



Airport Vision Committee Work Session #2

GA Operations

January 16, 2020

ASE Historical Operations Data

Table 4-1
Historical Aircraft Operations
Aspen/Pitkin County Airport

Year	Commercial operations			General aviation	Military	Total aircraft operations	Percent increase (decrease)
	Air carrier	Air taxi/commuter	Total				
2000	7,632	7,199	14,831	33,748	239	48,818	--%
2001	6,988	9,008	15,996	29,930	121	46,047	(5.7)
2002	6,902	10,034	16,936	29,377	128	46,441	0.9
2003	6,580	10,034	16,614	26,241	124	42,979	(7.5)
2004	5,224	12,446	17,670	26,228	93	43,991	2.4
2005	5,223	12,522	17,745	26,383	125	44,253	0.6
2006	5,410	13,904	19,314	25,330	94	44,738	1.1
2007	6,380	12,786	19,166	19,284	57	38,507	(13.9)
2008	7,849	12,750	20,599	15,718	59	36,376	(5.5)
2009	8,359	10,247	18,606	21,053	127	39,786	9.4
2010	9,698	7,945	17,643	19,842	118	37,603	(5.5)
2011	9,682	8,664	18,346	19,171	98	37,615	0.0
2012	9,485	8,797	18,282	18,493	125	36,900	(1.9)
2013	8,307	9,428	17,735	17,507	86	35,328	(4.3)
2014	8,716	8,926	17,642	17,604	149	35,395	0.2
2015	8,986	9,674	18,660	20,297	237	39,194	10.7
2016	9,310	10,248	19,558	21,448	334	41,340	5.5
2017	9,626	10,865	20,491	21,667	268	42,426	2.6
2018	11,590	9,514	21,104	19,867	267	41,238	(2.8)
January-March							
2018	5,113	3,004	8,117	5,677	56	13,850	--%
2019	4,443	3,323	7,766	5,216	28	13,010	(6.1)
Compound average percent increase (decrease)							
2000-2010	2.4%	1.0%	1.8%	(5.2%)	(6.8%)	(2.6%)	
2010-2018	2.3	2.3	2.3	0.0	10.7	1.2	
2000-2018	2.3	1.6	2.0	(2.9)	0.6	(0.9)	

Note: Includes arrivals and departures.

Source: Federal Aviation Administration, Air Traffic Activity System (ATADS), www.faa.gov, accessed April 2019.



Peak Season Air Taxi Ops

Table 5-2 (page 3 of 10)

Forecasts of Aircraft Fleet Mix by Airplane Design Group

Aspen/Pitkin County Airport



	Historical 2018	Estimated 2019	Forecast				CAGR 2018-2048	
			2023	2028	2033	2038	2048	
AIR TAXI OPERATIONS								
Peak Season (January-March)								
ADG I								
E550 - Eclipse 550	49	49	48	49	49	48	44	-0.4%
H25B - BAe HS 125/700-800	38	37	36	36	35	33	27	-1.1%
LJ45 - Bombardier Learjet 45	33	33	31	30	29	27	20	-1.7%
Other	<u>40</u>	<u>40</u>	<u>39</u>	<u>38</u>	<u>38</u>	<u>36</u>	<u>30</u>	-0.9%
Total ADG I	159	159	155	154	150	143	121	-0.9%
ADG II								
E55P - Embraer Phenom 300	534	545	590	644	698	747	833	1.5%
CL30 - Challenger 300	434	443	480	524	569	609	680	1.5%
C680 - Cessna Citation Sovereign	403	412	446	487	529	566	633	1.5%
C56X - Cessna Excel/XLS	379	387	419	458	497	533	596	1.5%
CL35 - Challenger 300	294	301	327	357	388	416	467	1.5%
Other	<u>775</u>	<u>791</u>	<u>856</u>	<u>933</u>	<u>1,010</u>	<u>1,080</u>	<u>1,203</u>	1.5%
Total ADG II	2,818	2,879	3,118	3,403	3,690	3,950	4,412	1.5%
ADG III								
GLEK - BD-700 Global Express	77	80	88	97	107	117	134	1.8%
GL5T - BD-700 Global 5000	<u>51</u>	<u>52</u>	<u>59</u>	<u>66</u>	<u>73</u>	<u>80</u>	<u>94</u>	2.0%
Total ADG III	128	132	147	163	180	197	228	1.9%
Total Peak Season	3,106	3,170	3,420	3,720	4,020	4,290	4,760	1.4%

Off Season Air Taxi Ops

Table 5-2 (page 4 of 10)

Forecasts of Aircraft Fleet Mix by Airplane Design Group

Aspen/Pitkin County Airport

	Historical 2018	Estimated 2019	Forecast					CAGR 2018-2048
			2023	2028	2033	2038	2048	
AIR TAXI OPERATIONS (CONTINUED)								
Off Season (April-December)								
ADG I								
E550 - Eclipse 550	113	112	110	109	107	103	100	-0.4%
C25A - Cessna Citation CJ2	77	76	72	69	64	59	54	-1.2%
E50P - Embraer Phenom 100	41	39	33	28	22	15	8	-5.4%
Other	<u>62</u>	<u>61</u>	<u>56</u>	<u>52</u>	<u>47</u>	<u>41</u>	<u>35</u>	-1.9%
Total ADG I	293	289	272	258	240	218	198	-1.3%
ADG II								
E55P - Embraer Phenom 300	1,330	1,349	1,427	1,513	1,589	1,652	1,731	0.9%
CL30 - Challenger 300	842	855	905	961	1,011	1,052	1,104	0.9%
C56X - Cessna Excel/XLS	730	740	785	834	877	913	958	0.9%
CL35 - Challenger 300	605	614	652	693	729	760	799	0.9%
C680 - Cessna Citation Sovereign	577	586	622	662	697	726	763	0.9%
Other	<u>1,770</u>	<u>1,795</u>	<u>1,897</u>	<u>2,011</u>	<u>2,110</u>	<u>2,194</u>	<u>2,297</u>	0.9%
Total ADG II	5,854	5,939	6,287	6,673	7,013	7,298	7,651	0.9%
ADG III								
GLEK - BD-700 Global Express	150	153	166	179	191	202	215	1.2%
GL5T - BD-700 Global 5000	137	140	152	164	176	186	198	1.2%
GLF5 - Gulfstream V/G500	<u>8</u>	<u>9</u>	<u>14</u>	<u>18</u>	<u>23</u>	<u>27</u>	<u>32</u>	4.6%
Total ADG III	<u>296</u>	<u>303</u>	<u>332</u>	<u>362</u>	<u>390</u>	<u>415</u>	<u>445</u>	1.4%
Total Off Season	6,443	6,530	6,890	7,290	7,640	7,930	8,290	0.8%

Top GA Destinations from ASE

Rank	Airport Code	Airport Name	Number of ASE Departures
1	KAPA	Centennial	591
2	KVNY	Van Nuys	394
3	KTEB	Teterboro	247
4	KDAL	Dallas Love Field	244
5	KHOU	William P Hobby	150
6	KDEN	Denver Intl	140
7	KSDL	Scottsdale	129
8	KLAS	McCarran Intl	109
9	KHPN	Westchester County	103
10	KFTW	Fort Worth Meacham Intl	100
11	KSNA	John Wayne	96
12	KPWK	Chicago Executive	93
13	KEGE	Eagle County Rgnl	92
14	KMDW	Chicago Midway Intl	90
15	KRIL	Rifle Garfield County	81
16	KLAX	Los Angeles Intl	79
17	KBJC	Rocky Mtn Metropolitan	79
18	KPBI	Palm Beach Intl	74
19	KAUS	Austin-Bergstrom Intl	73
20	KSJC	San Jose Int'l	65

Top GA Origins to ASE

Rank	Airport Code	Origin Airport Name	Number of Arrivals to ASE
1	KAPA	Centennial	528
2	KVNY	Van Nuys	378
3	KTEB	Teterboro	263
4	KRIL	Rifle Garfield County	239
5	KDAL	Dallas Love Field	238
6	KEGE	Eagle County Rgnl	169
7	KHOU	William P Hobby	162
8	KSDL	Scottsdale	134
9	KPWK	Westchester County	106
10	KHPN	Chicago Executive	106
11	KMDW	Chicago Midway Intl	104
12	KDEN	Denver Intl	101
13	KSNA	John Wayne	94
14	KBJC	Rocky Mtn Metropolitan	91
15	KFTW	Fort Worth Meacham Intl	91
16	KLAS	McCarran Intl	89
17	KLAX	Los Angeles Intl	82
18	KAUS	Austin-Bergstrom Intl	76
19	KCRQ	Mc Clellan-Palomar	66
20	KPBI	Palm Beach Intl	65

Most Active GA Aircraft Operating at ASE

Rank	Tail	Ops	Plane	Location	Type
1	N108JA	131	Embraer Legacy 500	Aspen	Jet
2	N8YU	110	Pilatus PC-12	Aspen	TurboProp
3	N925EM	90	Cessna 525B	Aspen	Jet
4	BLK15	62	Cessna Citation X		Jet
5	BLK13	58	Dassault Falcon 2000		Jet
6	BLK12	52	Cessna Citation Jet		Jet
7	N382KU	52	Dassault Falcon 2000	Eden Prairie, MN	Jet
8	BLK4	44	Beechcraft 400 Beechjet		Jet
9	BLK51	44	Embraer Phenom 300		Jet
10	BLK17	42	Gulfstream V		Jet
11	BLK204	42	Gulfstream G280		Jet
12	GTH9 / N963RS	41	Dassault Falcon 900	New York	Jet
13	N814BB	40	Saab 2000	Texas	TurboProp
14	BLK36	36	Gulfstream G150		Jet
15	BLK270	35	Gulfstream IV		Jet
16	BLK61	35	Learjet 35		Jet
17	BLK34	34	Bombardier Global Express		Jet
18	N700WE	33	Socata TBM 700	Texas	TurboProp
19	N1415	32	Bombardier Global Express	Delaware Trust	Jet
20	N785JH	32	Piaggio P180	CA Charter	TurboProp

Drop & Go Operations

Total Number of Drop and Go's (Total)			
	Year		
	2017	2018	2019
January	0	617	112
February	0	463	0
March	0	595	0
April	0	0	0
May	0	0	0
June	0	378	0
July	0	207	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	69	0
December	633	341	0
Number of Drop and Go's (Total)	633	2670	112
Defined as 2 hour or less layover at ASE between Landing and Takeoff			

Drop & Go – Rifle, Eagle, Grand Junction

Number of Drop and Go's (Local Origin)					Number of Drop and Go's (Local Destination)			
	Year					Year		
	2017	2018	2019			2017	2018	2019
January	0	58	4		January	0	23	3
February	0	36	0		February	0	27	0
March	0	54	0		March	0	19	0
April	0	0	0		April	0	0	0
May	0	0	0		May	0	0	0
June	0	19	0		June	0	13	0
July	0	10	0		July	0	8	0
August	0	0	0		August	0	0	0
September	0	0	0		September	0	0	0
October	0	0	0		October	0	0	0
November	0	8	0		November	0	1	0
December	39	23	0		December	27	15	0
Number of Drop and Go's (Total)	39	208	4		Number of Drop and Go's (Total)	27	106	3
2 Hour or less layover at ASE Originating at GJT, RIL, or EGE to ASE					2 Hour or less layover at ASE. Departing ASE for GJT, RIL, or EGE			

Drop & Go – Front Range Airports

Number of Drop and Go's (Front Range Origin)					Number of Drop and Go's (Front Range Destination)			
	Year					Year		
	2017	2018	2019			2017	2018	2019
January	0	79	14		January	0	57	6
February	0	59	0		February	0	62	0
March	0	84	0		March	0	90	0
April	0	0	0		April	0	0	0
May	0	0	0		May	0	0	0
June	0	30	0		June	0	51	0
July	0	16	0		July	0	25	0
August	0	0	0		August	0	0	0
September	0	0	0		September	0	0	0
October	0	0	0		October	0	0	0
November	0	8	0		November	0	8	0
December	53	19	0		December	102	56	0
Number of Drop and Go's (Total)	53	295	14		Number of Drop and Go's (Total)	102	349	6
2 Hour or less layover at ASE Originating at APA, FTG, GXY, FNL or BJC to ASE					2 Hour or less layover at ASE. Departing ASE for APA, FTG, GXY, FNL or BJC			

Historical ASE Airline Activity

Table 3-1
Historical Passenger Airline Activity
Aspen/Pitkin County Airport

Year	Enplaned passengers	Seats	Departures	Load factor	Average seats per departure
2000	198,723	312,169	3,604	64%	87
2001	174,438	292,544	3,319	60%	88
2002	178,642	294,044	3,448	61%	85
2003	189,795	303,204	3,839	63%	79
2004	183,934	271,025	3,904	68%	69
2005	193,626	273,544	3,973	71%	69
2006	200,847	277,223	4,698	72%	59
2007	180,784	272,994	4,795	66%	57
2008	212,323	340,246	5,773	62%	59
2009	216,405	345,732	5,659	63%	61
2010	222,255	343,266	5,070	65%	68
2011	221,108	343,448	5,093	64%	67
2012	214,207	333,131	5,016	64%	66
2013	204,198	292,175	4,446	70%	66
2014	217,134	300,756	4,514	72%	67
2015	233,476	332,750	4,807	70%	69
2016	254,302	348,651	5,073	73%	69
2017	244,732	359,939	5,222	68%	69
2018	283,877	445,979	6,652	64%	67
January-March					
2018	118,648	192,045	2,795	62%	69
2019	127,655	168,162	2,511	76%	67
Percent increase (decrease)					
2010-2011	(0.5%)	0.1%	0.5%	(0.6%)	(0.4%)
2011-2012	(3.1)	(3.0)	(1.5)	(0.1)	(1.5)
2012-2013	(4.7)	(12.3)	(11.4)	8.7	(1.0)
2013-2014	6.3	2.9	1.5	3.3	1.4
2014-2015	7.5	10.6	6.5	(2.8)	3.9
2015-2016	8.9	4.8	5.5	4.0	(0.7)
2016-2017	(3.8)	3.2	2.9	(6.8)	0.3
2017-2018	16.0	23.9	27.4	(6.4)	(2.7)
2018-2019 (a)	7.6	(12.4)	(10.2)	22.9	(2.5)
Compound average percent increase (decrease)					
2000-2005	(0.5%)	(2.6%)	2.0	2.1	(4.5%)
2005-2010	2.8	4.6	5.0	(1.8)	(0.3)
2010-2018	3.1	3.3	3.5	(0.2)	(0.1)
2000-2018	2.0	2.0	3.5	0.0	(1.4)

(a) Represents the percent change for the first three months of 2019 (January through March).

Source: U.S. Department of Transportation, online database, accessed April 2019.

ASE Origin/ Destination Data

Table 3-2
Domestic Passenger Origin-Destination Patterns and Airline Service
Aspen/Pitkin County Airport

Rank	Origin-destination market	Air miles from Aspen	Percent of outbound O&D airline passengers	Average daily nonstop departures	
				Peak Season (January-March 2019)	Off Season (April-December 2018)
1	Los Angeles (a)	737	13.7%	4	2
2	New York (b)	1,744	11.0	--	--
3	Chicago (c)	1,013	7.0	4	1
4	San Francisco (d)	848	5.8	2	1
5	Houston (e)	913	5.4	3	1
6	Dallas/Fort Worth (f)	701	4.8	3	1
7	Miami (g)	1,792	4.0	--	--
8	Washington D.C. (h)	1,574	3.8	--	--
9	Denver	125	2.9	7	6
10	Boston	1,879	2.6	--	--
11	Atlanta	1,304	2.0	1	--
12	Austin	812	1.9	--	--
13	San Diego	730	1.5	--	--
14	Philadelphia	1,681	1.4	--	--
15	Detroit	1,248	1.4	--	--
16	Phoenix	491	1.4	2	--
17	Seattle/Tacoma	960	1.3	--	--
18	Tampa	1,596	1.3	--	--
19	Minneapolis/St. Paul	802	1.2	--	--
20	Orlando	1,640	<u>1.0</u>	--	--
	Markets listed		75.3%	26	11
	Other markets		<u>24.7</u>	<u>2</u>	<u>3</u>
	Total		100.0%	28	14

(a) Los Angeles International, Bob Hope, Ontario International, John Wayne (Orange County), and Long Beach airports.

(b) Newark Liberty International, LaGuardia, and John F. Kennedy International airports.

(c) Chicago O'Hare and Midway International airports.

(d) San Francisco, Oakland, and Mineta San Jose International airports.

(e) George Bush Intercontinental and Houston William P. Hobby airports.

(f) Dallas Fort Worth International Airport and Dallas Love Field.

(g) Miami International and Fort Lauderdale International airports.

(h) Reagan Washington National, Baltimore/Washington International, and Washington Dulles International airports.

Sources: U.S. Department of Transportation, Origin-Destination Survey of Airline Passenger Traffic, Domestic, Databank 1A, online database, and U.S. Department of Transportation, online database, accessed April 2019.

Commercial Ops Forecast – Peak Season

Table 5-2
Forecasts of Aircraft Fleet Mix by Airplane Design Group
Aspen/Pitkin County Airport

	Historical 2018	Estimated 2019 (a)	Forecast				CAGR 2018- 2048
			2023	2028	2033	2038	2048
COMMERCIAL OPERATIONS							
(PASSENGER AND ALL-CARGO AIRLINES)							
Peak Season (January-March)							
ADG II							
CRJ700	5,580	5,000	5,420	--	--	--	--
Cessna 208 Caravan (cargo)	--	--	--	--	--	10	80
Total ADG II	5,580	5,000	5,420	--	--	10	80
ADG III							
A319	--	--	--	720	800	1,050	1,210
A220-100	--	--	--	310	190	210	230
E175	--	--	--	3,880	4,380	4,410	4,700
Total ADG III	--	--	--	4,910	5,370	5,670	6,140
Total Peak Season	5,580	5,000	5,420	4,910	5,380	5,680	6,210
Off Season (April-December)							
ADG II							
CRJ700	7,400	7,800	7,990	2,870	460	--	--
Cessna 208 Caravan (cargo)	10	10	10	20	50	90	310
Total ADG II	7,410	7,810	8,000	2,890	510	90	310
ADG III							
A319	--	--	--	980	1,020	1,460	1,550
A220-100	--	--	--	570	580	590	630
E175	--	--	--	2,470	4,850	4,740	4,970
Total ADG III	--	--	--	4,020	6,450	6,800	7,160
Total Off Season	7,410	7,810	8,000	6,910	6,960	6,890	7,470

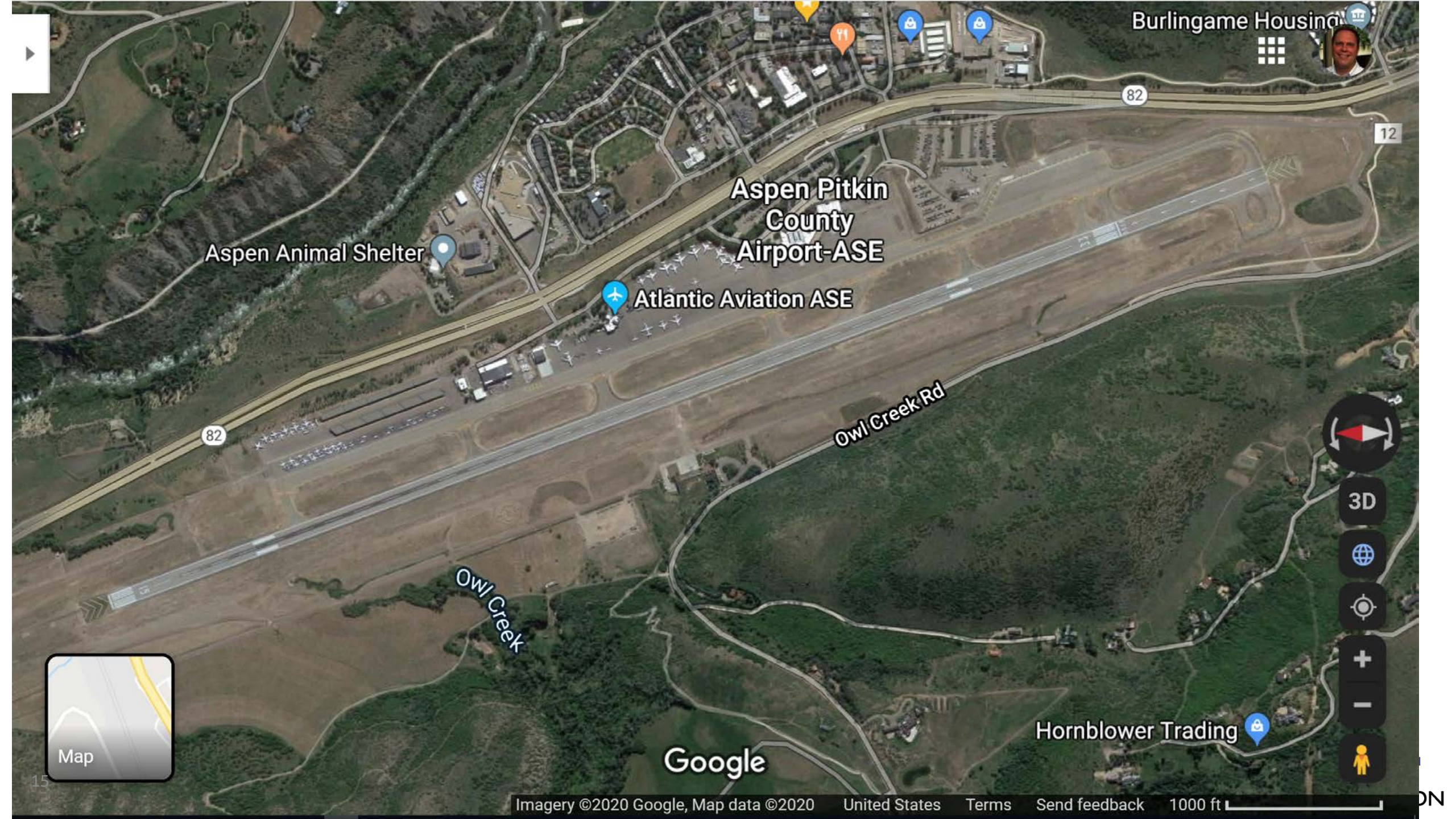
Commercial Ops Forecast – Total Year

Table 5-2 (page 2 of 10)

Forecasts of Aircraft Fleet Mix by Airplane Design Group

Aspen/Pitkin County Airport

	Historical 2018	Estimated 2019	Forecast					CAGR 2018-2048
			2023	2028	2033	2038	2048	
COMMERCIAL OPERATIONS (CONTINUED)								
Total (January-December)								
ADG II								
CRJ700	12,980	12,800	13,410	2,870	460	--	--	-100.0%
Cessna 208 Caravan (cargo)	<u>10</u>	<u>10</u>	<u>10</u>	<u>20</u>	<u>50</u>	<u>100</u>	<u>390</u>	13.0%
Total ADG II	12,990	12,810	13,420	2,890	510	100	390	-11.0%
ADG III								
A319	--	--	--	1,700	1,820	2,510	2,760	--
A220-100	--	--	--	880	780	800	860	--
E175	<u>--</u>	<u>--</u>	<u>--</u>	<u>6,350</u>	<u>9,230</u>	<u>9,160</u>	<u>9,670</u>	--
Total ADG III	<u>--</u>	<u>--</u>	<u>--</u>	<u>8,930</u>	<u>11,830</u>	<u>12,470</u>	<u>13,290</u>	--
Total	12,990	12,810	13,420	11,820	12,340	12,560	13,680	0.2%
Percent of commercial operations								
Peak Season (January-March)								
ADG II	100%	100%	100%	0%	0%	0%	1%	
ADG III	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>99%</u>	
Total Peak Season	100%	100%	100%	100%	100%	100%	100%	
Off Season (April-December)								
ADG II	100%	100%	100%	42%	7%	1%	4%	
ADG III	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>58%</u>	<u>93%</u>	<u>99%</u>	<u>96%</u>	
Total Off Season	100%	100%	100%	100%	100%	100%	100%	
Total (January-December)								
ADG II	100%	100%	100%	24%	4%	1%	3%	
ADG III	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>76%</u>	<u>96%</u>	<u>99%</u>	<u>97%</u>	
Total	100%	100%	100%	100%	100%	100%	100%	



Burlingame Housing



Aspen Pitkin
County
Airport-ASE

Aspen Animal Shelter

Atlantic Aviation ASE

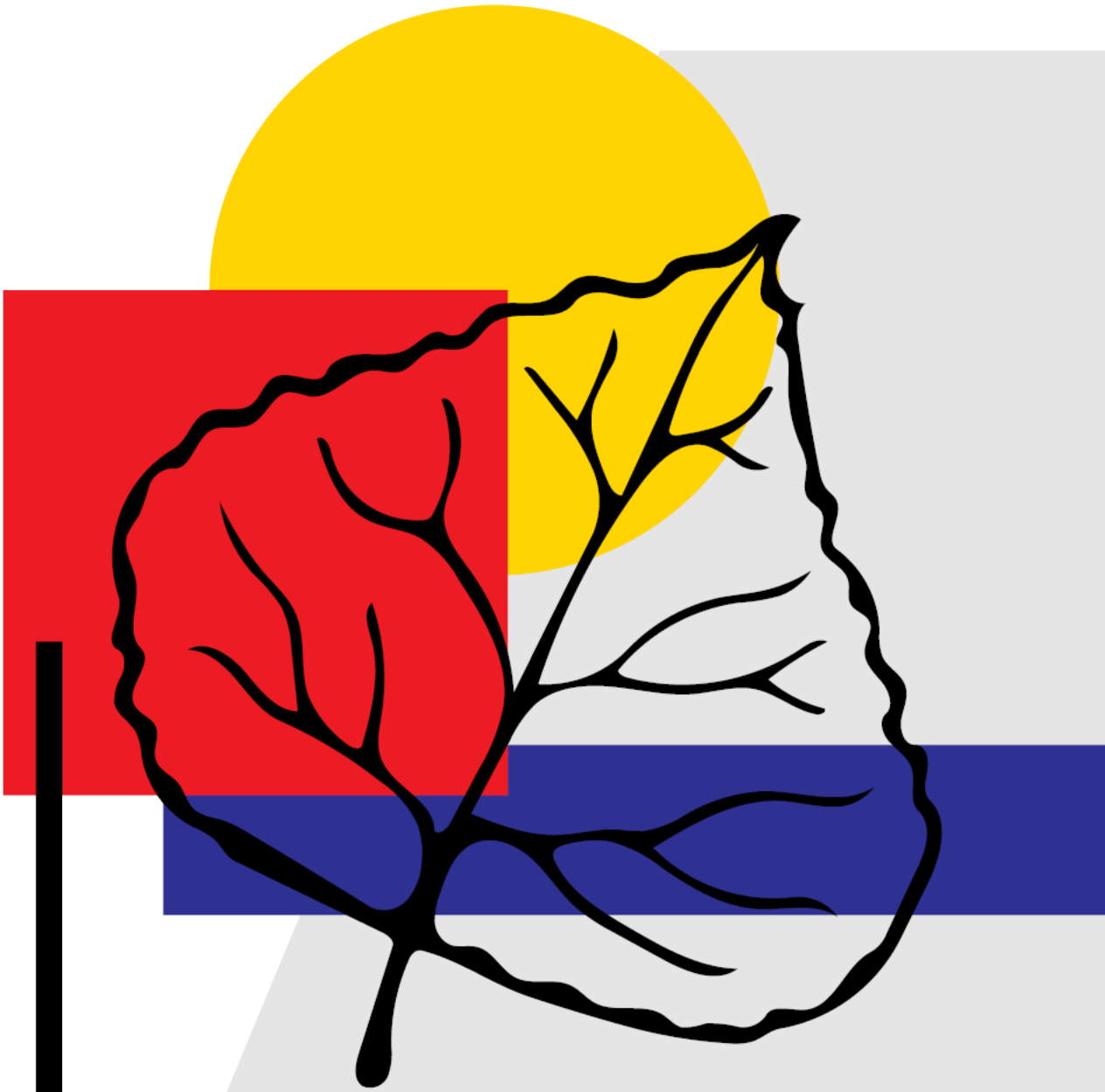
Owl Creek Rd

Owl Creek

Hornblower Trading

Google

Map



Reference Materials

Initial Aircraft Ranking TWG (9-18-2019) *Draft_v1*

	Emissions	Emissions Rank	Noise	Noise Rank	Enplanements/ Operations	Enplanements Rank	Average Score	Overall Rank
A220-300	1.125	2	1.25	1	1.833333333	5	1.4027778	3
A320 NEO Sharklet	1	1	1.25	1	1.833333333	5	1.3611111	2
737-MAX 8	1.5	5	2.25	8	2.166666667	11	1.9722222	6
A320-200 Sharklet	1.25	3	2.875	15	1.833333333	5	1.9861111	7
EMB 195-E2	1.625	6	2.5625	12	1.333333333	1	1.8402778	4
A220-100	1.25	3	1.25	1	1.333333333	1	1.2777778	1
A319-100 Sharklet	1.75	7	2.375	9	1.5	3	1.875	5
737-700 with winglets	2	9	2.875	15	1.5	3	2.125	10
EMB 175 LR, extended wingtips	1.875	8	2.625	13	2.666666667	16	2.3888889	14
EMB 190-E2	2.375	13	2.4375	11	1.833333333	5	2.2152778	11
E 190 Standard	2.5	15	2.375	9	1.833333333	5	2.2361111	13
CRJ 100/200/440 LR (CL-600-2B19)	2.375	13	1.5	5	2.8	19	2.225	12
CRJ 700/701/702 LR	2	9	2	6	2	10	2	8
E 170 Standard	2.1666667	12	2.6875	14	2.4	14	2.4180556	15
CRJ 550 (Same airframe as CRJ-700)	2.8333333	16	2	6	2.8	19	2.5444444	16
M100 SpaceJet		#N/A		#N/A	2.666666667	16		#N/A
M90 SpaceJet		#N/A		#N/A	2.333333333	13		#N/A
EMB 175-E2		#N/A		#N/A	2.5	15		#N/A
737-MAX 7 (same engine as MAX 8)		#N/A		#N/A	2.166666667	11		#N/A
Dash 8 Q400	2	9	1.375	4	2.666666667	16	2.0138889	9

Commercial Aircraft – Characteristics

ADG	Manufacturer	Model	AAC	Approach Speed (V _{ref})	Seating	Wingspan (ft.)	Range (NM)	MTOW	Engine Type (note 6)	ICAO Noise				Fuel per LTO Cycle (kg) per Passenger	Fuel Compared to CRJ-700	CO2 Total Mass LTO (kg) per Passenger	CO2 Compared to CRJ-700	ICAO Emissions				NOx Total (All Segments)	ASE Operational Capability			Operations Data			
										EPNLD B Noise Level Lateral/Full Power	EPNLD B Noise Level Approach	EPNLD B Noise Level Flyover	Average ICAO Noise					NOx Total Mass LTO (kg) per Passenger	NOx Compared to CRJ-700	NOx Takeoff	NOx Climbout		NOx Approach	NOx Idle	ASE Missed Approach Capable? Winter	ASE Missed Approach Capable? Summer	Significant Wt Penalty at ASE?	Annual Ops 2018	Annual Ops Future
II	Bombardier	CRJ 100/200/440 LR ICL-600-2819)	C	140	50	69.67	1,650	53,000	High Bypass Turbofan	82.4	92.2	77.7	84.1	3.34	123%	67.00	384%	22.74	62%	0.23	0.20	0.14	0.08	0.65	Charter	N	Y	16,462	17,816
III	Bombardier	Dash 8 Q400	C	125	76	93.25	1,100	65,200	Turboprop	84.9	94.0	77.8	85.6					Information not available					Y	Y	N	10,823	11,721		
III	Airbus	A320-100	C	130	109	115.08	3,400	134,000	Geared Turbofan LEAP or Geared Turbofan	88.0	91.5	78.8	86.1	2.71	100%	17.44	100%	36.83	100%	0.17	0.14	0.07	0.03	0.40	Y	Y	N	7,547	8,173
III	Airbus	A320 NEO Sharklet	C	136	157	117.45	3,500	174,165	Geared Turbofan	86.4	92.4	80.5	86.4	1.99	74%	22.00	126%	19.13	52%	0.16	0.13	0.06	0.03	0.37	Unknown	Unknown	Unknown	5,876	6,363
III	Airbus	A320-300	C	135	140	115.08	3,350	149,000	Geared Turbofan	87.5	92.4	80.3	86.7	1.98	73%	14.33	92%	25.08	68%	0.24	0.19	0.10	0.06	0.58	Unknown	Unknown	Unknown	5,876	6,363
III	Boeing	737-MAX 8	D	142	178****	117.83	3,550	181,200	LEAP	88.2	94.0	80.9	87.7	1.99	74%	13.52	77%	32.01	87%	0.27	0.13	0.06	0.03	0.48	Y	Marginal	Y	4,621	5,005
II	Bombardier	CRJ 550 (Same airframe as CRJ-700)	C	135	50	76.27	1,000	65,000	High Bypass Turbofan	89.5	92.6	82.4	89.2	4.69	173%	49.87	286%	41.30	112%	0.29	0.25	0.22	0.09	0.84	Y	Y	N	16,462	17,816
II	Bombardier	CRJ 700/701/702 LR	C	135	70	76.27	1,400	77,000	High Bypass Turbofan	89.5	92.6	82.4	89.2	3.35	124%	35.62	204%	29.50	80%	0.20	0.18	0.15	0.06	0.60	Y	Y	Y	11,751	12,726
III	Embraer	E 190 Standard	C	124	96**	94.25	2,450	105,359	High Bypass Turbofan	92.2	92.3	82.9	89.1	3.24	119%	68.39	392%	31.59	86%	0.20	0.17	0.09	0.04	0.49	Unknown	Unknown	Unknown	8,569	9,279
III	Airbus	A319-100 Sharklet	C	126	132	117.45	3,750	168,653	High Bypass Turbofan	91.4	92.9	83.3	89.2	2.89	107%	39.96	229%	31.07	84%	0.12	0.08	0.06	0.03	0.29	Y	Y	N	6,426	6,959
III	Embraer	E 175 Standard	C	124	69	85.42	2,150	82,012	High Bypass Turbofan	92.0	94.5	81.3	89.3	3.57	132%	29.65	170%	33.63	91%	0.22	0.19	0.16	0.07	0.63	Unknown	Unknown	Unknown	11,921	12,910
III	Embraer	EMB 190-E2	C	124	97	110.70	2,850	124,341	Geared Turbofan	92.3	92.3	83.8	89.5	3.23	119%	67.14	385%	31.81	86%	0.20	0.17	0.09	0.04	0.49	Unknown	Unknown	Unknown	8,480	9,184
III	Airbus	A320-200 Sharklet	C	136	157	117.45	3,300	171,961	High Bypass Turbofan	90.9	93.6	84.1	89.5	2.57	95%	27.55	158%	31.17	85%	0.16	0.13	0.07	0.04	0.40	Unknown	Unknown	Unknown	5,484	5,939
III	Embraer	EMB 195-E2	C	124	120	115.15	2,600	135,584	Geared Turbofan	92.3	92.7	84.9	90.0	2.63	97%	53.83	309%	26.17	71%	0.16	0.13	0.07	0.03	0.39	Unknown	Unknown	Unknown	6,855	7,423
III	Boeing	737-700 with winglets	C	130	137	117.42	4,400	154,500	Geared Turbofan	93.1	95.9	83.5	90.8	2.99	110%	47.66	273%	32.15	87%	0.15	0.12	0.06	0.03	0.37	Y	Marginal	Y	6,528	7,070
III	Embraer	EMB 175 LR, extended wingtips	C	124	76	93.92	2,150	85,517	High Bypass Turbofan	91.8	95.1	93.0	93.3	3.23	119%	26.96	155%	30.34	82%	0.20	0.17	0.14	0.06	0.57	Y	Marginal	Y	10,823	11,721
III	Mitsubishi	M100 Spacejet	C		76	91.30	1,910	86,000	Geared Turbofan	Information not available								Information not available					Unknown	Unknown	Unknown	10,823	11,721		
III	Mitsubishi	M90 Spacejet	C		88*	95.83	2,040	94,358	Geared Turbofan	Information not available								Information not available					Unknown	Unknown	Unknown	9,348	10,123		
III	Embraer	EMB 175-E2	C	124	80	101.70	2,000	98,767	Geared Turbofan	Information not available								Information not available					Unknown	Unknown	Unknown	10,282	11,135		
III	Boeing	737-MAX 7 (same engine as MAX 8)	D	142	153****	117.83	3,850	177,000	LEAP	Information not available								Information not available					Y	Y	N	5,376	5,822		

Notes:

- 1) Noise and Emissions Source: ICAO Certification Database, August 2019 | HMMH, August 2019; Per-passenger interpretation - Kinley-Horn August 2019.
- 2) Operations: 2018 = Actual Implementations at 70% load factor. Future = 2028 Implementations at 0.8% Annual Growth and 70% load factor
- 3) Aircraft Load and Dimensions from FAA Aircraft Design Characteristics Database OCT 2018
- 4) ASE Operational Capability from August 2018 Aircraft Feasibility analysis done by Alec Seybold - Flight Tech Engineering
- 5) Range is nominal stated by manufacturer
- 6) LEAP = "Leading Edge Aviation Propulsion" by CFM, a NextGen High Bypass Engine which competes with Pratt & Whitney Geared Turbofan

* Single-class seating as configured for ANA for use in Japan. Range is 76 to 92
 ** Dual-class seating per Manufacturer
 **** Dual-class range 138 to 153
 ***** Dual-class range 162 to 178

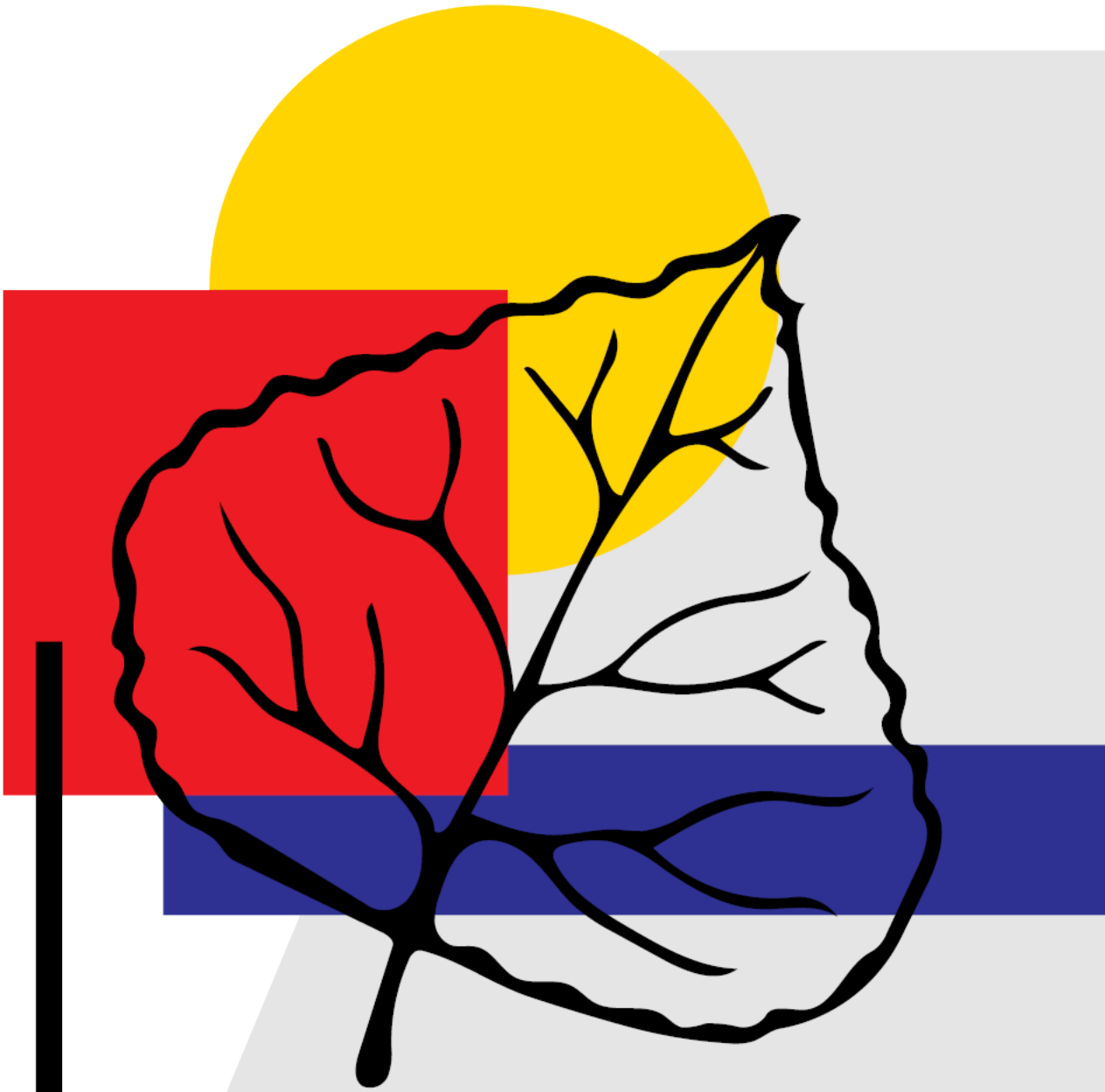
General Aviation Aircraft - Characteristics

Manufacturer	Model	Seat Count	# Engines	AAC	ADG	Approach Speed (Vref)	Wingtip Config	Wingspan, ft	Length, ft	MTOW
Boeing	737-BBJ	20	2	C	III	132	winglets	117.4	110.3	171,000
Bombardier	Challenger (BD-100-1A10) 300	9	2	B	II	117	winglets	63.8	68.8	38,850
Bombardier	Challenger (BD-100-1A10) 350 (the 300 with sn/ 20501 and subsequent)	8	2	C	II	125	winglets	69.0	68.8	40,600
Bombardier	Global 5000 (BD-700-1A11)	17	2	B	III	107.9	winglets	94.0	96.8	92,500
Bombardier	Global 6000/Express (BD-700-1A10)	19	2	B	III	107.9	winglets	94.0	99.4	99,500
Bombardier	Global 7500 (BD-700-2A12)	19	2	B	III	110.5	winglets	104.3	110.6	106,250
British Aerospace (BAe)/Avro	BAe HS 125-1/2/3-700/800	8	2	No Value	No Value		tbd		tbd	tbd
Cessna	Citation CJ1 (Model C525)	6	2	B	I	107.9	no winglets	46.9	42.6	10,600
Cessna	Citation CJ2 (Model C525A)	7	2	B	II	114.4	no winglets	49.8	47.7	12,300
Cessna	Citation XLS, XLS+	9	2	B	II	117	no winglets	56.3	52.5	20,200
Cessna	Citation Sovereign	8	2	B	II	107.9	no winglets	63.3	63.5	30,300
Dassault Aviation	Falcon 7X	16	3	B	III	104	winglets	86.0	76.1	70,000
Dassault Aviation	Falcon 8X	16	3	B	III	106	winglets	86.3	80.2	73,000
Eclipse Aerospace	Eclipse 500*	4	2	A	I	89.7	tip tanks	37.3	33.1	5,950
Embraer	Phenom 100 (EMB-500)	7	2	B	I	100.1	no winglets	40.3	42.1	10,582
Embraer	Phenom 300 (EMB-505)	11	2	B	II	115.7	winglets	52.2	51.3	17,968
Gulfstream Aerospace Corp.	Gulfstream V (G-V)	14	2	C	III	125	winglets	93.3	95.4	90,500
Gulfstream Aerospace Corp.	G650	18	2	D	III	145	winglets	99.6	99.8	99,600

Notes: *in lieu of the Eclipse 550 identified by LF Forecast 2019

Mountain Resort Enplanement Data

	Passenger Enplanements Comparisons							
YEAR	ASE	1 YR Growth Rate	SUN	1 YR Growth Rate	JAC	1 YR Growth Rate	EGE	1 YR Growth Rate
2009	216,405	1.9%	50,540	-24.1%	281,674	-9.1%	180,272	-17.3%
2010	222,255	2.7%	52,861	4.6%	286,660	1.8%	201,489	11.8%
2011	221,108	-0.5%	51,003	-3.5%	281,808	-1.7%	190,823	-5.3%
2012	214,207	-3.1%	47,882	-6.1%	272,888	-3.2%	173,639	-9.0%
2013	204,198	-4.7%	49,106	2.6%	292,176	7.1%	166,969	-3.8%
2014	217,134	6.3%	63,174	28.6%	305,204	4.5%	164,432	-1.5%
2015	233,476	7.5%	68,067	7.7%	307,150	0.6%	155,795	-5.3%
2016	254,302	8.9%	75,947	11.6%	336,951	9.7%	159,837	2.6%
2017	244,732	-3.8%	83,480	9.9%	341,192	1.3%	154,310	-3.5%
2018	283,877	16.0%	90,667	8.6%	367,167	7.6%	170,868	10.7%
10 year CAGR		2.8%		6.0%		2.7%		-0.5%
Sources: ASE: Airport Management Records;								
	SUN, JAC & EGE: FAA Terminal Area Forecast							



Thank You!