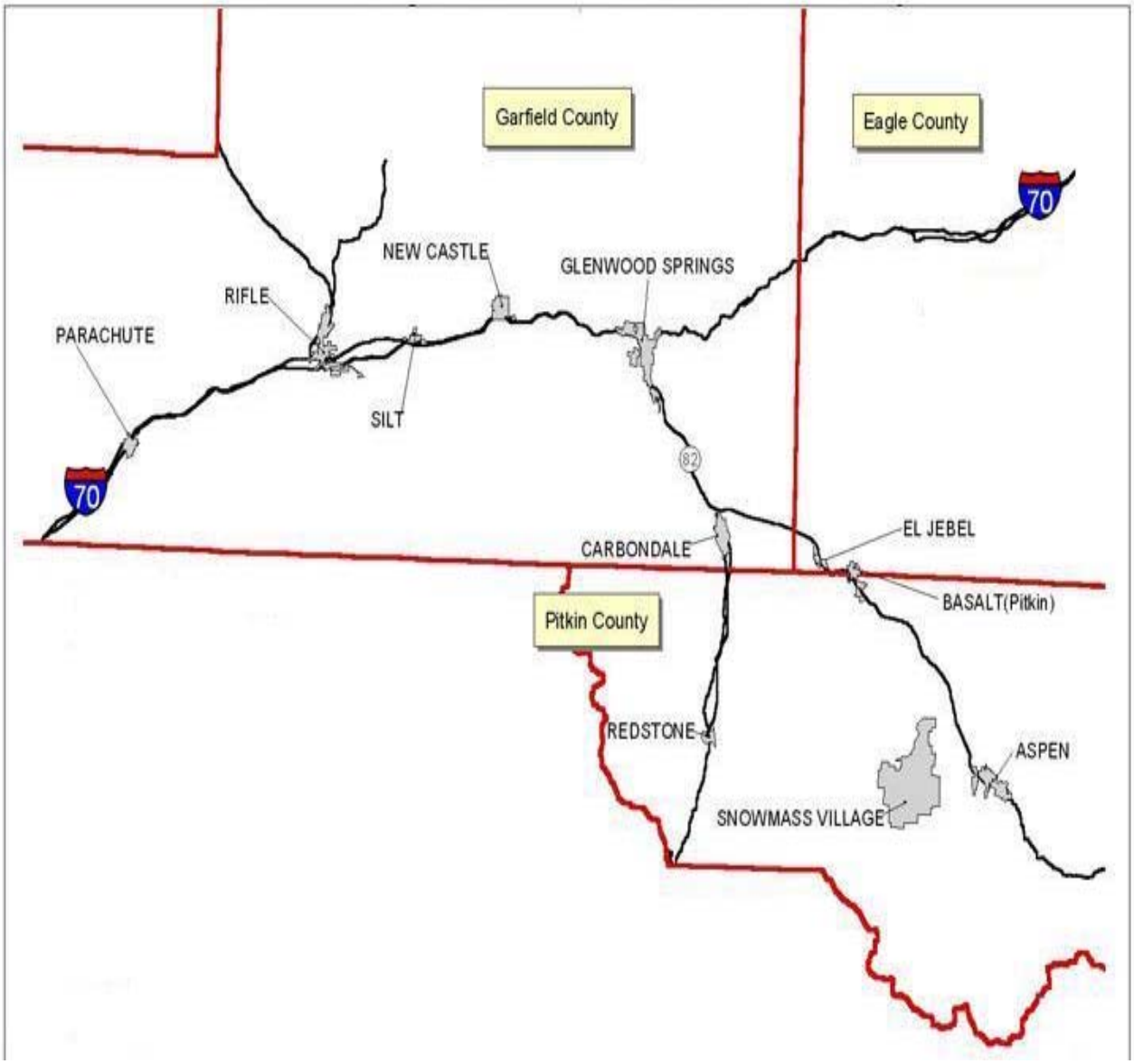
Local and Regional Travel Patterns Study



1998

Healthy Mountain Communities

CHAPTER 1.
PURPOSE AND METHODOLOGY

This report provides facts and data for use in transportation planning for the study area (depicted on the cover) from Parachute to Aspen. For simplicity, this area will be referred to as the "Roaring Fork" region even though a significant portion is actually in the Grand Valley.

Transportation planning -- planning for the mobility and access needs of residents, commuters and visitors -- benefits from accurate data about the real world travel market. Every region and every town has a population with different travel needs and different travel behavior. Market research provides a description of the travel behavior and other characteristics of the population that give rise to the traffic observed on the roadways as well as to other travel patterns (e.g., transit ridership). An assessment of travel patterns data provides a factual basis for planning that improves the probability that programs and projects will have their intended benefits.

One specific intended purpose of this study is to provide accurate data for use in the corridor investment study being conducted by the Colorado Department of Transportation (CDOT) for the SH 82 corridor from near Aspen to Glenwood Springs.

The primary data sources for this report were two surveys administered during January and February, 1998: an employee survey and an employer survey. The employee survey was made available to employees throughout the study area through their employers and then mailed back postage-paid. About 3,000 of these surveys were distributed, of which about 500 were returned -- a 17% response rate. Figure 1.1 on the next page compares the distribution of responses (by residence) with the distribution of the estimated population in the study area. The distribution of responses is quite close to the underlying population distribution; no significant geographic bias is present in the data. (Figure 1.2 shows where the respondents to the survey work.)

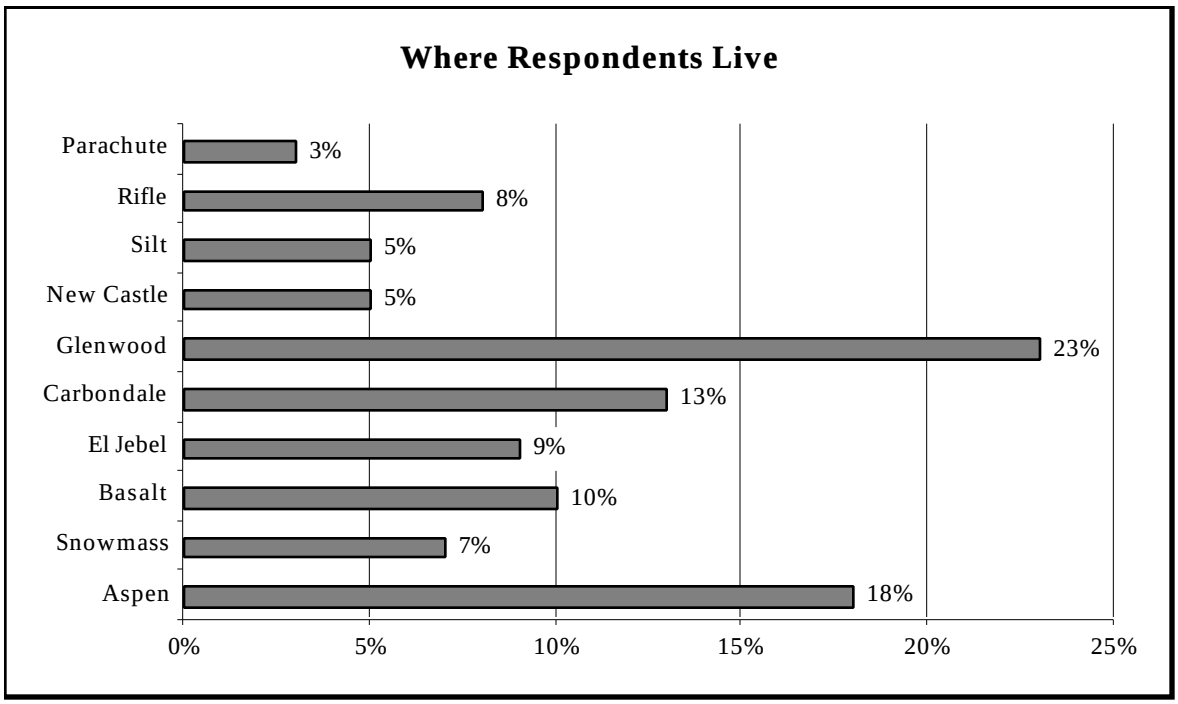
The sampling approach to data development achieves substantial cost savings without a significant loss in accuracy. About 400 responses were needed to ensure a high degree of confidence in the results at a regional scale. With 500 responses the study exceeded its original objective. The degree of confidence for data disaggregated to the community level is lower, of course, but still within acceptable limits. Attempting to obtain responses from every household in the study area would have been impractical and extremely expensive. By sampling the population a reliable result is obtained at much lower cost.

The employer survey was provided to 200 employers. Fully 96 responses were received -- a 48% response rate. This high rate was achieved in part by aggressive communication and follow-up with employers. The distribution of employer responses is shown in Figure 1.2.

A large amount of data is available from the two surveys. This data has been printed in tabular form in a companion "Appendices" document available from Healthy Mountain Communities staff.

This Volume I of the Final Report of the Local and Regional Travel Patterns Study describes current travel behavior and mode shift opportunities. Volume II provides forecasts of future travel and traffic based on potential buildout land uses in the study area.

FIGURE 1.1


Where Respondents Live
Parachute
Rifle
Silt
New Castle
Glenwood
Carbondale
El Jebel
Basalt
Snowmass
Aspen
3%
8%
5%
5%
23%
13%
9%
10%
7%
18%
0%
5%
10%
15%
20%
25%

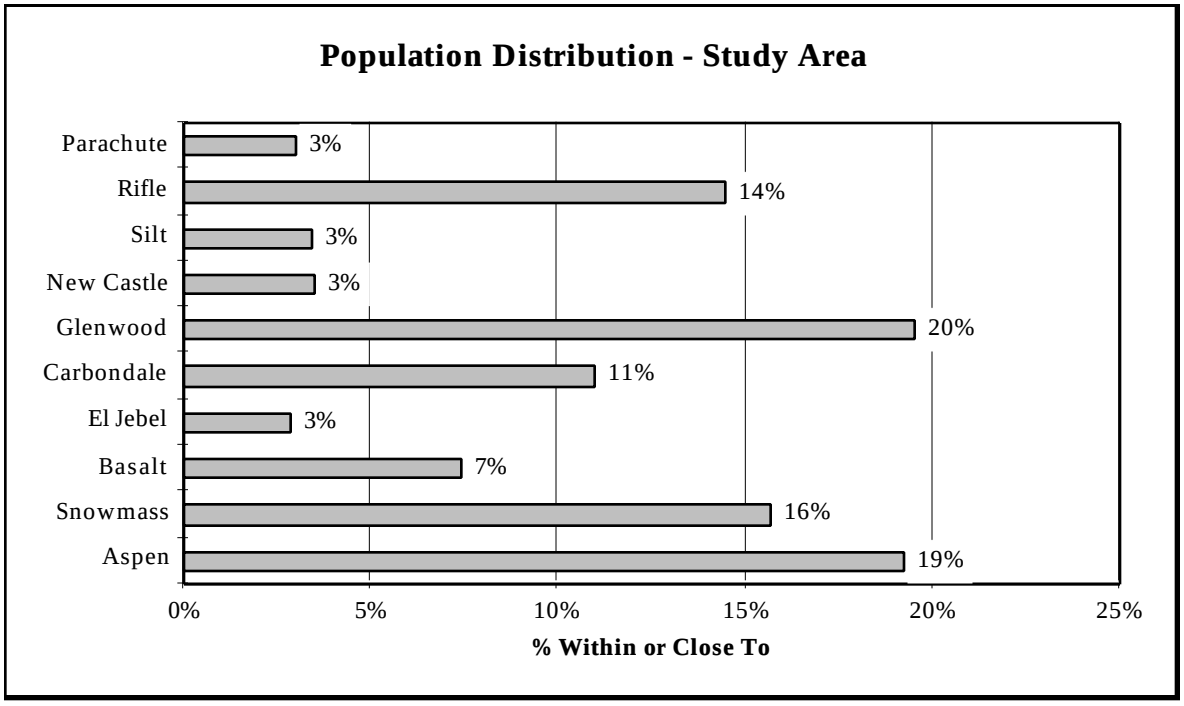
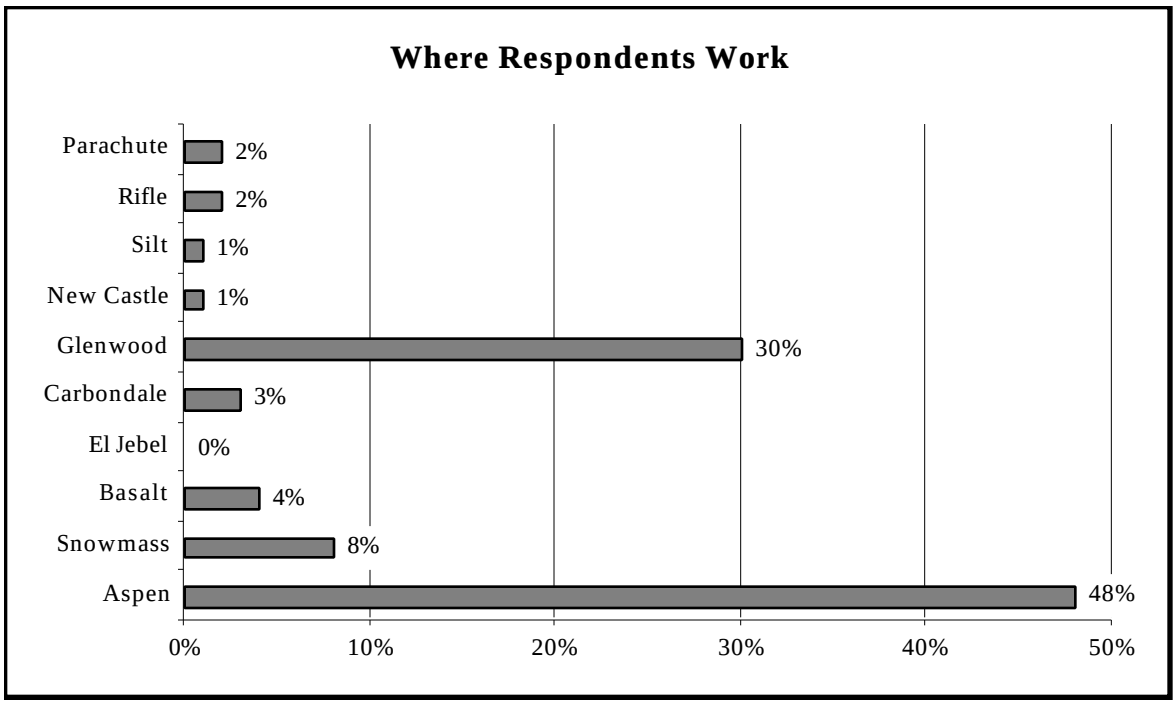
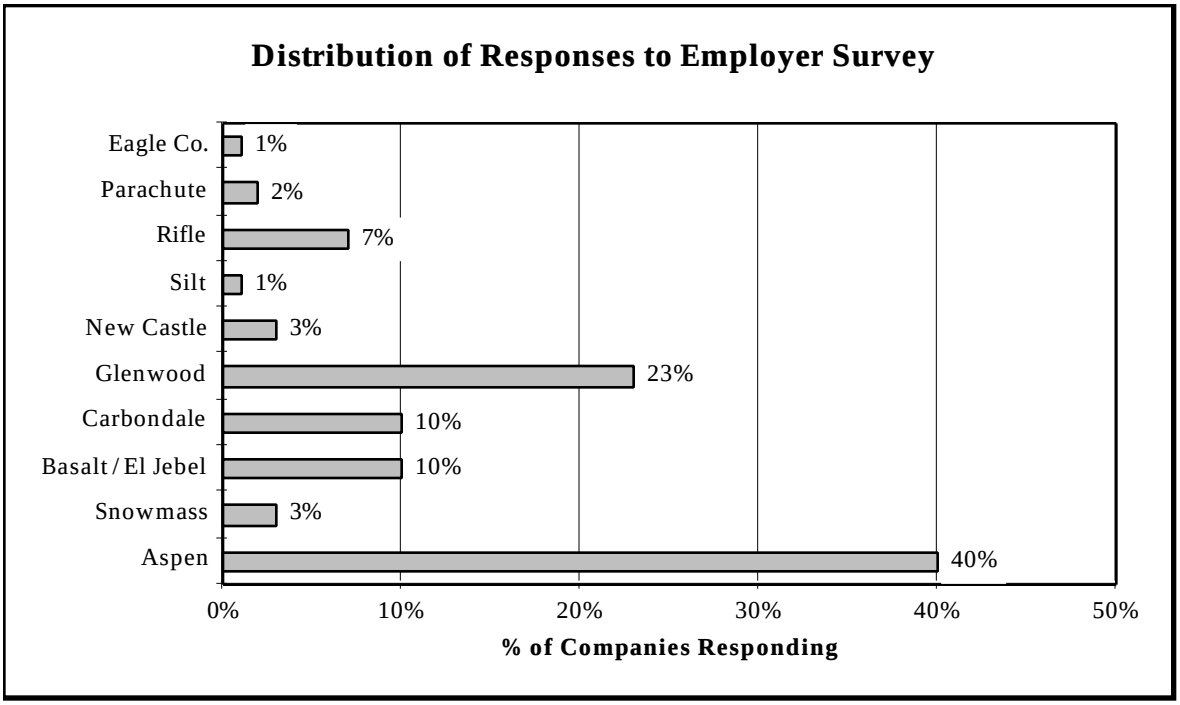

Population Distribution - Study Area
Parachute
Rifle
Silt
New Castle
Glenwood
Carbondale
El Jebel
Basalt
Snowmass
Aspen
3%
14%
3%
3%
20%
11%
3%
7%
16%
19%
0%
5%
10%
15%
20%
25%
% Within or Close To

FIGURE 1.2


Where Respondents Work
Parachute 2%
Rifle 2%
Silt 1%
New Castle 1%
Glenwood 30%
Carbondale 3%
El Jebel 0%
Basalt 4%
Snowmass 8%
Aspen 48%
0%
10%
20%
30%
40%
50%


Distribution of Responses to Employer Survey
Eagle Co. 1%
Parachute 2%
Rifle 7%
Silt 1%
New Castle 3%
Glenwood 23%
Carbondale 10%
Basalt / El Jebel 10%
Snowmass 3%
Aspen 40%
0%
10%
20%
30%
40%
50%
% of Companies Responding

CHAPTER 2.
CURRENT TRAVEL PATTERNS & RELATIONSHIPS

This chapter describes the travel behavior of commuters and residents in the study area. The figures and text present current travel characteristics based primarily on the employee survey.

Sections and topics covered are as follows:

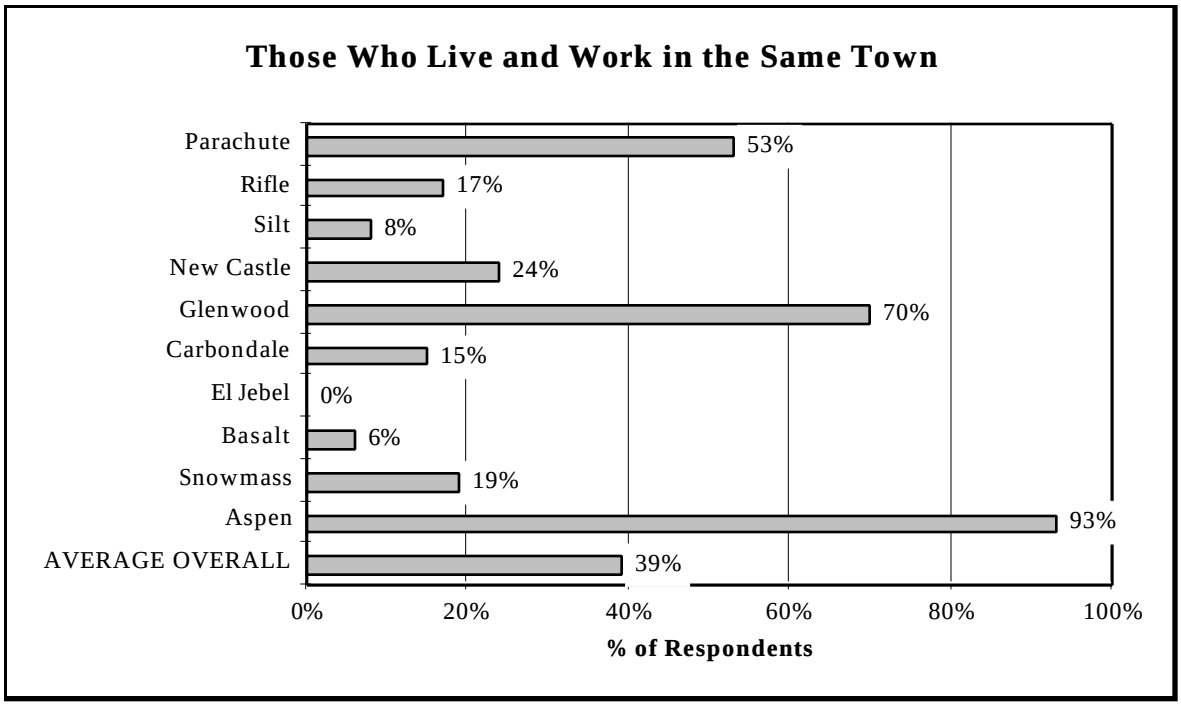
Most of the data presented on following pages is summarized by place of residence of the respondents. However, both place of residence and place of work relationships were captured in the survey database. Those readers in exploring the travel patterns based on where people work can find that data in the companion Appendices document available from Healthy Mountain Communties staff.

Live - Work Patterns

More than half of the people holding jobs in the study area live and work in different towns. Only about 39% live in the same town where they work.

The percentage of people who live and work in the same town is highest for Aspen, Glenwood Springs and Parachute, and is low in Silt, El Jebel and Basalt. This reflects the roles these communities play in the region, with some serving as employment centers and others serving as residential communities. However, this also affects the extent to which people are dependent on driving to reach their jobs.

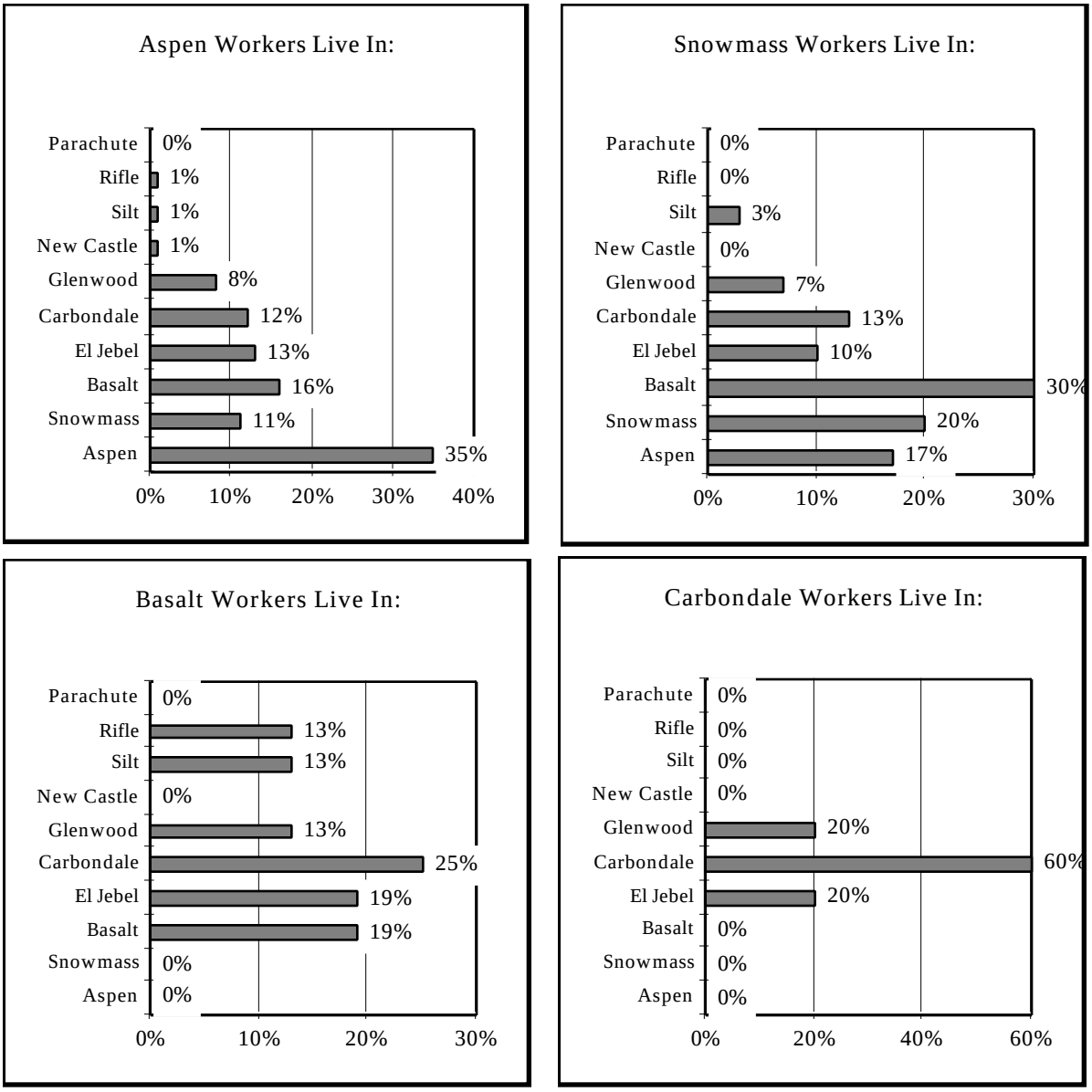
FIGURE 2.1



The percentage of the employees in each of the study area communities who live within the same community is shown for each town in Figure 2.2 on the next two pages. This data looks at the issue a slightly different way than Figure 2.1: of the people working in a given place, what percentage also live there?

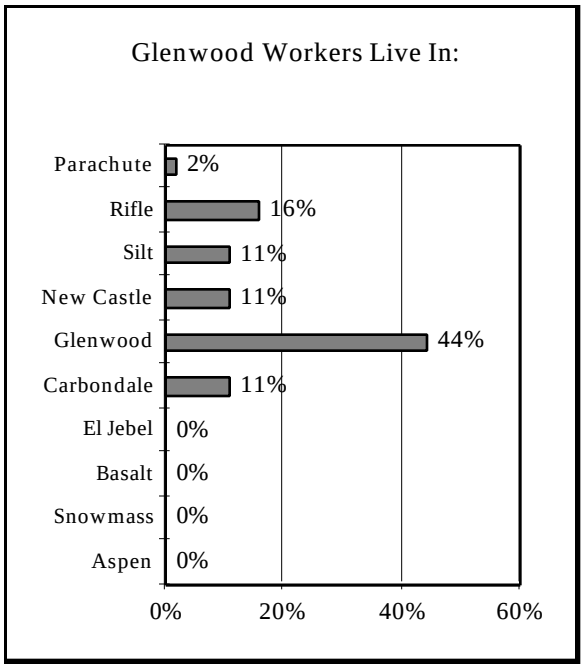
On this statistic, the smaller communities tend to fare better: Parachute, Silt, New Castle and Carbondale import a lower percentage of their workers than do the larger employment centers like Aspen and Glenwood Springs.

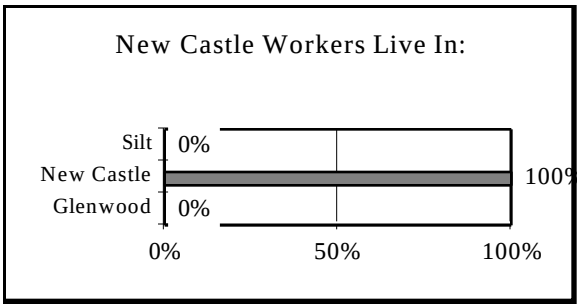
FIGURE 2.2

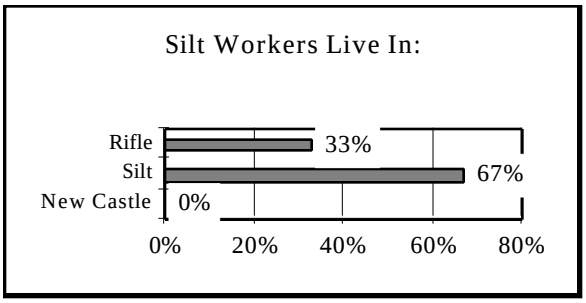


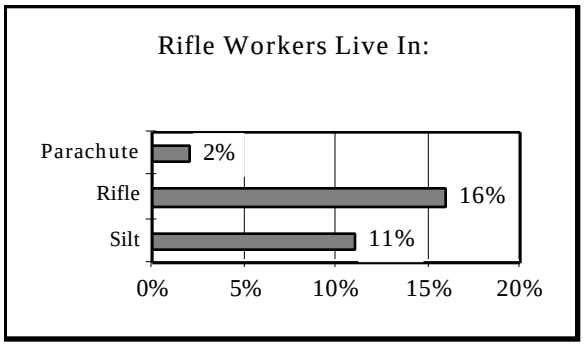
The data suggests that a two-fold strategy of increasing employment in the smaller communities while increasing affordable housing in the larger cities could have some impact on the amount of commuting (and resulting traffic) between the towns on SH 82 and I-70.

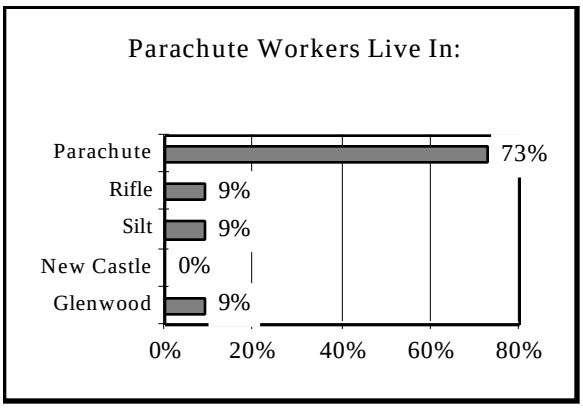
FIGURE 2.2 cont.









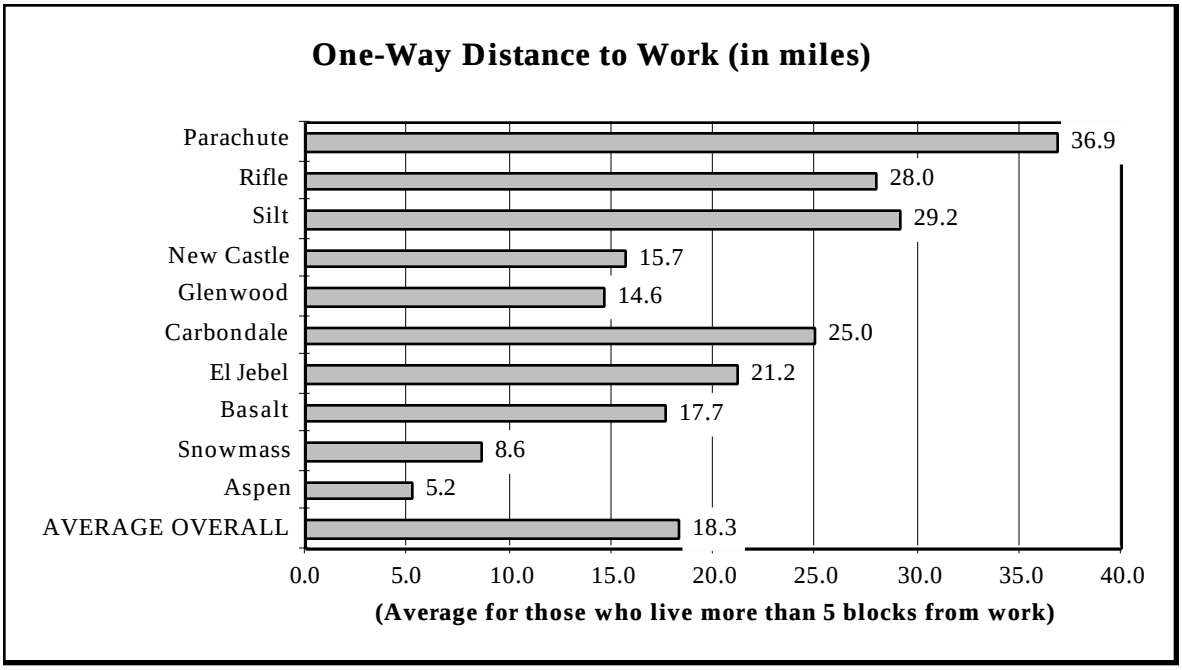


The amount of inter-community commuting occurring in the study area has an impact on the cost of living for families and households. Figure 2.3 on the next page shows how far people are driving to get to work. This data applies only to those who live five blocks or more from their jobs. (Commuters living within five blocks were subtracted out before these percentages were computed).

Using a cost of auto travel of 45¢ per mile and taking into account average occupancies (about 1.3 people per car), the commute is costing the average household (2.1 jobholders) about $7,000 annually - about 13% of household income. (Note - this is the cost of commuting only. The total cost of travel is typically at least twice this much.)

Parachute households are spending over $14,000 - about 28% of household income - to get to work.

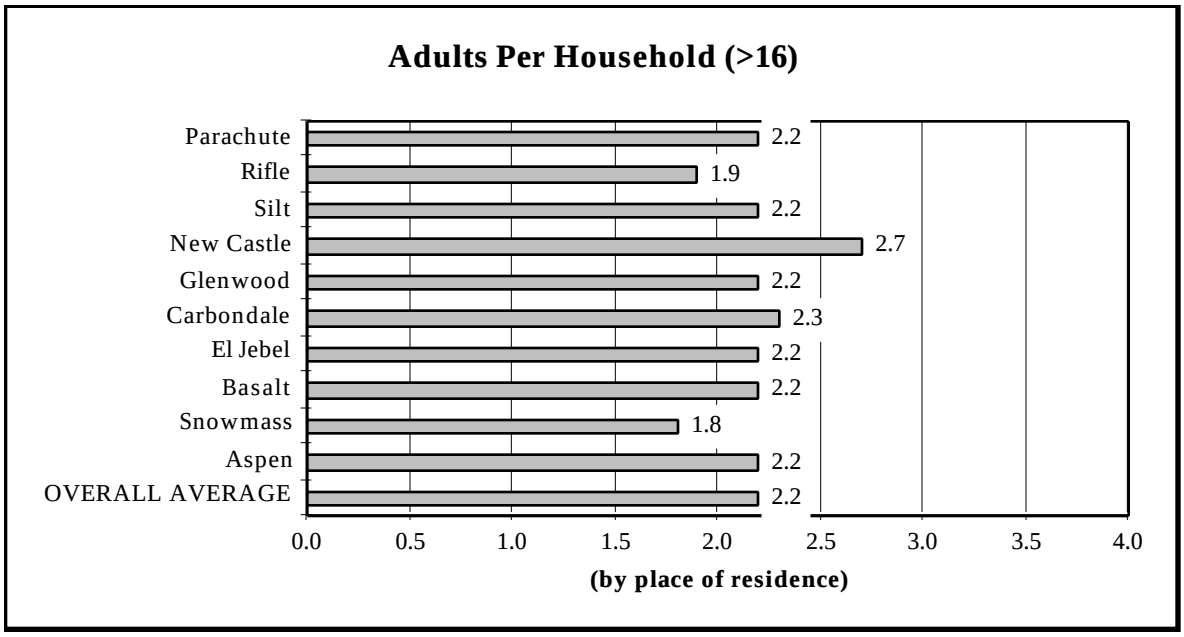
FIGURE 2.3



Employment Patterns

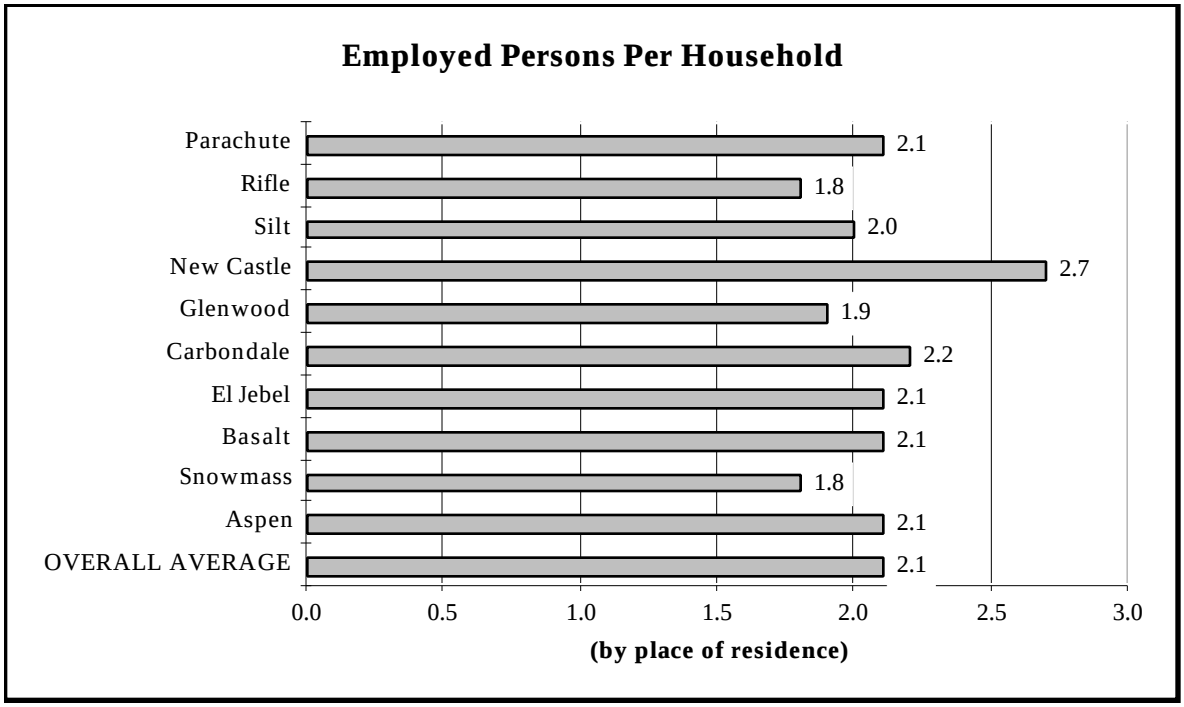
Household size varies significantly throughout the study area, from 2.0 people in Snowmass to 3.6 in New Castle. The number of adults (people >16 years of age) per household varies somewhat less, with most areas at about 2.2 adults per household. Typically, a number above 2 indicates either a high percentage of unrelated people living together or a larger number of adult children remaining at home.

FIGURE 2.4



Most, but not all, adults are employed. Figure 2.5 shows the number of employed persons per household in the study area. The differences between communities are important because they are reflected in the amount of traffic produced by households.

FIGURE 2.5



The percentage of adults who hold jobs is the "labor force participation rate" (LFP rate) which ranges in this study area from 95% to 100% with the exception of Silt and Glenwood Springs. (See Figure 2.6 on the next page.) The relatively low LFP rate in those communities may reflect some combination of a higher percentage of families with "homemakers" staying home with children and/or a higher percentage of retired family members.

The conventional wisdom on this subject is that many people in the Roaring Fork are holding multiple jobs and that is borne out to some degree in the survey (see Figure 2.7). About 15% of respondents hold both a full time and a part time job, while 4% hold more than one part time job. About 75% hold one full time job, a figure that is consistent with other mountain towns in Colorado.

About 90% of workers in the study area work weekdays or weekdays and weekends. Only 7% work variable schedules -- a lower percentage than is normally reported for more urban areas.

FIGURE 2.6

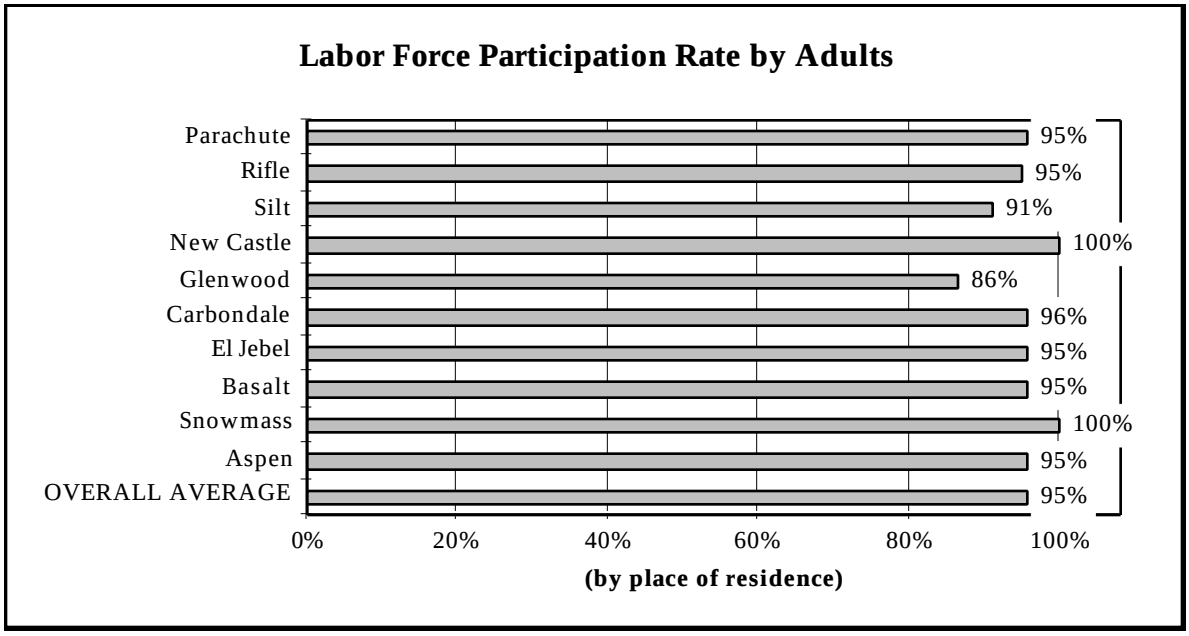
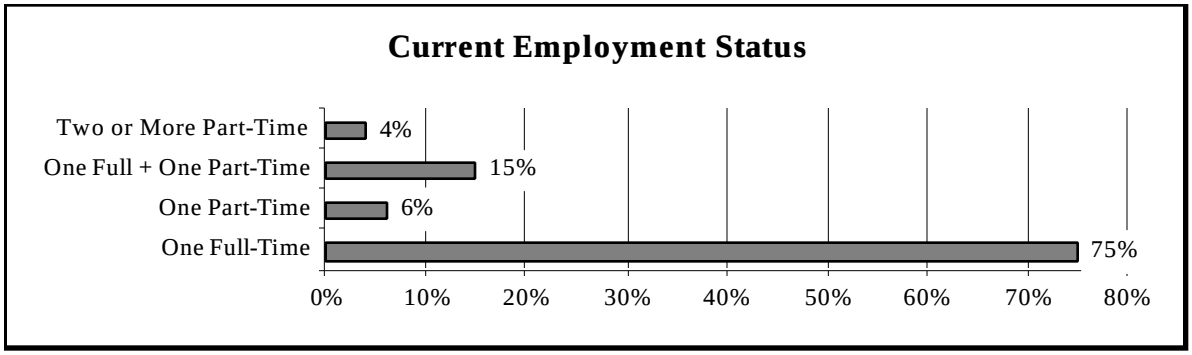
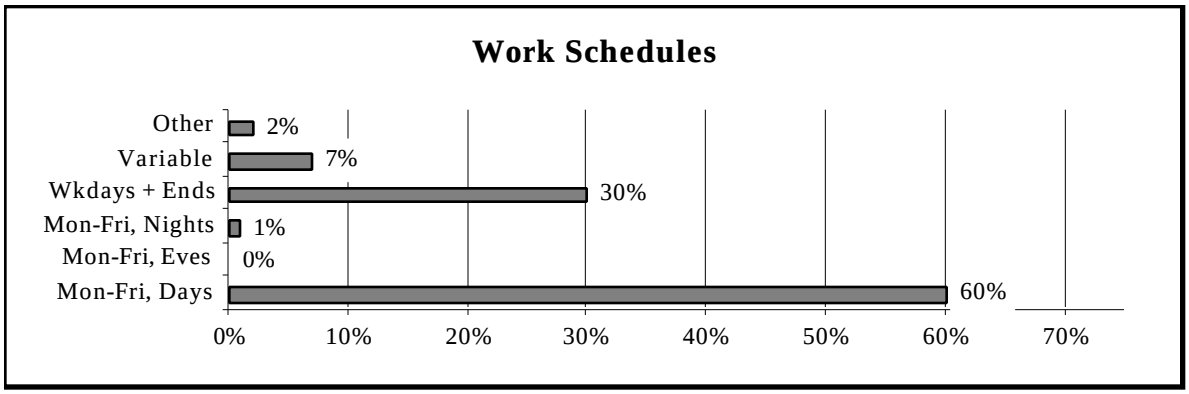


FIGURE 2.7

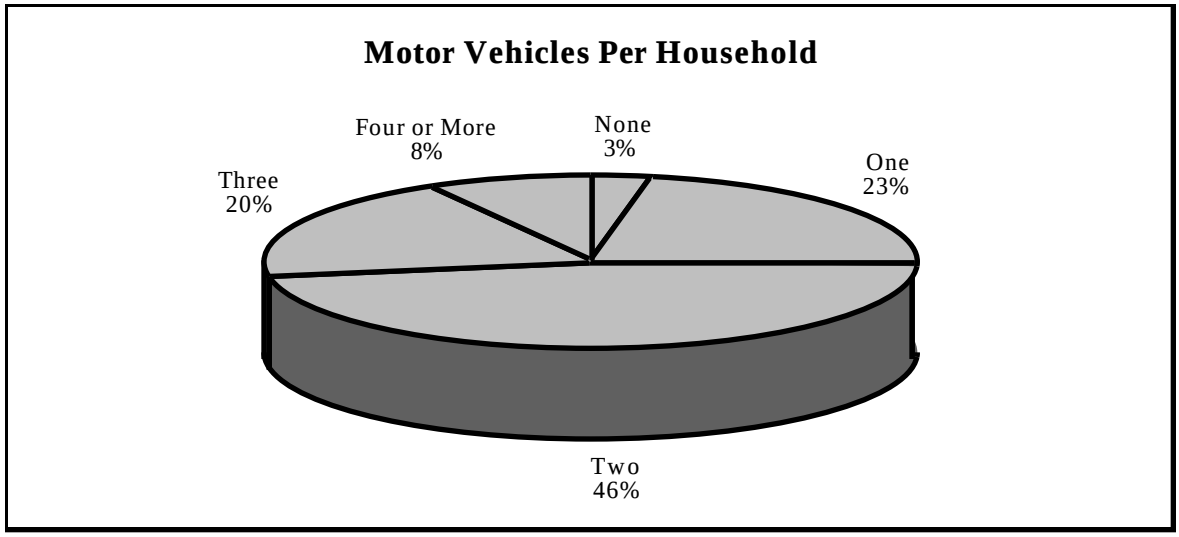


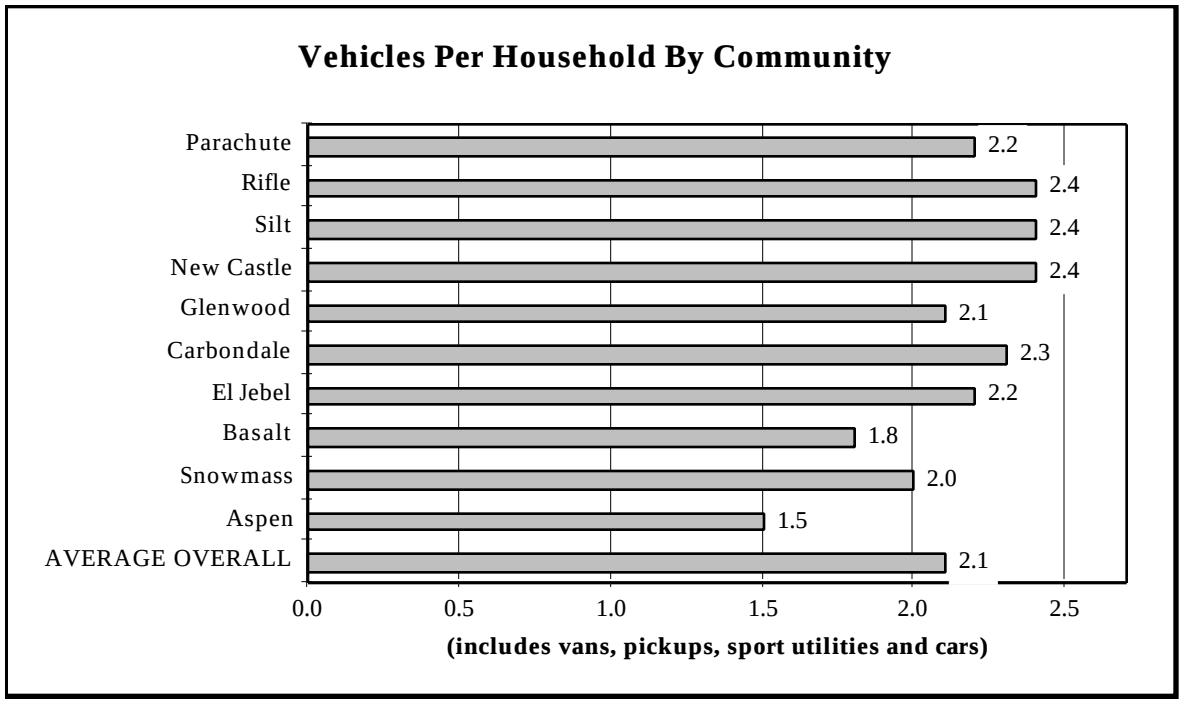


Vehicle Ownership

Few households in the study area get by with one vehicle. Nearly half own two vehicles and over a fourth of the households own three or four vehicles. (The survey defined vehicles as "passenger cars, vans and light trucks.") Vehicle ownership is lowest in Aspen and highest in the "down-valley" areas.

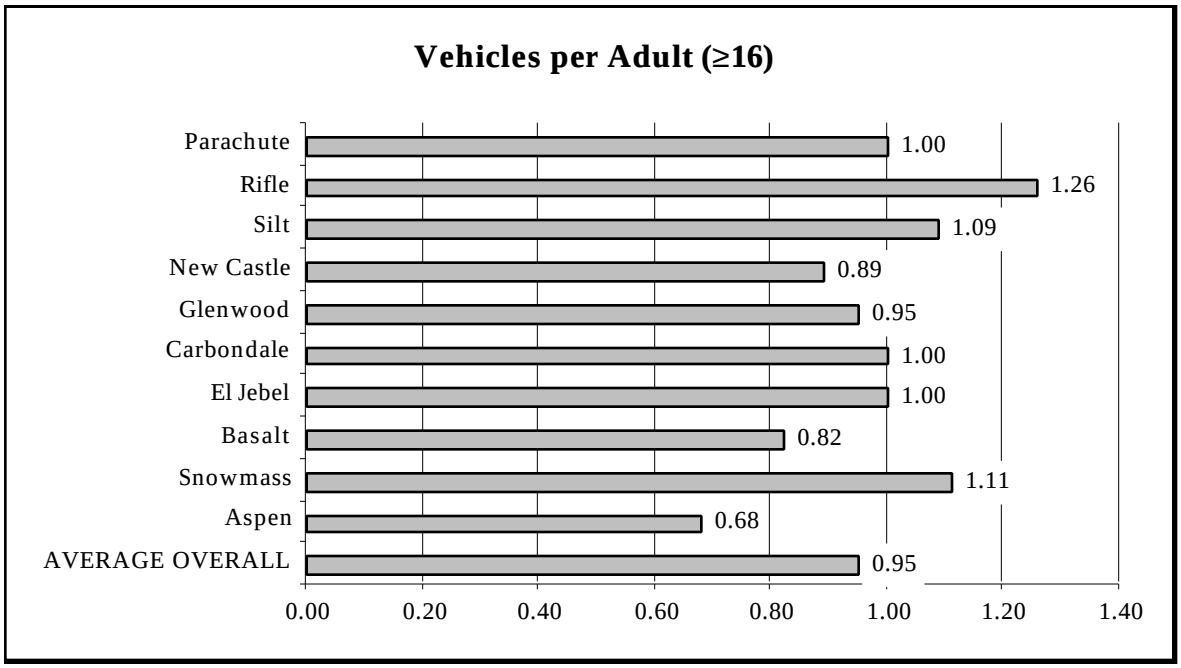
FIGURE 2.8

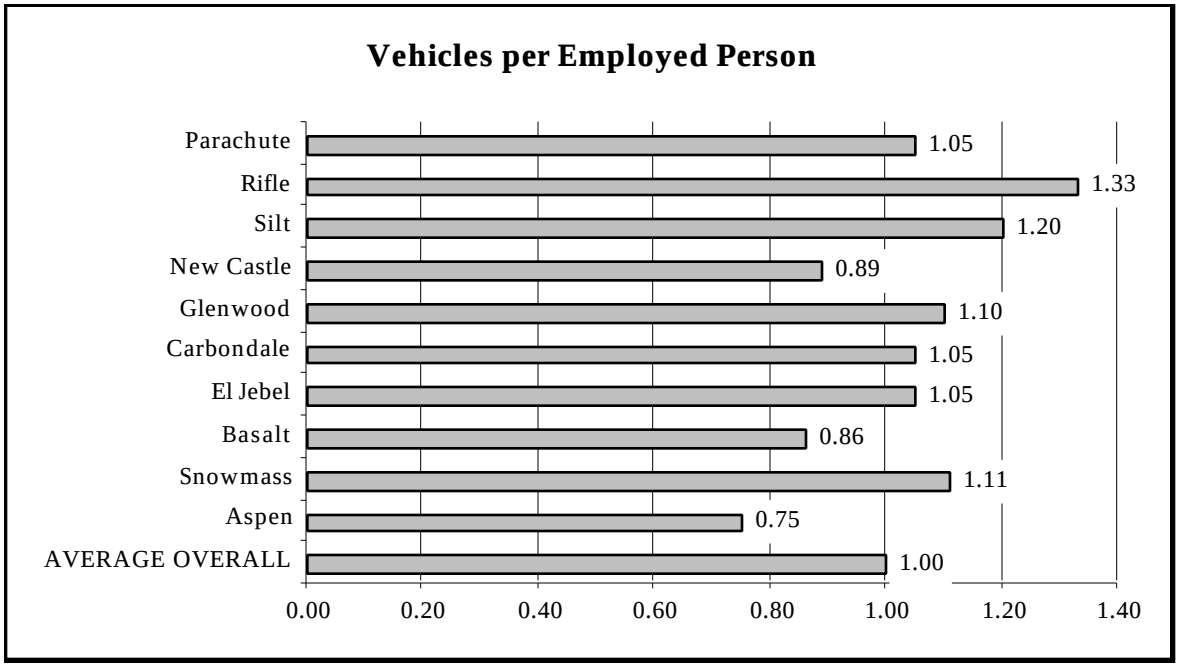




The parameter most important in determining household vehicle ownership in the study area is employment. As Figure 2.9 shows, vehicle ownership per employed person is equal to one: to hold a job in the study area, you need a car. The lowest ownership rate is in Aspen, a fact which reflects a combination of transit service, walk environment and people working closer to home.

FIGURE 2.9





Mode Choice - Commute Trips

One of the most important parameters used to describe how people travel is "mode choice" -- the mode by which people make trips. The employee survey used the following mode choice list:

-> drive alone;
-> carpool (2-4 people);
-> vanpool (5+ people);
-> bus;
-> bicycle;
-> walk;
-> hitchhike;
-> bike and take the bus; and,
-> drive to park & ride and take the bus.

Respondents were asked how many days per week they typically use each mode to get to work. Then, in a later question, they were asked how they got to work (and home again) on their most recent workday. This approach utilizes survey research techniques to develop the most accurate estimate of actual behavior. Allowing people to state how they "typically" travel provides an opportunity to resolve any innate human desire to reflect "good" or "right" behavior. Then asking them how they got to work on the most recent workday leaves them more free to report actual behavior.

The differences between Figure 2.10 and 2.11 show how people answered these questions. Figure 2.11 is a more accurate measure of actual daily commute travel behavior.

FIGURE 2.10

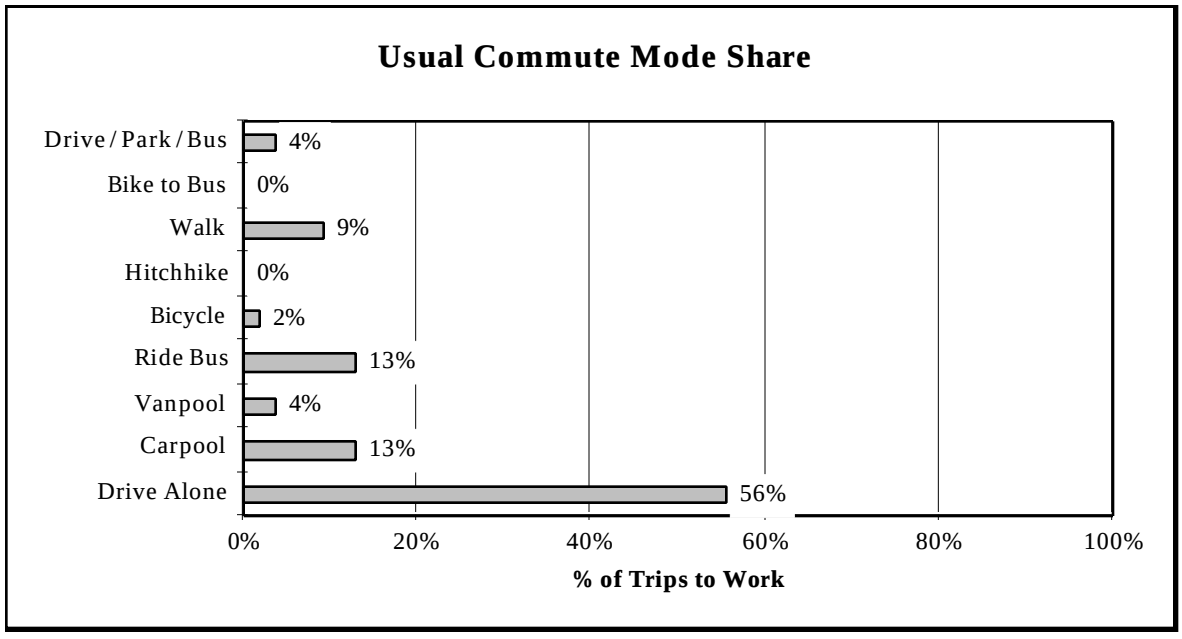
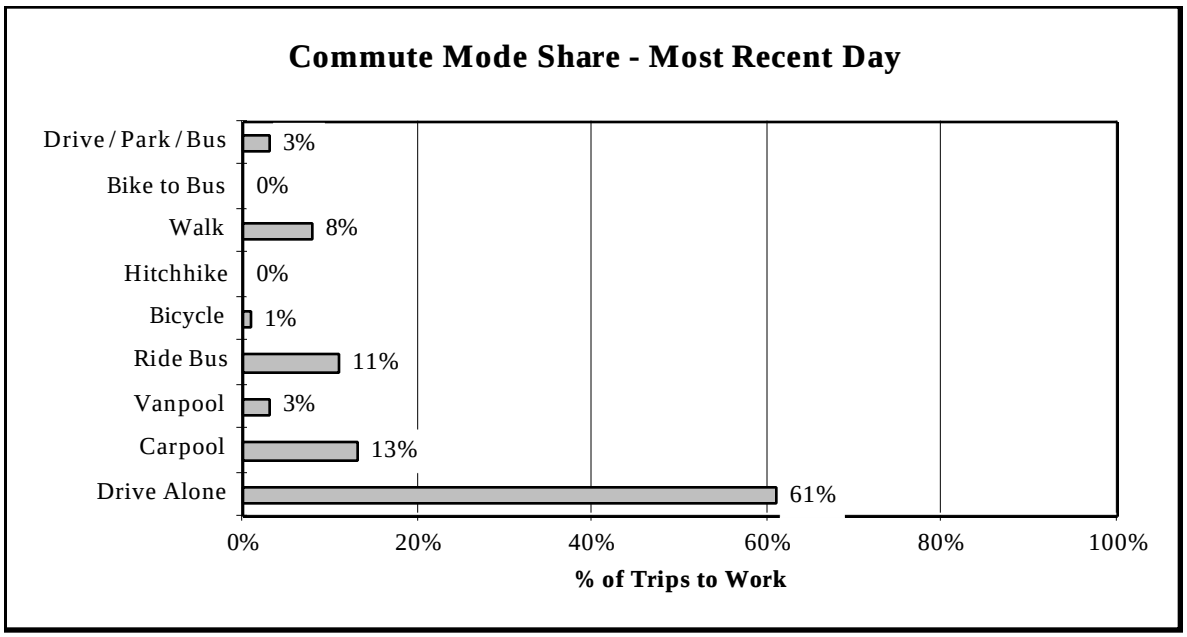


FIGURE 2.11



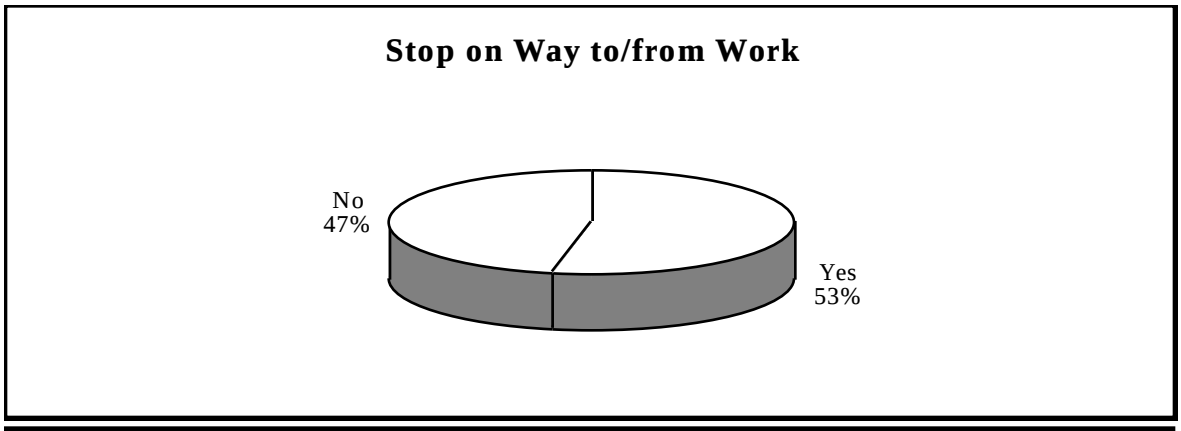
The percentage of travel by mode is typically described with the phrase, "mode share." Thus, Figure 2.11 indicates a 61% drive-alone mode share.

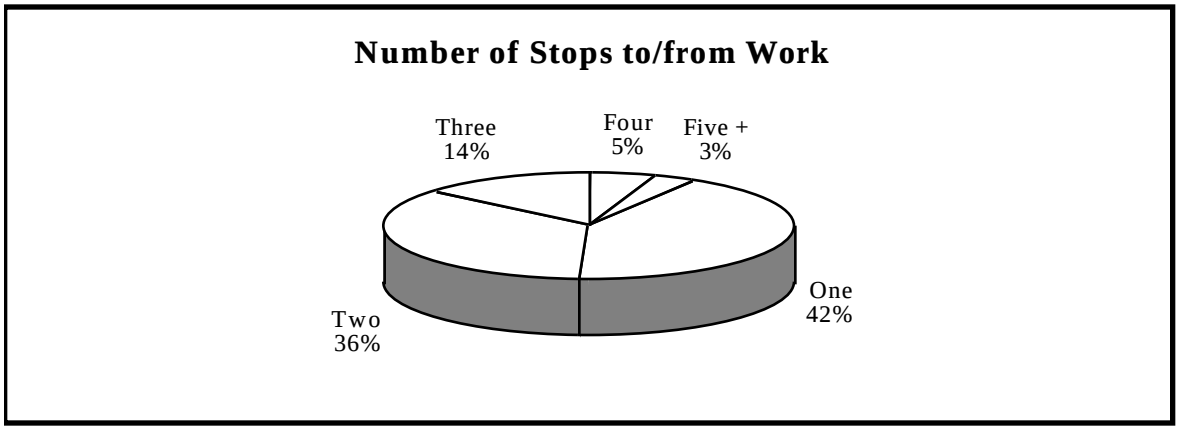
A couple of data points are significant in this figure. First, the bus mode share is unusually high. A 11% bus mode share to work (14% with park 'n ride) is at least two to three times what would normally be expected in a rural / small town regional setting. Second, the carpool / vanpool data is also relatively high (combined mode share of 16%). The average commute vehicle occupancy indicated by this data -- about 1.3 to 1.4 -- is consistent with the winter origin and destination surveys done for CDOT in 1993. This compares with commute occupancies closer to 1.05 or 1.1 typically observed in Front Range cities.

It is also important to recognize that this is winter travel behavior. Summertime responses would probably show higher walk and bike percentages. Without the Ski Company employees, the bus mode share would probably be lower. Summer drive-alone mode share would probably be similar to winter. Comparative commute mode share data for other communities is shown below.

Community:	Boulder	North Front Range	Jackson,WY	Gunnison	Crested Butte	Roaring Fork
Season / Year:	Fall '94	Spring '95	Summer '96	Winter '98	Winter '98	Winter '98
Drive-Alone	60%	83%	74%	72%	40%	61%
Carpool	10%	9%	11%	10%	1%	16%
Walk	12%	3%	6%	11%	37%	8%
Bicycle	12%	4%	8%	4%	12%	1%
Transit	6%	1%	1%	3%	10%	14%

FIGURE 2.12





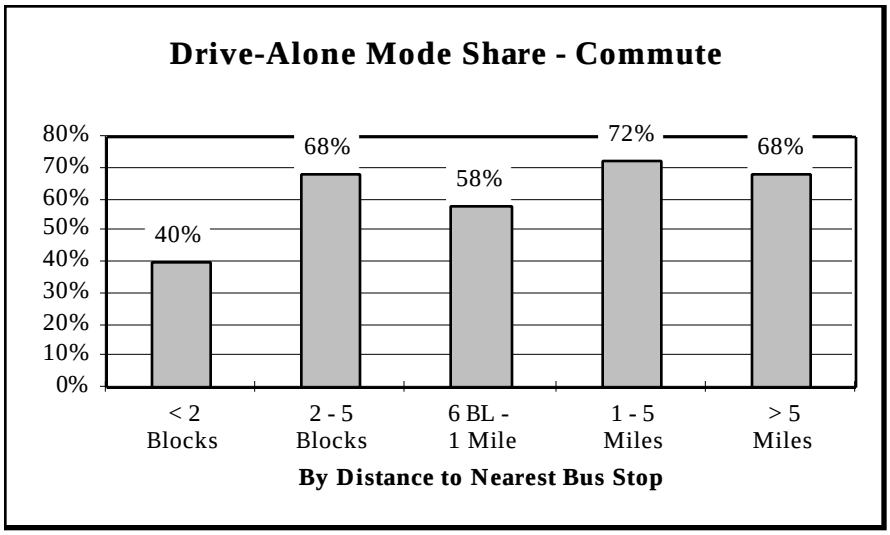
A number of factors influence commute mode choice. One of these is whether people need to run errands on the way to or from work. If so, it is harder for them to take the bus or share a ride.

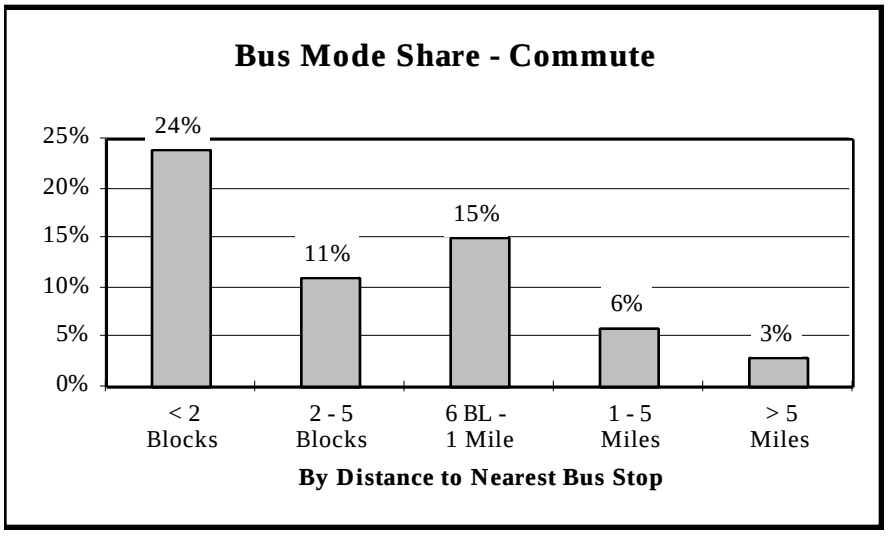
As Figure 2.12 shows, about half of the commuters in the study area make stops as part of the commute. This indicator varies somewhat geographically, from a high of 67% for commuters living in Silt and Parachute to a low of 41% for those living in Basalt and El Jebel. Fully 31% of respondents made at least two stops. This data results from a question about the "most recent workday." If people were asked the same question about the most recent "work week" the percentage answering yes would probably approach 90% or higher.

This reflects an important consideration in transportation planning: nearly everyone needs to drive at least some of the time, but most people do not need to drive every day. This has significance for the design of employer-based transportation demand management programs. Successful programs help people drive on the days they need to drive and help them take other modes on the days they do not need to drive.

Another important practical consideration in mode choice is the proximity of transit service to the home of the commuter. Transit mode share is closely related to the proximity of service, as is shown in Figure 2.12 below. Interestingly, beyond 2 blocks, the effect of bus service is not to reduce drive-alone commuting, but rather to reduce carpooling and driving to a park 'n ride.

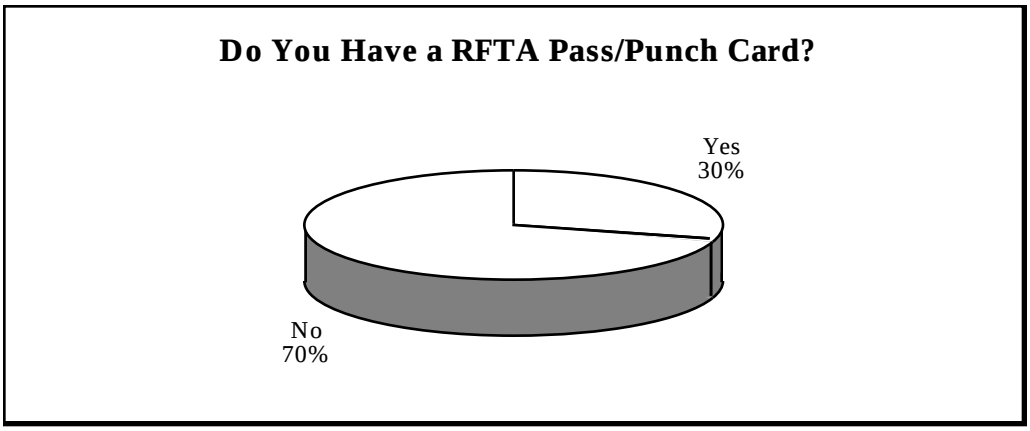
FIGURE 2.13

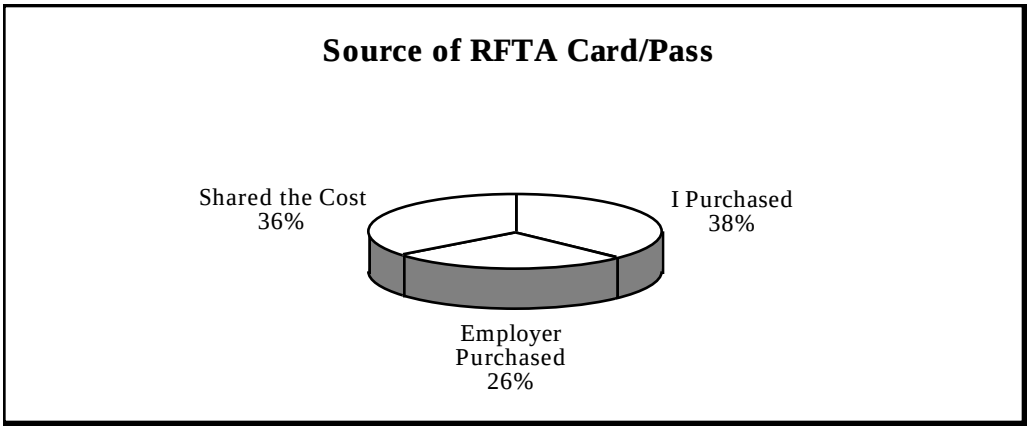




Another important factor in transit mode share is the availability of a transit pass, as shown in Figure 2.14 on the next page. Research elsewhere indicates that this relationship goes beyond the simple cost savings achieved in using a pass rather than paying cash fare. People who hold a pass are more likely to use transit even if they can easily afford to drive alone.

FIGURE 2.14


Do You Have a RFTA Pass/Punch Card?
Yes
30%
No
70%


Source of RFTA Card/Pass
Shared the Cost
36%
I Purchased
38%
Employer
Purchased
26%

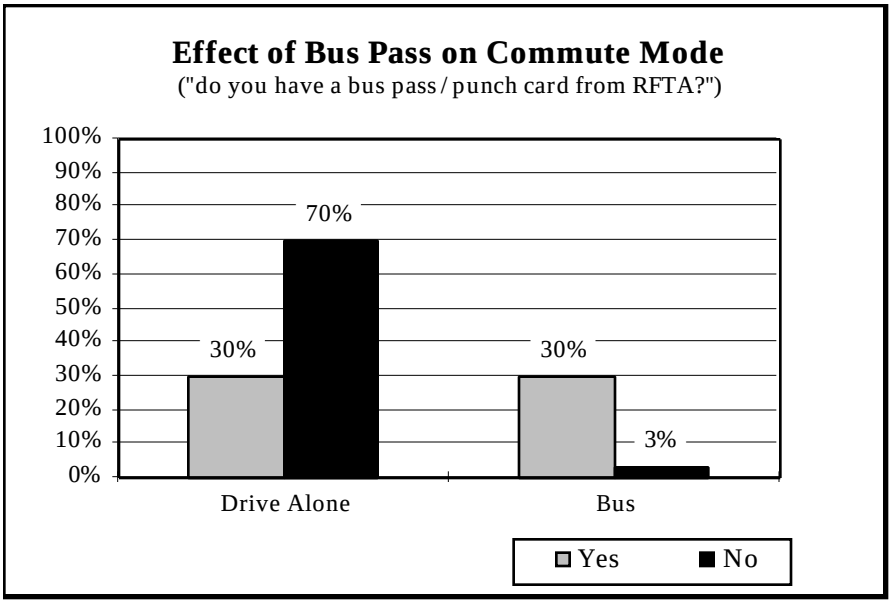
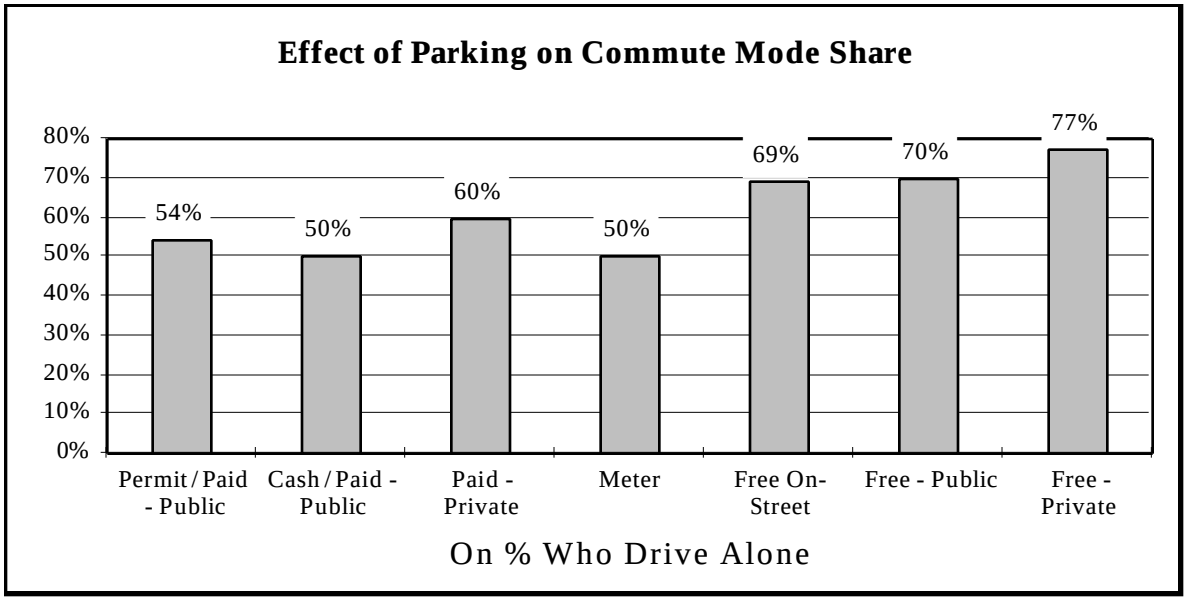
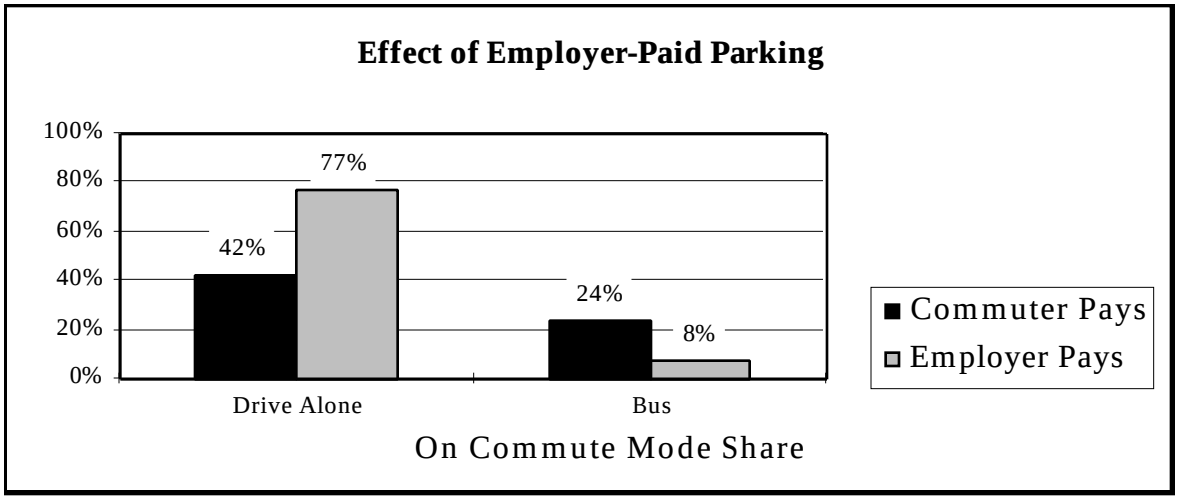

Effect of Bus Pass on Commute Mode
("do you have a bus pass / punch card from RFTA?")
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
70%
30%
30%
3%
Drive Alone
Bus
Yes
No

FIGURE 2.15





One of the most important determinants of mode choice -- especially drive-alone mode share -- is the availability of free parking. Roaring Fork commuters who are able to park in free parking spaces are 50% more likely to drive alone than are those who must pay cash to park.

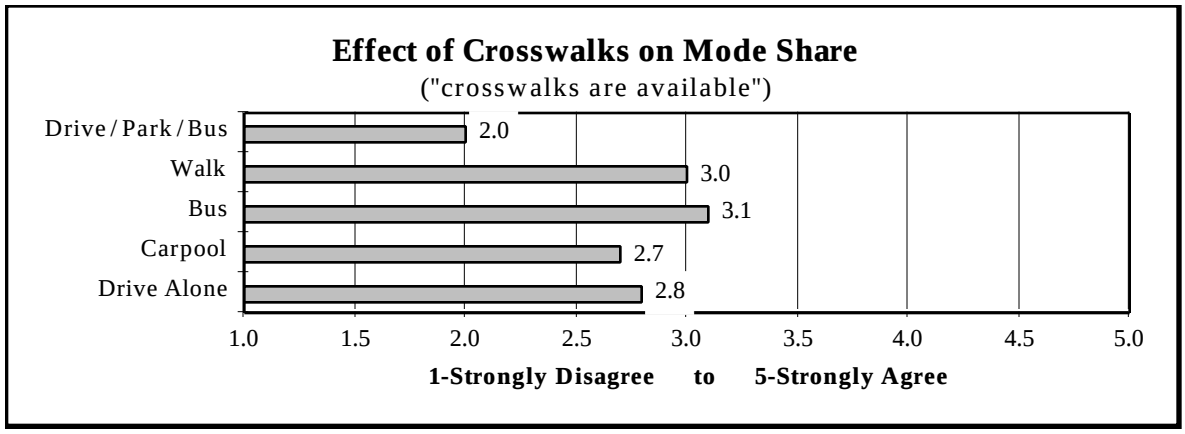
Further, of those commuters parking in paid parking areas, those who must pay for their own parking are three times more likely to take the bus than those whose employers pay for parking. Those who pay for their own parking are 43% less likely to drive alone.

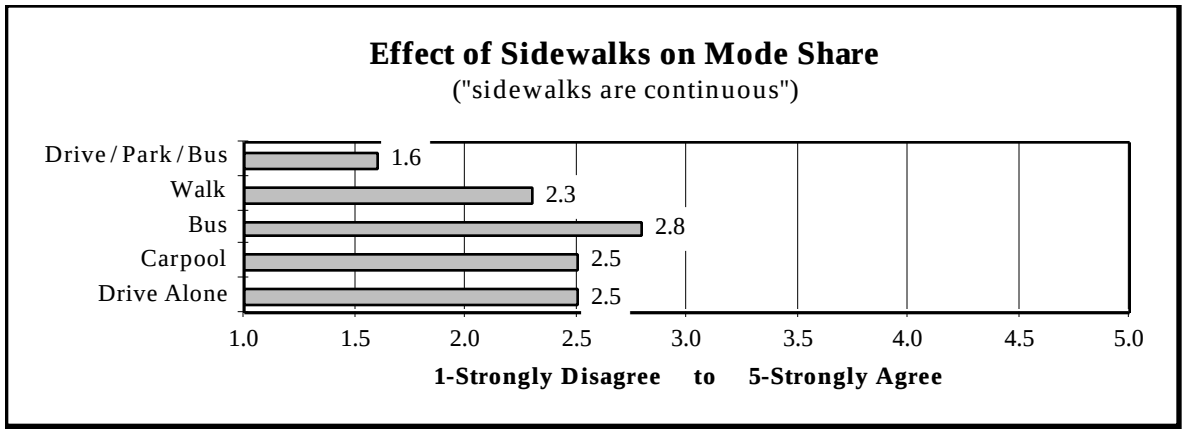
Research in other areas of the country has shown that one of the most important determinants of mode choice is the walk environment where people live. The Portland Metro Area's LUTRAQ (land use, transportation and air quality) Study conducted in the early 1990s demonstrated a clear connection between walk environment and mode choice. A good neighborhood walking environment encourages not only walking, but transit patronage as well, since at least some walking is an essential part of most transit travel.

Since the LUTRAQ Study was published, a number of other research efforts have been undertaken in many cities around the US. One thing that has emerged from this work is the need to develop locally-specific descriptors of the walk environment to use in evaluating mode choice decision making. This is not because walking is less important in some areas than in others, but because different factors discourage walking in different environments. In Portland, for example, the presence of hills or steep grades discouraged walking, while in Austin that variable plays no important role.

For this reason, this study of Roaring Fork travel behavior examined the relationships between four characteristics of the walk environment and mode choice to determine which would be the most important.

FIGURE 2.16





The four characteristics included in the survey were:

-> "Crosswalks and other street crossings are available"

-> "Sidewalks are continuous"

-> Walking environment is comfortable and pleasant"

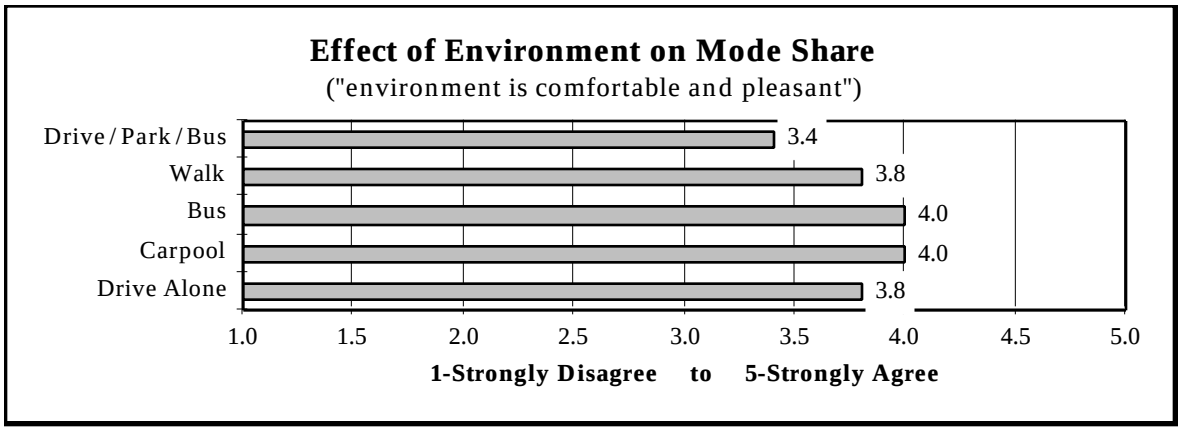
-> Walking environment is safe"

As Figures 2.16 and 2.17 indicate, the first two of these are quite important in the Roaring Fork study area; the last two are not significant at all. This data suggests a couple of conclusions:

1) the primary factors discouraging walking are physical -- the lack of sidewalks and crossings are practical barriers to transit patronage; and,

2) communities in the study area are still safe and pleasant enough that these factors do not discourage walking or transit.

FIGURE 2.17



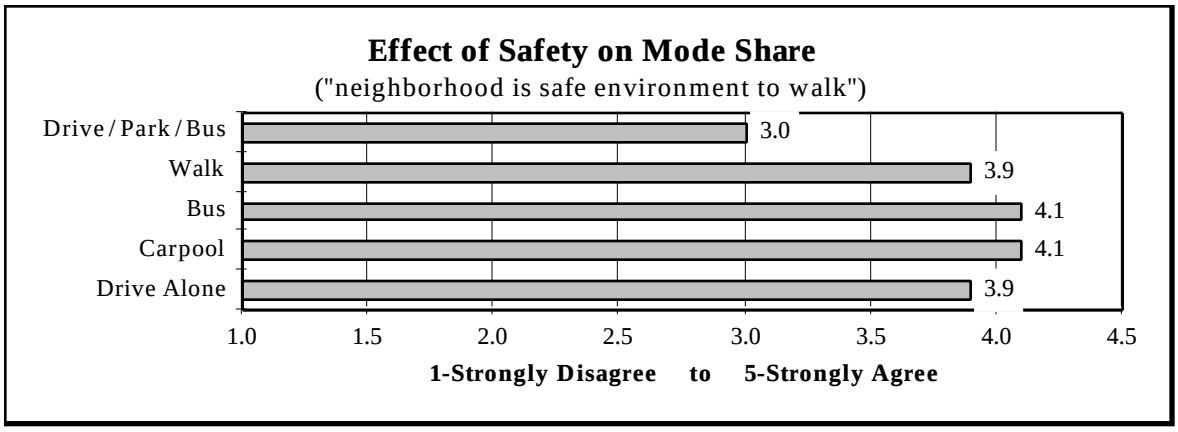
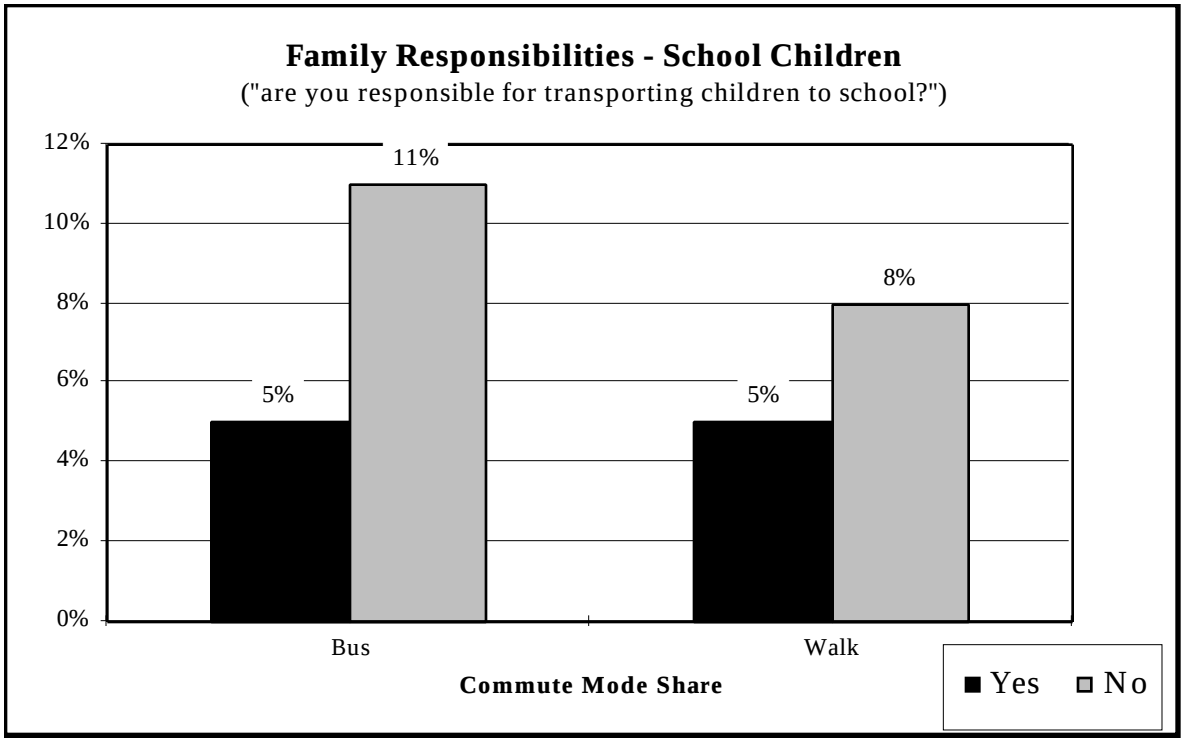
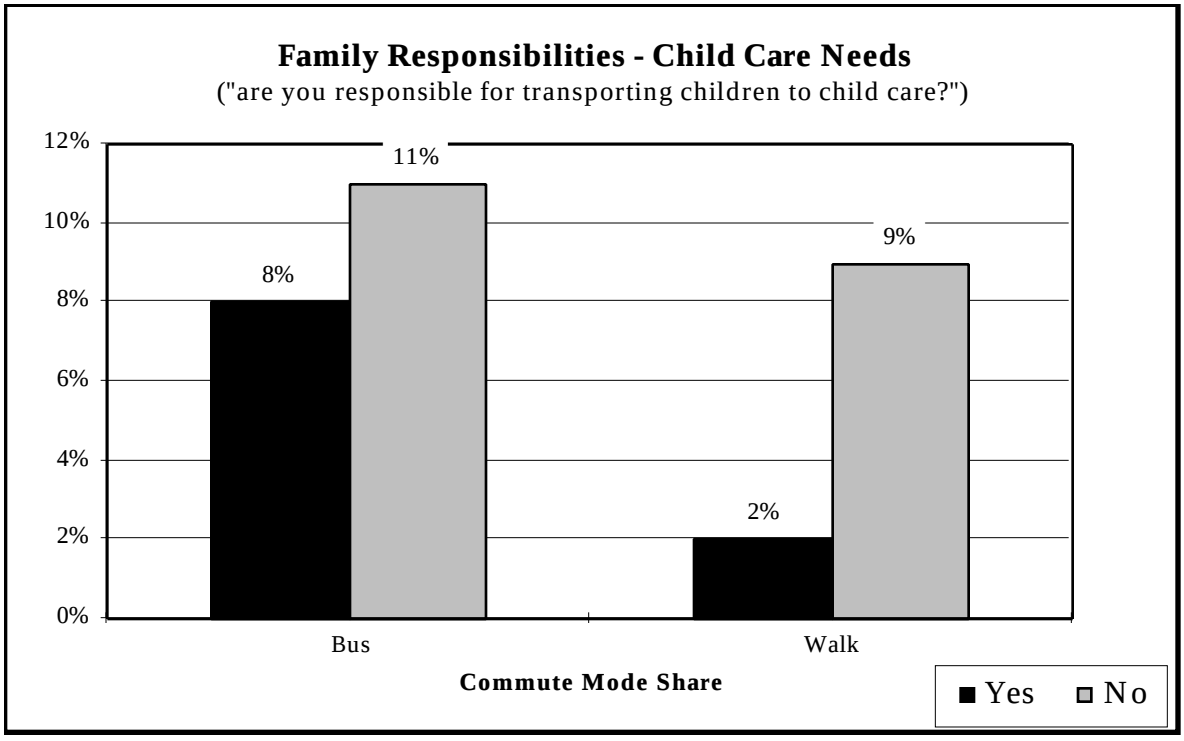


FIGURE 2.18


Family Responsibilities - School Children
("are you responsible for transporting children to school?")
12%
10%
8%
6%
4%
2%
0%
11%
8%
5%
5%
Bus
Walk
Commute Mode Share
Yes
No


Family Responsibilities - Child Care Needs
("are you responsible for transporting children to child care?")
12%
10%
8%
6%
4%
2%
0%
11%
9%
8%
2%
Bus
Walk
Commute Mode Share
Yes
No

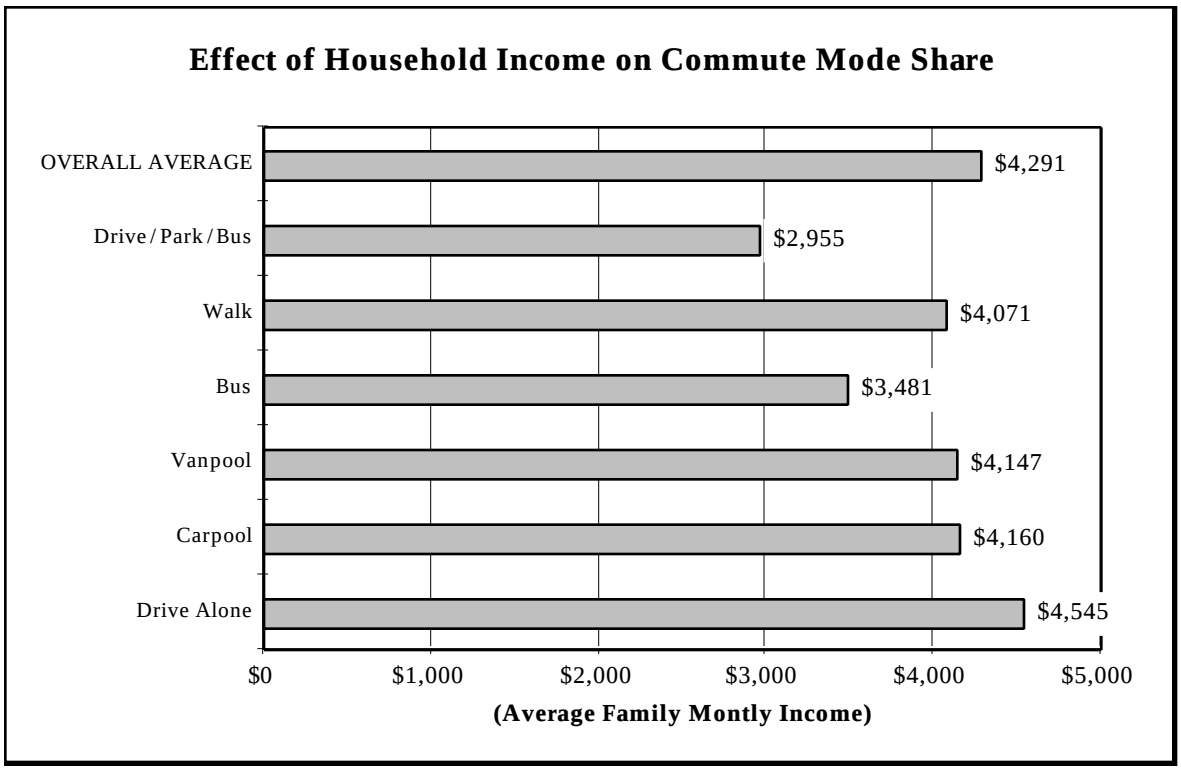
One of the reasons people give for driving to work is the need to provide transportation for their children -- whether to school or to daycare -- as part of the commute trip. Figure 2.18 confirms this as an important determinant of mode choice in the study area.

Parents and others responsible for transporting children to school or daycare are much less likely to walk or take the bus to work. This reinforces the importance of neighborhood elementary schools and employment-based daycare, not only as quality of life measures, but as traffic reduction strategies.

As Figure 2.19 shows, household income is somewhat correlated with mode choice. Research around the country has shown that wealthier people do tend to drive more. However, in the Roaring Fork, this relationship appears to be the result of a complex interaction of variables, including vehicle ownership (higher for wealthier families) and cost of driving rather than an indicator that high income people will not utilize transit.

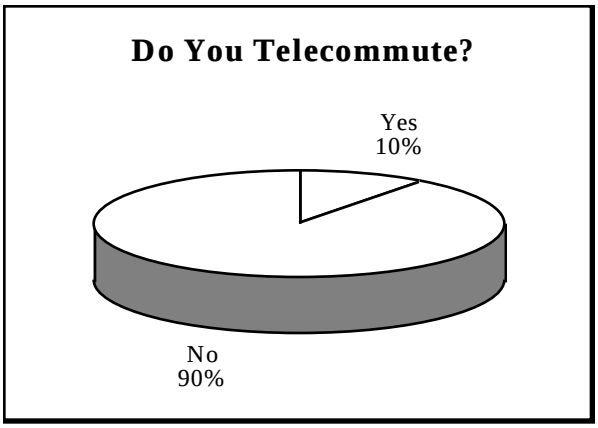
In fact, in those communities where transit service is high, the relationship between income and mode share is not significant. In parts of the study area with lower levels of transit service, the relationship is much stronger. This suggests that wealthy people may be somewhat less likely to utilize inconvenient transit.

FIGURE 2.19



Very little telecommuting was reported by respondents to the employee survey. Only 10% of employees ever telecommute, and of those who do, only about a third telecommute regularly. This is consistent with national trends.

FIGURE 2.20

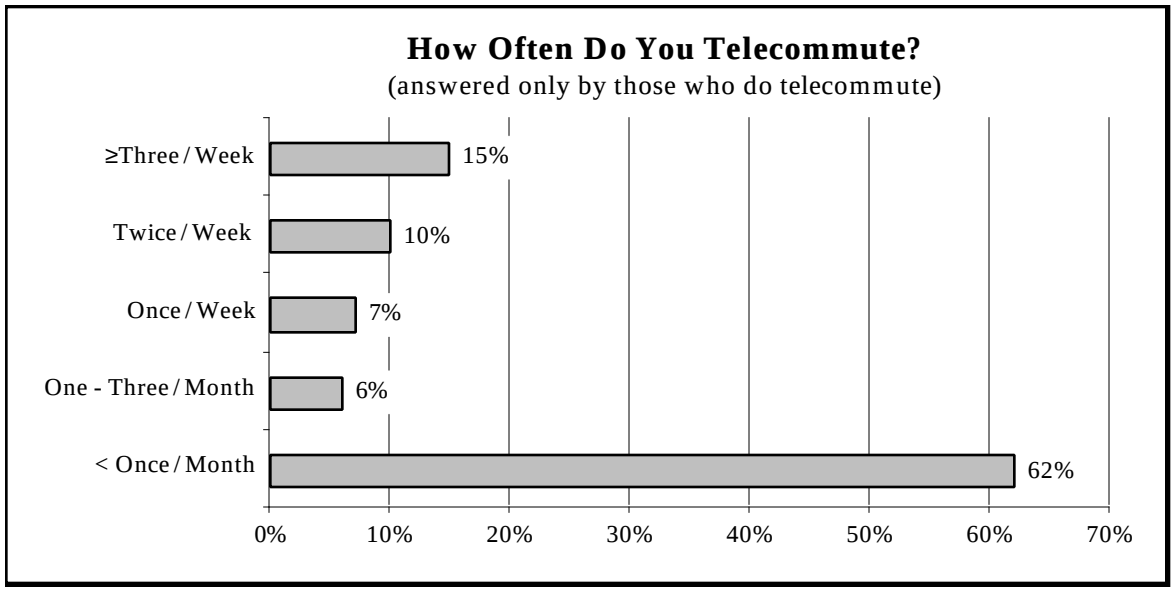


The employer survey makes it clear that this situation is consistent with employer policies. Fully 75% of employers reported that "telecommuting is not a workable option for any employees." Another 11% indicated that "telecommuting is a workable option, but currently have no telecommuting." Only 14% responded that "we support telecommuting for certain employees."

However, 77% of the employees who do not currently telecommute agree that their jobs would not "fit with" a telecommuting program.

It may be that inherent characteristics of employment in the region (for example, a high percentage of service sector jobs) would tend to limit the potential of telecommuting programs in reducing vehicular traffic.

FIGURE 2.21



Other Trips

The employee survey explored travel behavior in addition to the work commute. Roaring Fork residents make about four one-way trips per day, of which commute trips are about half.

(The definition of "trip" utilized here is different from what traffic modelers use. This study does not treat "stops" on the way to and from work as separate trips. Many computerized traffic models would count these separately.)

These other trips were categorized as "personal" (doctor, haircut, etc.); "lunch, shopping, recreation;" and, "Work-related" (meetings, etc.).

FIGURE 2.22

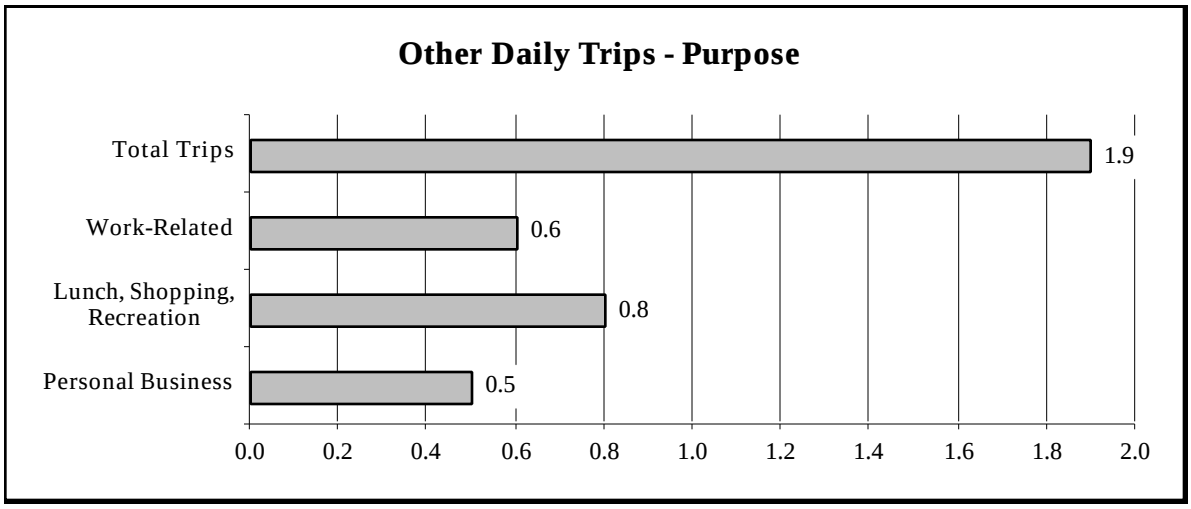


FIGURE 2.23

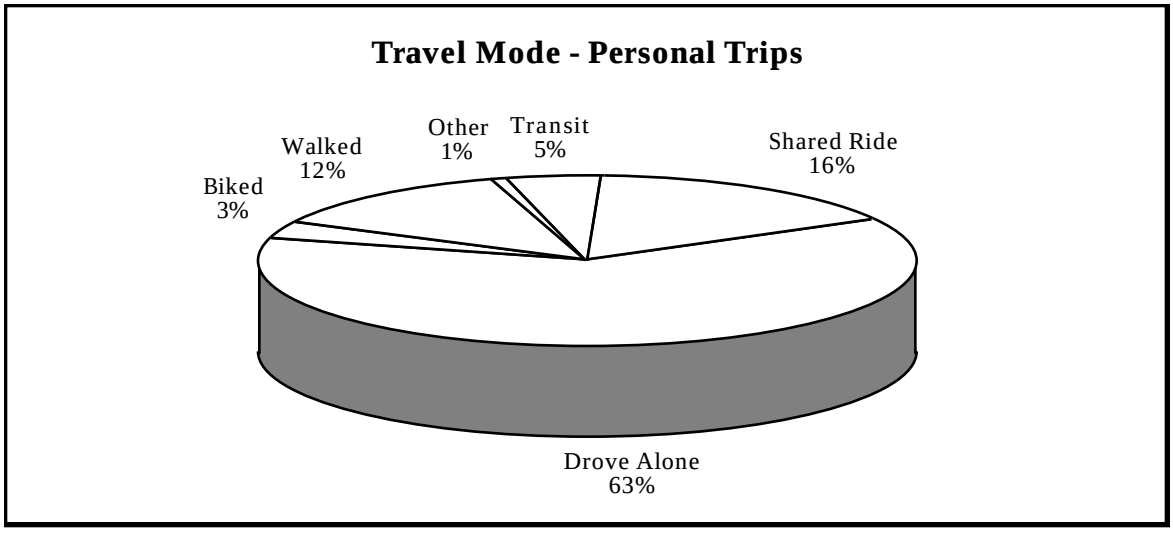
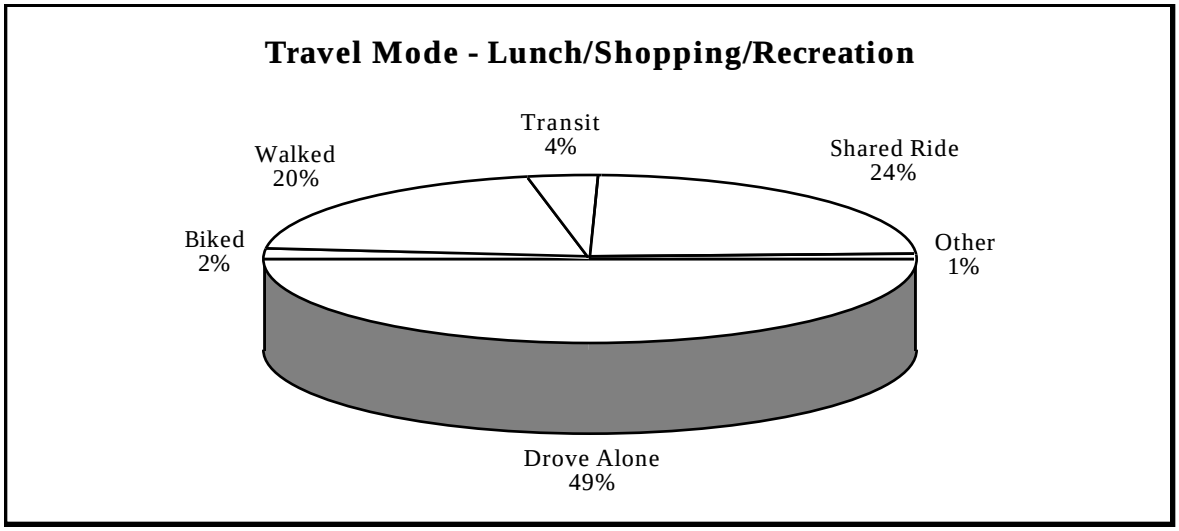


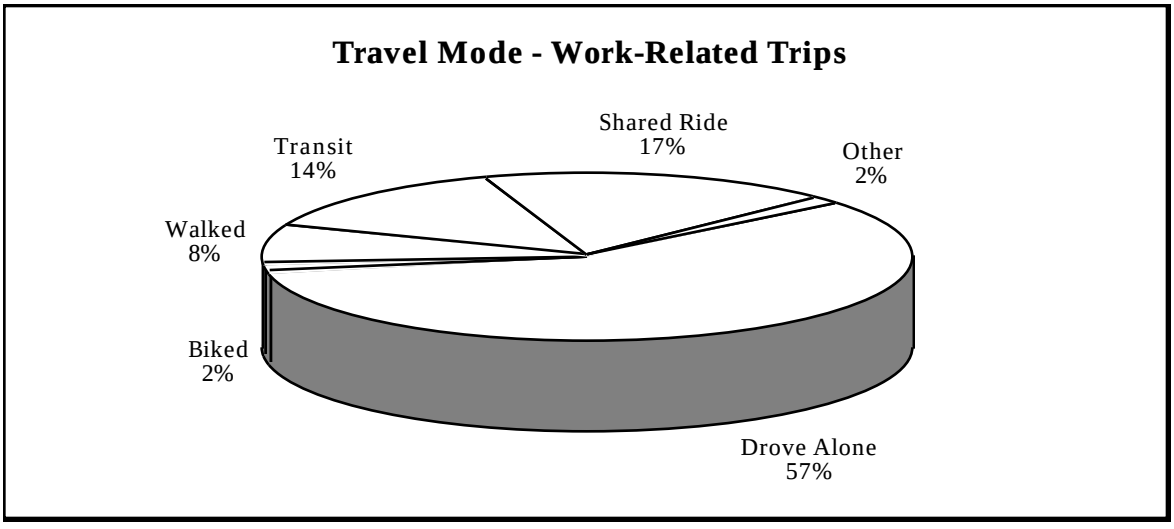
FIGURE 2.24



The mode share characteristics of non-commute trips is shown in Figures 2.23, 2.24 and 2.25. Personal trips resemble commuting in large part because the commute mode choice influences other tripmaking throughout the day.

Lunch / shopping / recreation trips tend to be more social in nature and thus reflect higher shared ride and walking components. The surprise in this data is the high transit mode share for business travel. This outcome results from very high transit work trip mode shares in Aspen, Snowmass and Basalt. North of Basalt, driving alone largely replaces transit for most people.

FIGURE 2.25



CHAPTER 3.
MODE SHIFT OPPORTUNITIES

Chapter 2 identified a number of opportunities to influence the travel behavior of Roaring Fork residents and commuters. This chapter explores some of these opportunities in more detail (with an emphasis on mode choice).

In reviewing the data in this chapter, it may be helpful to keep in mind that significant reductions in future traffic levels do not require a complete shift away from driving alone. If commuters were to drive, on the average, one less day per week, the result would be a 20% decrease in commute traffic. Two days of not driving would result in a 40% decrease.

The origin and destination roadside surveys conducted by CDOT in the winter of 1993 indicated that commuters represent between 28% and 36% of the day-long traffic stream, depending on location and direction of travel. However, they represent more than 60% of the afternoon peak traffic stream (the most congested time). Thus, a 25% reduction in peak hour traffic could result from relatively modest adjustments in commute travel behavior.

At the same time, reductions in commute driving significantly affect other travel as well. How people get to work in the morning shapes their travel behavior all day long. It is reasonable to expect changes in commuting to leverage changes in most other kinds of personal travel.

Figure 3.1 compares drive-alone mode shares of respondents based both on where they live and on where they work. This data suggests that certain characteristics of the environment at the place of work may be significantly more important than characteristics of the residential environment.

A number of workplace characteristics should be considered:

-> the level of transit service;

-> whether there are opportunities to walk to lunch, shopping and other activities; and,

-> the extent to which large reservoirs of free parking (or employer-provided parking) are available to commuters.

Figure 3.2 compares transit mode share by community -- again showing the relationships both to place of residence and to place of work. It is important to recognize that the existing intraregional commute patterns essentially have made this one large, interrelated commute travel market. Strategies that appeal to commuters in the Aspen-Basalt corridor will probably also appeal to commuters in the Parachute-Glenwood corridor. Thus the low transit mode shares north and west of Carbondale represent an enormous opportunity. If transit service levels to and within these communities could be brought up to the service levels currently offered south of Basalt, several thousands of daily vehicle trips could be taken off area roadways, including (especially) SH 82.

FIGURE 3.1

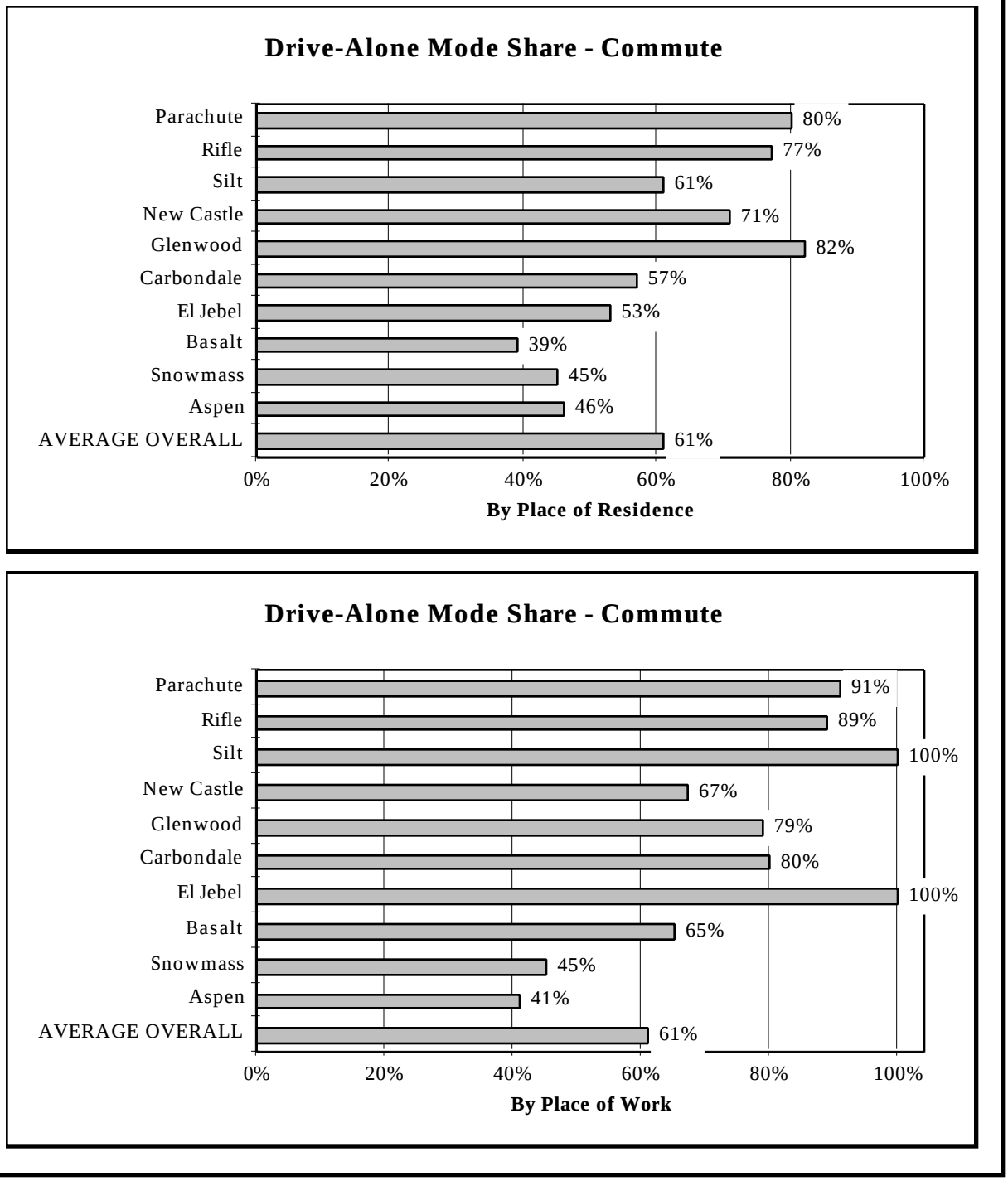
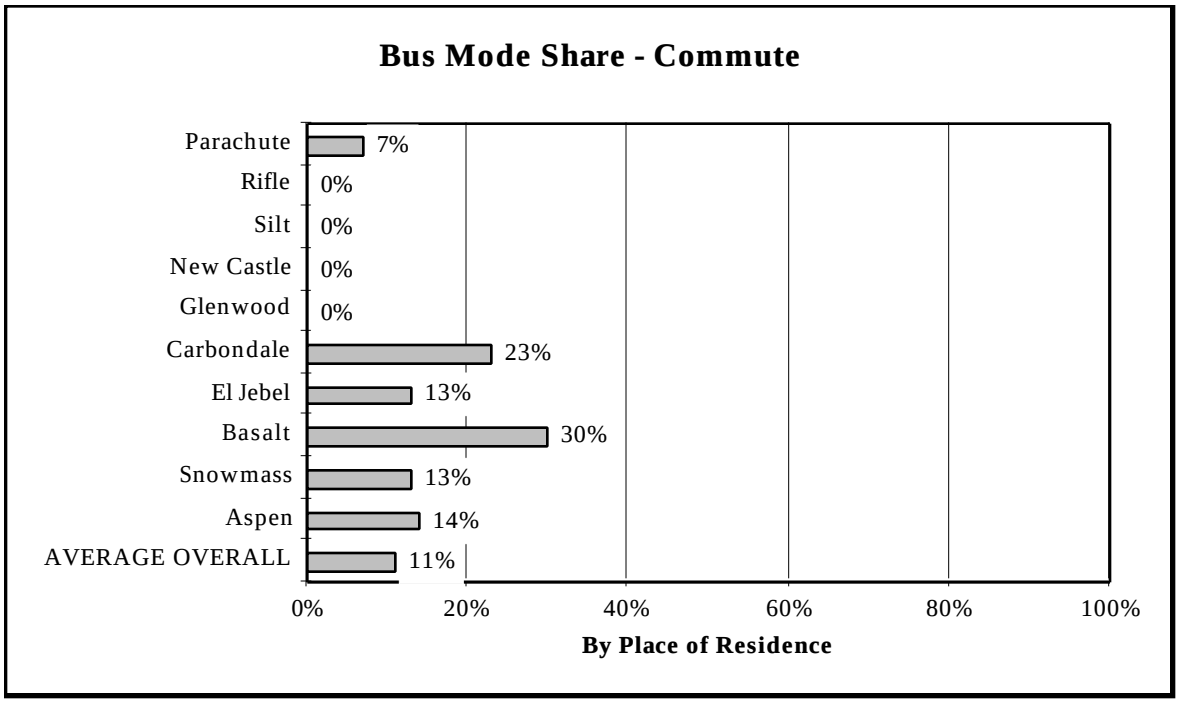
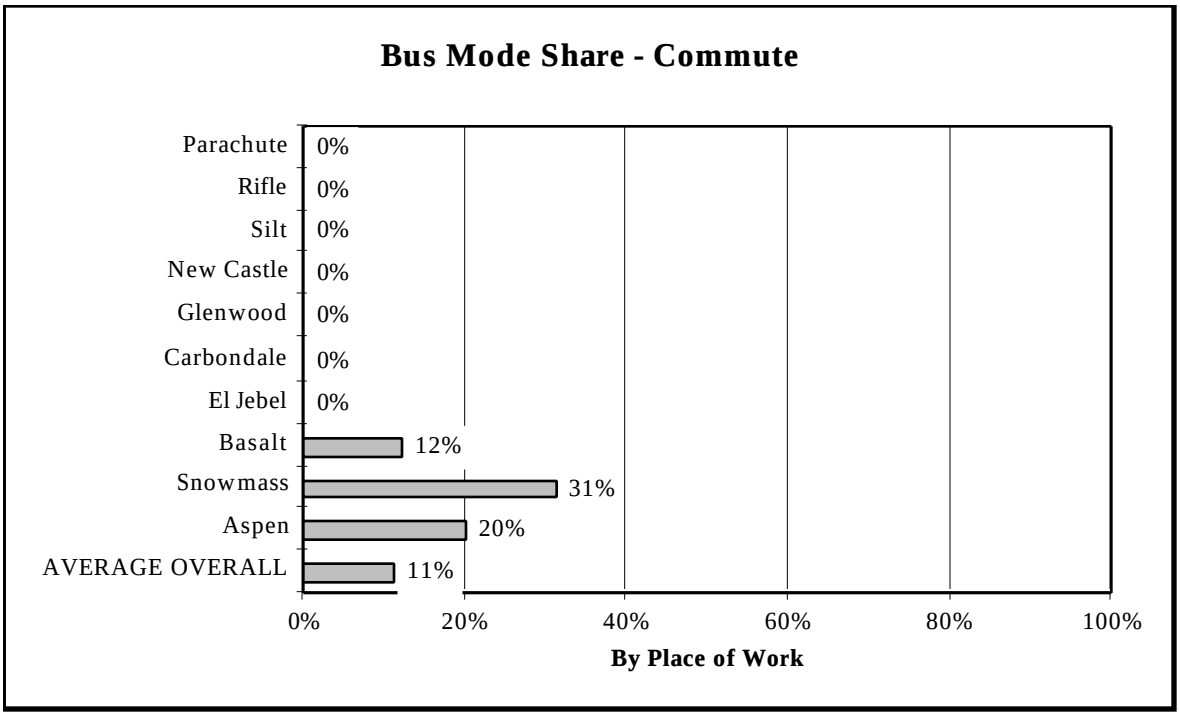

Drive-Alone Mode Share - Commute
Parachute
Rifle
Silt
New Castle
Glenwood
Carbondale
El Jebel
Basalt
Snowmass
Aspen
AVERAGE OVERALL
80%
77%
61%
71%
82%
57%
53%
39%
45%
46%
61%
0%
20%
40%
60%
80%
100%
By Place of Residence
Drive-Alone Mode Share - Commute
Parachute
Rifle
Silt
New Castle
Glenwood
Carbondale
El Jebel
Basalt
Snowmass
Aspen
AVERAGE OVERALL
91%
89%
100%
67%
79%
80%
100%
65%
45%
41%
61%
0%
20%
40%
60%
80%
100%
By Place of Work

FIGURE 3.2


Bus Mode Share - Commute
Parachute
Rifle
Silt
New Castle
Glenwood
Carbondale
El Jebel
Basalt
Snowmass
Aspen
AVERAGE OVERALL
7%
0%
0%
0%
0%
23%
13%
30%
13%
14%
11%
0%
20%
40%
60%
80%
100%
By Place of Residence


Bus Mode Share - Commute
Parachute
Rifle
Silt
New Castle
Glenwood
Carbondale
El Jebel
Basalt
Snowmass
Aspen
AVERAGE OVERALL
0%
0%
0%
0%
0%
0%
0%
12%
31%
20%
11%
0%
20%
40%
60%
80%
100%
By Place of Work

Perhaps the most obvious and significant transit opportunity is to be found in Glenwood Springs where the commute transit mode share is essentially zero both for residents and for employees. A 20% transit mode share for commuters who live in Glenwood Springs (similar to Carbondale today) would have the potential of removing over 2,000 cars per day from Grand Avenue in Glenwood Springs. About one-third that many could be removed from SH 82 south of Glenwood Springs. The leveraging effect of a shift in commute mode share would cause additional reductions in vehicular traffic for other trip purposes.

Even larger reductions in daily traffic could be accomplished if a 20% transit mode share for commuters coming into Glenwood to work (56% of the employment base) could be achieved (again, a level similar to Carbondale today). Fewer of these trips would be on Grand Avenue, but the benefit to other local streets would be profound. Added to this would be the potential impact of higher transit mode shares for commuters living west of Glenwood and passing through on their way to points south along SH 82.

The least expensive mode of travel from the public perspective (cost of infrastructure, etc.) is the pedestrian mode. Figure 3.3 on the next page shows significant variations in the amount of walking to work occurring in different communities in the study area. Three factors are important here:

-> the characteristics of the local walk environment (we saw in Chapter 2 that the availability of continuous sidewalks and good crossings were most important);

-> the level of transit service (transit commuters become pedestrians for other trip types); and,

-> the percentage of people who live close to where they work.

Influencing these characteristics would require a mix of local pedestrian improvements, regional transit service increases, and more mixed-use land development patterns. Combining these three strategies in the same travel market could be expected to significantly reduce drive-alone commuting and, as a result, peak hour traffic congestion.

Figure 3.4 reports how residents rated the two most important characteristics of the walk environments in their own communities. Clearly, improvements in walk environment are achievable everywhere in the region. No community has a pedestrian system that ranks very high in its own residents' estimation. Improvements in walk environment pay off in a variety of ways in addition to increasing walk mode share:

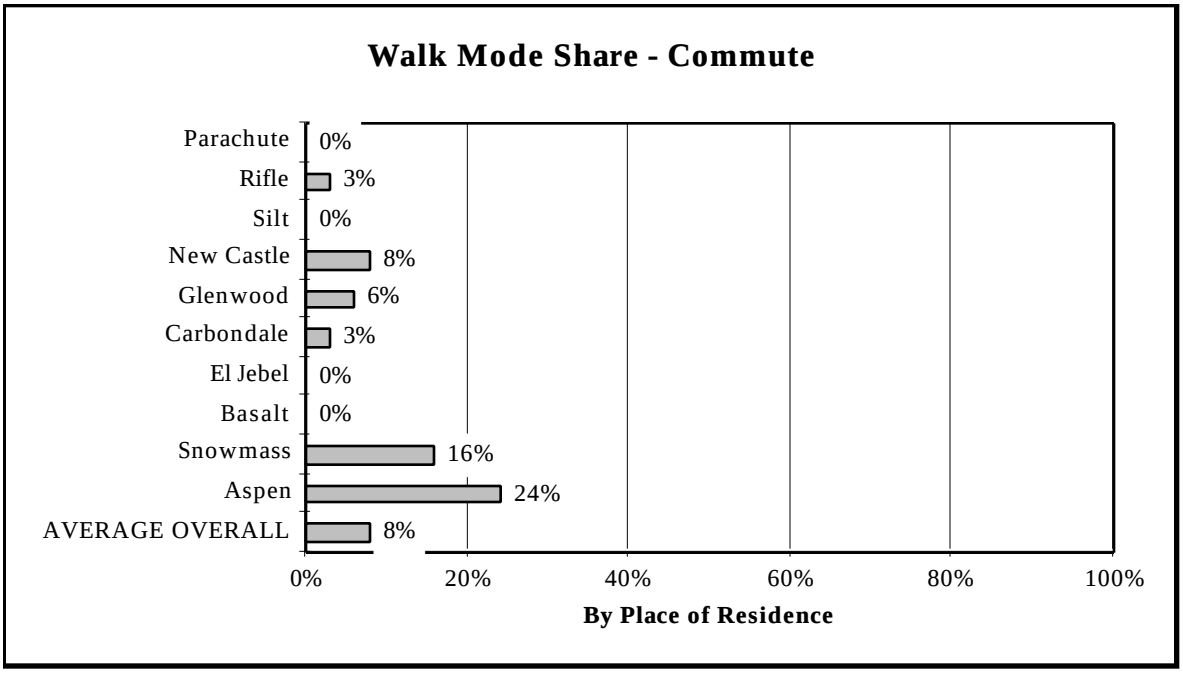
-> they also increase transit mode share;

-> they add quality of life for residents and employees;

-> they enhance retail and restaurant revenues by attracting workers as new customers;

-> they improve the attractiveness of existing developed areas for infill and redevelopment projects.

FIGURE 3.3


Walk Mode Share - Commute
Parachute 0%
Rifle 3%
Silt 0%
New Castle 8%
Glenwood 6%
Carbondale 3%
El Jebel 0%
Basalt 0%
Snowmass 16%
Aspen 24%
AVERAGE OVERALL 8%
0% 20% 40% 60% 80% 100%
By Place of Residence

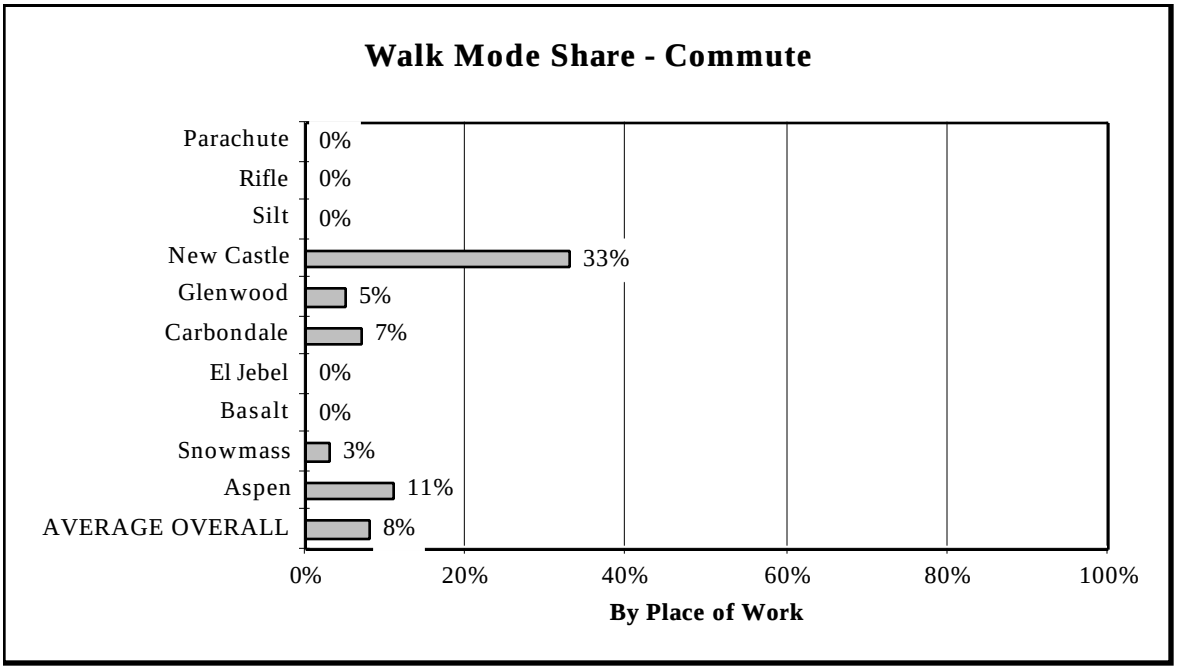
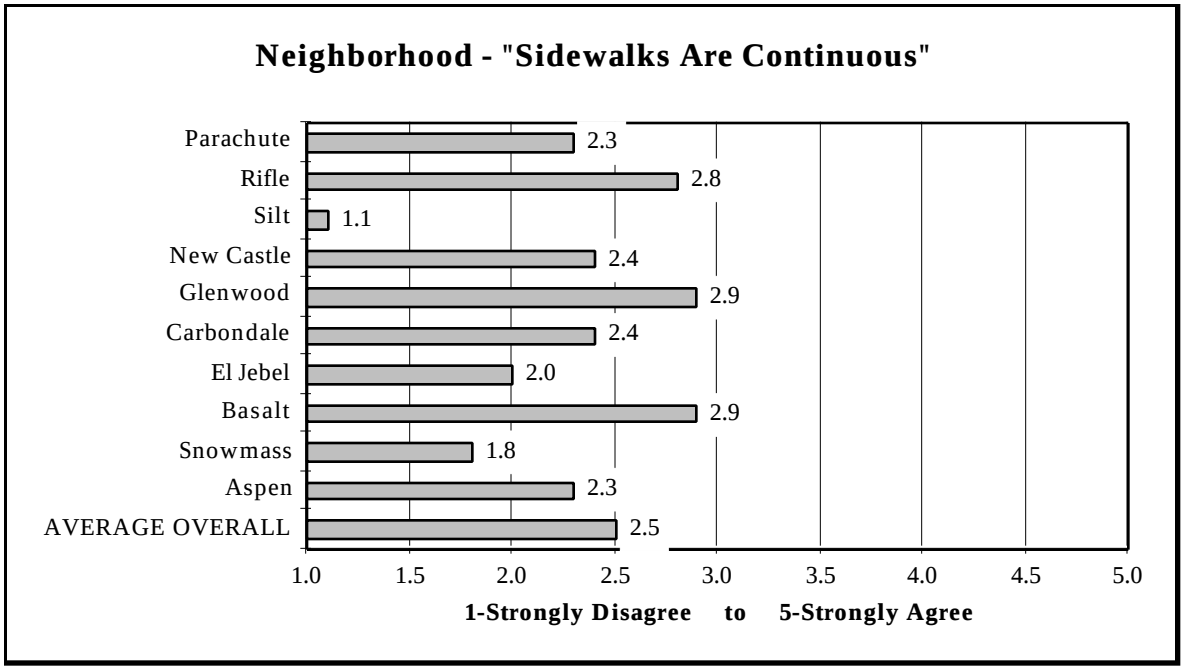

Walk Mode Share - Commute
Parachute 0%
Rifle 0%
Silt 0%
New Castle 33%
Glenwood 5%
Carbondale 7%
El Jebel 0%
Basalt 0%
Snowmass 3%
Aspen 11%
AVERAGE OVERALL 8%
0% 20% 40% 60% 80% 100%
By Place of Work

FIGURE 3.4


Neighborhood - "Sidewalks Are Continuous"
Parachute 2.3
Rifle 2.8
Silt 1.1
New Castle 2.4
Glenwood 2.9
Carbondale 2.4
El Jebel 2.0
Basalt 2.9
Snowmass 1.8
Aspen 2.3
AVERAGE OVERALL 2.5
1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0
1-Strongly Disagree to 5-Strongly Agree

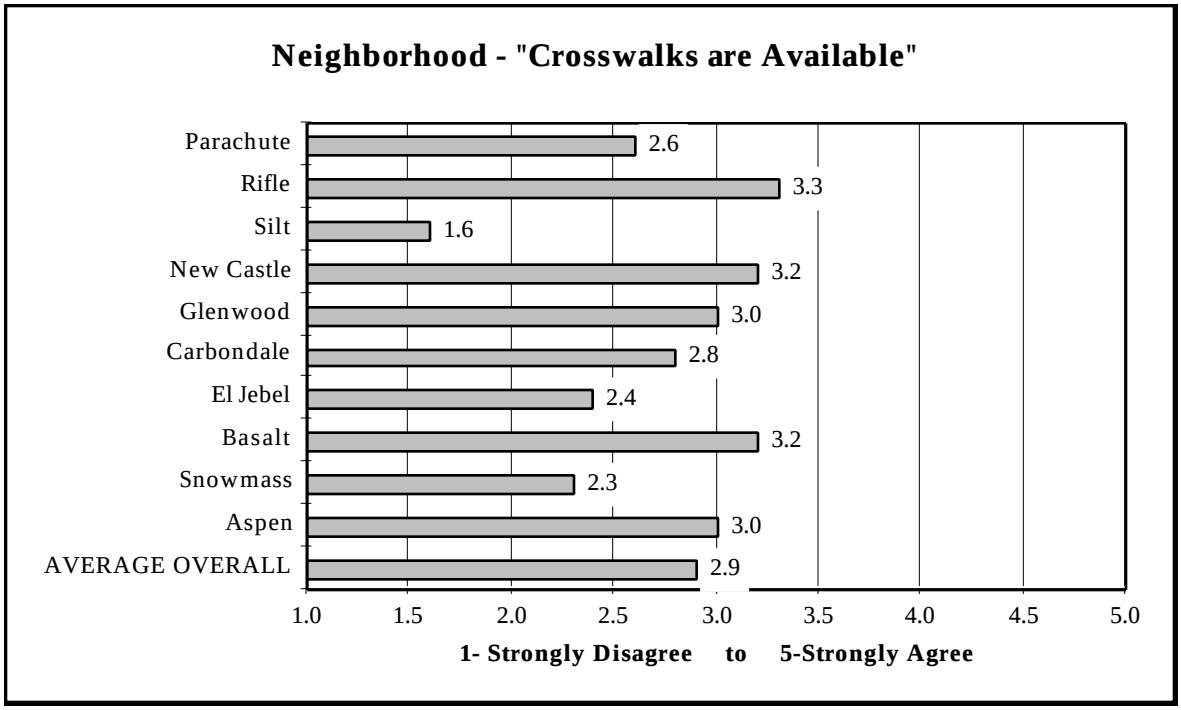
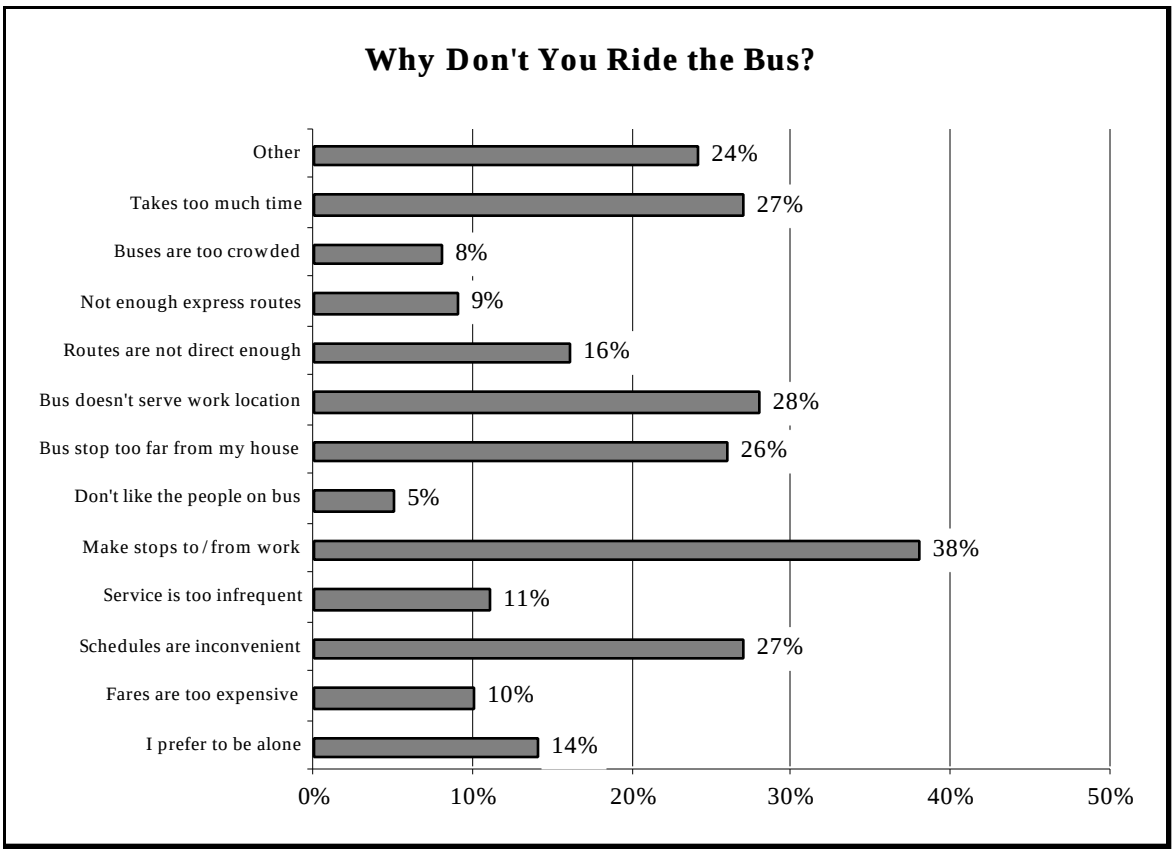

Neighborhood - "Crosswalks are Available"
Parachute 2.6
Rifle 3.3
Silt 1.6
New Castle 3.2
Glenwood 3.0
Carbondale 2.8
El Jebel 2.4
Basalt 3.2
Snowmass 2.3
Aspen 3.0
AVERAGE OVERALL 2.9
1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0
1- Strongly Disagree to 5-Strongly Agree

FIGURE 3.5



The employee survey asked people who do not ride the bus to identify their reasons. The factor receiving the largest response is the one discussed in some detail in Chapter 2: people need to make stops on the way to and from work. These stops relate both to other trip purposes (e.g., grocery shopping) and to the need to transport children to school and daycare. A number of strategies could be pursued to change these factors:

-> transit service to junior high and high schools could be improved (a prime example of the potential here is the K-12 campus on Maroon Creek Road west of Aspen);

-> daycare centers could be established within employment centers or near future major (destination) transit stations (these are not as effective on the home end because the children are too far away for parents to be comfortable without a car); and,

-> local circulator service could be provided in employment centers outside Aspen (especially Glenwood Springs).

Most of the other responses in Figure 3.5 relate to transit service levels. People desire more frequent service (shorter headways); service that comes closer to their homes and workplaces; more direct routes (especially over the long haul); and longer hours of service. Addressing these issues, of course, requires increased funding for transit.

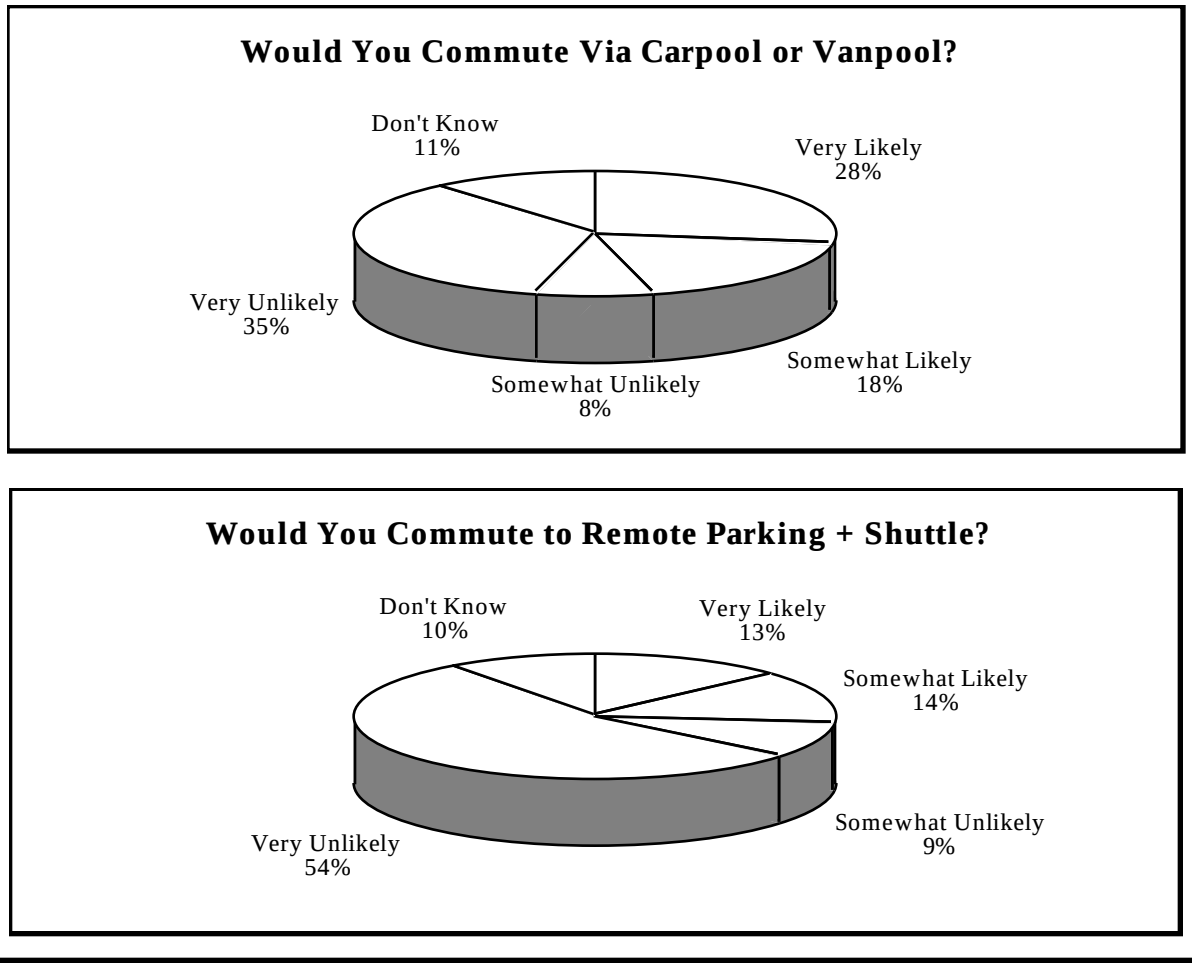
Figure 3.6 below examines two other potential means of reducing drive-alone mode share. Respondents were asked:

-> "If a carpool or vanpool were arranged for you to commute to work, how likely would you be to use it?" and,

-> "How likely would you be to use a remote parking lot where you would be shuttled to your workplace?"

This data indicates a significant interest in both strategies, with the greater interest in carpool and vanpool commuting.

FIGURE 3.6



CHAPTER 4.
RECOMMENDATIONS FOR FURTHER STUDY

The first chapter of this report begins with a description of the importance of facts and data to transportation planning. This chapter returns to that subject and identifies some specific data needs.

The Roaring Fork region faces significant challenges over the next quarter century as it strives to meet the mobility needs of a growing population and at the same time preserve the high quality of life and economic vitality for which the region is known. If the people of the Roaring Fork and their local and regional governments are to succeed in these efforts, they will need information about:

-> travel patterns and travel behavior of residents, commutes and visitors;

-> trends in travel behavior over time and the effect of these on travel and traffic;

-> relationships between land development patterns and travel behavior.

Specific needs for further data gathering were identified during the course of this study. These are described below.

(1) Summer Employee Survey

The employee survey conducted as part of this project during the peak winter ski season of 1998 should be replicated during the summer of 1998.

Mountain environment travel behavior is highly seasonal. People move around differently in the summer than they do in the winter. Repeating the survey this year means the results will reveal the seasonal relationships. If summer replication were completed in some later year, the data would contain elements of both seasonal variation and change over time -- and as a result would be of less value.

The employee survey conducted as part of this project included a significant number of responses from employees of the Aspen Ski Company. Many of these employees are not present during the summer, giving rise to different averages on many of the key variables.

Finally, there is an urgent need for accurate travel behavior data for use in the SH 82 corridor investment study currently underway at CDOT. Issues related to the potential for improved transit service in this corridor (including, potentially, rail service) can be significantly clarified by accurate information about local and regional travel patterns -- including seasonal variations.

It should be noted that replication of this survey can be accomplished at lower expense than the original survey since the survey design and database design have been accomplished.

(2) Routine Traffic Counts

Annual and seasonal traffic counts are needed on all of the major area roadways. The permanent counter on SH 82 west of Aspen should be kept in working order so that continuous monthly readings can be maintained. This will also help with determining seasonal expansion factors and annualization factors for counts conducted over short durations at specific locations.

It would be valuable if a small number of "control points" (ten to twelve locations) could be identified on area roadways which can serve as indicators for the entire regional roadway system. These should be counted (preferably three to four day counts with two weekdays and one or two weekend days) at least four times per year: October, February, April and July. This can be accomplished with portable roadside counters (hoses stretched across the roadway).

(3) Through Traffic -- Grand Avenue in Glenwood Springs

Issues related to the proposed replacement of the Grand Avenue Bridge, the potential alignment of future rail systems, and the potential for a bypass of downtown (SH 82) are all of critical importance to the City of Glenwood Springs. Accurate data about the characteristics of the current traffic stream on Grand Avenue would clarify these issues considerably. Of most importance would be an estimate of through traffic as a percentage of all traffic on various parts of the SH 82 corridor through Glenwood Springs. This would be particularly valuable in estimating the benefits of an SH 82 bypass as originally proposed in a 1979 consultant study.

(4) Skier and Visitor Opinion Surveys

Pitkin County, Aspen and Snowmass Village are wrestling with issues related to potential transit linkages from the Entrance to Aspen LRT project in the SH 82 corridor up to the Town of Snowmass Village. The feasibility of long range alternatives for this transit linkage may hinge on issues of travel time, esthetic appeal, flexibility and other service parameters. Survey research exploring how different groups of visitors feel about some of these variables could be of significant value.

(5) Land Use and Land Development Data - GIS Systems

This project undertook an initial effort to develop a set of consolidated GIS data files and maps intended to provide a comprehensive picture of current and anticipated commercial and residential development throughout the Roaring Fork Region. This effort is not complete. A routine, ongoing system of updating and sharing local GIS data files and maps should be developed so that this information is accessible to the public and to local elected leaders.

(6) Regional Monitoring and Reporting - Mobility Report Card

The Roaring Fork region has begun to address its transportation challenges through regional cooperation among the various local and regional governments, and among public and private sector entities. To support this continued cooperation and mutual effort, there is a need for a systematic system for regional reporting on issues of traffic, congestion, transit ridership, travel behavior trends and land use development. An annual or biennial "Regional Mobility Report Card" should be designed which provides easily-understood information on key regional transportation performance measures for use in public meetings and for general distribution to the public. This would help people make decisions about major transportation proposals (from roadway bridge replacements to rail transit projects) based on a deeper understanding of trends and cause-effect relationships.