Airport Master Plan

Planning Advisory Committee (PAC) Meeting #2

Ogden-Hinckley Airport (OGD)

February 13, 2019

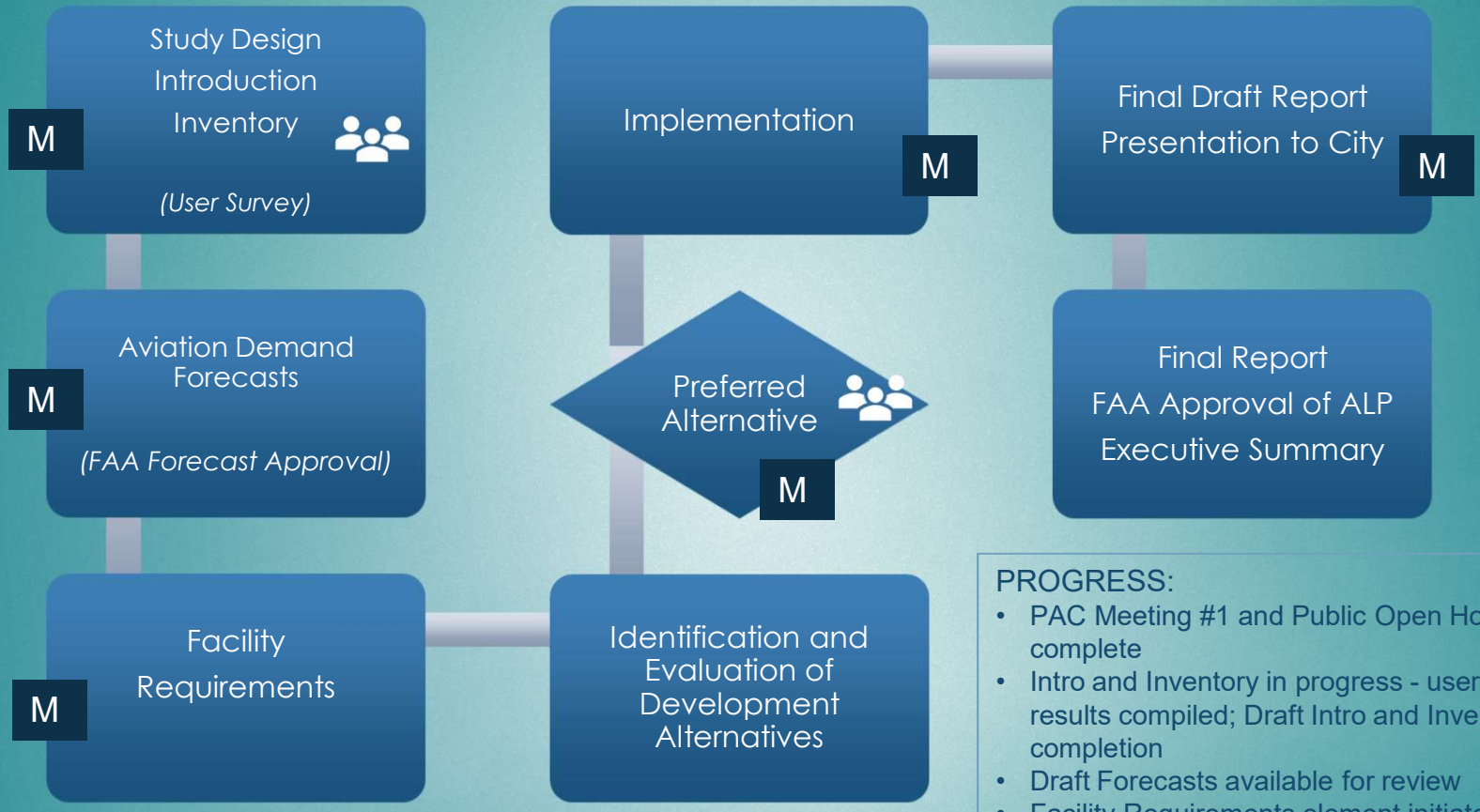
Agenda

- Welcome
- Introductions
- Progress Update
- Key Study Findings, to date
- Preliminary Discussion of Facility Needs
- The Next Steps…

Introductions

- City of Ogden
  - Bryant Garrett, Airport Manager
  - Jon Greiner, City Consultant
- Airport Development Group Team
  - Dana Hartshorn, Chuck Kellerman, Derek Johnson (ADG)
  - Wendy Renier, Sara Funk (Subconsultant Aviation Planners)
- Utah Division of Aeronautics
  - Jared Esselman
- FAA
  - John Sweeney
- Local Planning Advisory Committee (PAC) Members
- Guest Attendees

Progress Update



M = Meeting

= Pubic Open House

PROGRESS:

- PAC Meeting #1 and Public Open House #1 complete
- Intro and Inventory in progress - user survey results compiled; Draft Intro and Inventory nearing completion
- Draft Forecasts available for review
- Facility Requirements element initiated

NEXT:

- Complete Draft Intro and Inventory
- Address review comments (Inventory, Forecasts)
- Coordinate w/ FAA on approval of Forecasts

Key Study Findings
(as of January 2019)

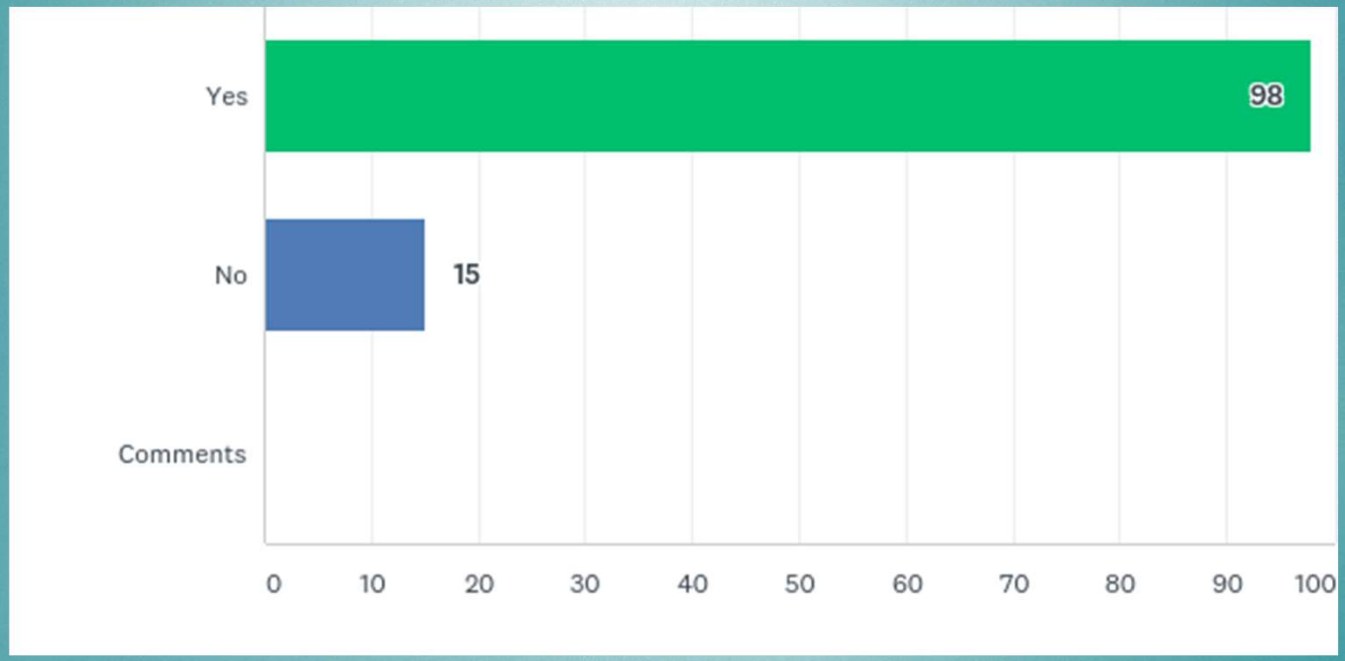
- User Survey Results
  - Online and paper survey distribution
  - Total respondents 115 (113 online, 2 paper/ email)
- Aviation Demand Forecasts
  - Passenger enplanements
  - Based Aircraft
  - Operations

User Survey Results

- Outreach
  - Emailed online survey link to tenants
  - Paper surveys provided to OGD and mailed to area airport FBOs
  - Postcards mailed to select FAA aircraft registrants inviting participation in online survey
  - City's website (notice in newsletter, pdf copy of survey)

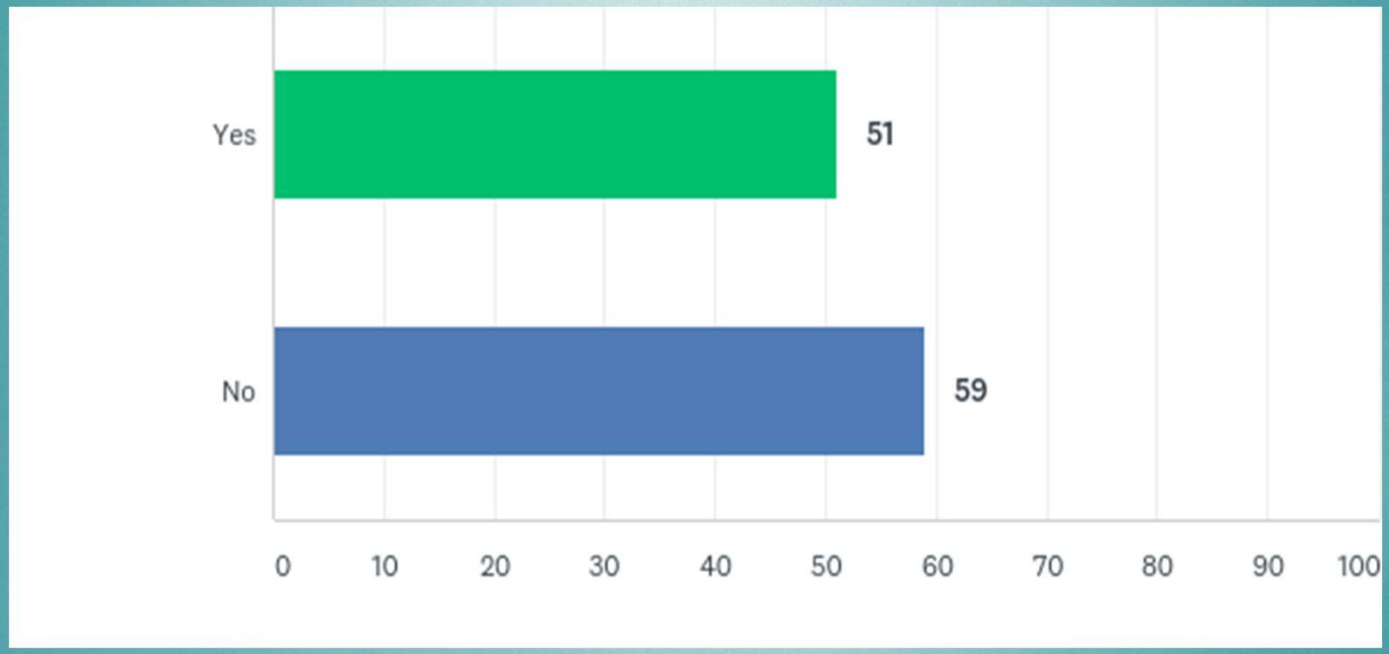
Q1: Do you base an aircraft at KOGD?

- Answered: 113 Skipped: 0



Q2: If yes, do you rent hangar space?

- Answered: 110 Skipped: 3



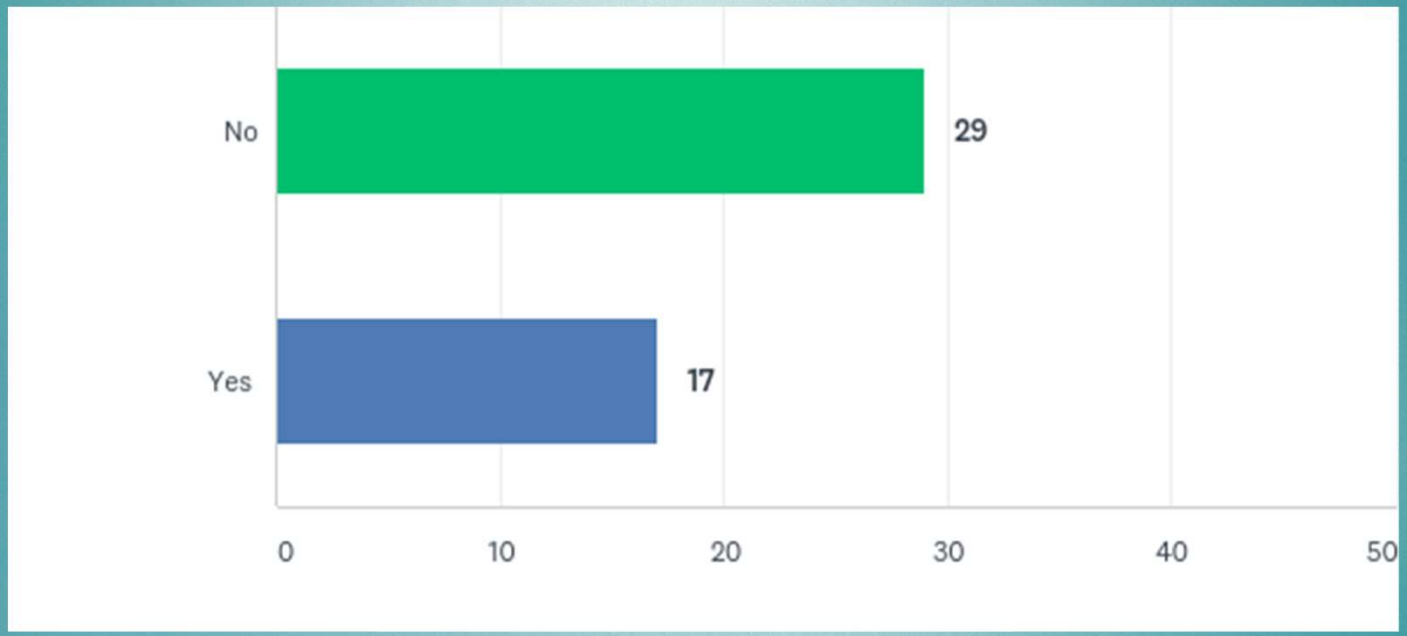
Q3: If not based at KOGD, where do you currently base your aircraft?

- Answered: 23 Skipped: 90

  - Respondents who are not based at OGD, or who base at OGD and elsewhere
    - Utah
      - SLC – Salt Lake City International
      - LGU – Logan-Cache
      - BMC – Brigham City Municipal
      - BTF – Skypark
      - 42U – Morgan County
    - Other States
      - Northern California
      - New Mexico
      - Texas
      - Michigan

Q4: Would you base at KOGD if additional facilities or services were available?

- Answered: 46 Skipped: 67



Q5: What type of aircraft do you own or fly?

- Answered: 108 Skipped: 5

  - Broad range of aircraft identified
    - Single-engine
    - Multi-engine
    - Jet
    - Helicopters
    - Other

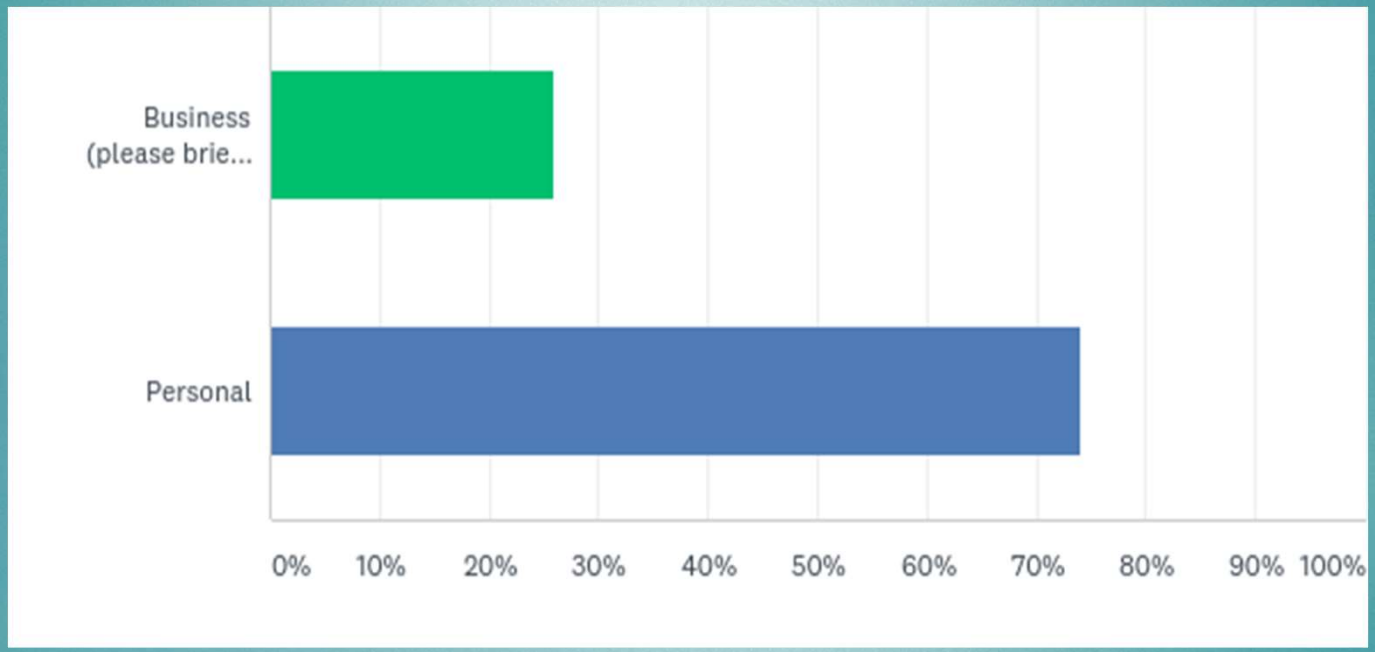
Q6: Estimate your annual landings?

- Answered: 104 Skipped: 9

  - Total number of landings at "all airports" in a year
    - Estimated 18,300 landings (36,600 operations)
  - Landings at KOGD
    - 8,000 landings (16,000 operations)

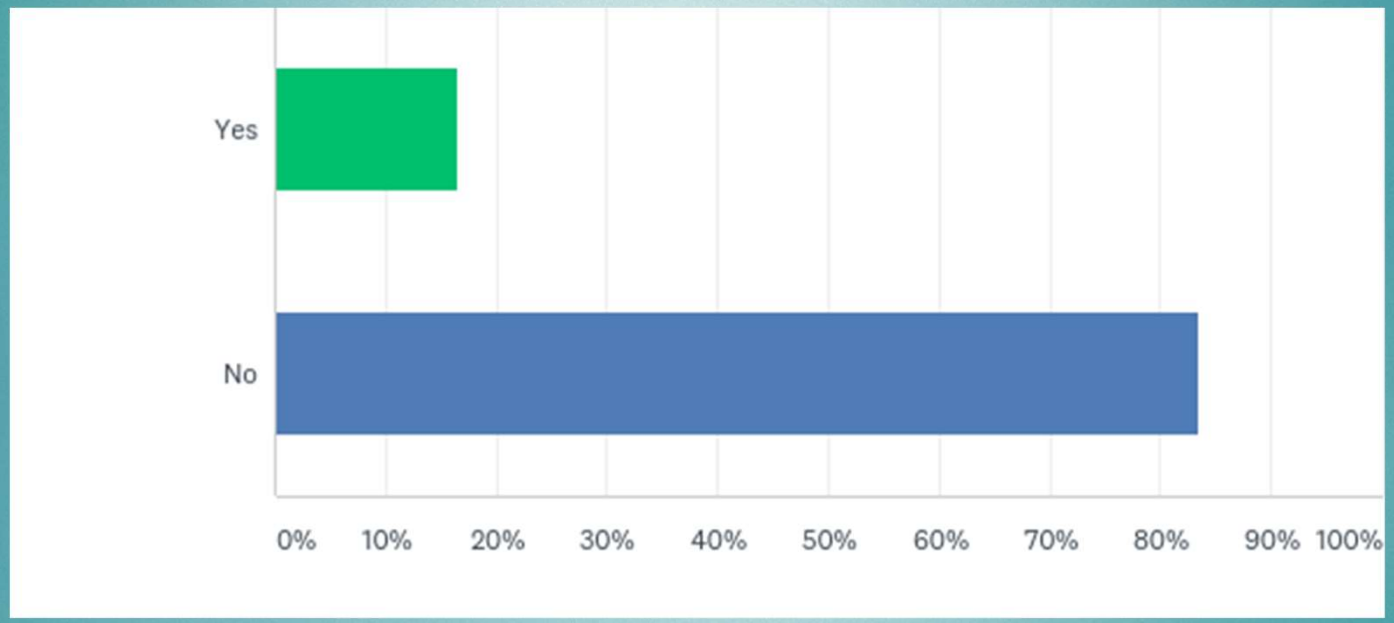
Q7: What is your primary use of KOGD?

- Answered: 112 Skipped: 1



Q8: Are facility improvements needed to grow your business?

- Answered: 91 Skipped: 22



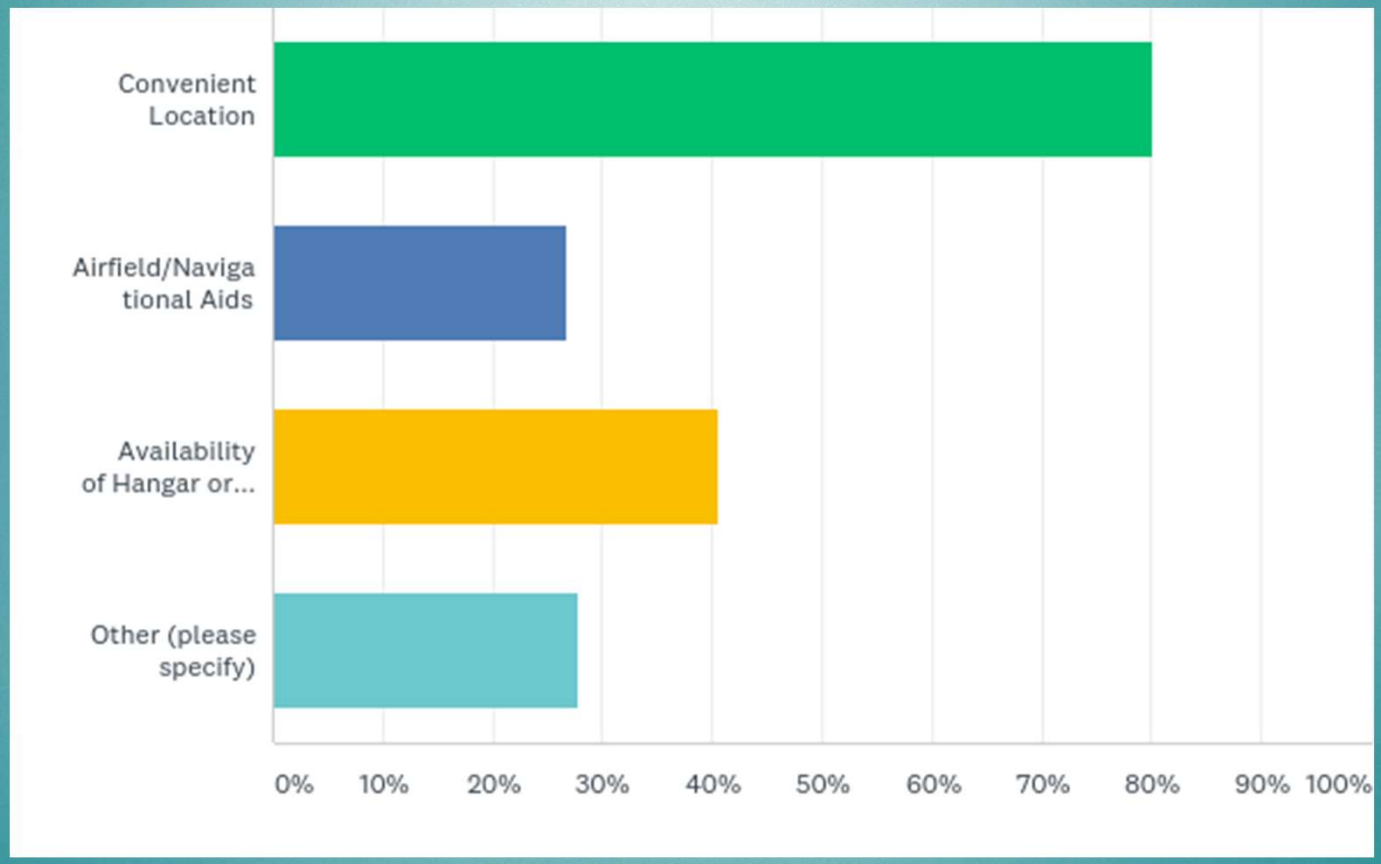
Q9: Zip code?

- Answered: 85 Skipped: 28

  - Utah – majority respondents
  - Nevada - 1
  - California - 1

Q10: If your aircraft is based at KOGD, please identify your reasons for basing there.

- Answered: 101 Skipped: 12



Q11: Please list any specific improvements that you believe are needed at KOGD.

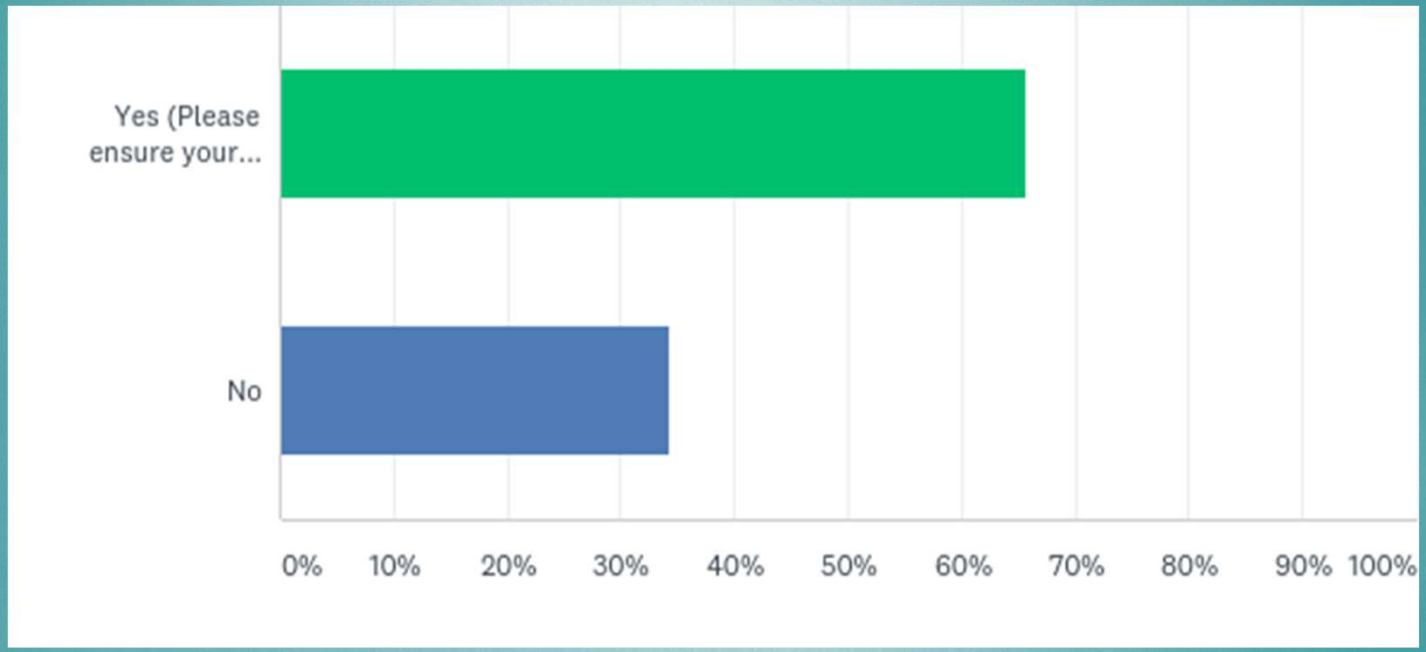
- Answered: 73 Skipped: 40
  - Broad range of responses – related and unrelated* to the planning study scope
  - Study-related responses

• Additional hangars, tiedowns • Pavement maintenance • Separate passenger terminal on the airfield (apart from GA) • Attract more users (e.g. business aviation)	• Improved amenities – rental car, restaurants, high-speed internet access, aircraft maintenance/avionics for turbines/jets • Grass/dirt landing strip • Wash rack

**Input unrelated to study scope will be provided to the City*

Q14: Would you like to receive information on this study via email?

- Answered: 96 Skipped: 17



**A link to the City's webpage with draft master planning study documents will be emailed to interested parties prior to the next public open house. Email addresses of interested parties will be provided to the City.*

Questions on User Survey Results?

Study Terms
(recap from previous PAC meeting)

- OGD or KOGD – airport identifier for Ogden-Hinckley
- General Aviation (GA) - all aviation other than commercial service and military
- Based Aircraft – an active aircraft that spends the majority of its time at the airport
- Operation – one landing or one takeoff; a touch-and-go counts as two operations
- NPIAS – National Plan of Integrated Airport Systems published by FAA
- UCASP – Utah Continuous Airport System Plan
- Design/Critical Aircraft – most demanding aircraft that conducts 500+ annual itinerant operations
- Airport Reference Code – alphanumeric code that drives required FAA design standards (ARC assigned to aircraft based on approach speed and wingspan, sometimes tail height)

Aviation Demand Forecasts

- Base Year 2017 or 2018
- Future Milestones
  - Short-term (2023)
  - Intermediate term (2028)
  - Long-term future (2038)
- FAA HQ approval required
  - If more than 10% higher than FAA's Terminal Area Forecast (TAF)
- Airport Service Area
  - 1/2-hour drive (25 miles)=Ogden-Clearfield MSA, almost 700,000 people

Airport Service Area

County	Population	Share of MSA	Unemployment Rate
Box Elder	54,079	8%	3.0%
Davis	347,637	52%	3.0%
Morgan	11,872	2%	2.8%
Weber	251,769	38%	3.4%

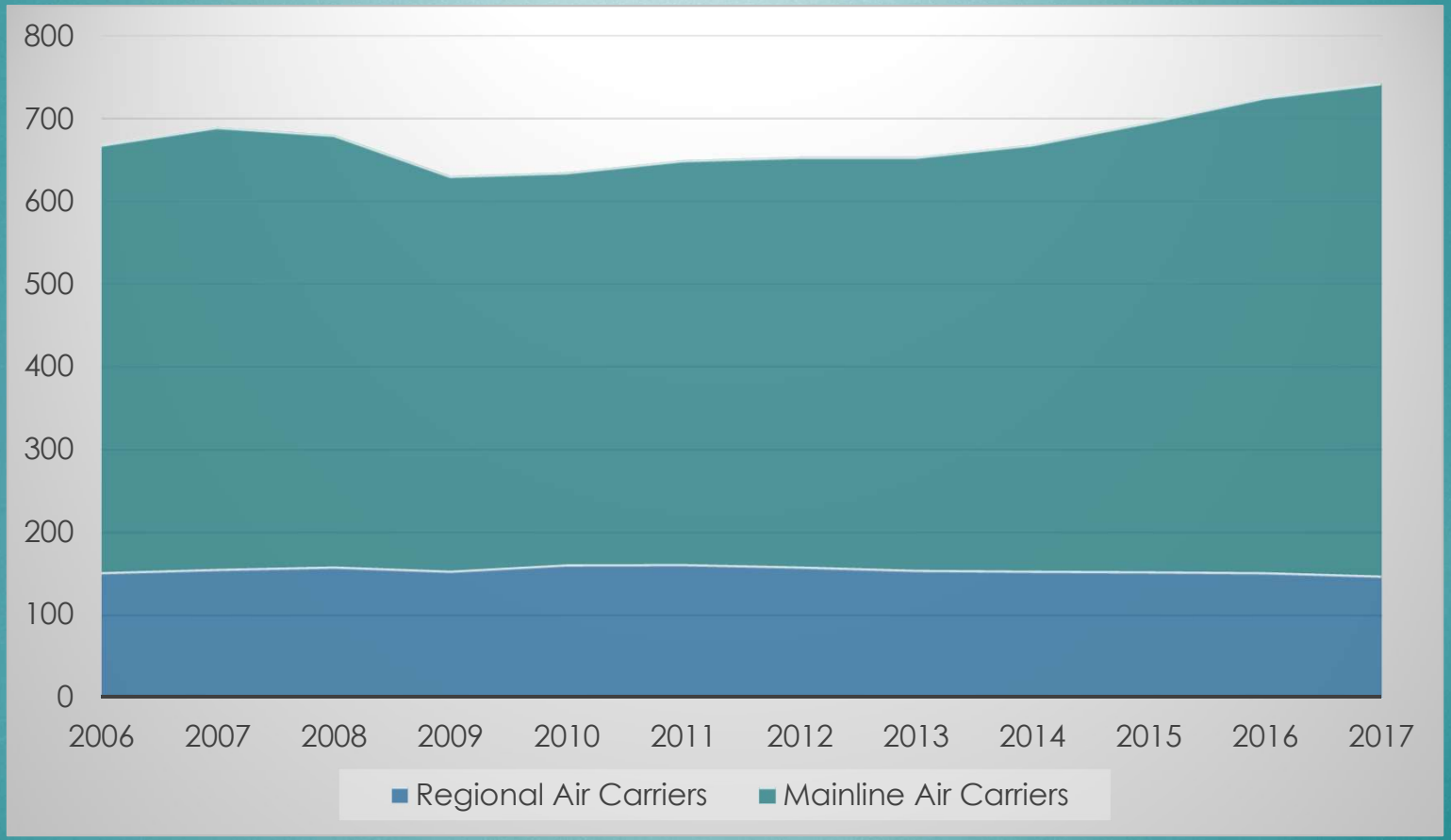
Airport Service Area

Year	Total Population	Total Employment	Per Capita Income (2009 $)	Gross Regional Product (millions of 2009 $)	Retail Sales Per Household (2009 $)
1998	470,206	248,406	28,251	13,857.53	36,399
2003	513,021	267,175	31,001	16,676.90	35,702
2008	577,040	310,632	33,619	19,352.24	37,313
2013	622,371	315,533	32,801	20,068.27	36,188
2018	673,856	362,975	37,044	23,900.18	38,572
2023	726,189	395,458	39,467	26,450.22	39,348
2028	781,810	428,240	41,708	29,126.98	40,355
2038	896,890	491,330	45,080	34,656.67	42,502
Average Annual Growth					
1998-2018	1.8%	1.9%	1.4%	2.8%	0.3%
2018-2038	1.4%	1.5%	1.0%	1.9%	0.5%

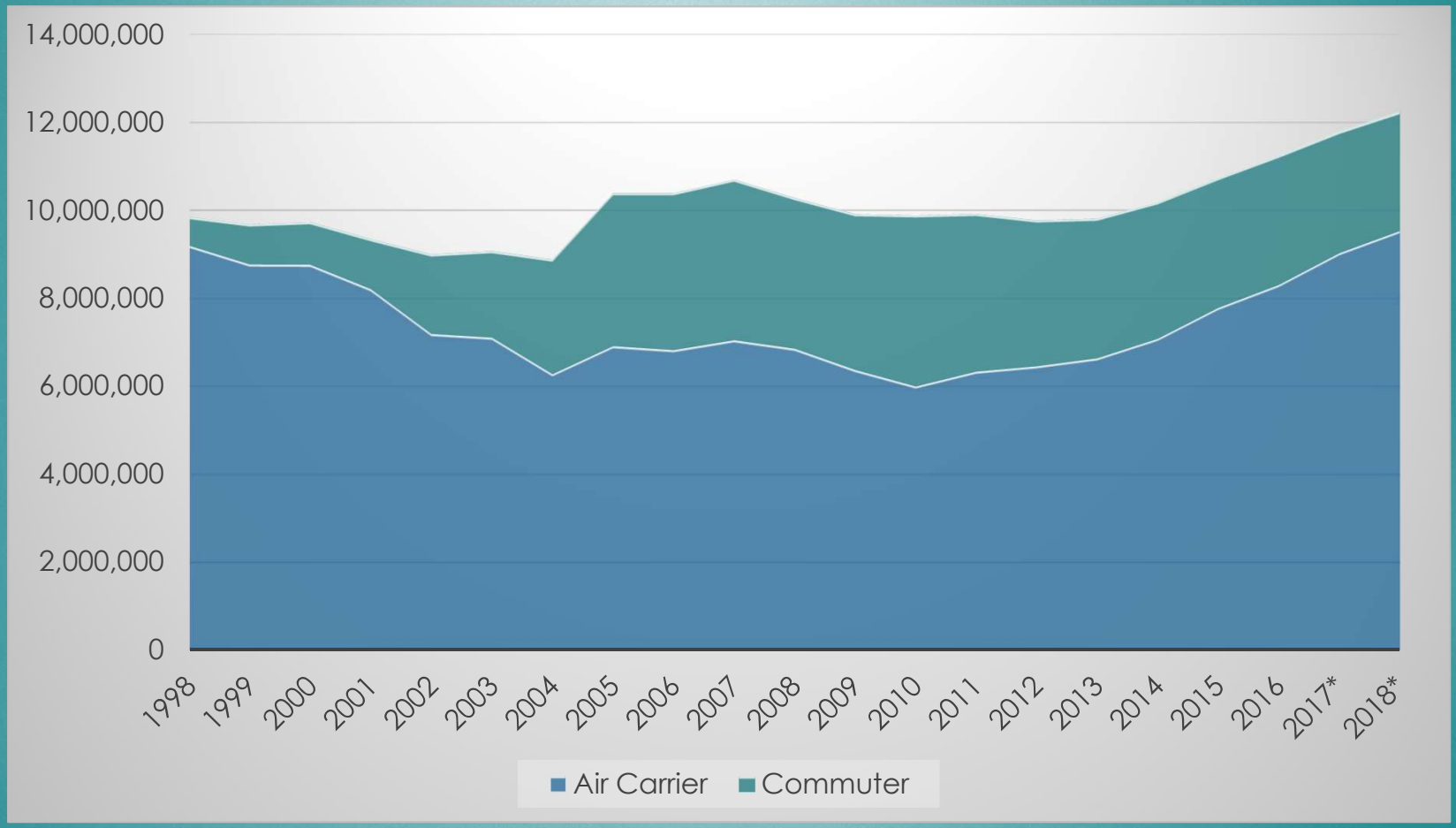
Passenger Trends and Forecasts

- Enplaned passengers forecast because tied to entitlement funding
- As a nonhub, primary airport in the National Plan of Integrated Airport Systems (NPIAS), Ogden receives $1 million+ entitlement funding

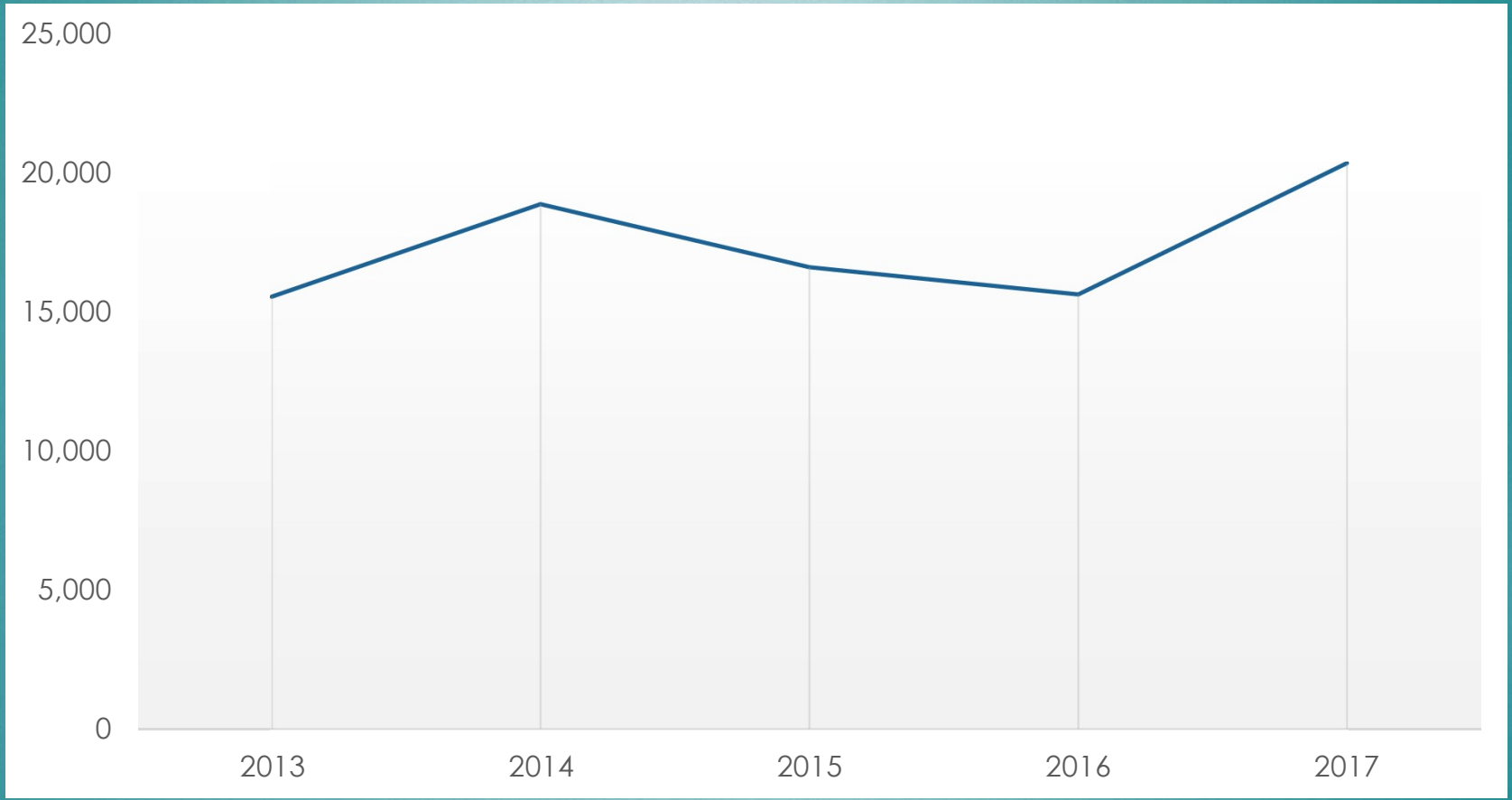
US Domestic Enplaned Passengers



Utah Enplaned Passengers



Ogden's Enplaned Passengers



FAA and IATA Passenger Forecasts

- Annual Growth Rates
  - 2.0% Utah (FAA)
  - 1.9% US (FAA)
  - 2.4% North America (International Air Transport Association)

Airline Industry

- US airline industry transformed from highly cyclical, capital intensive industry to one that can generate sustained profits.
- Lowered operating costs, eliminated unprofitable routes, grounded older airplanes, initiated new services, and started charging separately for services once in ticket prices.
- Yields (average fare per passenger per mile) increased only 0.1% from 2016 to 2017, partly due to competition from ultra-low-cost carriers (ULCC) such as Allegiant Airlines.
- ULCCs like Allegiant have been compared to "wildcatters" in the oil industry, because they "drill" for latent discretionary income available in markets overlooked by mainline airlines

Allegiant Airlines Route Map

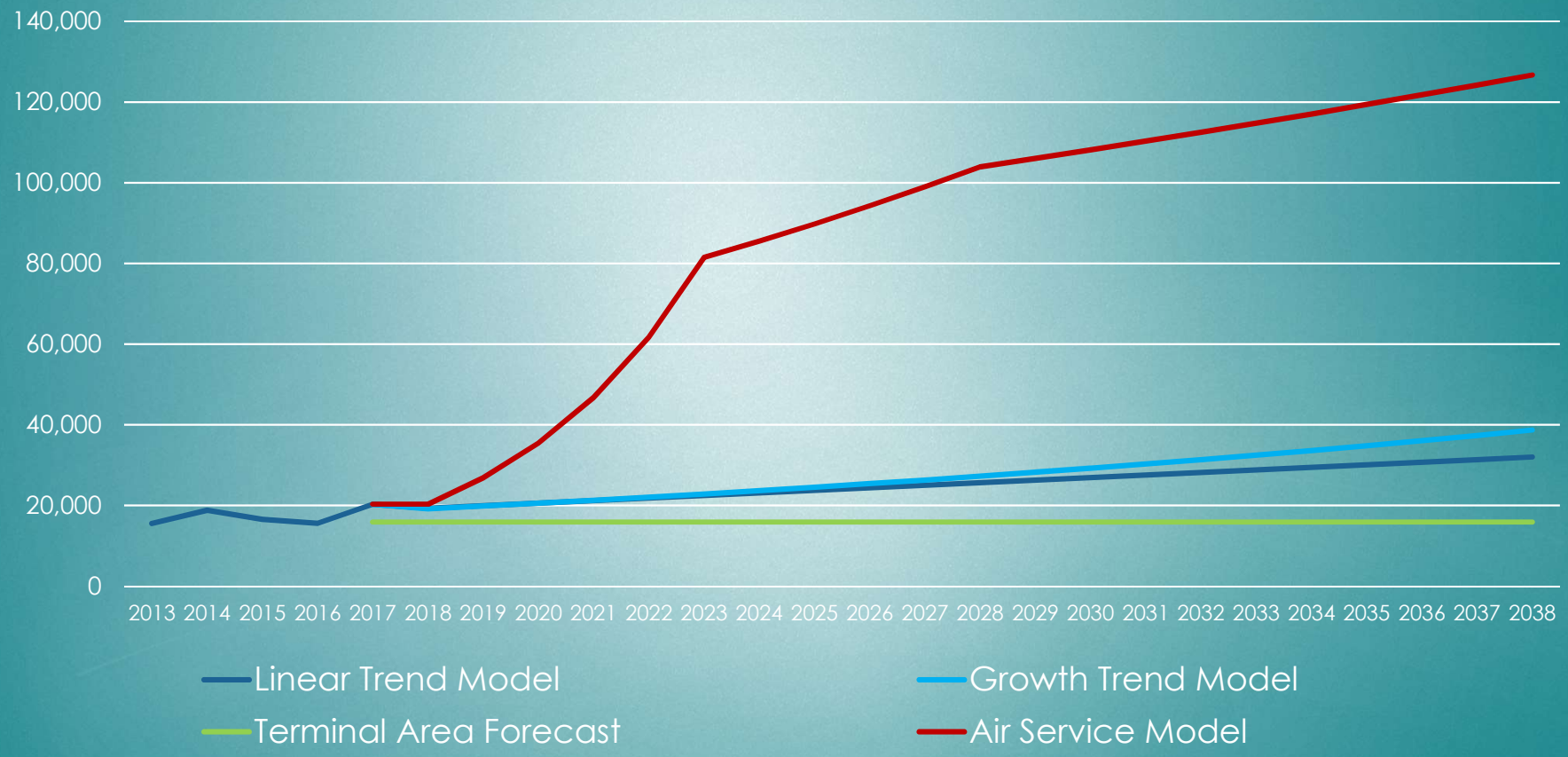
Ogden Challenges

- SLC has 99% of passengers in greater Salt Lake City area
- Ogden is a reasonable drive time from SLC
- Mainline airlines and their regional affiliates established at SLC
- SLC expanding
- Low cost carriers require many passengers to start
- Sky West flies for regional affiliates

Ogden's vs. Provo's Allegiant Service

- 20,324 passenger enplanements, compared to 91,581
- 7% average annual growth from 2013, compared to 32%
- 2 weekly departures, compared to 12

Ogden Passenger Forecast Models



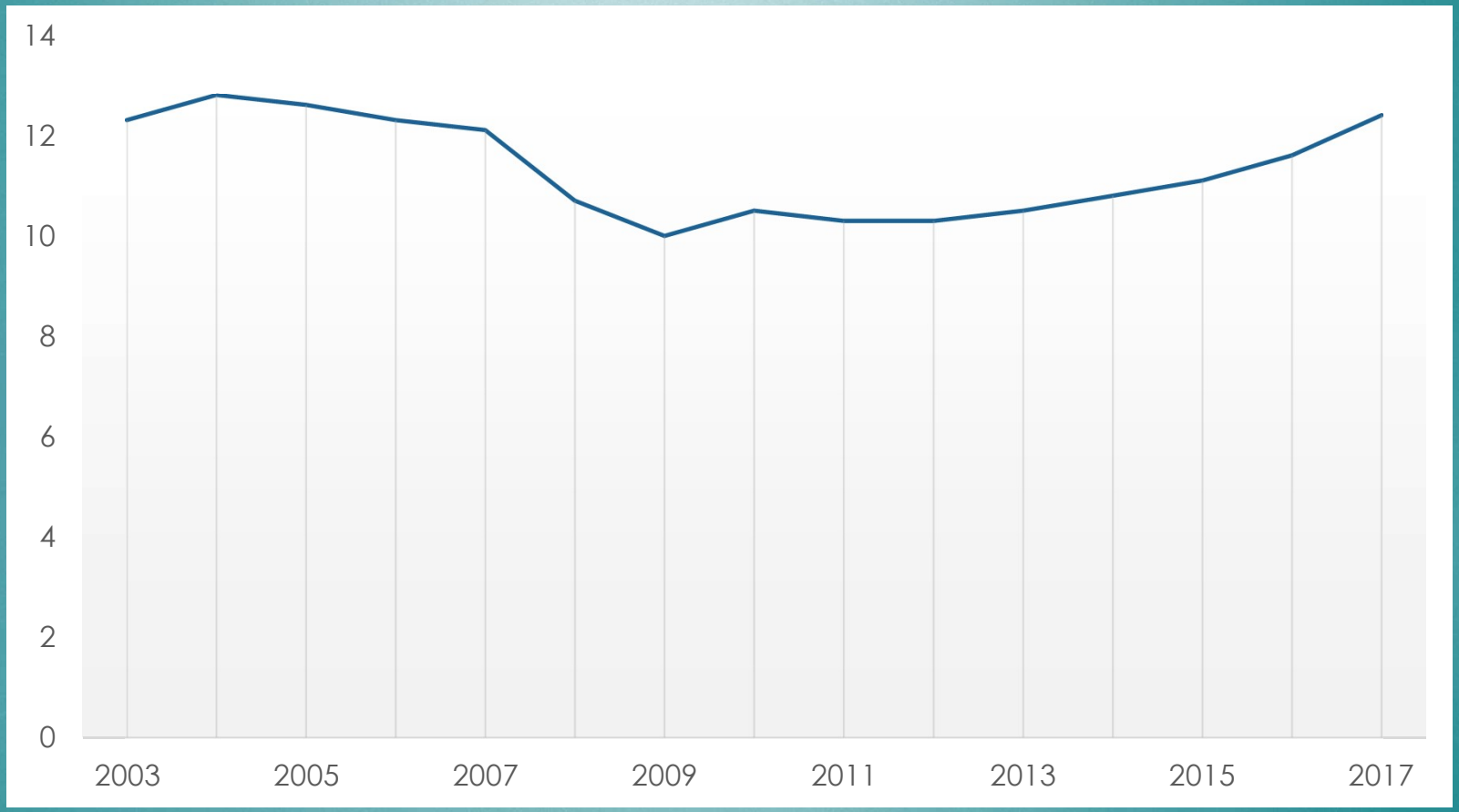
Passenger Forecast Models

Year	Linear Trend Model (Low Growth)	Growth Trend Model	Terminal Area Forecast	Air Service Model (High Growth) (preferred)
2013	15,523	15,523	15,128	15,523
2017	20,324	20,324	15,892	20,324
2023	22,470	22,868	15,892	81,448
2028	25,654	27,251	15,892	103,950
2038	32,022	38,697	15,892	126,715
Average Annual Growth				
2017-2038	2.2%	3.1%	0.0%	9.1%

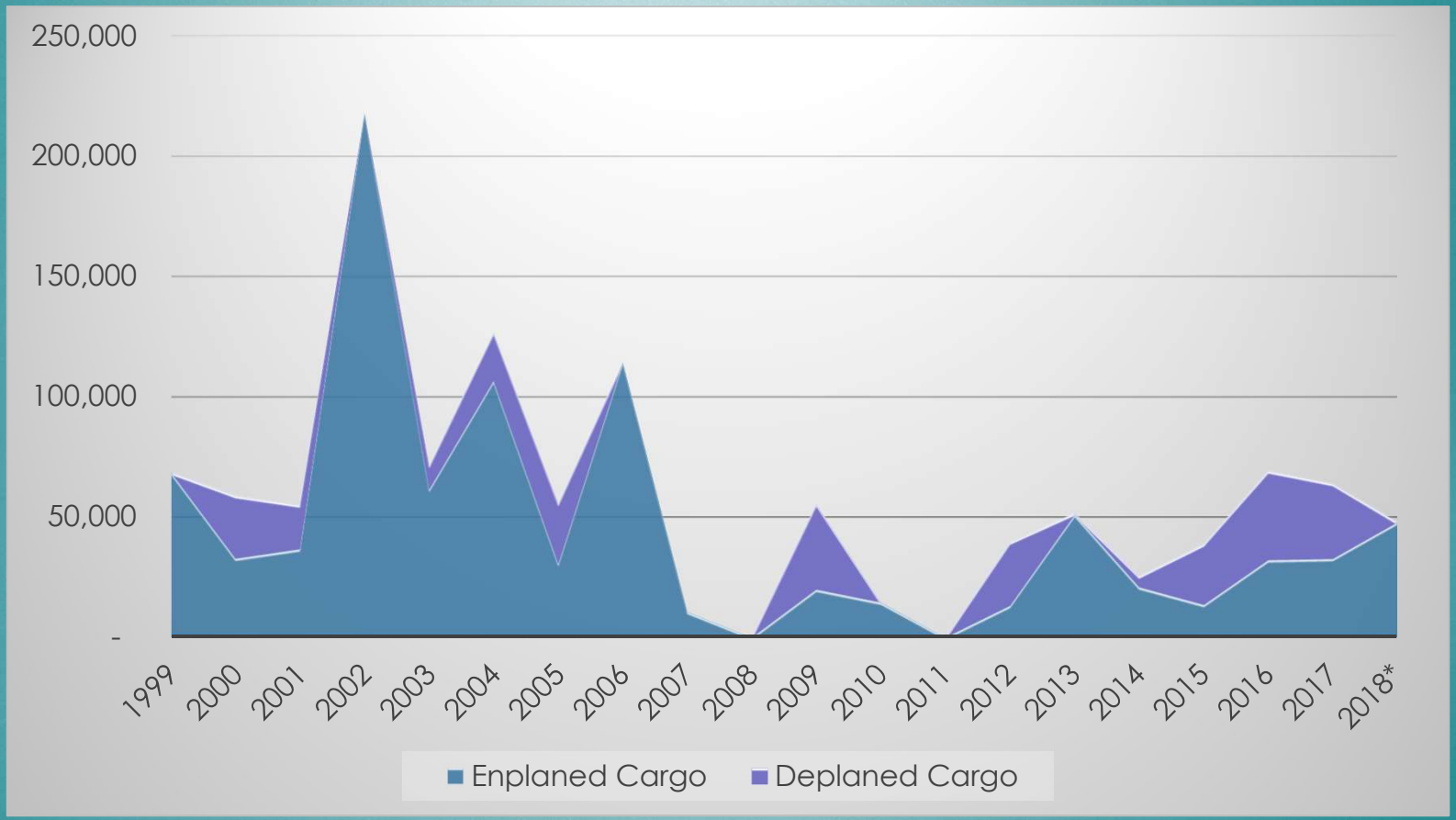
Air Cargo Trends and Forecasts

- Scheduled and non-scheduled, freight and mail, all-cargo and passenger aircraft
- Affected by economy, security requirements, changes in mail
- UPS new regional center at SLC

US Enplaned Air Cargo Tons (millions)



Ogden Cargo History (pounds)



Ogden Air Cargo Forecast

- At Ogden, nonscheduled flights, mostly freight
- Small turboprops to Boeing 757 freighters
- Forecast growth rate same as MSA Gross Regional Product
- 94,439 pounds in 2038 (63,856 in 2017)
- 78% of the cargo is enplaned, 22% deplaned

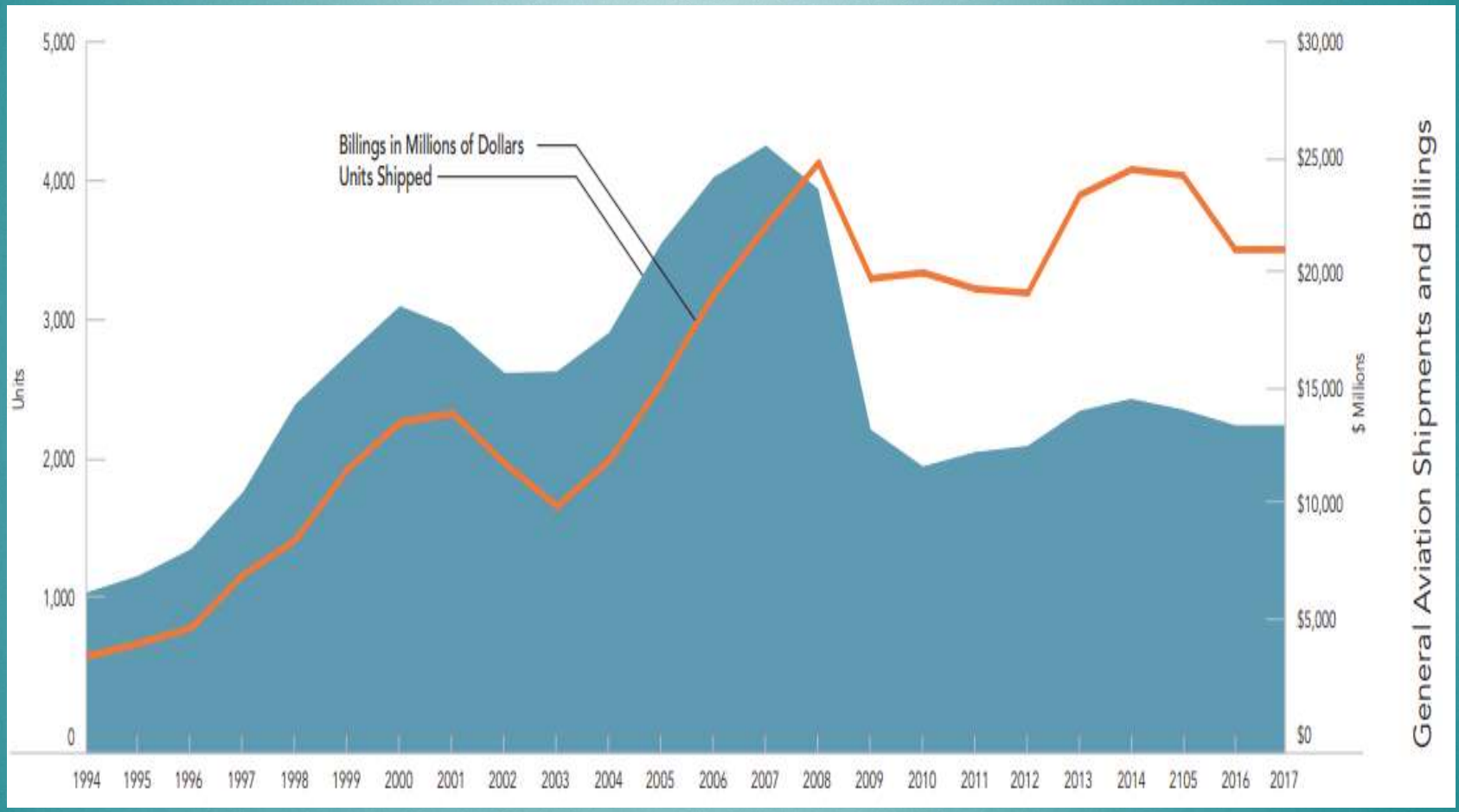
General Aviation Trends and Forecasts

- Nationally, GA industry has not recovered to pre-recession levels, although it is growing.
- Ogden GA activity (based aircraft and aircraft operations) has trended with the nation.
- Most GA aircraft and aircraft operations are piston-powered
- Past and future trend for piston aircraft is gradual decline
- Trend for turboprops, jets, and helicopters is growth

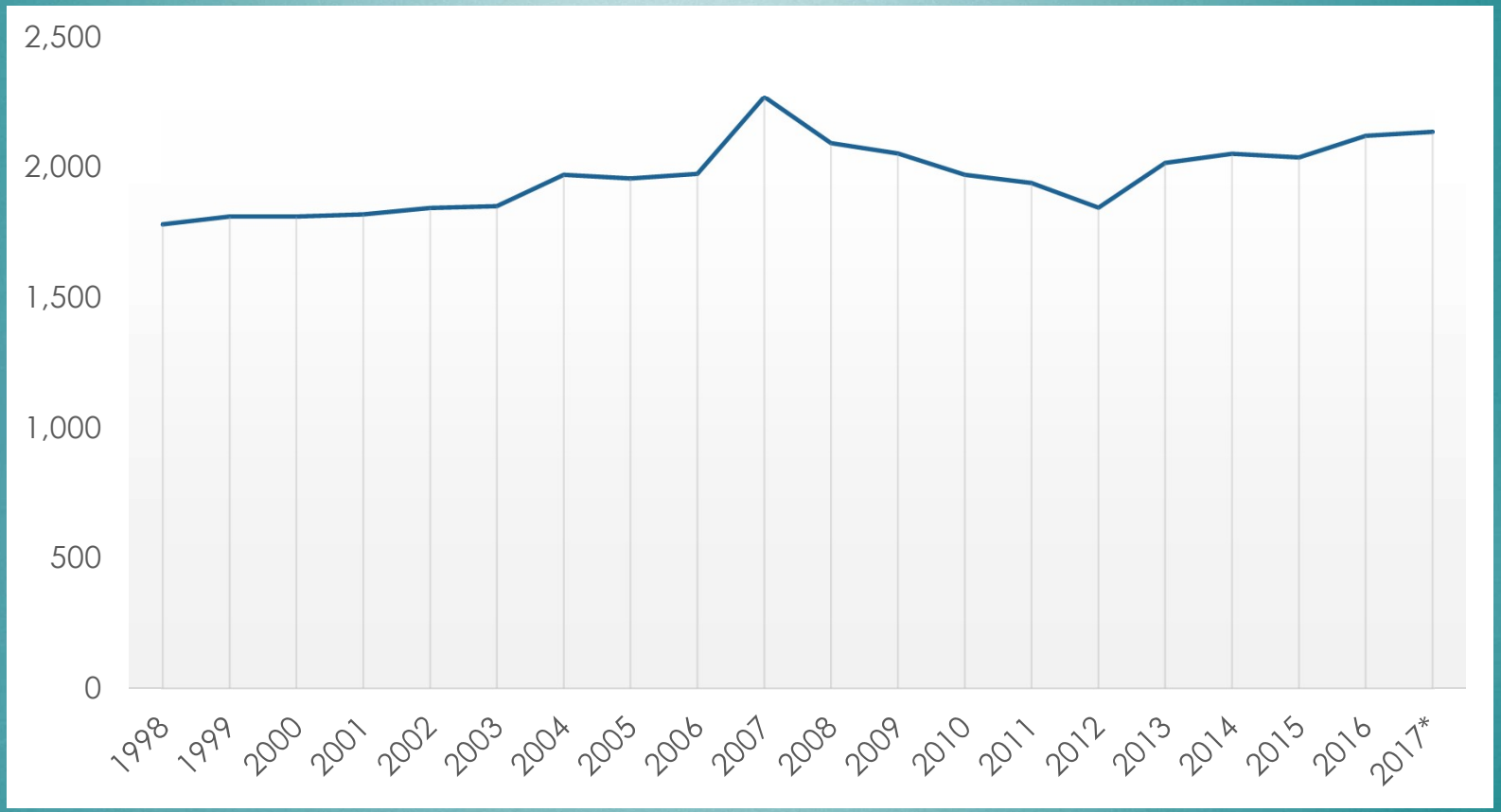
National GA Fleet

Aircraft Type	Active Air-craft	% Fleet	Hours Flown	% Hours Flown	Hours per Aircraft
Piston SE Fixed Wing	130,330	73.4%	11,877,735	50.1%	91.1
Piston ME Fixed Wing	12,935	7.3%	1,665,676	7.0%	128.8
Turboprop Fixed Wing	9,430	5.3%	2,674,467	11.3%	283.6
Turbojet Fixed Wing	14,075	7.9%	4,273,872	18.0%	303.6
Rotorcraft	10,805	6.1%	3,237,145	13.6%	299.6
Total	177,575	100%	23,728,894	100%	133.6
Experi-mental	27,865	78.5%	1,248,478	76.1%	44.8
Sport Aircraft	2,585	7.3%	196,913	12.0%	76.2
Other	5,025	14.2%	194,623	11.9%	38.7
Total	35,475	100%	1,640,014	100%	46.2

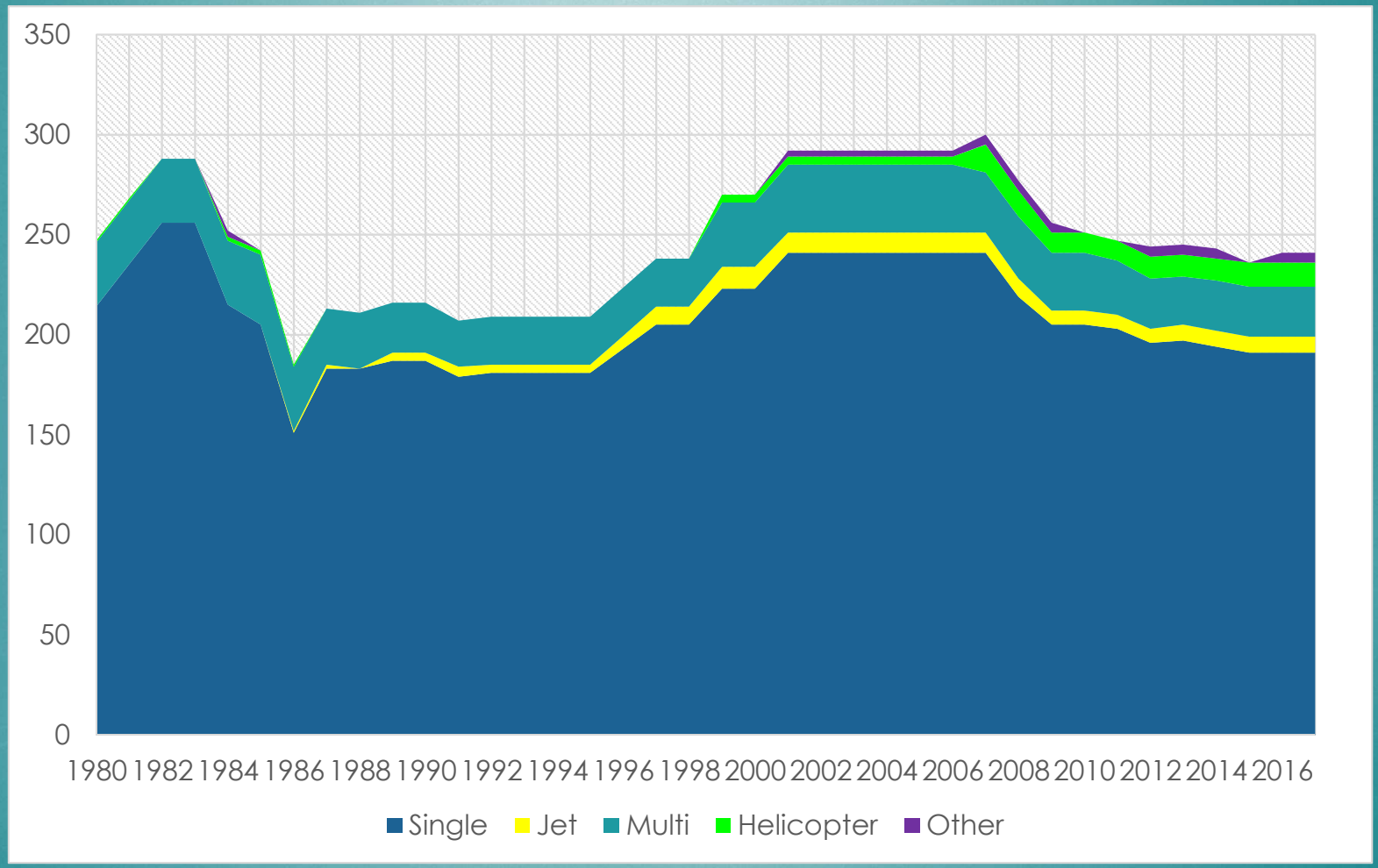
Worldwide GA Industry



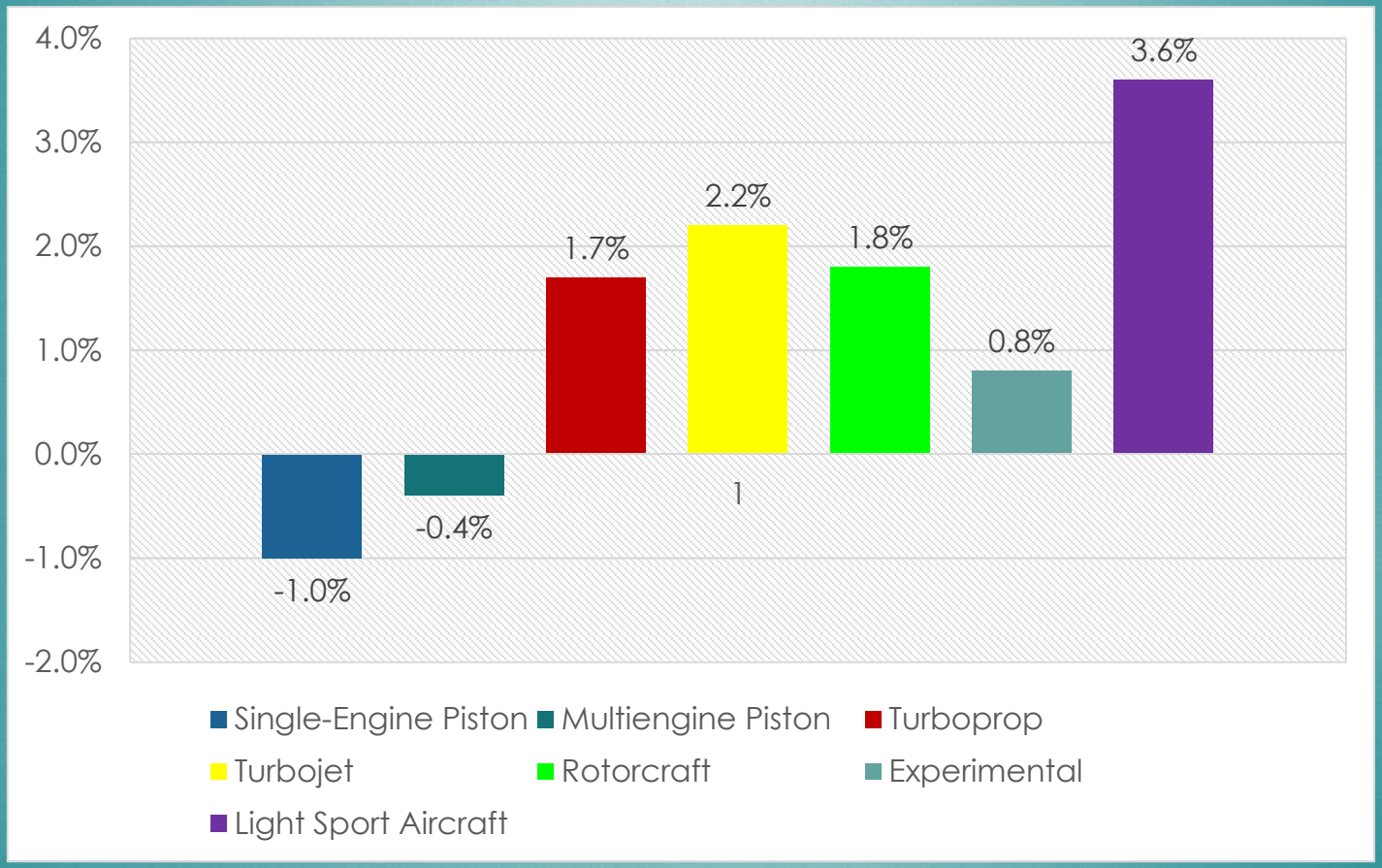
Utah Based Aircraft



Ogden Based Aircraft



FAA National Forecast for Active Aircraft (annual rates)



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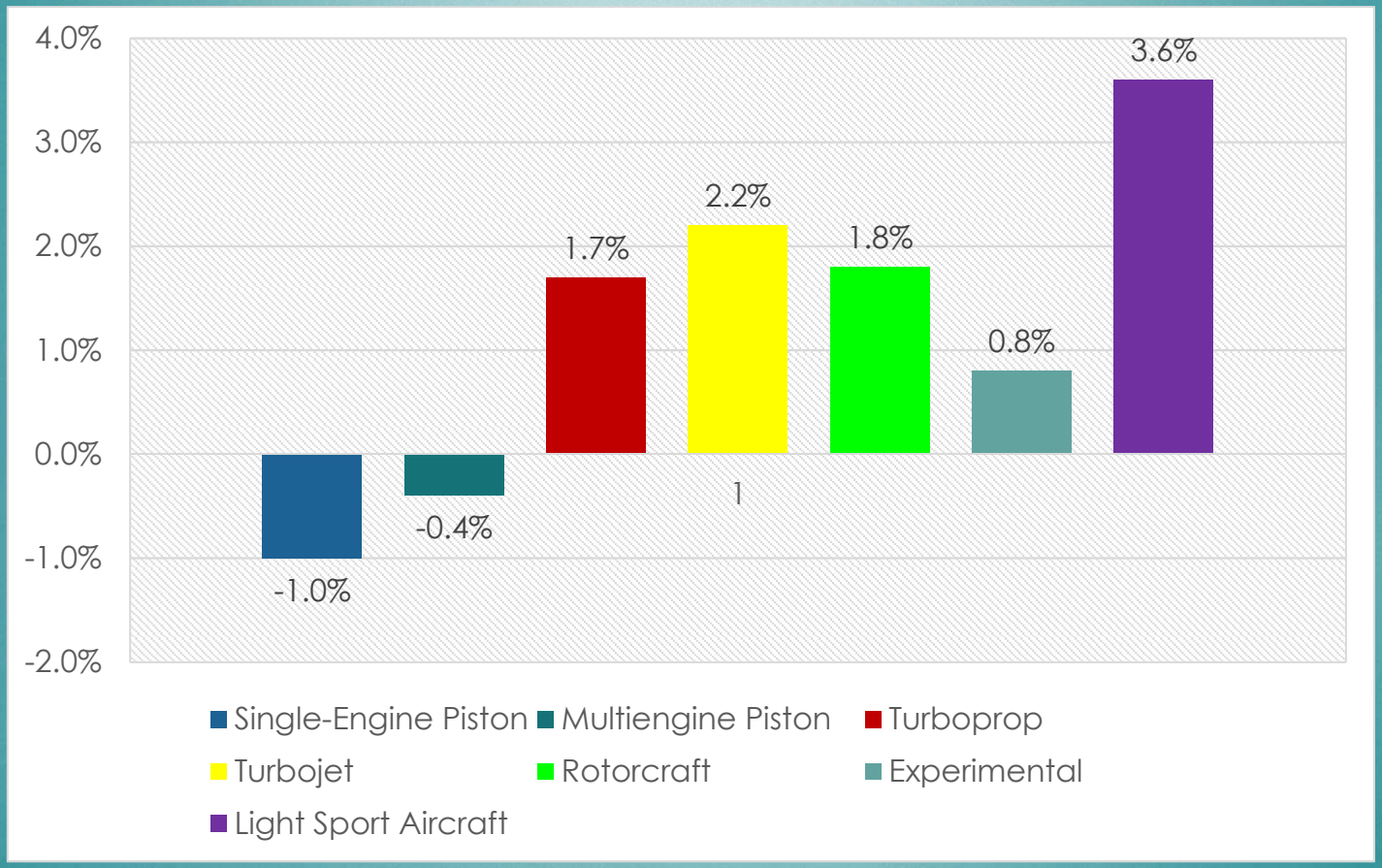
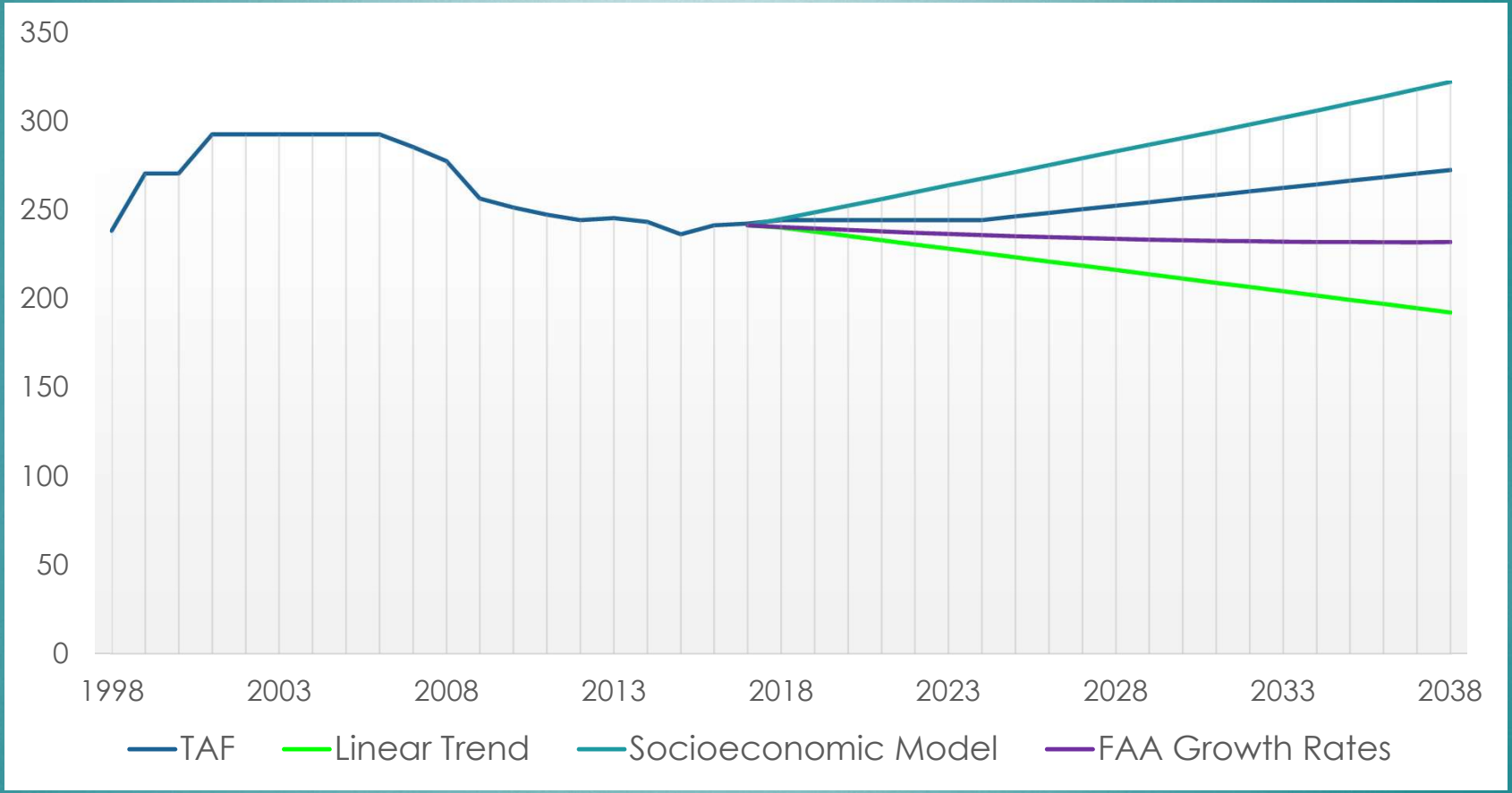


Based Aircraft Forecast Models



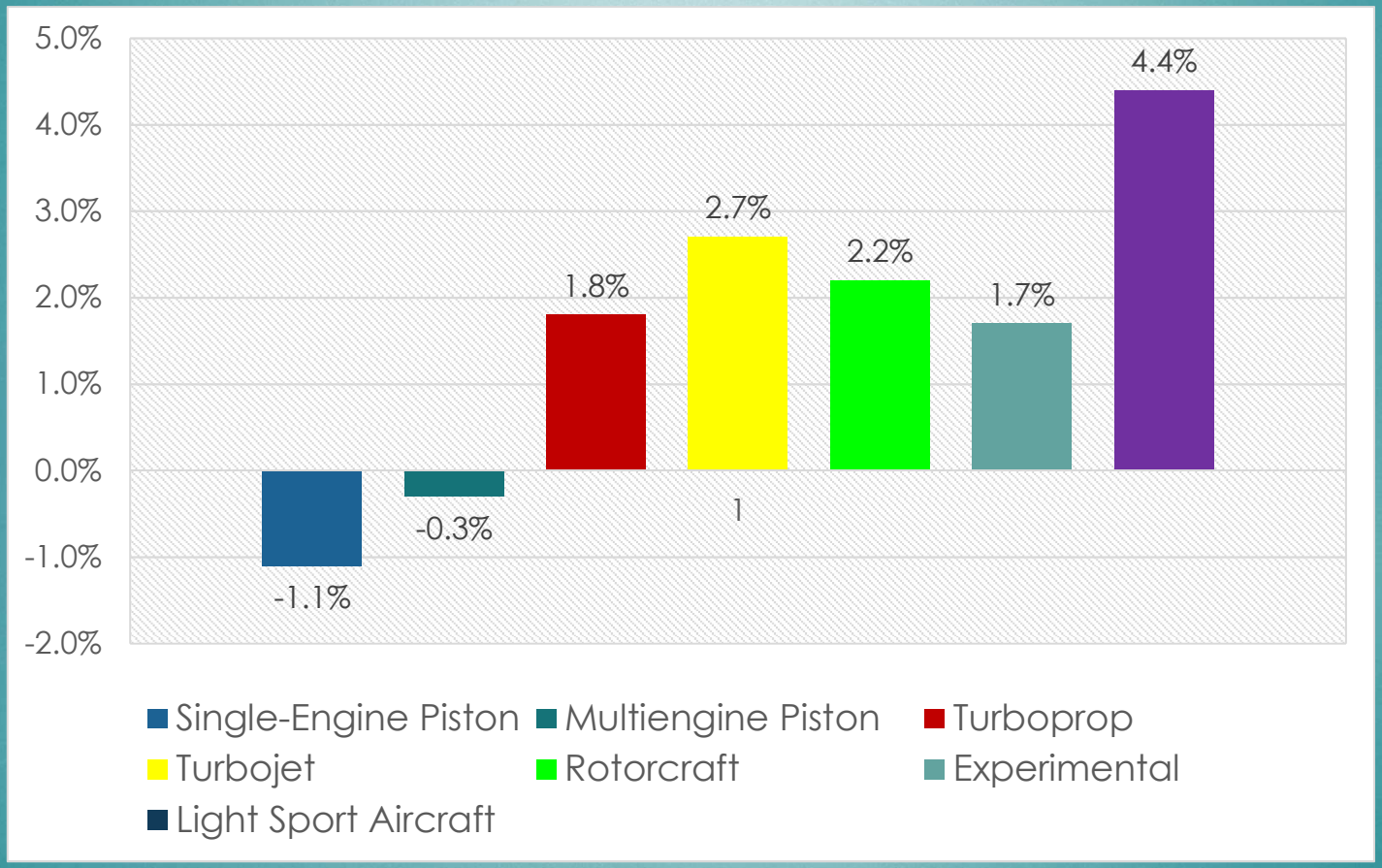
Ogden Based Aircraft Fleet Mix Forecast

	Single Engine	Multi-Engine	Jet	Heli-copter	Other	Total
2017	79%	10%	3%	5%	2%	
	191	25	8	12	5	241
2023	77%	11%	4%	6%	2%	
	188	27	10	15	5	244
2028	76%	11%	5%	6%	2%	
	192	28	13	15	5	252
2038	72%	12%	5%	8%	3%	
	197	32	14	22	7	272
Avg. Annual Growth	0.1%	1.2%	2.6%	2.8%	1.5%	0.6%

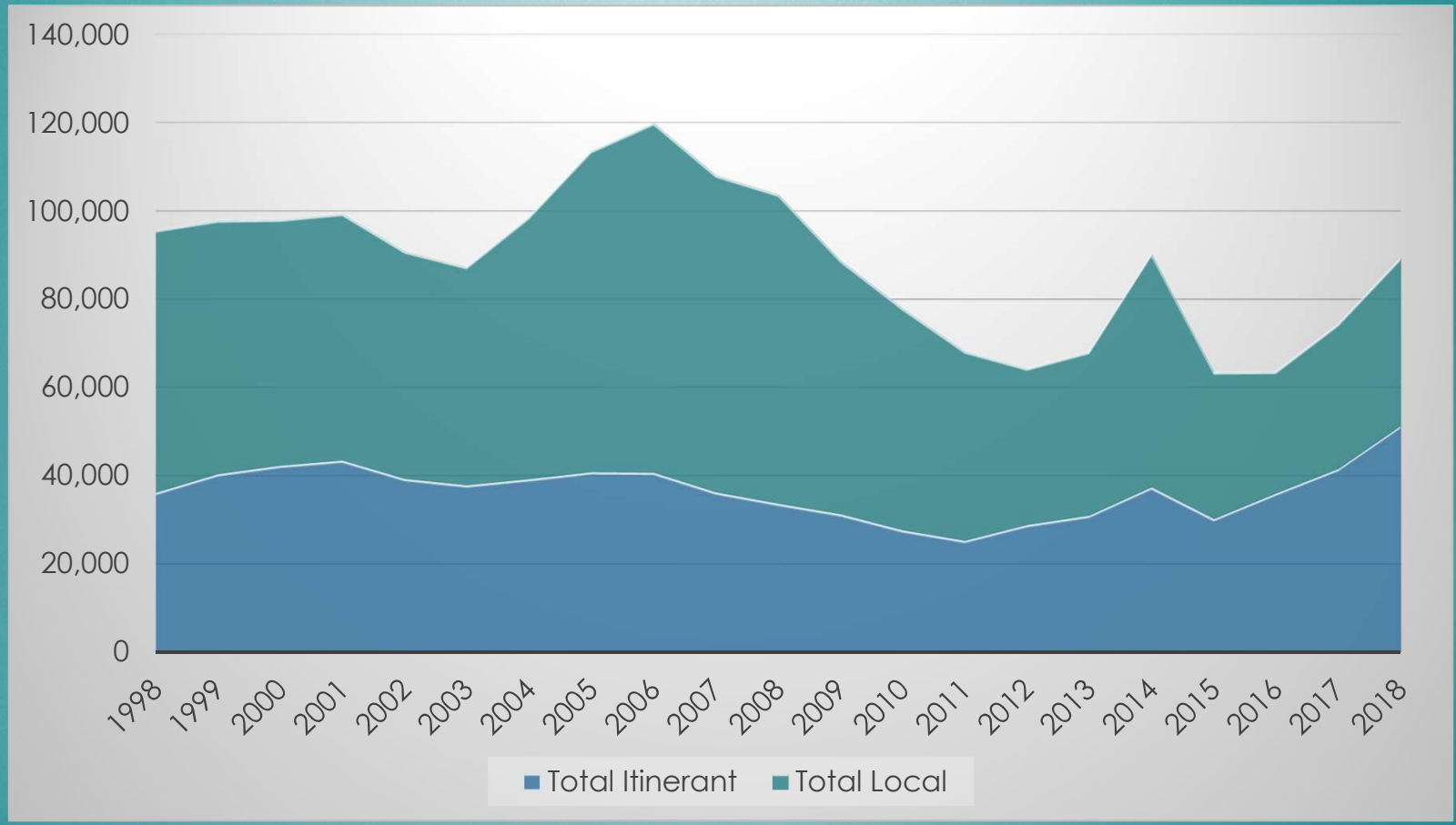
Aircraft Operations Trends and Forecasts

- Landings, takeoffs, touch-and-goes (T&G=2 ops)
- Local (training) operations within 20 miles of the airport; others are itinerant
- GA, Air Carrier, Air Taxi, and Military Aircraft
- In last 20 years, low 63,402 (2015) and high 119,831 (2006)
- FY 2018 -- 89,222 operations at airport
- CY 2018 – 95,145 operations at airport
- CY 2018 – 100,529 Tower operations including airport and overflights

FAA National Forecast for Hours Flown (annual rates)



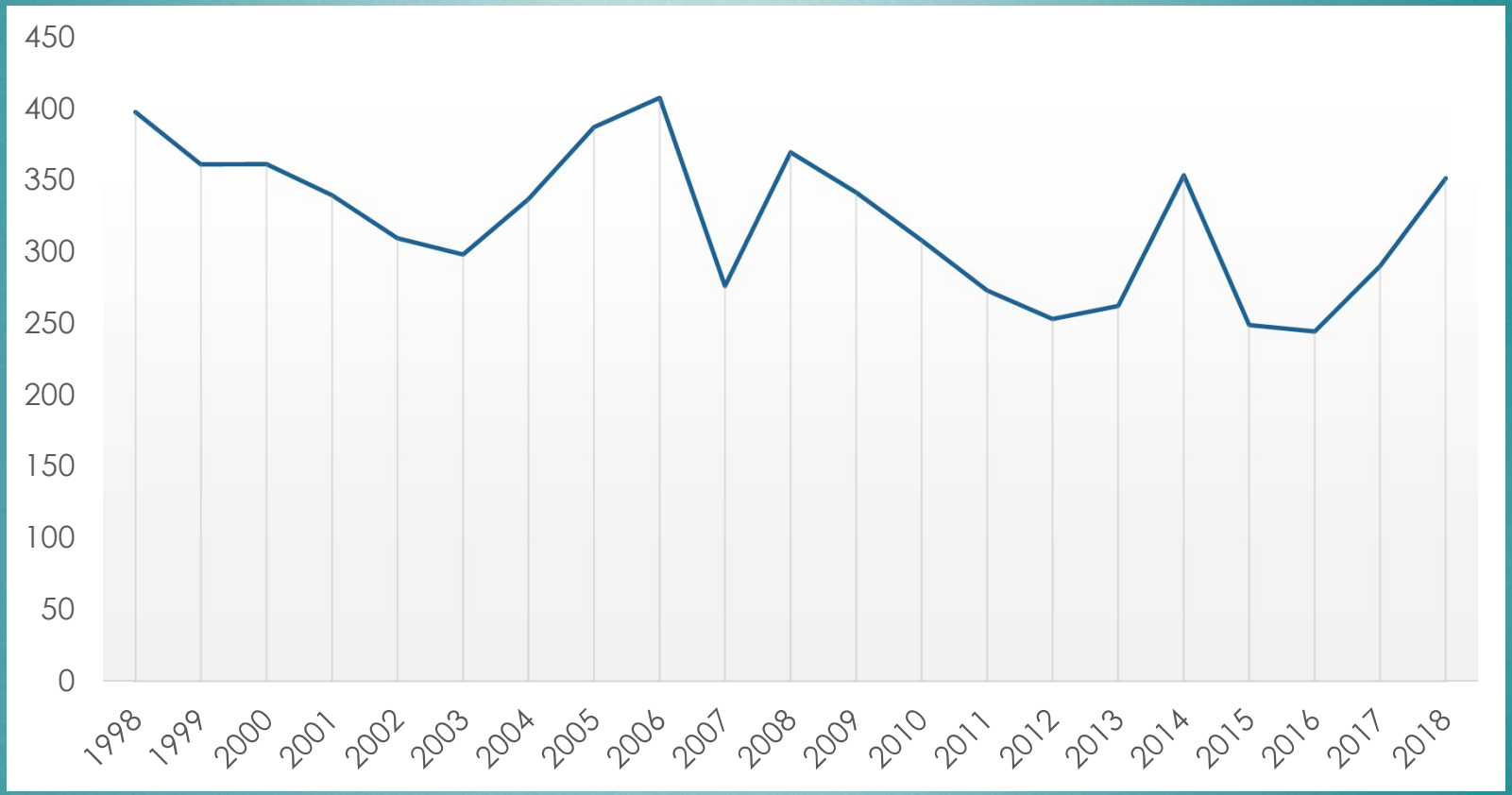
Ogden Aircraft Operations History



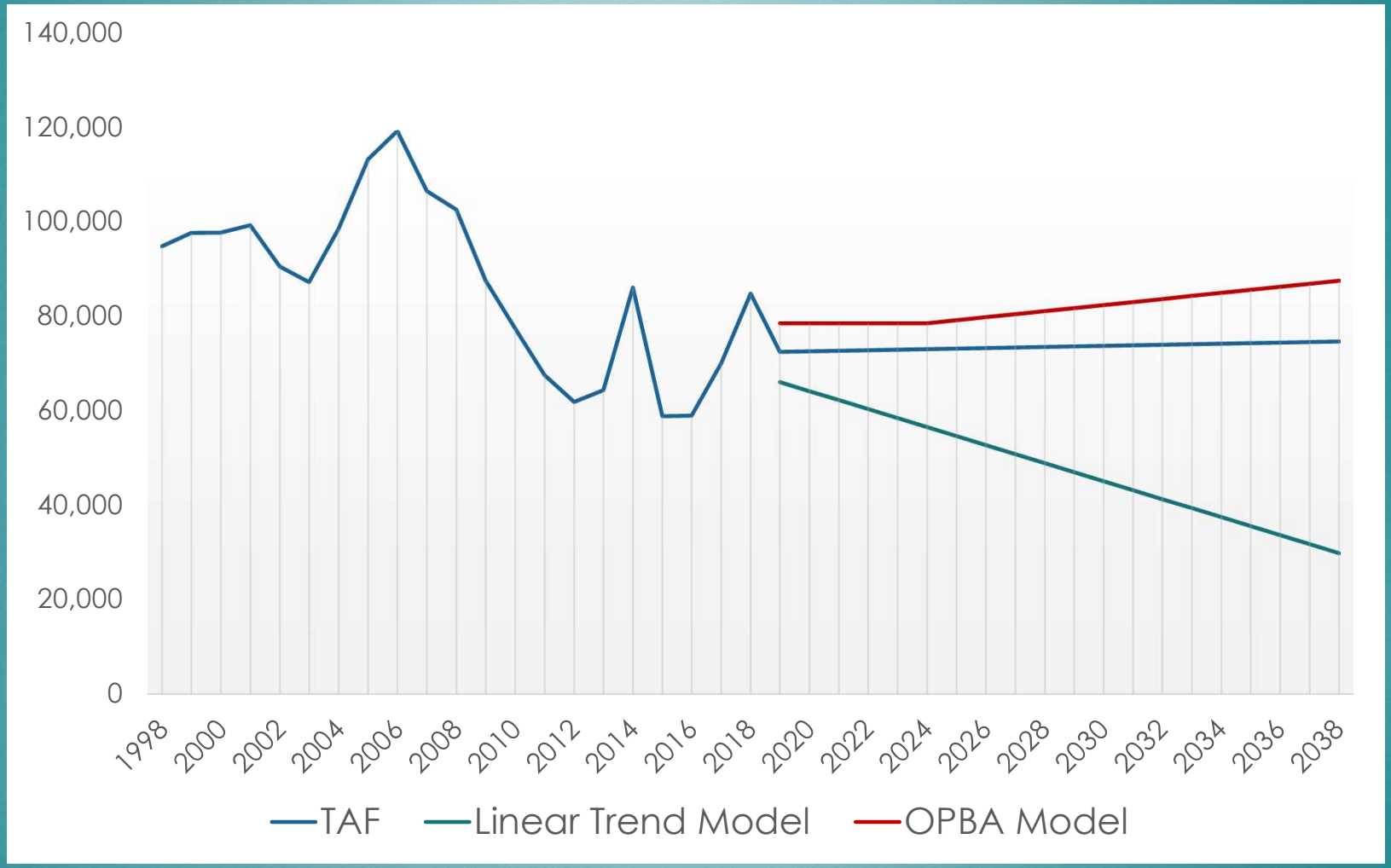
GA Aircraft Operations

- GA is 99% of all ops now
- Forecast to be 91% in 20 years
- Preferred forecast uses 321 operations per based aircraft (OPBA)
- Slight decline in % local vs itinerant (trend and forecast)

Operations per Based Aircraft



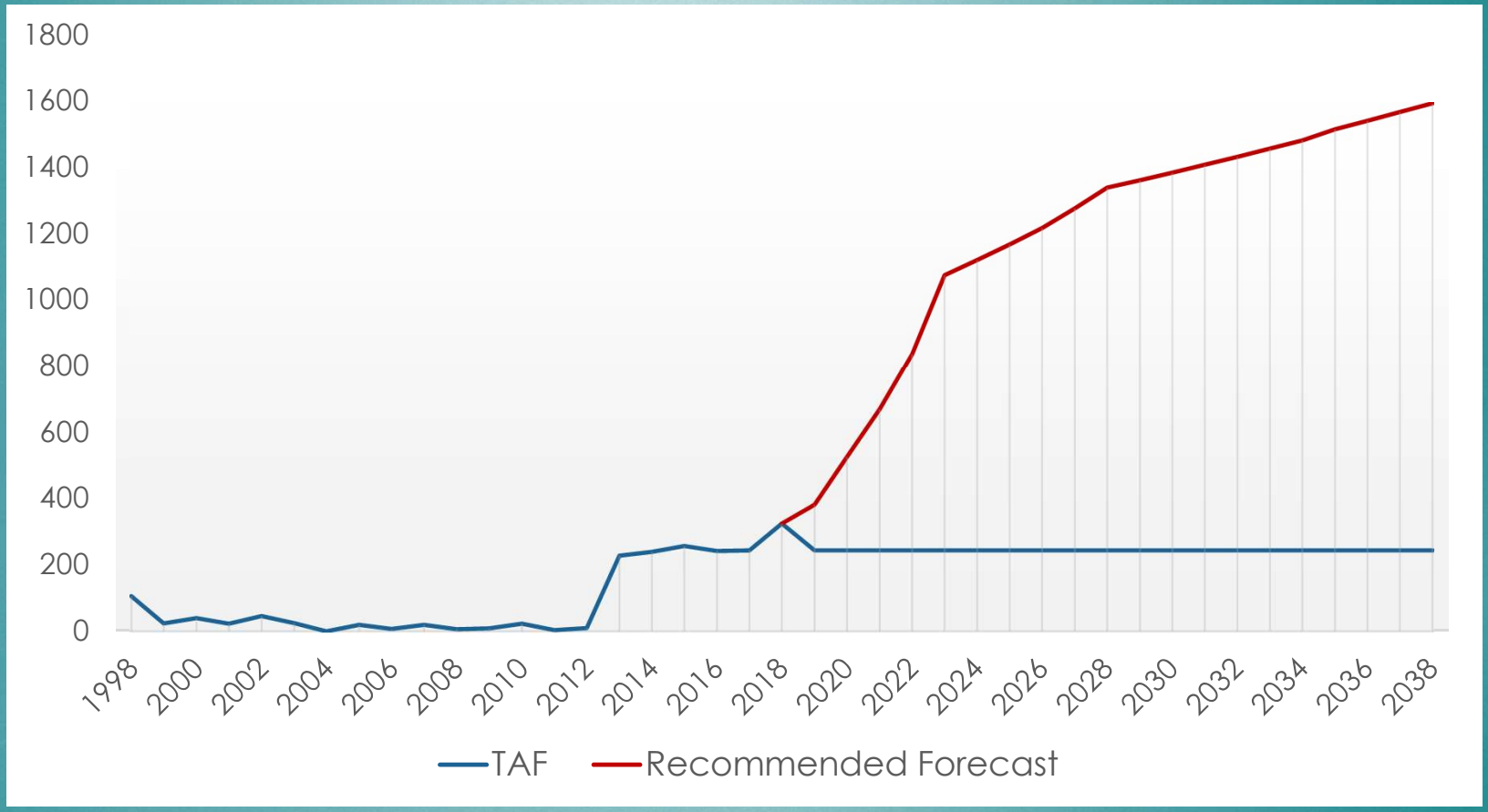
GA Ops Forecast Models



Air Carrier Operations Forecast

- Air carrier aircraft larger than 60 seats (or similar-sized all cargo)
- Mostly driven by Passenger Forecast (Air Service Model)
- 8.3% average annual growth

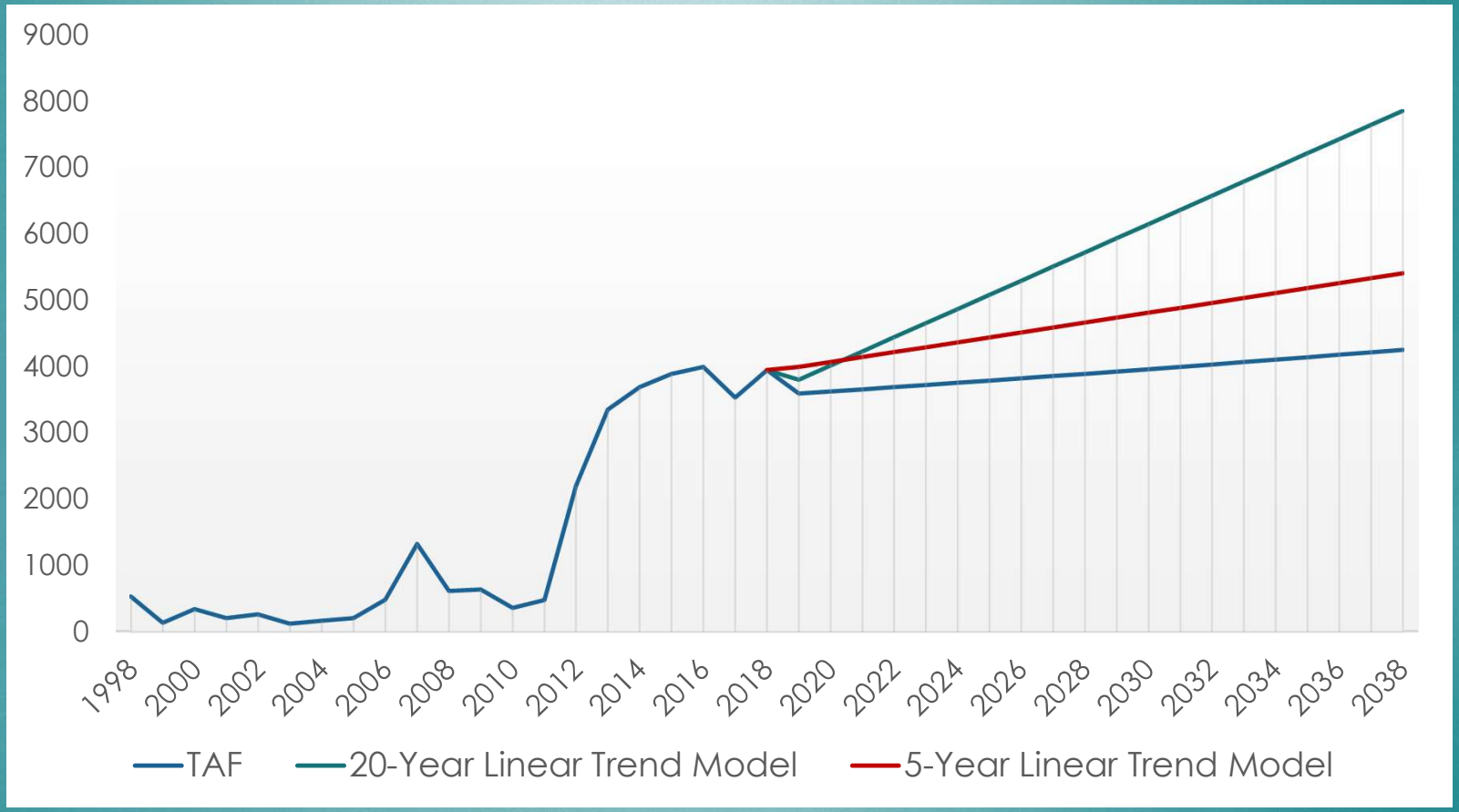
Air Carrier Operations Forecast



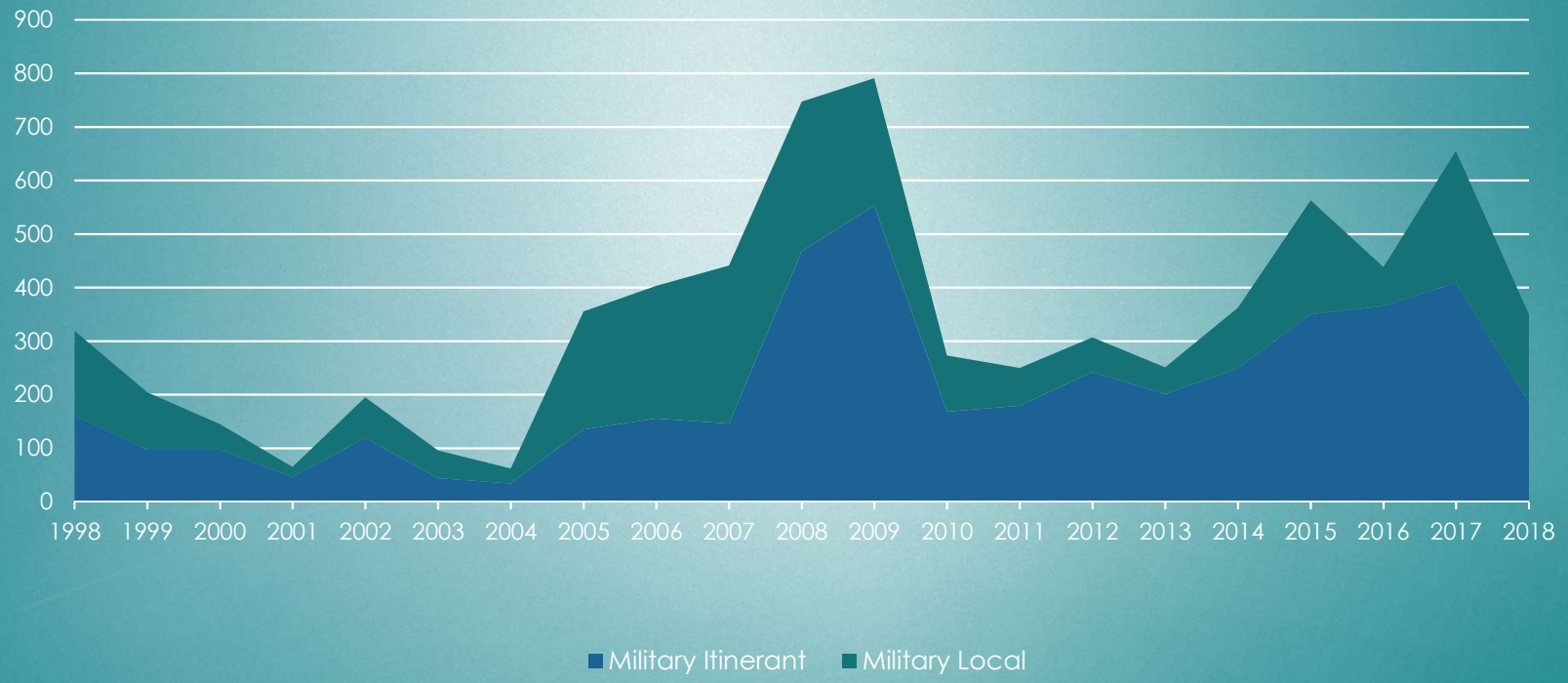
Air Taxi Operations Forecast

- Air taxi aircraft 60 seats or smaller (or similar-sized all cargo)
- Passenger and cargo charters, air ambulance, for hire helicopters
- 1.6% average annual growth preferred forecast (5-year linear trend model)

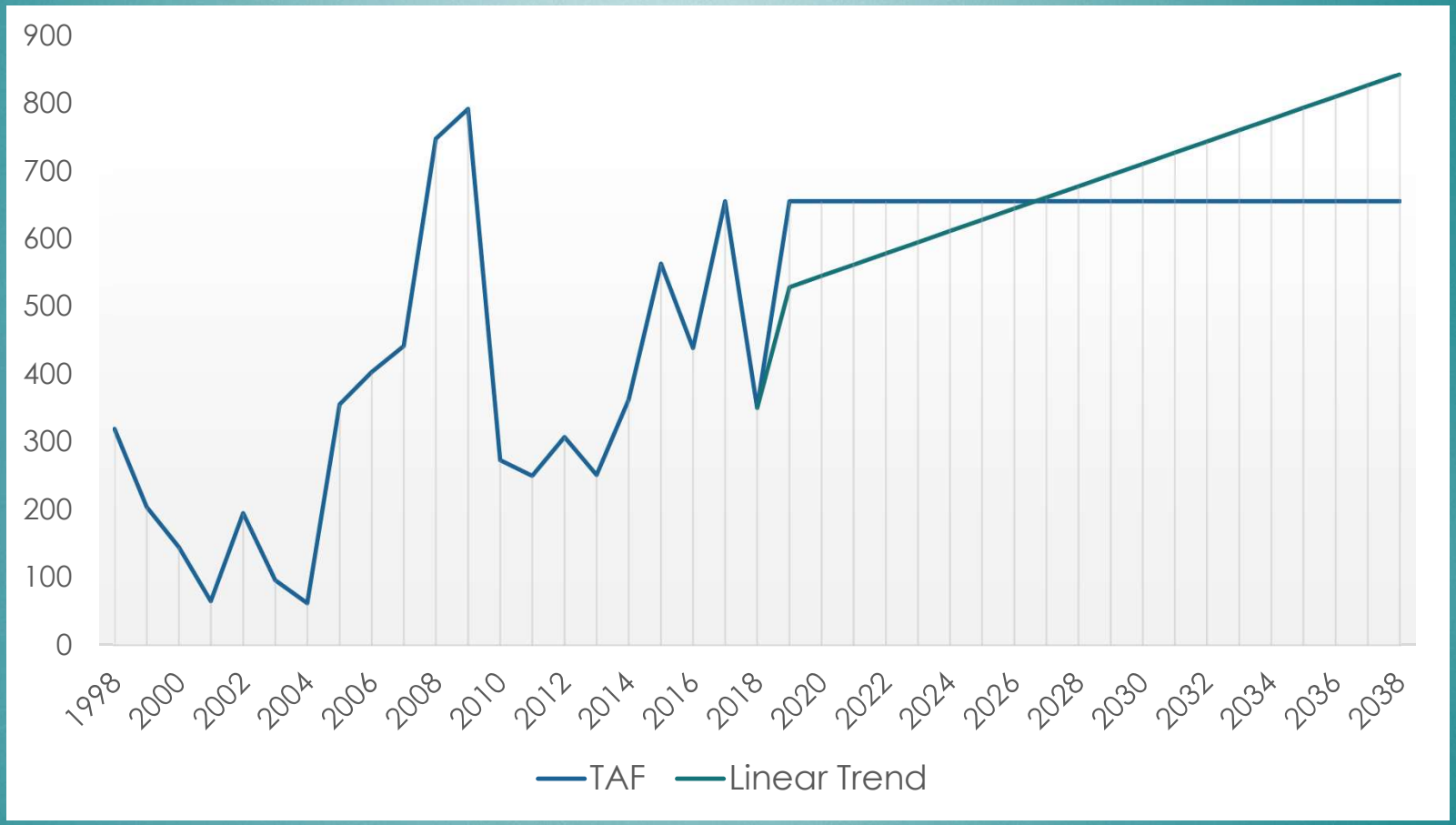
Air Taxi Operations Forecast Models



Military Aircraft Ops History



Military Aircraft Ops Forecasts



Compiled Aircraft Ops Forecast

	Itinerant	Itinerant	Itinerant	Itinerant	Local	Local	Total
Fiscal Year	Air Carrier	Air Taxi	Military	GA	GA	Military	Oper-ations
2017	243	3,526	409	37,373	32,504	246	74,301
2018	324	3,943	186	46,801	37,804	164	89,222
2023	1,073	4,286	409	37,644	40,680	246	84,338
5-Year AAGR	27.1%	1.7%	17.1%	-4.3%	1.5%	8.4%	-1.1%
2028	1,336	4,657	409	40,789	40,103	246	87,540
5-Year AAGR	4.5%	1.7%	0.0%	1.6%	-0.3%	0.0%	0.7%
2038	1,590	5,399	409	48,150	39,162	246	94,956
10-Year AAGR	1.8%	1.5%	0.0%	1.7%	-0.2%	0.0%	0.8%
20-year AAGR	8.3%	1.6%	4.0%	0.1%	0.2%	2.0%	0.3%

Operations Fleet Mix Forecast

	SEP	MEP	Turboprop	Jet	Helicopter	Total
2018	79.5%	6.5%	4.0%	3.0%	7.0%	100.0%
	70,931	5,799	3,569	2,677	6,246	89,222
2023	74.5%	6.0%	4.5%	5.0%	10.0%	100.0%
	62,832	5,060	3,795	4,217	8,434	84,338
2028	73.0%	6.0%	5.0%	6.0%	10.0%	100.0%
	63,904	5,252	4,377	5,252	8,754	87,540
2038	67.5%	6.0%	6.0%	7.0%	13.5%	100.0%
	64,095	5,697	5,697	6,647	12,819	94,956

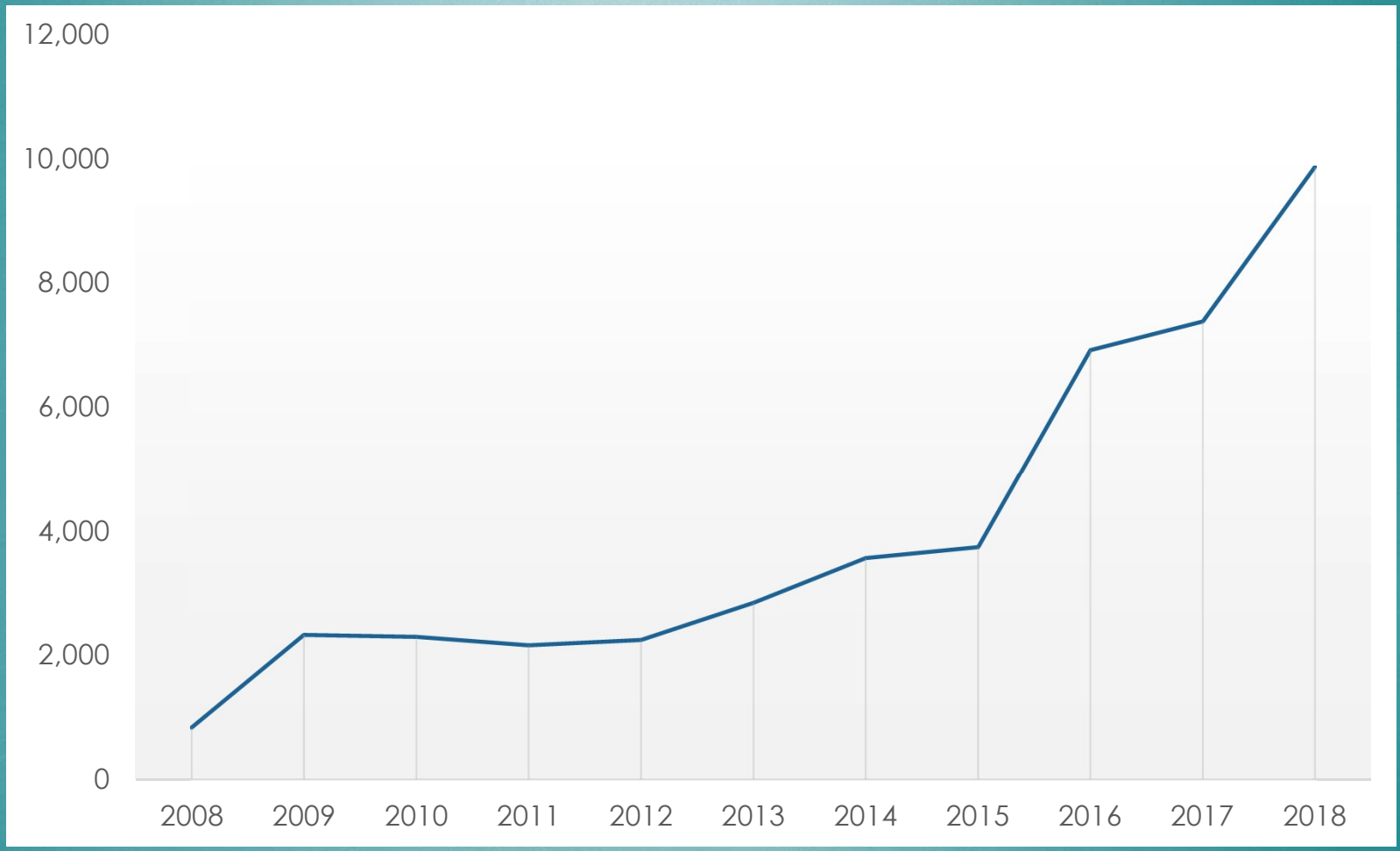
Peak Demand Forecast

	Base Year 2018	Short-Term 2023	Inter-mediate Term 2028	Long-Term 2038
Annual Operations	89,222	78,324	80,892	87,312
Peak Month (10% of Total)	8,922	7,832	8,089	8,731
Design Day	297	261	270	291
Design Hour (15% of Design Day)	45	39	40	44

Instrument Ops Forecast

- Not all flights under Instrument Flight Rules (IFR) relate to weather
- Allegiant and other jets 100% IFR
- In 2010, IFR = 3% of total ops
- In 2018, IFR = 11% of total ops
- In 2038, IFR = 16% of total ops (forecast)

IFR Ops History



Airport Reference Code

- Derived from most demanding aircraft or family of aircraft that flies 500 or more annual itinerant operations
- Airport Reference Code (ARC) determines FAA airport design standards and consists of:
  - **Letter** denoting Aircraft Approach Category (1.3 x stall speed)
  - **Roman numeral** denoting Airplane Design Group (usually wingspan, can be tail height)
- **ARC for Ogden = C-III**
  - (Airbus A319 & A320 and Some Business Jets)

AIRCRAFT APPROACH CATEGORY (AAC)		
AAC	Approach Speed	
A	Less than 91 knots	
B	91 knots to 120 knots	
C	121 knots to 140 knots	
D	141 knots to 165 knots	
E	Approach speed 166 knots or more	
AIRPLANE DESIGN GROUP (ADG)		
ADG #	Tail Height (ft)	Wingspan (ft)
I	< 20'	< 49'
II	20' to < 30'	49' to < 79'
III	30' to < 45'	79' to < 118'
IV	45' to < 60'	118' to < 171'
V	60' to < 66'	171' to < 214'
VI	66' to < 80'	214' to < 262'
APPROACH VISIBILITY MINIMUMS		
RVR (ft)	Flight Visibility Category (statue mile)	
4000	Lower than 1 mile but not lower than ¾ mile (APV ¾ but< 1 mile)	
2400	Lower than ¾ mile but not lower than ½ mile (CAT-I PA)	
1600	Lower than ½ mile but not lower than ¼ mile (CAT-II PA)	
1200	Lower than ¼ mile (CAT-III PA)	

Sample Aircraft by Design Group

Personal Aircraft

Group I

Representative Aircraft

Beechcraft Bonanza 35, 36
Cessna 150, 172, 402, 414
Beechcraft Baron
Beechcraft King Air 90, 200
Cessna 182, 206, 401, 421
Cessna Citation I, CJI
Piper Navajo-34, Cheyenne-42

Business Aircraft

Group II

Representative Aircraft

DHC Twin Otter
Beechcraft 1900
Cessna Citation II, III, V
Dassault Falcon 50, 200
Embraer 145 RJ; ATR 42, 72
Rockwell Aero Commander 560, 680
DeHavilland Dash-7, 8

Corporate Aircraft

Group II

Representative Aircraft

Gates Lear 24, 25
IAI Westwind 1124
Bombardier 600, 601
Gulfstream III
Starship 1
Cessna Citation X
Gates Lear 35

Commercial Aircraft

Group III

Representative Aircraft

Airbus 318-321
Boeing 727, 737
McDonnell Douglas DC-9
MD-82; MD-83
Gulfstream II, IV, V

Transport Aircraft

Group IV, V, VI

Representative Aircraft

Airbus 300, 310
Boeing 757, 767
Lockheed Hercules C-130
Airbus 330, 340, 380
Boeing 747; Boeing 777
Antonov 124, 225
Lockheed Galaxy C-5

Questions on Forecasts?

Preliminary Facility Needs

- Needs are quantified and presented in Chapter 3, Facility Requirements.
- For evaluation, needs are graphically presented in various optional development drawings in Chapter 4, Development Alternatives.
- Airside, landside and support needs are included.
- Needs are based on compliance with latest FAA design standards, results of aviation demand forecasts, City input/goals, PAC member input and recommendations, and user input (survey results).


OGDEN AIRPORT
FLYOGDEN.COM
0 200 400 Feet
1 Inch = 200 feet

The Next Steps

- Complete Intro and Inventory for review
- Obtain PAC input on Inventory and Forecasts
- Coordinate with FAA on review/approval of forecasts
- Address review comments
- Move forward with Facility Requirements

Questions?

Thank You