CHAPTER IV

Analysis of Onboard Survey

INTRODUCTION

A key element in the analysis of current performance is the collection of data for passenger and trip characteristics. These data were collected through two onboard surveys for Summit Stage. The first survey was conducted on October 22, 2002. This date was selected during the low ridership season to determine the characteristics of year-round passengers. The second survey was conducted on Friday, January 10, 2003 to capture winter visitors. This chapter discusses the survey methodology used to conduct the survey, including preparation of the survey instrument, training of surveyors, and the survey results.

METHODOLOGY

The survey instrument was developed to collect information essential for the evaluation of current services. The Summit Stage survey was designed to include transit trip characteristics, trip purposes, socioeconomic data, and attitudes toward Summit Stage. A draft survey instrument was prepared and submitted to Summit Stage for review and comment. The survey was printed in English on 8½" x 11" card stock. A Spanish version was also prepared. The survey instruments are included in Appendix A.

Preparation and Training

Training for the onboard surveys was conducted prior to the data collection. Survey workers were trained to conduct the onboard survey by the LSC Team. Workers were instructed on the proper procedures for administering the survey and were led in role-playing exercises to familiarize themselves with the process. Efforts were made to have bilingual survey workers on each run. This was not achieved in October, but was accomplished in January. The response rate does not indicate any problem resulting from the lack of translators in October.

Sampling Methodology

For the October survey, 50 percent of all runs on each route were selected randomly for data collection. This number of runs was selected to obtain a sufficient sample size to be representative. A total of 404 completed questionnaires were received. This sample provides an error of +/- 4.9 percent at the 95 percent confidence level. As ridership is significantly higher in January, fewer runs were selected. Runs were selected randomly for each route proportionately based on the ridership for each route. In January, 849 responses were received yielding an error range of +/- 3.4 percent at the 95 percent confidence level.

SURVEY FINDINGS

Responses from the usable questionnaires were entered into a database for analysis. In addition to the individual responses, the date, route, and time were included for each response to permit detailed analysis by season, route, or time of day. The responses are summarized in the following sections. Survey responses are included in Appendix B.

Demographic Characteristics

There were a number of questions asked to determine demographic characteristics of transit riders on the Summit Stage. Respondents were asked to complete information on every trip which they took regarding the characteristics of the trip, but to provide demographic information only once. The demographic information is summarized from unduplicated individuals responding to the questions. For the January survey, there 283 unduplicated individual responses. This sample provides an error range of 5.8 percent for demographic data.

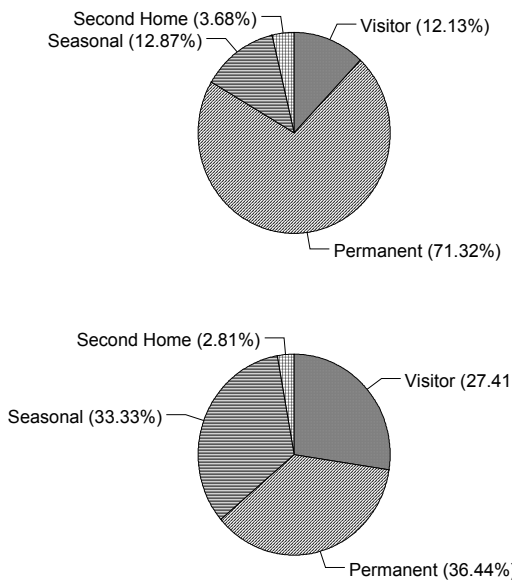
The January survey had 684 unduplicated individuals yielding an error range of 3.7 percent for demographic information. In October, 42 percent of the responses were in Spanish while in January, only 22 percent were in Spanish. In addition to having the option of completing the questionnaire in Spanish, passengers were asked to indicate their primary language. English was indicated by 68 percent and Spanish by 28 percent. The remaining four percent indicated a variety of languages with all less than one percent.

The first consideration is the residency status of passengers. Passengers were asked to indicate whether they were a visitor/tourist, year-round resident, seasonal resident, or second homeowner. The results are shown in Figure IV-1. As can be seen, the January ridership included significantly more seasonal residents and visitors.

The average age of the October respondents was 29.3 years while the average for January was 28.4 years. Although the average is slightly lower in January, this is not a statistically significant difference between the two groups. In October, 64 percent of the respondents were male and 62 percent were male in January.

Figure IV-1

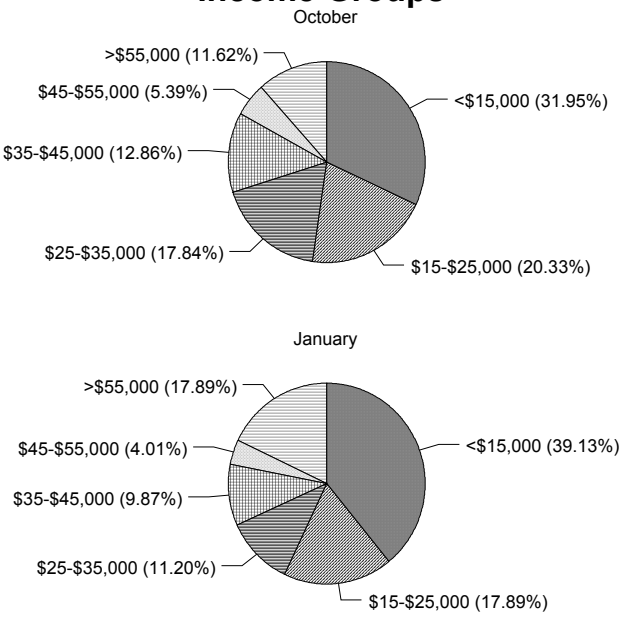
Residency



Income is another major consideration in transit need in Summit County. The household income of respondents is shown in Figure IV-2. About one-half of passengers (50 percent) have incomes of less than $15,000 annually, with another 23 percent having incomes of $15,000 to $25,000. Both the highest and lowest income groups experienced increased ridership in January compared to October. In both groups, over half the passengers were in households earning less than $25,000 per year.

Figure IV-2

Income Groups



Vehicle availability and the ability to drive are often factors in demand for public transportation. Lack of a private vehicle or the inability drive influence people to use public transportation. This comparison provides an indication of the number of choice riders compared to those who are transit-dependent. Figure IV-3 shows the proportion of passengers with and without vehicles available for both surveys. In October, about 60 percent of the passengers did not have a vehicle available, while in January this increased to about 68 percent. Figure IV-4 shows the proportion of passengers who are licensed drivers. The percentage of drivers with licenses increased from 56 percent in October to 71 percent in January. This, combined with the increase in passengers without vehicles, indicates that there is some success in attracting visitors who do not have a vehicle with them. To explore this further, the January data were looked at to determine the proportion of visitors using Summit Stage who did not have a car. The proportion of visitors without a car available was only slightly less than the total sample at 63 percent. Seasonal residents had the highest percentage without a vehicle at 76 percent while second homeowners were the lowest at 14 percent.

Figure IV-3

Vehicle Availability

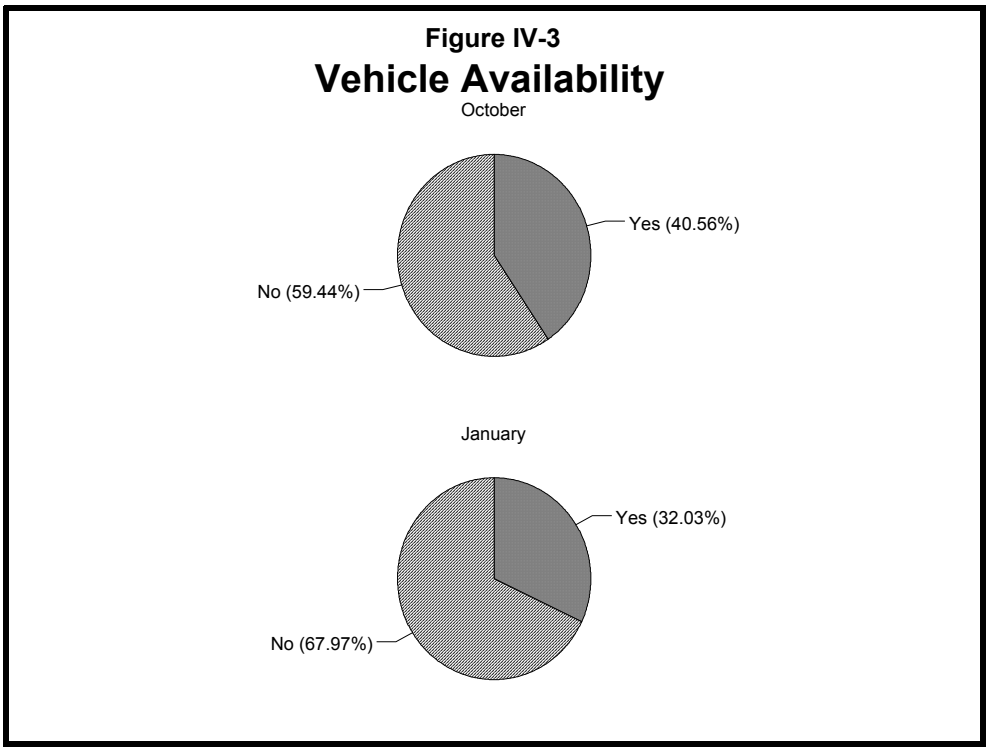
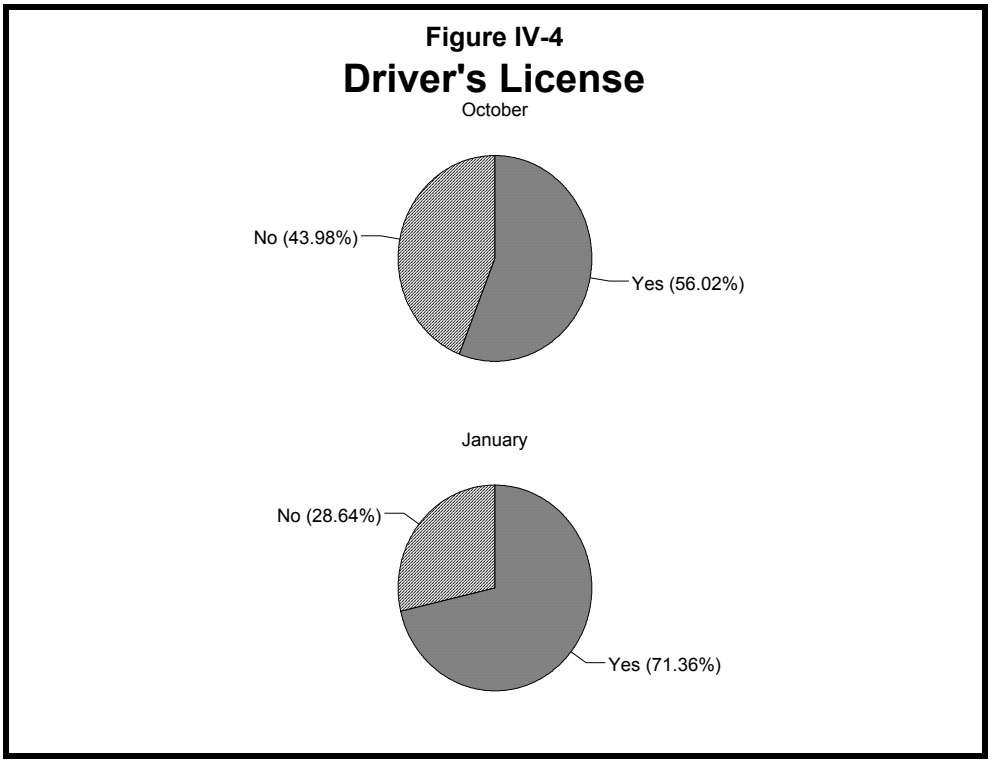


Figure IV-4

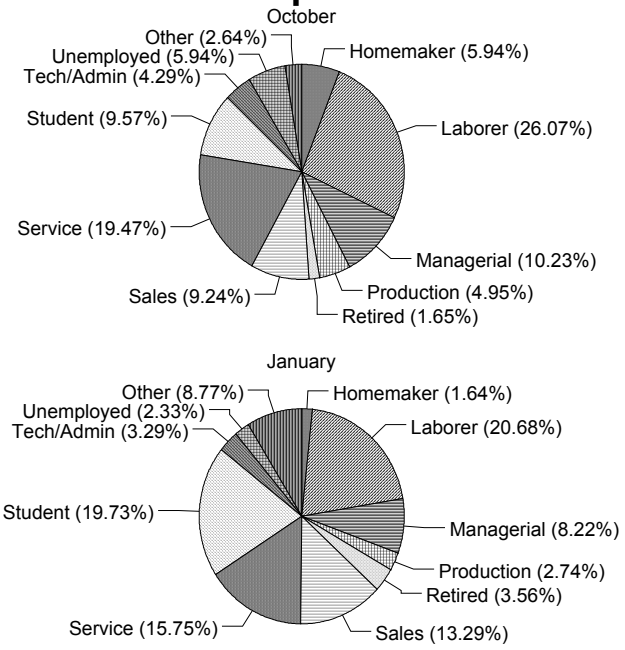
Driver's License



Passengers were asked their occupation. The results are shown in Figure IV-5. Passengers represent a broad spectrum of occupations. The primary differences between October and January were in laborers and students.

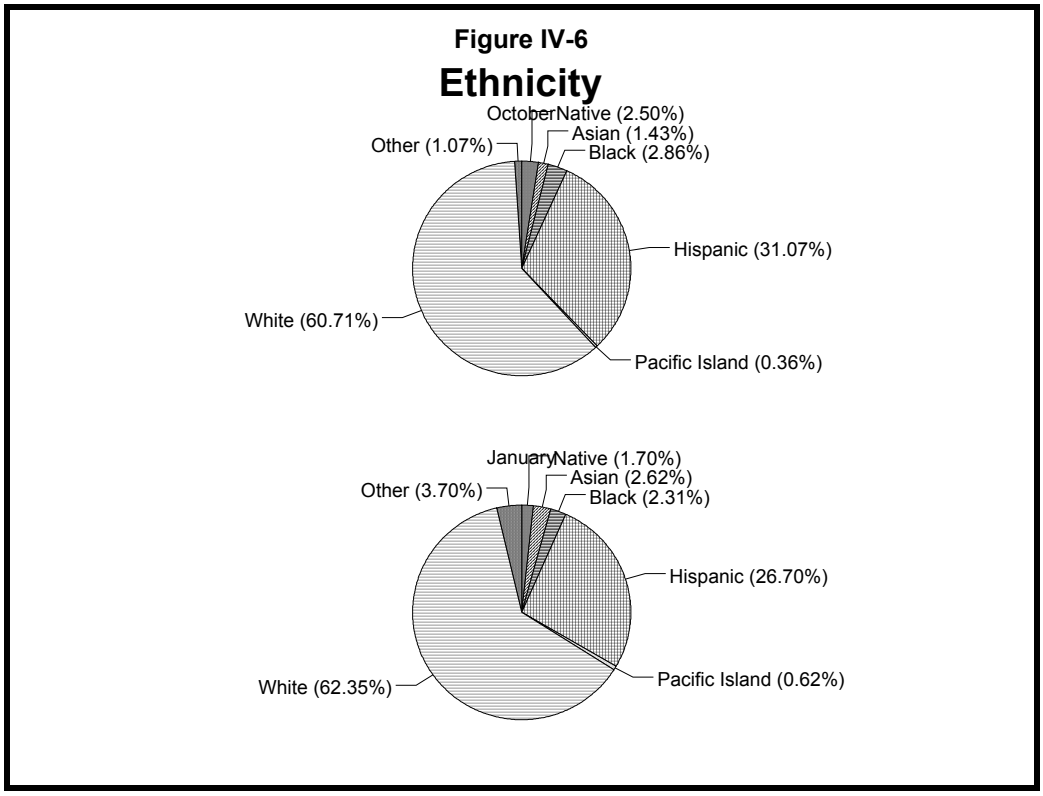
Figure IV-5

Occupation



Ethnicity is shown in Figure IV-6. There is not statistical difference in passenger ethnicity between the two surveys. Whites made up about 60 percent of the passengers, and Hispanics were about 30 percent.

Figure IV-6



Trip Characteristics

Passengers were asked to provide information about the individual trip they were making on Summit Stage. Passengers were asked to provide this information each time they were on a run that was sampled.

Trip purposes are shown in Figure IV-7. The primary trip purpose was for work. Most trip purposes were reduced as a percentage from October to January, primarily because of the addition of ski trips in January. The exception was shopping trips which increased from October to January as a percentage of all trips. Passengers were also asked to indicate the purpose for most often riding the bus. These responses are shown in Figure IV-8. The responses show a similar pattern to that found for the specific purpose of the individual trip.

Figure IV-7

Trip Purposes

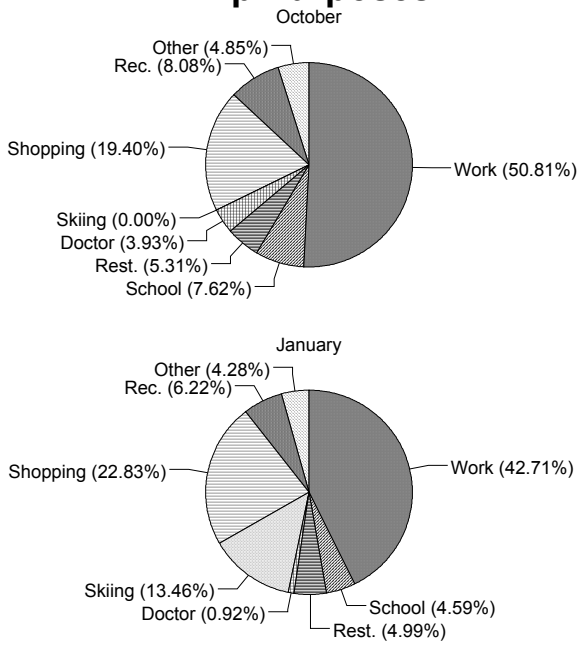
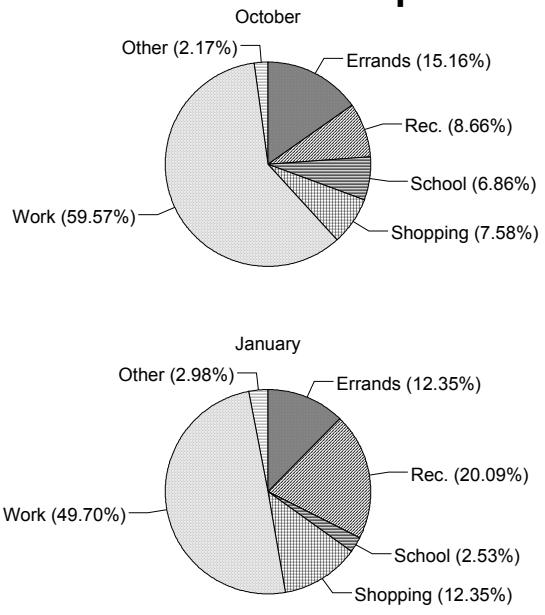


Figure IV-8

Most Common Purpose



The vast majority of passengers (85 percent) walked to and from the bus. An additional 7 to 10 percent transferred to or from other buses.

Passengers were asked to indicate trip origins and destinations so that travel patterns might be assessed. Table IV-1 shows the trip origin-destination matrix for October, and Table IV-2 shows the trip origin-destination matrix for January. The primary origin-destination pairs are Breckenridge-Frisco and Frisco-Silverthorne. In January, Frisco-Copper Mountain was the highest origin-destination pair.

Passengers were also asked to indicate the amount of time it typically takes them to get from their actual origin to the bus stop and the amount of time from the bus stop to their final destination. The average time to get to a bus stop was 10.8 minutes in October and 8.0 minutes in January. The average time to get from the bus stop to their final destination was 14.6 minutes in October and 11.3 minutes in January. These time differences may reflect the larger number of passengers and particularly visitors who are closer to a bus stop during the high visitor season. These times are longer than nationwide typical times, which are usually around five minutes.

Table IV-1
October Origin-Destination Matrix

From	To							
	Breckenridge	Copper Mountain	Dillon	Dillon Valley	Frisco	Silverthorne	Keystone	Wildernest
Breckenridge	9%	1%	1%	1%	9%	4%	1%	1%
Copper Mountain					1%			
Dillon	2%		1%		1%	2%	1%	
Dillon Valley	1%	1%	1%	1%	1%	1%	3%	
Frisco	9%	2%	2%	1%	2%	5%	1%	1%
Silverthorne	2%	1%	3%	1%	7%	3%	3%	1%
Keystone	1%		1%	1%	1%			
Wildernest	1%		1%		1%	2%	1%	1%

Source: LSC, 2003
Note: Blank cells indicate less than 1%

Table IV-2
January Origin-Destination Matrix

From	To								
	Breckenridge	Copper Mountain	Dillon	Dillon Valley	Frisco	Silverthorne	Keystone	Wildernest	A-Basin
Breckenridge	4%	1%	1%		9%	3%		1%	
Copper Mountain	1%	1%	1%		10%	2%			
Dillon	1%		1%		1%	1%	4%		
Dillon Valley			1%		1%	1%	2%		
Frisco	5%	7%	1%		1%	4%	1%	1%	
Silverthorne	3%	4%		1%	2%	1%	3%	1%	1%
Keystone			2%	1%	1%	3%	1%	1%	
Wildernest	2%	1%			1%	2%	1%		
A-Basin									

Source: LSC, 2003
Note: Blank cells indicate less than 1%

Perceptions about Summit Stage

Passengers were asked to rate the quality of service provided by Summit Stage. The responses were poor, fair, good, and very good. Each was given a numerical value from one to four, and the average response was then calculated for each attribute. The middle point of responses would be 2.5, so an average score of 3.0 or higher would indicate positive perceptions for that particular attribute. The responses for both October and January are shown in Table IV-3.

Table IV-3
Quality of Service

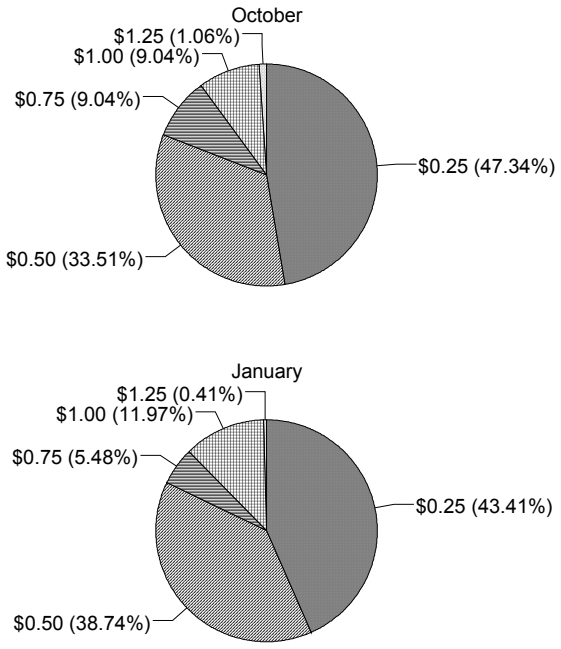
Attribute	October Score	January Score
Service Frequency	3.4	3.3
Condition of Buses	3.3	3.5
Transfer Convenience	3.5	3.3
Schedule Reliability	3.4	3.4
Driver Courtesy	3.4	3.4
Driver Competence	3.5	3.5
Bus Routes	3.3	3.1
Bus Stop Safety	3.5	3.4
Overall Quality (average of the above)	3.4	3.4

All characteristics of Summit Stage scored positively. There were some differences between October and January, possibly reflecting the difference in passengers, but the differences are not significant.

Passengers were also asked to indicate their willingness to ride if a fare was charged and what would be a reasonable fare. In October, 64 percent said they would continue to ride if a fare was charged, and in January the response was 62 percent. The responses to the amount of a reasonable fare are shown in Figure IV-9.

Figure IV-9

Reasonable Fare



Additional Comments

Passengers were given the opportunity to include additional comments regarding Summit Stage service. The actual comments are included in Appendix C. Many of the comments were very positive about the service. There are some specific comments about changes in service which were included in the development of service options. Among the Spanish responses, there were a number of comments about drivers being unfriendly or unhelpful. This may indicate a need to emphasize assistance for non-English speaking passengers.

Because there were a number of comments from Spanish respondents regarding drivers, the rating of driver courtesy among this group was looked at separately. The average response among Spanish response was 3.3 compared to 3.5 for English responses and 3.4 overall. Although there were written comments, the overall response from Spanish respondents was still positive.