Aviation Demand Forecasts in Planning – Consultant's Perspective

FAA Northwest Mountain Region Airport Conference

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Principal, Mead & Hunt

Introduction

"Making predictions is difficult – especially when it's about the future"

– Yogi Berra

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Outline

- Background of planning effort
- Level of forecasting effort
- Implications of various forecast components
- Methodologies/techniques
- FAA acceptance of forecasts
- Case studies

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Background

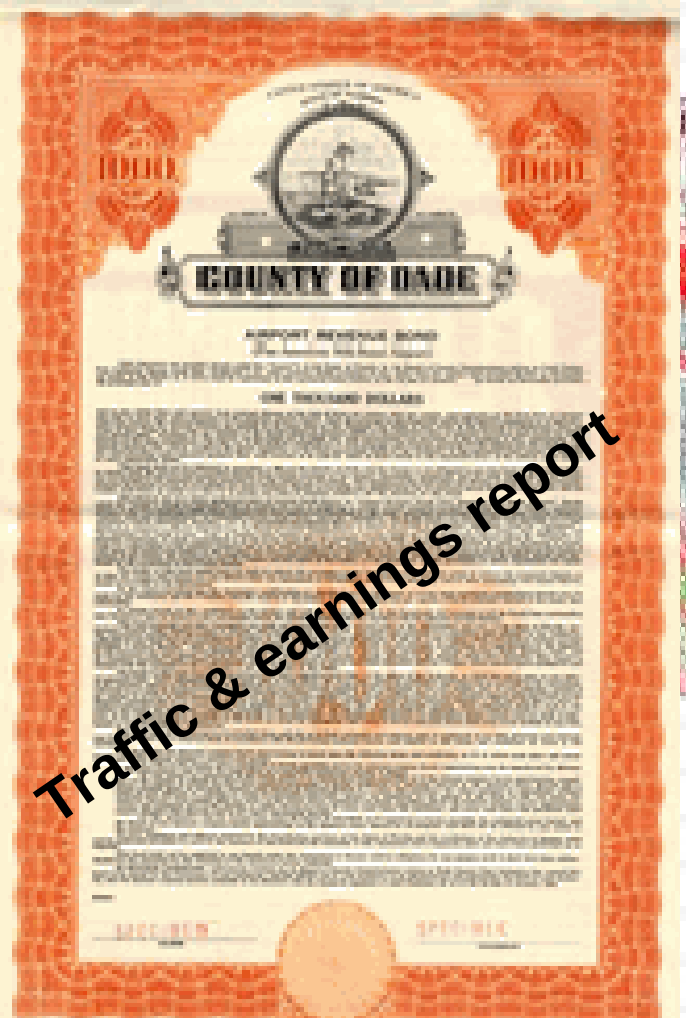
Level of effort

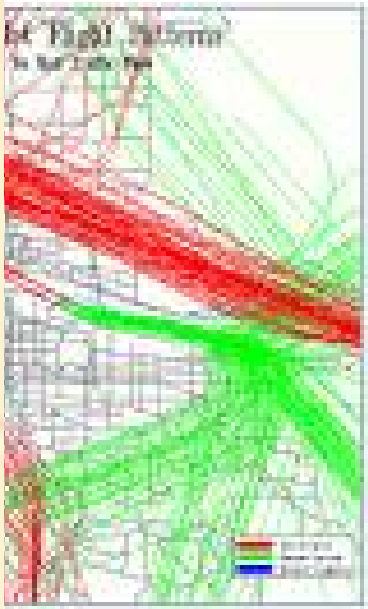
Implications of various forecast components

Context

Context

Benefit-cost analysis





noise study

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Methodologies/techniques

- Regression
- Trend analysis
- Market share
- Smoothing
- Reference class
- Terminal Area Forecast

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FAA acceptance of forecasts

- Early coordination
  - Use of forecasts
  - Level of effort
  - Techniques to be used
- Comparison with TAF
  - S, M, L hubs: 10% in 5 yrs, 15% in 10 yrs, or no effect on timing/scale of project
  - Other commercial: same as above, or does not effect NPIAS role
  - GA (when 5/10 yr forecast >100,000 ops or 100 based a/c: same as "Other commercial"

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Case study: Eugene Airport

Practical

Case study – Eugene Airport

- Master Plan Update
- Commercial operations
- Methodology to derive Commercial Ops:
  - Preferred EP forecast
  - Average # seats per departure
  - Assume load factor
  - Double to get total Ops

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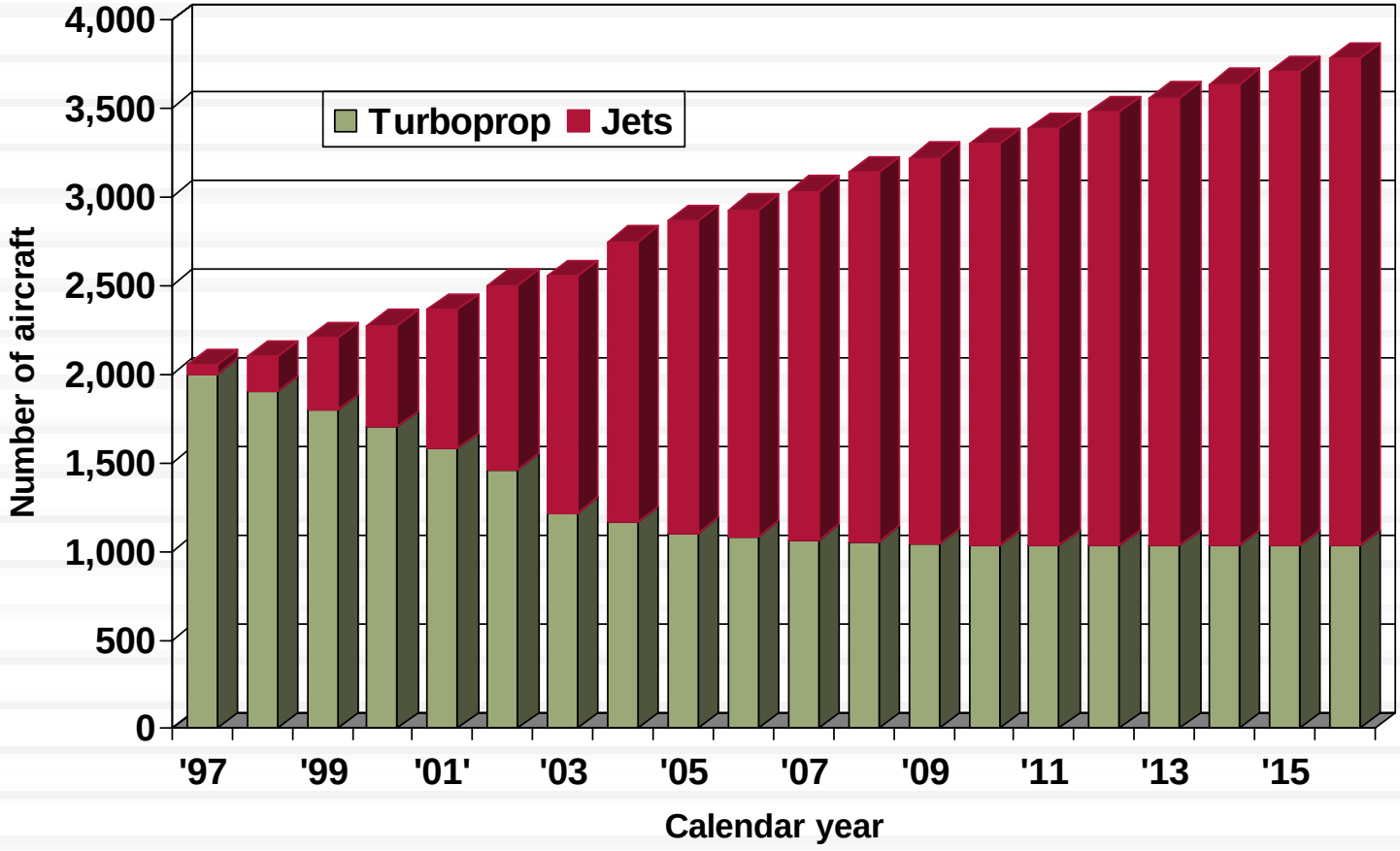
Case study – Eugene Airport

Fleet by aircraft type



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Case study – Eugene Airport

Aircraft	Regional aircraft orders and options													
	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	Total
Canadair RJ 100/200/440	1	10	30	36	57	38	30	29	19	18	13	0	0	**281**
Canadair RJ 701	2	23	43	43	25	2	0	0	0	0	0	0	0	**138**
Canadair RJ 900	7	34	38	34	26	26	13	0	0	0	0	0	0	**178**
Dornier 328	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Embraer RJ 135	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Embraer RJ 140	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Embraer RJ 145	0	2	6	2	0	0	0	0	0	0	0	0	0	**10**
Embraer RJ 170	2	32	46	52	41	31	24	10	6	6	6	6	1	**263**
Embraer RJ 190	7	36	33	34	30	27	26	26	18	18	10	0	0	**265**
Subtotal regional jet	19	137	196	201	179	124	93	65	43	42	29	6	1	**1,135**
BAE Jetstream 41	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Beechcraft 1900D	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
de Havilland Dash 8 200	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
de Havilland Dash 8 400	0	17	11	11	6	6	1	0	0	0	0	0	0	**52**
Dornier 328	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Embraer 120 Brasilia	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Saab 340	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Subtotal turboprop	0	17	11	11	6	6	1	0	0	0	0	0	0	**52**
Total	19	154	207	212	185	130	94	65	43	42	29	6	1	**1,187**

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Case study – Eugene Airport

Fleet plans for regional airlines in the northwest U.S.

Airline	Aircraft	Seats	Current Aircraft	Plan (Net)
Horizon Air	Dash 8-200	36	28	0 (TBD)
	Dash 8-Q400	74	21	33 (7/07)
	CRJ-700	70	20	20
SkyWest/ Delta and United	EMB-120	30	62 (12 DL, 50 UA)	0 (TBD)
	CRJ-200	50	122 (57 DL, 66 UA)	161
	CRJ-700	70	62 (9 DL, 52 UA)	122
	CRJ-900	90	11 (11 DL)	21
Big Sky	B-1900	19	10	20
US Airways	CRJ-200	50	19	13-16 (6/07)
	Dash-8 200	36	6	0 (TBD)

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Case study – Eugene Airport

Year	Enplanements	Avg. Seats Per Departure	Load Factor	Departures	Operations
2006 actual	360,258	36.8	79%	12,389	24,777
2011	412,873	66	80%	7,820	15,639
2016	445,593	67	81%	8,211	16,421
2026	557,736	70	83%	9,600	19,199

Fleet size assumptions:	*50 seat*	*70 seat*	*90 seat*	*Average*
2011	*40%*	*40%*	*20%*	*66*
2016	*35%*	*45%*	*20%*	*67*
2026	*25%*	*50%*	*25%*	*70*

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McCALL - THE GATEWAY TO IDAHO'S BACKCOUNTRY

Case study: McCall Municipal Airport

Practical

Case study – McCall Municipal Airport

- Master Plan Update
- Currently GA airport
- What is potential for scheduled commercial activity?

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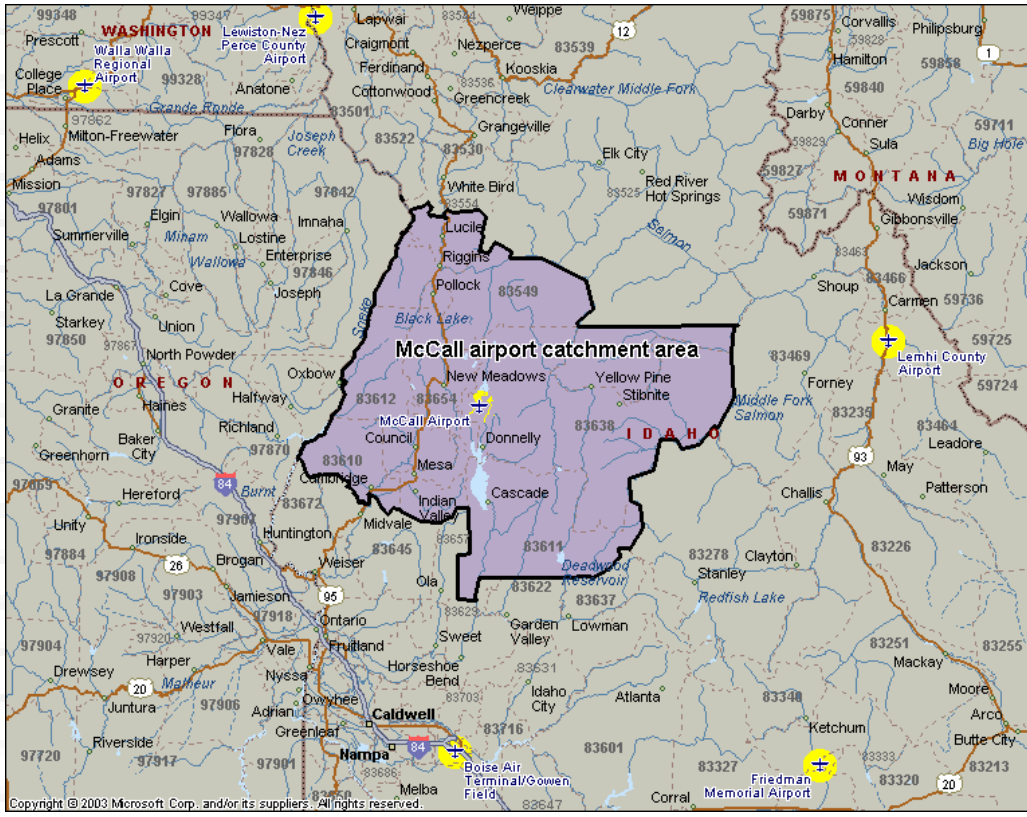
Case study – McCall Municipal Airport

Airport catchment area



- Population = 13,824
- Primarily Valley and Adams County

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Case study – McCall Municipal Airport

Factors affecting air service demand

- Local demand
  - Population, housing
  - Local economy, i.e., business
  - Level, quality, & cost of air service
  - Proximity of alternate airports: Boise
- Visitor demand
  - Bulk of traffic in leisure markets (75%+)
  - # of visitors to resort destinations
  - Vacation homes & transient bed space (pillows)

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Case study – McCall Municipal Airport

Comparison to other resort markets

Airport	County population	Total housing units	Vacation units	Renter occupied units	Area pillows for rent	Miles to alt. airport
McCall, ID	7,651	8,084	4,342	676	4,220	113 (BOI)
Aspen, CO	14,872	10,096	2,728	2,780	15,080	186 (DEN)
Eagle/Vail, CO	41,659	22,111	5,932	5,499	27,778	156 (DEN)
Jackson Hole, WY	18,251	10,267	2,121	3,473	15,177	282 (SLC)
Steamboat Springs, CO	19,690	11,217	1,977	2,448	18,800	214 (DEN)
Sun Valley, ID	18,991	12,186	3,723	2,423	5,465	138 (BOI)

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Case study – McCall Municipal Airport

Estimated demand

Statistic	Retention level		
	15%	20%	25%
Total air service demand	58,255	58,255	58,255
Retained passengers	8,738	11,651	14,564
Beechcraft 1900 (19-seat, 2 per day):			
Outbound seats per year	13,870	13,870	13,870
Load factor	**63%**	**84%**	**105%**
Embraer 120 (30-seat, 2 per day):			
Outbound seats per year	21,900	21,900	21,900
Load factor	**40%**	**53%**	**67%**
De Havilland Dash 8 200 (37-seat, 2 per day):			
Outbound seats per year	27,010	27,010	27,010
Load factor	**32%**	**43%**	**54%**

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Case study – McCall Municipal Airport

Conclusions/air service challenges

- Seasonal market
- Relatively small market size
- Competes with a larger airport with 28 nonstop destinations & low-fare service
- Considered high risk by airlines
- Likely require a subsidy to support air service

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Thank you!

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