

Appendix 7 Traffic



Ground Vehicle Movements at Aspen/Pitkin County Airport

Introduction

In support of an environmental assessment for proposed projects at the Aspen/Pitkin County Airport, this document provides information that pertains to ground vehicle movements attributed to an expected increase in passengers at Aspen/Pitkin County Airport under various improvement and passenger enplanement scenarios. Passenger forecasts were developed in a 2015 Airport Layout Plan (ALP) Update and serve as the basis for projections of ground vehicle movements. The ground vehicle movement assumptions used for the traffic analysis in the main body of the environmental assessment (Section 4.15) are included here.

Methodology

A curbside user survey was conducted by Jviation at the Aspen/Pitkin County Airport on February 13, 2009 in which passengers were asked whether they were arriving or departing, the number of members in their party, the mode of transportation they used to arrive at or depart the Airport, and if they were parking a vehicle. The types of vehicles reported included cars, vans, SUVs/Trucks, Large SUV, RFTA (public bus), and limousines. It was also noted if the mode of transportation used was a commercial vehicle (does not include public transit) or non-commercial vehicle.

Based on the results of the user survey and other data, this document describes the composition of commercial, non-commercial, and total vehicle ground movements by vehicle type, the average number of passengers per vehicle, and the expected number of vehicle trips that will occur from various passenger enplanement scenarios.

The curbside airport user survey showed that there were a total of 293 vehicle ground movements; 119 commercial (40.6 percent), and 174 non-commercial (59.4 percent). There were a total of 580 passengers on the 293 vehicles. Commercial, non-commercial, and total movements by vehicle type, percentage, total passengers, and average passengers per vehicle are shown in **Table 1**.

Table 1. Curb Front Airport User Survey Results					
Vehicle Type	Vehicle Movements	% of Movements	Total Passengers	% of Passengers	Average Passengers Per Vehicle
Commercial Vehicles - 40.6% (40.7% of Passengers)					
Car	2	1.7%	4	1.7%	2.00
Van	107	89.9%	210	89.0%	1.96
SUV/Truck	9	7.6%	21	8.9%	2.33
Large SUV	0	0.0%		0.0%	
RFTA (Public Bus)	0	0.0%		0.0%	
Limo	1	0.8%	1	0.4%	1.00
All	119	100.0%	236	100.0%	1.98
Non-Commercial Vehicles - 59.4% (59.3% of Passengers)					
Car	28	16.1%	41	11.9%	1.46
Van	25	14.4%	56	16.3%	2.24
SUV/Truck	94	54.0%	190	55.2%	2.02
Large SUV	8	4.6%	16	4.7%	2.00
RFTA (Public Bus)	11	6.3%	18	5.2%	1.64
Limo	8	4.6%	23	6.7%	2.88
All	174	100.0%	344	100.0%	1.98
Total Passengers					
Car	30	10.2%	45	7.8%	1.50
Van	132	45.1%	266	45.9%	2.02
SUV/Truck	103	35.2%	211	36.4%	2.05
Large SUV	8	2.7%	16	2.8%	2.00
RFTA (Public Bus)	11	3.8%	18	3.1%	1.64
Limo	9	3.1%	24	4.1%	2.67
All	293	100.0%	580	100.0%	1.98

Note: Ground movements based on a survey conducted by Jviation on 2/13/2009.

Sources: Jviation Engineering and Planning, Mead & Hunt

The curb front airport user survey did not include any data collection or compilation of rental car vehicles. The number of rental car vehicles has been established through the number of rental car transactions performed in 2007 and through the following methodology:

- 2007 rental car transactions were 24,548.
- Average number of passengers per vehicle and vehicle type split is assumed to equal the results of the curb front airport user survey for non-commercial vehicles.
- This indicates that 48,377 deplaning passengers, of the total 177,630 deplanements in 2007, or 27.2%, utilized a rental car.

The breakdown in passengers by vehicle type is applied to the forecasts of passengers to project the number of ground movements that would occur under various passenger enplanement scenarios. It is assumed that these figures will remain constant throughout the projection period.

Ground Vehicle Movements

Passenger forecasts were developed in a 2015 Airport Layout Plan (ALP) Update and serve as the basis for projections of ground vehicle movements. Passenger enplanements for each forecast year and under each scenario are presented in **Table 2**. Baseline movements by category and vehicle type are also shown in Table 2. These ground vehicle movements each represent a roundtrip vehicle movement, which is a trip to the airport to drop-off the passenger and a trip from the airport back to the vehicles origin.

Table 2. Vehicle Ground Movements									
Vehicle Type	% of Passengers	Average Passengers Per Vehicle	Vehicle Movements ¹						
			2015 Actual	2023 No Action with Project: Terminal	2028 No Action Runway	2028 With Project: Runway First Year of Implementation	2033 No Action	2033 With Project: Runway Out Year	2033** What If Scenario
Projected Passenger Enplanements			233,541	263,153	258,860	296,140	281,036	333,259	548,356
Projected Total Passengers			467,082	526,306	517,720	592,280	562,072	666,518	1,096,712
Rental Vehicles 27.2% of Passengers									
Car	14.3%	1.46	6,205	6,992	6,878	7,869	7,467	8,855	14,570
Van	19.5%	2.24	5,540	6,243	6,141	7,025	6,667	7,906	13,009
SUV/Truck	66.2%	2.02	20,832	23,473	23,090	26,416	25,068	29,727	48,913
All	100.0%	1.97	32,578	36,708	36,109	41,310	39,203	46,488	76,492
Commercial Vehicles 29.6% of Passengers									
<i>50.0% of Vehicles pickup passengers when dropping off other passengers</i>									
Car	1.7%	2.00	879	990	974	1,115	1,058	1,254	2,064
Van	89.0%	1.96	47,026	52,988	52,124	59,631	56,589	67,105	110,417
SUV/Truck	8.9%	2.33	3,955	4,457	4,384	5,016	4,760	5,644	9,287
Limo	0.4%	1.00	439	495	487	557	529	627	1,032
All	100.0%	1.98	52,300	58,931	57,970	66,318	62,936	74,631	122,800
Non-Commercial Vehicles 43.2% of Passengers									
<i>19.5% of private vehicles go to on-site parking (car, van, SUV. Large SUV)</i>									
Car	11.9%	1.46	14,805	16,682	16,410	18,773	17,815	21,126	34,762
Van	16.3%	2.24	13,218	14,895	14,652	16,762	15,907	18,863	31,037
SUV/Truck	55.2%	2.02	49,701	56,003	55,090	63,024	59,809	70,923	116,699
Large SUV	4.7%	2.00	4,230	4,766	4,688	5,364	5,090	6,036	9,932
RFTA (Public Bus)	5.2%	1.64	6,446	7,263	7,145	8,174	7,757	9,198	15,135
Limo	6.7%	2.88	4,688	5,282	5,196	5,944	5,641	6,690	11,007
All	100.0%	1.98	93,088	104,892	103,180	118,040	112,020	132,835	218,572
Total Vehicles									
Car	7.8%	1.50	21,889	24,664	24,262	27,756	26,340	31,235	51,395
Van	45.9%	2.02	65,785	74,126	72,917	83,418	79,163	93,874	154,463
SUV/Truck	36.4%	2.05	74,489	83,934	82,564	94,455	89,637	106,294	174,900
Large SUV	2.8%	2.00	4,230	4,766	4,688	5,364	5,090	6,036	9,932
RFTA (Public Bus)	3.1%	1.64	6,446	7,263	7,145	8,174	7,757	9,198	15,135
Limo	4.1%	2.67	5,127	5,778	5,683	6,502	6,170	7,317	12,039
All	100.0%	1.98	177,965	200,531	197,259	225,668	214,158	253,954	417,864

Note: ¹ Vehicle movements each represent a roundtrip vehicle movement, which is a trip to the airport to drop-off the passenger and a trip from the airport back to the vehicles origin.

Sources: 2015 ALP Update - Forecast Chapter, Aviation 2015, Mead & Hunt

Peaking characteristics have been used to determine the number of ground vehicles projected for the peak hour (PH) of the peak month average day (PMAD). **Table 3** summarizes the number of peak hour ground vehicles anticipated under various passenger scenarios.

Table 3. Peak Hour Vehicle Ground Movements									
Vehicle Type		Vehicle Movements ¹							
		2015 Actual	2023 No Action with Project: Terminal	2028 No Action Runway	2028 With Project: Runway First Year of Implementation	2033 No Action	2033 With Project: Runway Out Year	2033** What If Scenario	
Projected Passenger Enplanements			233,541	263,153	258,860	296,140	281,036	333,259	548,356
Total Annual Vehicles			177,965	200,531	197,259	225,668	214,158	253,954	417,864
	Peak Month	15.7%	27,941	31,483	30,970	35,430	33,623	39,871	65,605
	Average Day	1/30	931	1,049	1,032	1,181	1,121	1,329	2,187
	Peak Hour	15.9%	148	167	164	188	178	211	348

Sources: Projected Passenger Enplanements - 2015 ALP Update, Forecast Chapter, Aviation 2015, Mead & Hunt; Peak Month and Peak Hour percentages – 2008 Airport Master Plan Update; Vehicle Movements – Mead & Hunt.

¹ Vehicle movements each represent a roundtrip vehicle movement, which is a trip to the airport to drop-off the passenger and a trip from the airport back to the vehicles origin.