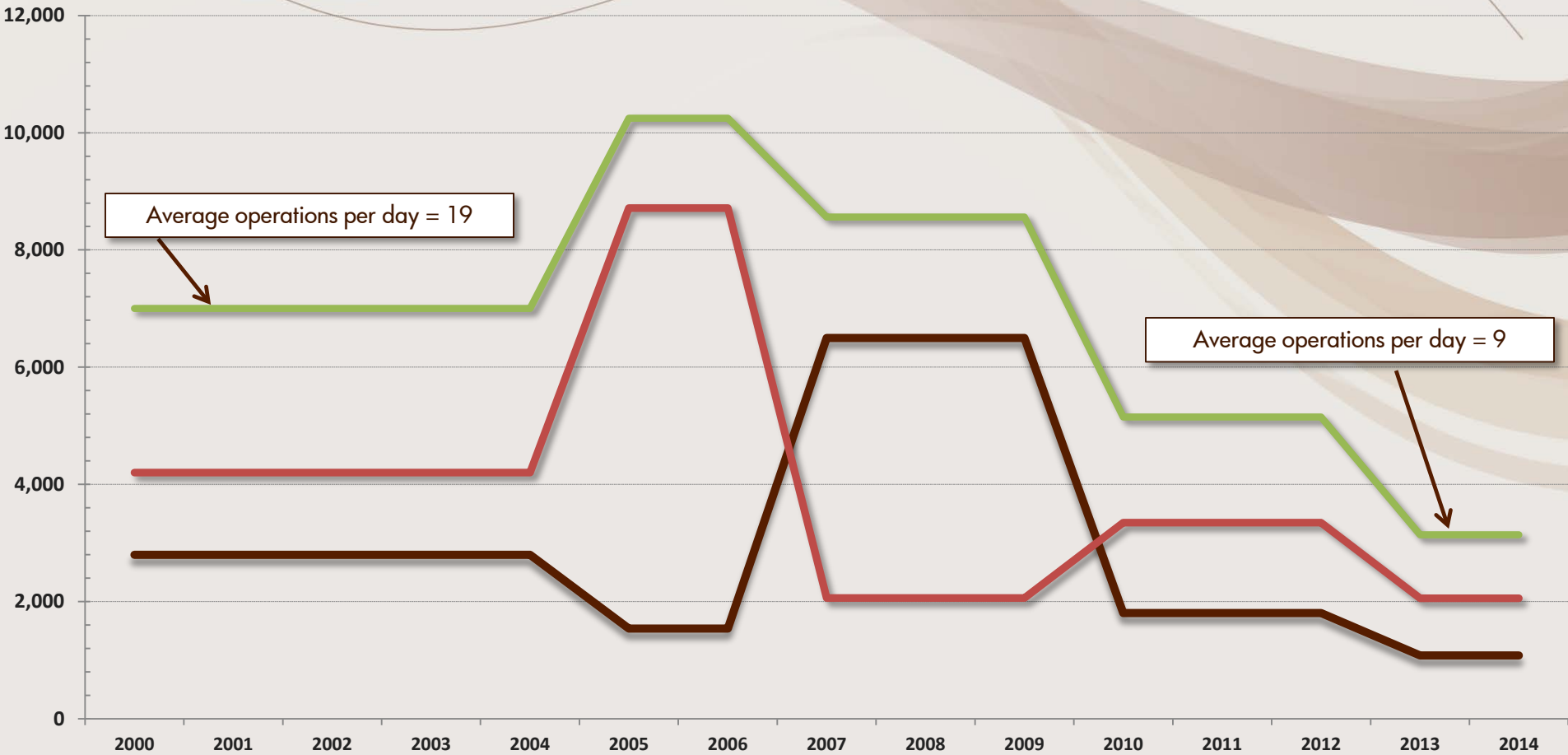


# Airport Improvement Projects

Year	Source	Project	Amount
2014	FAA	AIP-12 Security Fencing	\$418,773
2013	UDOT	Airport Pavement Maintenance (Crack Seal & Paint)	\$106,690
2012	FAA	AIP-11 - Replace Rotating Beacon and Record of Survey	\$86,283
2010	FAA	UDOT & AIP-09/10 - Apron Rehabilitation	\$1,051,292
2007	FAA	AIP-08 - Rehabilitate Runway Lighting & Signing	\$389,312
2006	UDOT	Airport Pavement Maintenance (Apron Crack Seal & Paint)	\$26,631
2005	FAA	AIP-07 - Runway Overlay	\$480,585
2003	FAA	AIP-06 - Rehabilitate Runway 1/19 and Lengthen to 6,200'	\$1,792,302
2002	FAA	AIP-05 - AWOS III Installation & Airport Layout Plan Update	\$150,475

# Aircraft Operations - Kanab Municipal Airport

Local  
Itinerant  
Total



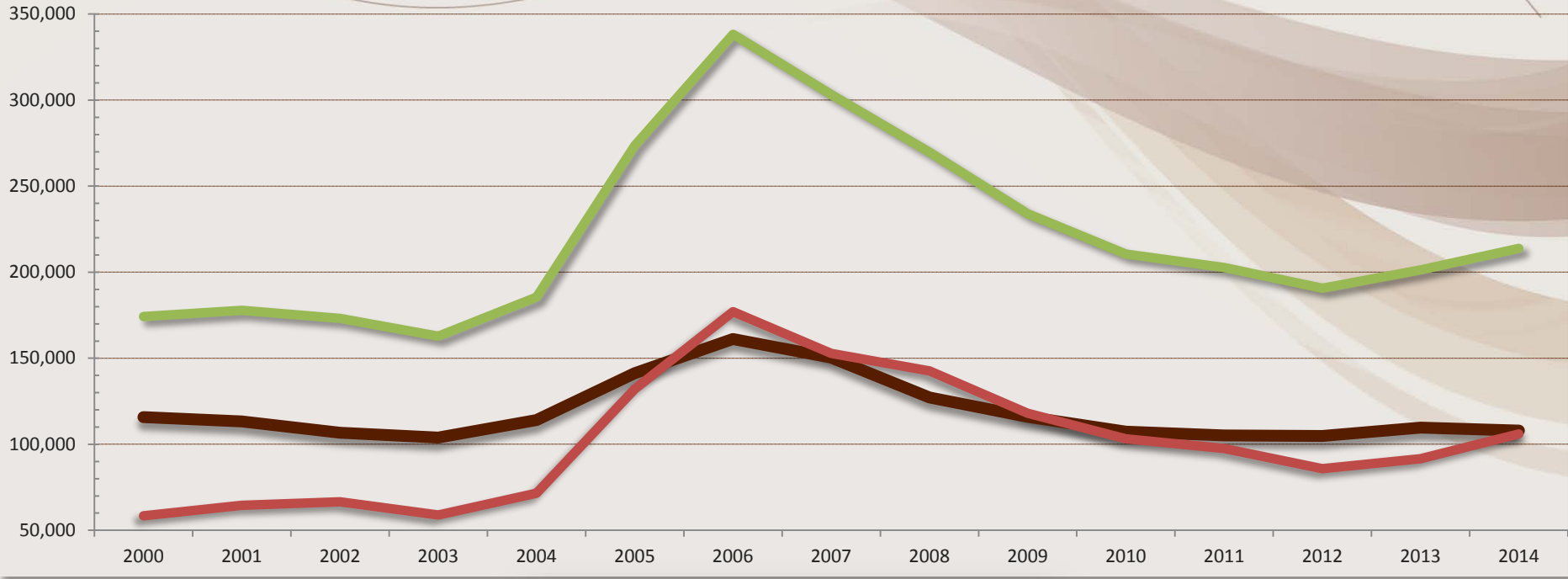
Source: FAA Terminal Area Forecast (TAF)



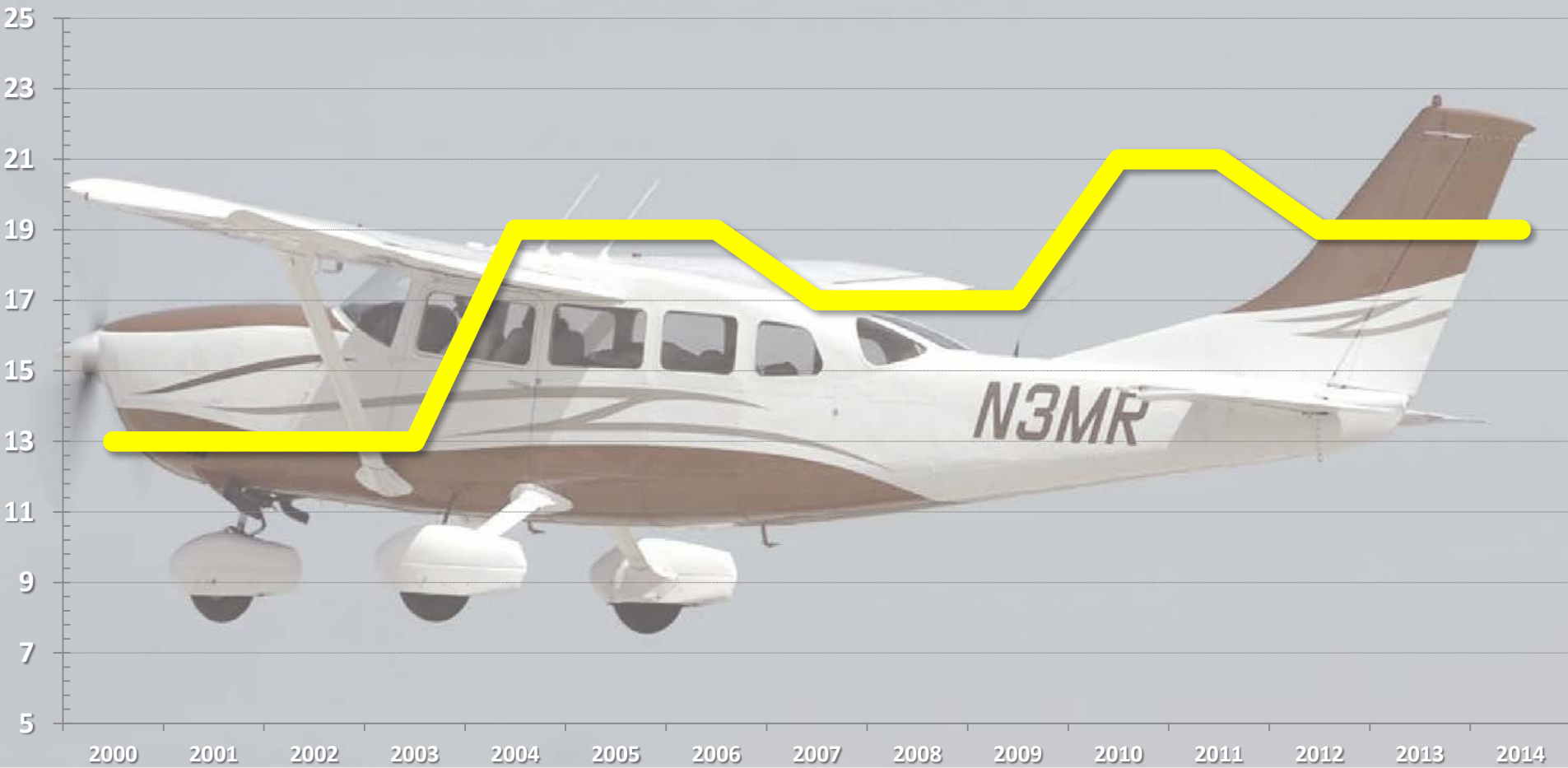
# GA Aircraft Operations: Towered Airports - State of Utah

Source: FAA ATADS

- Itinerant
- Local
- Total



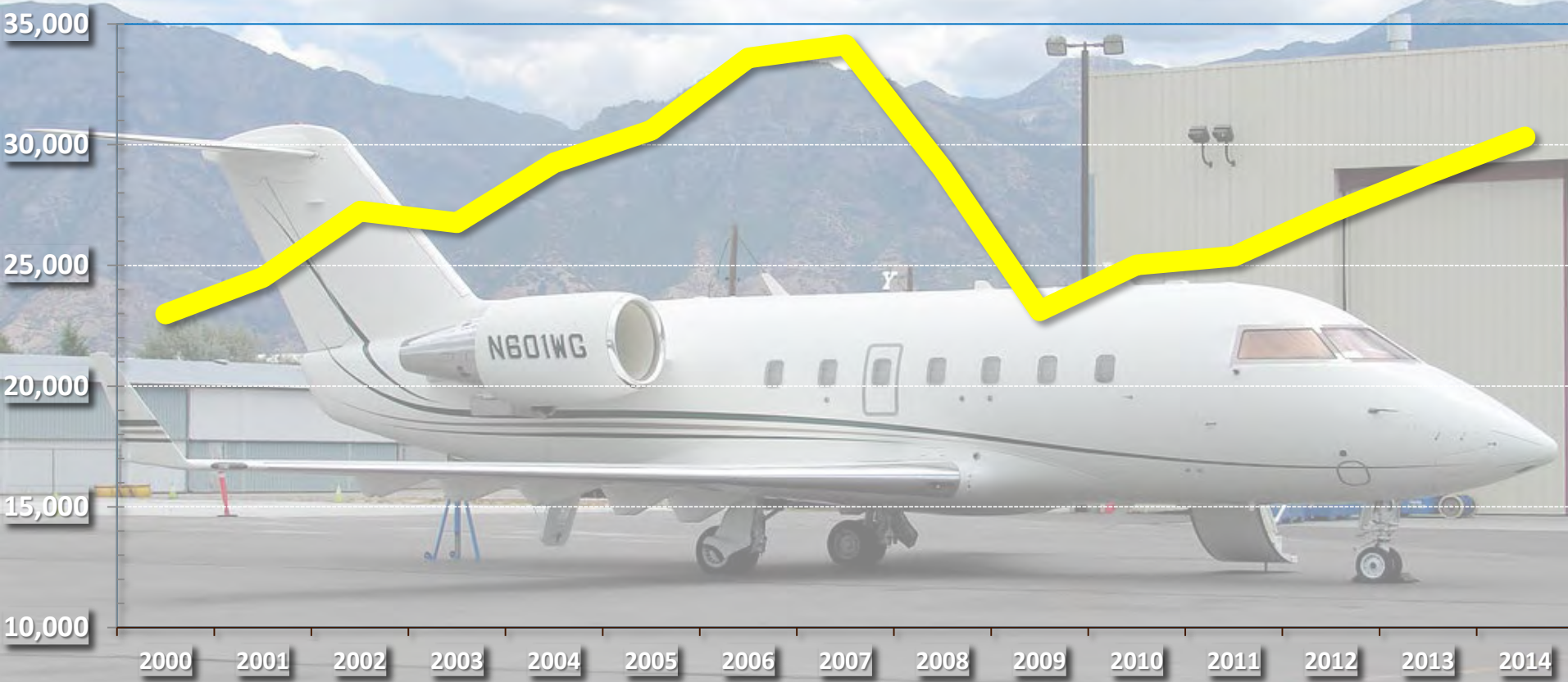
## Based Aircraft - Kanab Municipal Airport



Source: FAA Terminal Area Forecast (TAF)



# Business Jet Operations - State of Utah 2000-2014



Source: FAA TFMSC

# KNB JET & TURBOPROP OPERATIONS 2000-2014

Calendar Year	Corp. Jet	Turboprops
2009	8	56
2010	30	64
2011	24	14
2012	12	22
2013	30	26
2014	26	26
2015 (YTD Jan. 1 – Sept. 30)	28	22

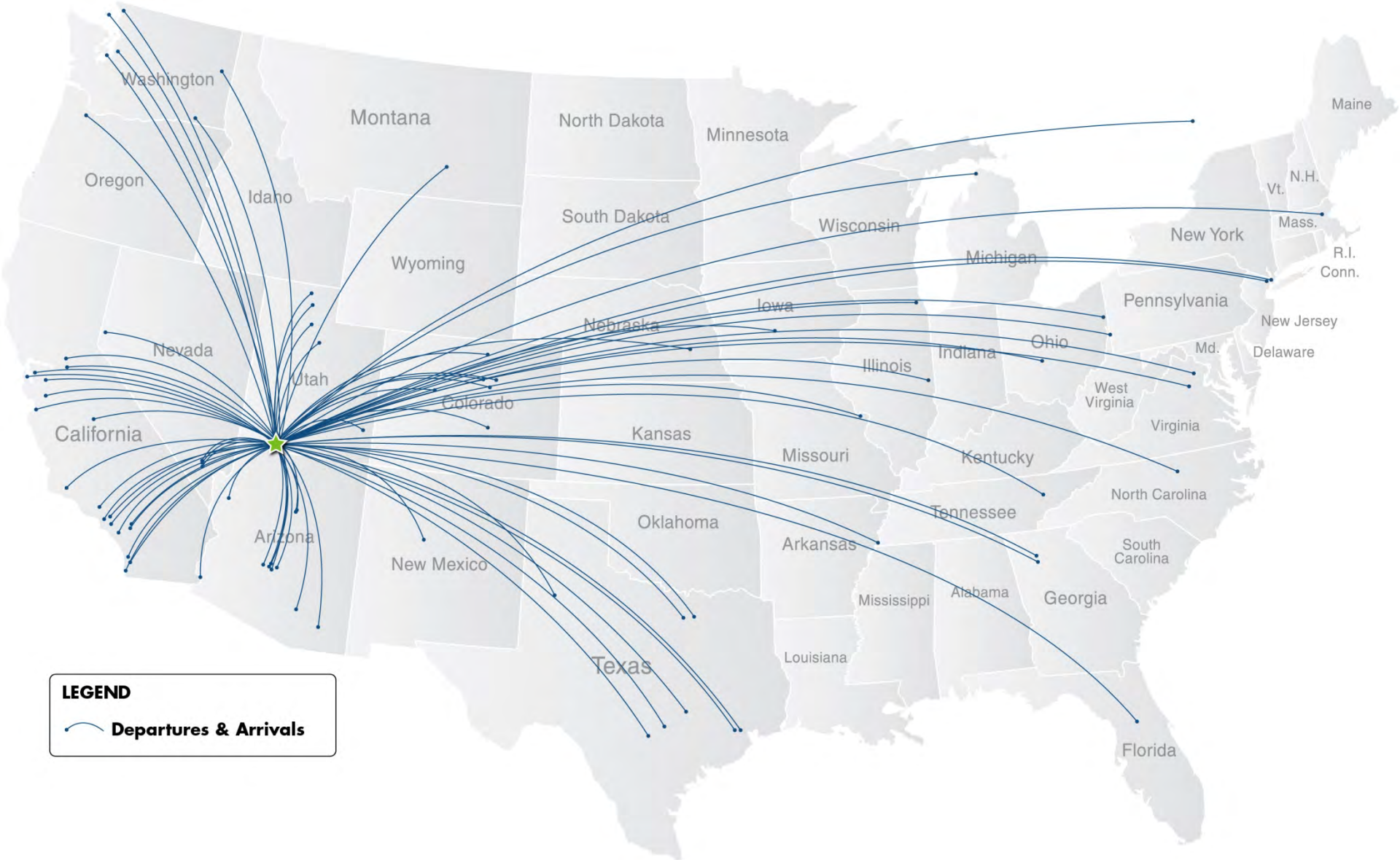
Source: GCR, inc

Note: Operations = takeoffs & landings

# TYPES OF CORPORATE AIRCRAFT AT KNB







**LEGEND**  
 Departures & Arrivals



# Aviation Fuel Prices within 55 miles of KNB

Sept./Oct. 2015

<u>Airport / FBO</u>			<u>100LL</u> (per gallon)	<u>Jet A</u> (per gallon)
KNB	Kanab Municipal Airport City	SS	\$5.09	FS \$4.85
AZC	Colorado City Municipal Airport, AZ (23 miles) Escalade air	FS	<b>\$6.25</b>	FS <b>\$6.25</b>
1L8	Gen. Stout Airport, Hurricane, UT (38 miles) Airport Quick Stop	SS	\$5.05	SS <b>\$4.29</b>
BCE	Bryce Canyon Airport, UT (46 miles) Bryce Canyon Airport	FS	\$5.30	FS \$4.30
SGU	St. George Municipal Airport, UT (52 miles) Above View Jet Center	FS	\$5.49	FS \$5.09
		SS	\$5.09	
CDC	Cedar City Regional Airport, UT (49 miles) Sphere One Aviation	FS	\$5.69	FS \$5.26
		SS	<b>\$4.99</b>	
PGA	Page Municipal Airport, UT (52 miles) Classic Aviation/Lake Powell Jet Center/American Aviation	FS	\$5.08	FS \$4.55
1L9	Parowan Airport, UT (53 miles) Parowan Aero Services	FS	\$5.22	PS \$4.91

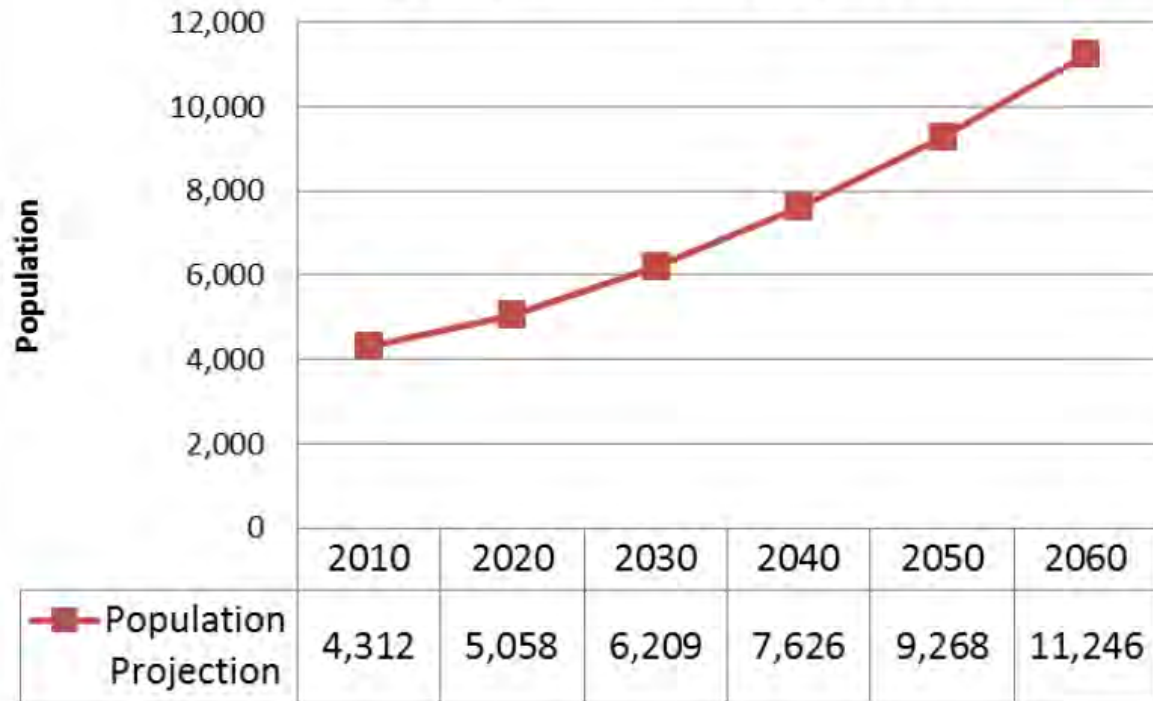
Source: Airnav.com

FS = Full Service  
SS = Self Service

# **POSSIBLE REASONS FOR FLUCTUATING ACTIVITY AT KNB**

1. Rising cost of new airplanes & parts (2x rate of inflation)
2. Fluctuating fuel prices
3. Declining military pilots + more stringent airline standards
4. Limited growth in regional disposable income
5. GA pilots average age higher than general pop. & rising
6. Number of private pilots declined 24% 1999-2011
7. No flight training at KNB - shortage of flight instructors

## Kanab City Population Projections



\*Source: Utah State Office of Management and Budget, 2012

# **KANAB DEMOGRAPHICS**

- **Utah State Governor's Office project the community's growth at 1.7% per year.**
- **Population = 6,209 by the year 2030.**
- **Median age of the city's population = 41.8 years**
- **Median household income = \$50,265.**
- **Total households numbered at 1,729 (2.44 average persons per household)**

Source: Kanab General Plan



# KANAB EMPLOYMENT

Industry	Percent Employment
Education, Health, Social Services	16.1%
Arts, entertainment, recreation, accommodation	14.1%
Retail Trade	11.4%
Other Services	10.7%
Transportation & warehousing, utilities	8.6%
Public administration	8.3%
Construction	8.1%

Source: Kanab General Plan

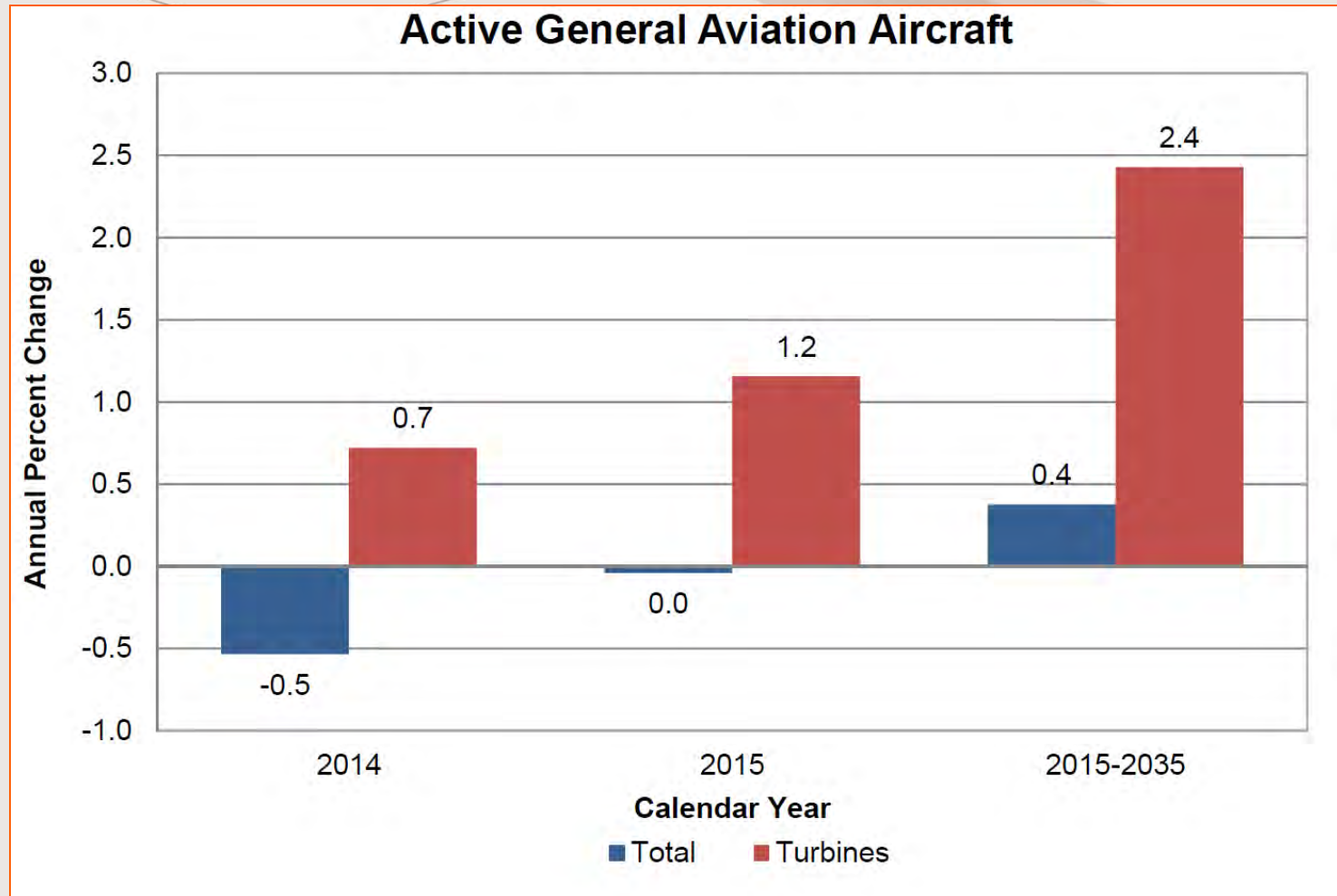
# Aircraft Operations - Kanab Municipal Airport

Source: FAA Terminal Area Forecast (TAF)

- Local
- Itinerant
- Total



# FAA NATIONAL FORECASTS: 2015-2035

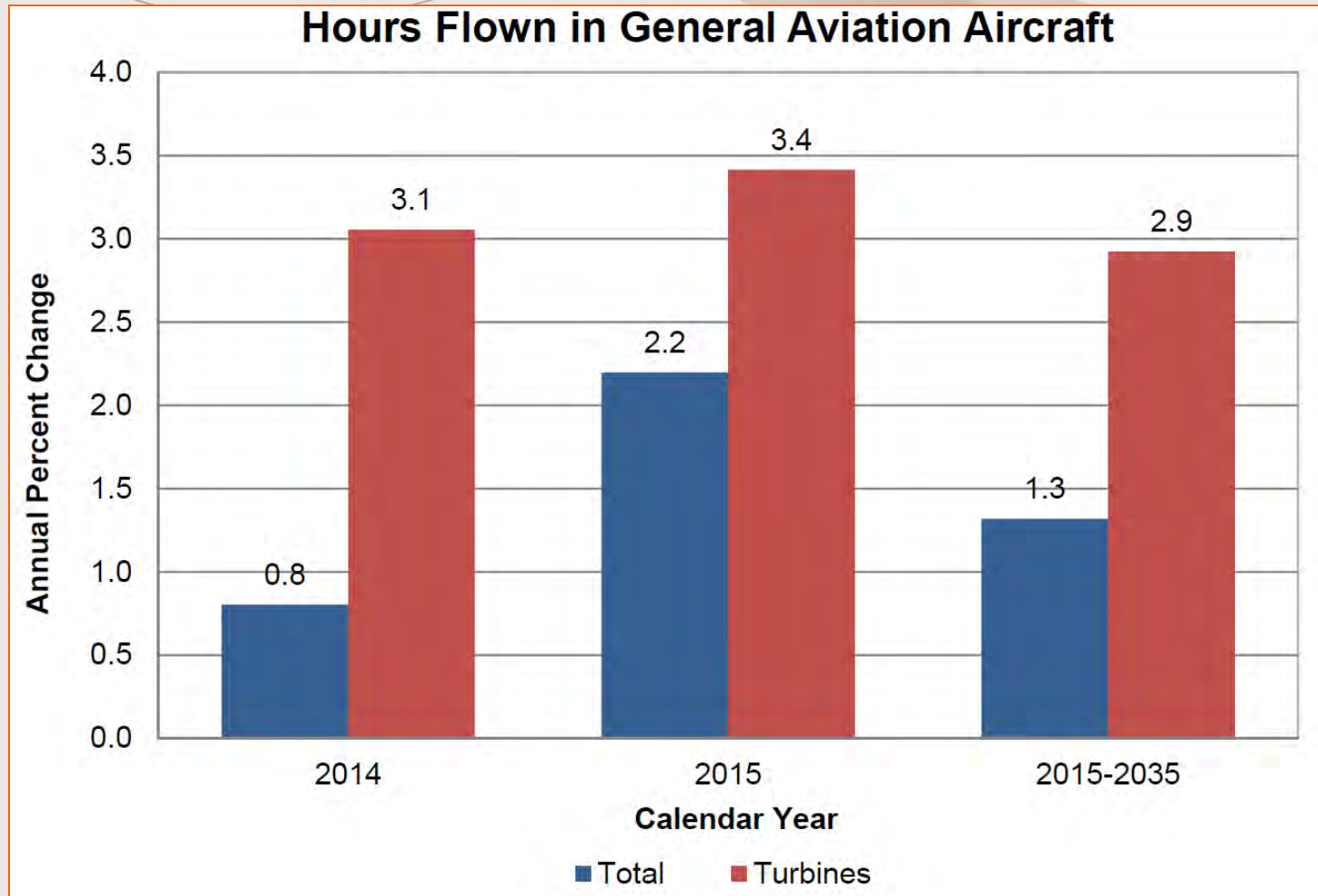




# FAA NATIONAL FORECASTS: 2015-2035

- Piston aircraft are projected to decrease annually 0.5%
- Light sport & experimental aircraft will increase 4.3% year
- Turbine corporate/business aircraft will grow 2.4% year
- Number of corporate jets will grow 2.8% year
- Hours flown by corporate turbine aircraft will grow 2.9% year
- Hours flown by piston aircraft will decline 0.3% year
- Number of student & private pilots will decrease 0.3% year

# FAA NATIONAL FORECASTS: 2015-2035



# KNB SWOT ANALYSIS

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Excellent airfield facilities</li> <li>• Good instrument approach</li> <li>• New terminal building</li> <li>• Pro-active Sponsor</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• No terminal weather forecast – impacts commercial operations</li> <li>• Lack of low altitude radar coverage</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Attract additional corporate traffic</li> <li>• Potential non-aviation uses</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Regional economy impacted by tourism – affected by gas prices, disposable income, employment</li> <li>• Shrinking piston GA airplane market</li> <li>• Aging &amp; declining pilot population</li> <li>• Rising cost of airplanes &amp; parts</li> <li>• Future of Avgas</li> </ul>