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Trip Diary Survey of Community Travel Patterns

Report of Results

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Executive Summary

Survey Background

- The Travel Diary Study is a survey of the Flagstaff Metropolitan Planning Organization's (FMPO) area residents' travel patterns and mode selection. This is the first implementation of this study. The study is designed to provide feedback to FMPO staff on resident travel behaviors useful for future transportation planning. The FMPO intends to repeat this study about every five years to provide trend data.
- A random sample of about 2,400 households and students living in campus housing were invited to participate in the study. This sample was divided into three areas: the "Core" area of the City of Flagstaff, the rest of the City, and then the rest of the Flagstaff area. (The figure on page 8 shows the division of the Flagstaff area into these three subareas.)
- From the selected sample, 320 completed surveys were received, providing a response rate of approximately 14%. While lower than a typical resident opinion survey response rate (which usually ranges from 25% to 40%), this response rate is not untypical for a travel diary study of this type, which places a greater burden on respondents. Typical response rates for these types of studies range from 12% to 20%.
- A sample size of 320 yields a 95% confidence interval of ±5.5% around results.
- Participants in the 2006 Travel Diary Study were asked to keep a log or "diary" of their travel for one randomly assigned day (Monday-Friday) during the week of October 2nd (or a replacement week if necessary). For every trip made during the 24 hour period, respondents recorded the origin and destination of the travel, the travel mode used, the time of day, the number of people in the vehicle (if applicable), and the number of miles or blocks traversed during the 24 hour period. A trip was defined as any "one-way travel from one point to another that takes you farther than one city block (about 200 yards) from the original location."
- The participants were also asked to complete a survey regarding their household characteristics such as number of vehicles and bicycles present in the household, receipt of deliveries, quality of transportation and other general socioeconomic demographics.

Drive Alone Trips Accounted for 57% of All Resident Trips

- Transportation mode choice or "modal share" can be defined as a method of dividing travel into all available transportation modes and can refer to the number of modes, number of trips or number of miles traveled. This study uses the number of trips and number of miles when calculating modal share, and classifies the modes as single-occupancy vehicle (SOV, an automobile, van, truck or motorcycle which has only one occupant), multiple-occupancy vehicle (MOV, an automobile, truck or motorcycle with more than one occupant), transit (including school bus), pedestrian (foot), and bicycle.
- Over half of all the **trips** made by respondents were made by driving alone. About 1 in 5 trips were made via MOV, while 12% of trips were made by walking, 7% by biking, and 2% by transit.
- When examining the proportion of miles traveled by the various modes, the proportion of miles traveled by vehicle was somewhat greater, with nearly two-thirds of all miles

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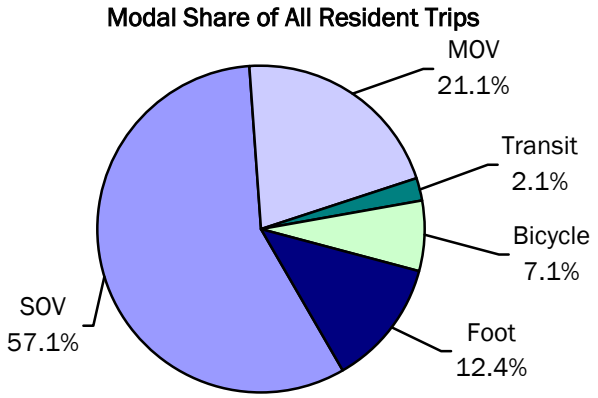
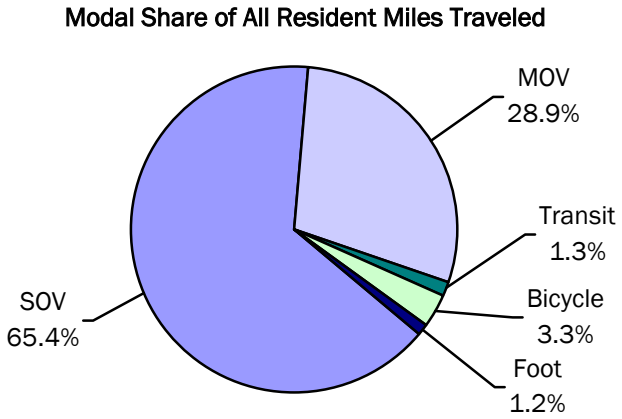
traveled accounted for by SOVs, almost 30% by MOVs, 1% by transit, 3% by bicycle and 1% by walking.

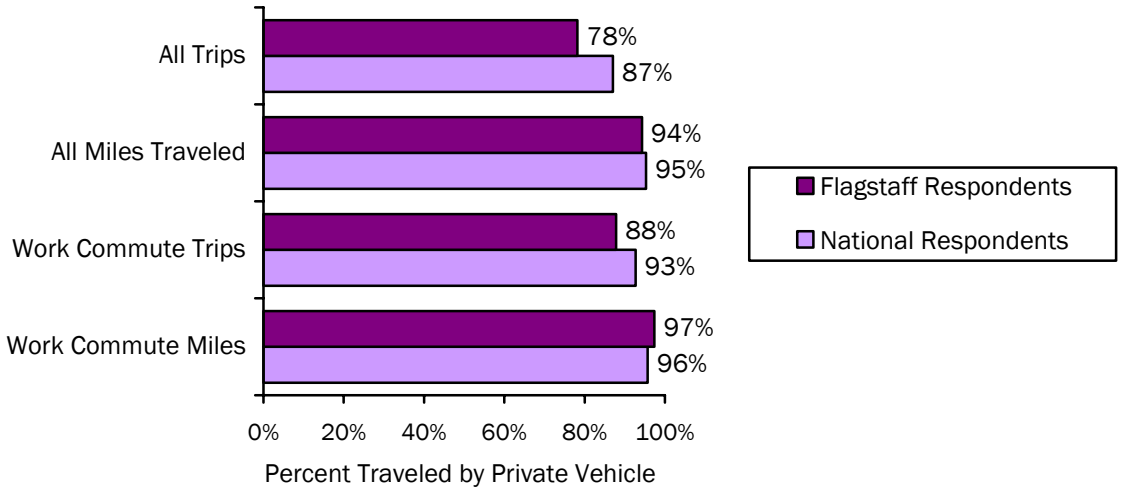
- Motorized vehicles can be expected to account for a greater share of miles traveled compared to trips traveled, as walking and biking modes are generally used only for shorter trips.





Flagstaff Residents' Travel via Private Vehicles Is Lower Than or Similar To National Trends

- The 2001 National Household Transportation Survey (NHTS, formerly the National Personal Transportation Study (NPTS)), commissioned by the U.S. Department of Transportation, studied the travel patterns of the nation as a whole using a diary methodology similar to the one used in this research project. Although the NHTS data were collected five years previous to the Flagstaff area trip diary data, the comparisons may also be helpful in understanding how Flagstaff travel patterns may differ from those seen nationally.
- The proportion of private vehicle (SOV or MOV) trips made by Flagstaff residents for any purpose was lower compared to the proportion of all trips made via private vehicle observed nationally. This was also true for work commute trips. The proportion of miles traveled by private vehicle was similar among Flagstaff respondents and NHTS respondents.



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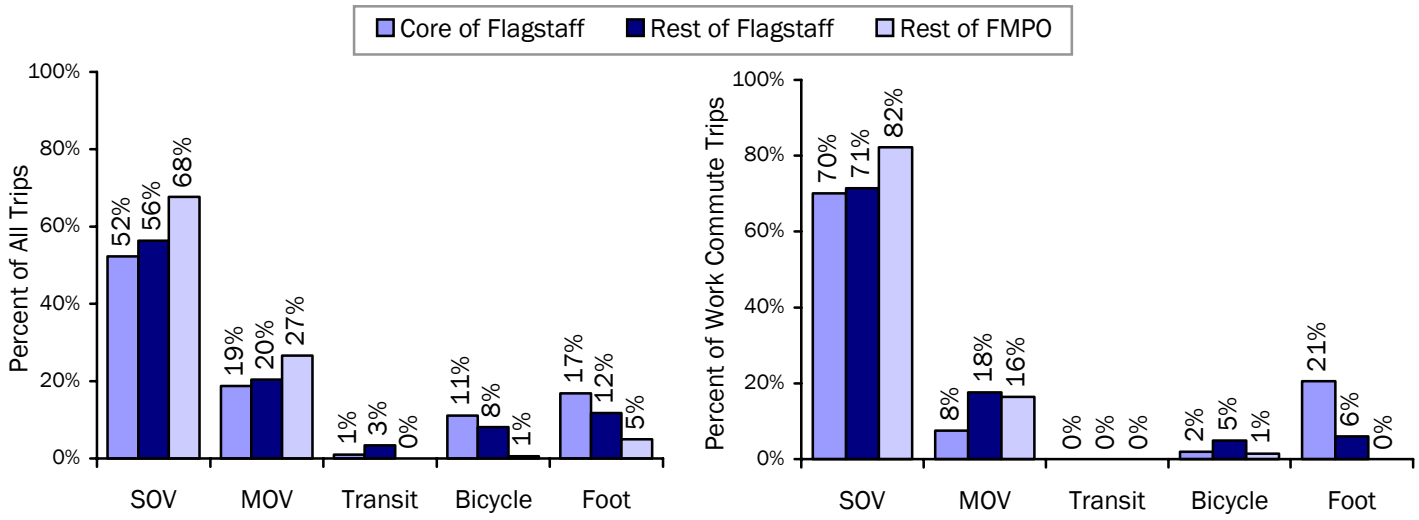
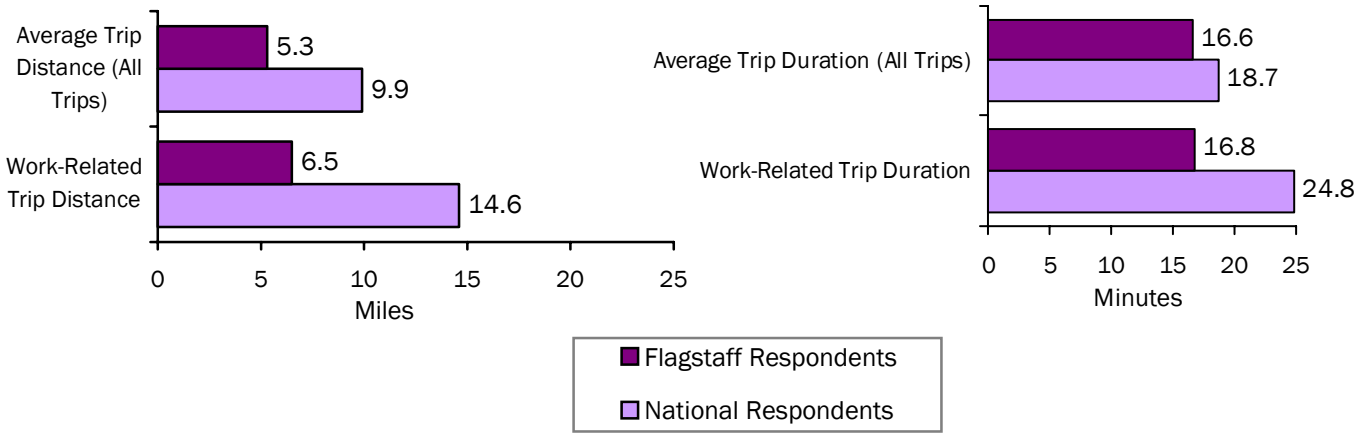
Land Use Patterns and Transportation Are Linked

- Residents that lived in the core tended to walk and bike more than those that lived in the outlying areas. This shows that in the areas where the land use environment is conducive to biking and walking residents took advantage of the increased opportunities to use modes other than driving. This type of trend affects transportation in a positive way and should be encouraged throughout the FMPO.



Positive Trends Were Observed in Trip-Making Behavior

- The average trip length was 5.3 miles and the average trip time was 16.6 minutes which were much shorter than the national average.



Opportunities for Improvement in the Modal Share Abound

- The results from the survey show that there are opportunities to improve the mode share in the region. The core area could improve the number of people who bike and walk while the outlying areas could improve overall on mode share.

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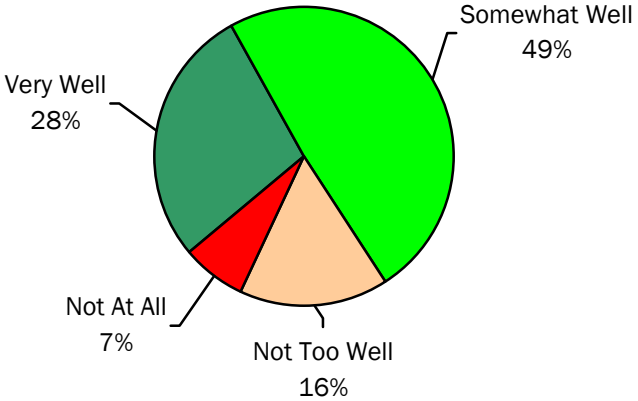
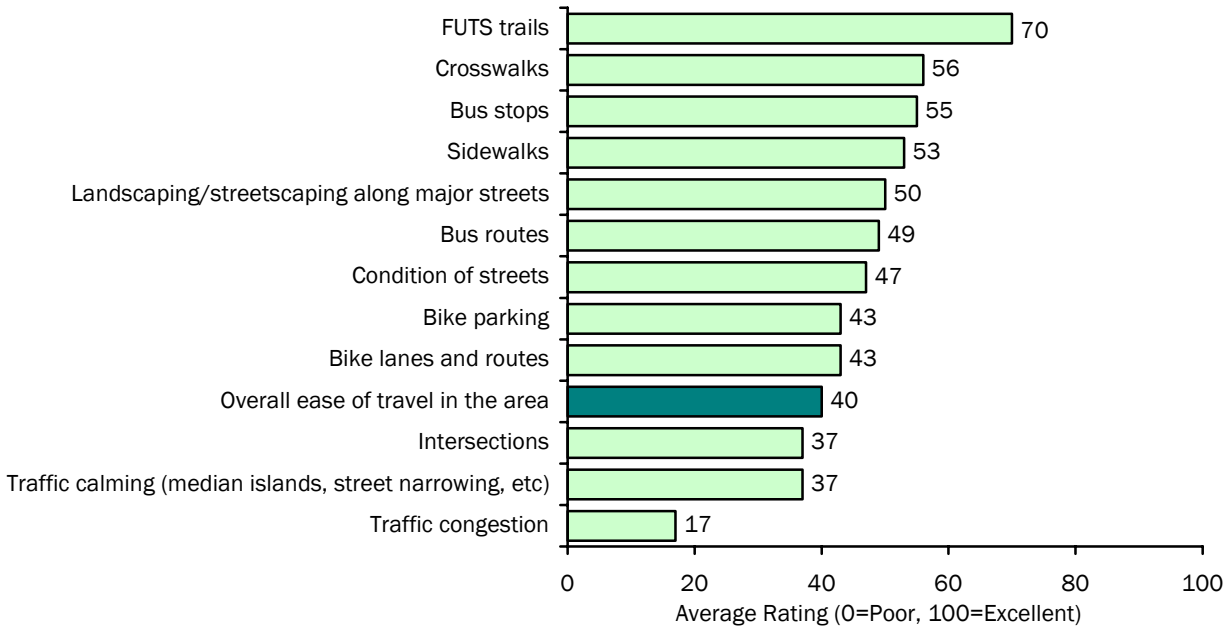
Resident Perceptions of the Transportation System and Transportation Planning Were Generally Favorable

- In addition to measuring travel behaviors, a survey which accompanied the trip diary asked respondents to rate various aspects of the regional transportation system. About three-quarters felt the overall transportation system does "very well" or "somewhat well" in meeting their travel needs

The transportation system in our region consists of roads, buses, sidewalks, Flagstaff Urtban Trails System (FUTS) trails, and bike facilities. How well do you feel the transportation system meets your travel needs?



- Residents' ratings of the different features of the transportation system were converted into an average rating on the 100-point scale where 0 represents the worst possible rating and 100 the best possible rating. If everyone rated a particular characteristic as "excellent," then the result would be 100 on the 100-point scale. Likewise, if all respondents gave a "poor" rating, the result would be 0 on the 100-point scale. If the average rating was "good," then the result would be 67 on the 100-point scale; "fair" would be 33 on the 100 point scale. Use of this converted scale allows for comparison to other jurisdictions, where different question wording and response scales may have been used.
- The highest rated aspect of the transportation system was the Flagstaff Urban Trails System (FUTS) trails (70 on the 100-point scale). Crosswalks, bus stops, sidewalks landscape/streetscaping, bus routes and condition of streets received average ratings between "good" and "fair."



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- Some of the ratings of aspects of the transportation system were able to be compared to ratings given by residents to similar items on surveys conducted across the country.
- Of the six items for which comparison data were available, four of the items scored statistically significantly above average. Aspects of the transportation system rated above the norm were:
    - FUTS trails
    - Bus routes
    - Sidewalks
    - Condition of streets

There are Opportunities for Improvement in Resident Perceptions

- The average rating for overall ease of travel was below the midpoint of the range; 40 on the 100-point scale.
- Several of the items included on the survey received average ratings lower than 40 on the 100-point scale. Traffic congestion received an especially low rating of 17 on the 100-point scale, while "intersections" and "traffic calming" each received average ratings of 37 on the 100-point scale.
- Two of the six items for which comparison data were available received average ratings below the norm. These were:
    - Bike lanes/routes
    - Traffic congestion

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Report of Results

Survey Background

The Travel Diary Study is a periodic survey of the Flagstaff Metropolitan Planning Organization's (FMPO) area residents' travel patterns and mode selection. This is the first implementation of the travel diary in Flagstaff. The study is designed to provide feedback to FMPO staff on travel patterns useful for future transportation planning. The FMPO intends to repeat this study about every five years to provide trend data.

A random sample of about 2,400 households and students living in campus housing were invited to participate in the study. This sample was divided into three areas: the "Core" area of the City of Flagstaff, the rest of the City, and then the rest of the Flagstaff area. The figure on page 8 shows the division of the Flagstaff area into these three subareas. From the selected sample, 320 completed the surveys were received, providing a response rate of approximately 14%. While lower than a typical resident opinion survey response rate (which usually ranges from 25% to 40%), this response rate is not untypical for a travel diary study of this type, which places a greater burden on respondents. Typical response rates for these types of studies range from 12% to 20%. A sample size of 320 yields a 95% confidence interval of ±5.5% around results.

Selected households were mailed a pre-notification postcard informing them they had been randomly selected to participate in the Travel Diary Study, while the selected students in University group quarters were sent an e-mail prenotification. One week after their pre-notification, the full travel study packets were sent to all those selected for the study. Additionally, a reminder postcard was sent to residents one week after the travel study packets were sent.

Participants in the study were asked to keep a log or "diary" of their travel for one randomly assigned day during the week (Monday-Friday) of October 2nd (or a replacement week if necessary). For every trip made during the 24 hour period, they recorded the origin and destination of the travel, the travel mode used, the time of day, the number of people in the vehicle (if applicable), and the number of miles or blocks traversed during the 24 hour period. A trip was defined as any "one-way travel from one point to another that takes you farther than one city block (about 200 yards) from the original location."

The participants were also asked to complete a survey regarding their adult household members' attitudes towards the quality of local transportation, alternative transportation options provided by employers, number of vehicles, and general socioeconomic information about the household and the study participant (see Appendix D: Survey Materials for copies of the survey materials). Results were statistically weighted so that demographics of respondents matched population demographics. More information about the study methodology is contained in Appendix C: Study Methods.

Study Limitations

Several methodological limitations of the research should be considered when interpreting these results. First, the self-report nature of the data collection meant that the data had the potential to be limited by social desirability bias, i.e., the tendency to respond to questions in a

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manner that is socially acceptable or preferred. While asking people to record each trip made should help to limit this bias in reporting trip-making behavior, other questions may have been influenced by this type of bias. For example, people may have tended to report having voted, or having voted in a certain way, if they perceive that a certain answer would be considered "more acceptable."

Second, selection bias may have influenced the results due to the fact that participants were not required to participate in the survey. Of those who were invited to do so, only 14% chose to complete a trip diary. The type of respondent who was interested in participating may have different travel behaviors or opinions than those who ignored the invitation, or forgot to complete their survey. It is assumed that those with an interest in transportation issues are more likely to be traveling by modes other than driving alone. Selection bias is a limitation with which most studies of this type have to contend. By replicating the same survey methods over time, changes observed in the trend line can be deemed accurate, although the point estimates for each year may underestimate the proportion of trips traveled by driving alone.

Third, the weather may have influenced travel behavior. However, it does not appear that the weather during the travel diary week was extremely unusual (see Table 68 on page 56 in Appendix C: Study Methods).

Finally, the relatively small sample size limits the ability to examine travel behavior by subgroups. For example, investigation of the characteristics of transit trips and those who used transit is limited by the fact that less than 5% of respondents made any trips via transit, and only 2% of all the trips recorded were made using transit. The 95% confidence interval around results is ±5.5%; this may be sufficient for many planning purposes, but more precise estimates may be desirable. In future implementations, if resources allow, a larger sample should be recruited, and additional efforts made to increase the response rate among those who are contacted.

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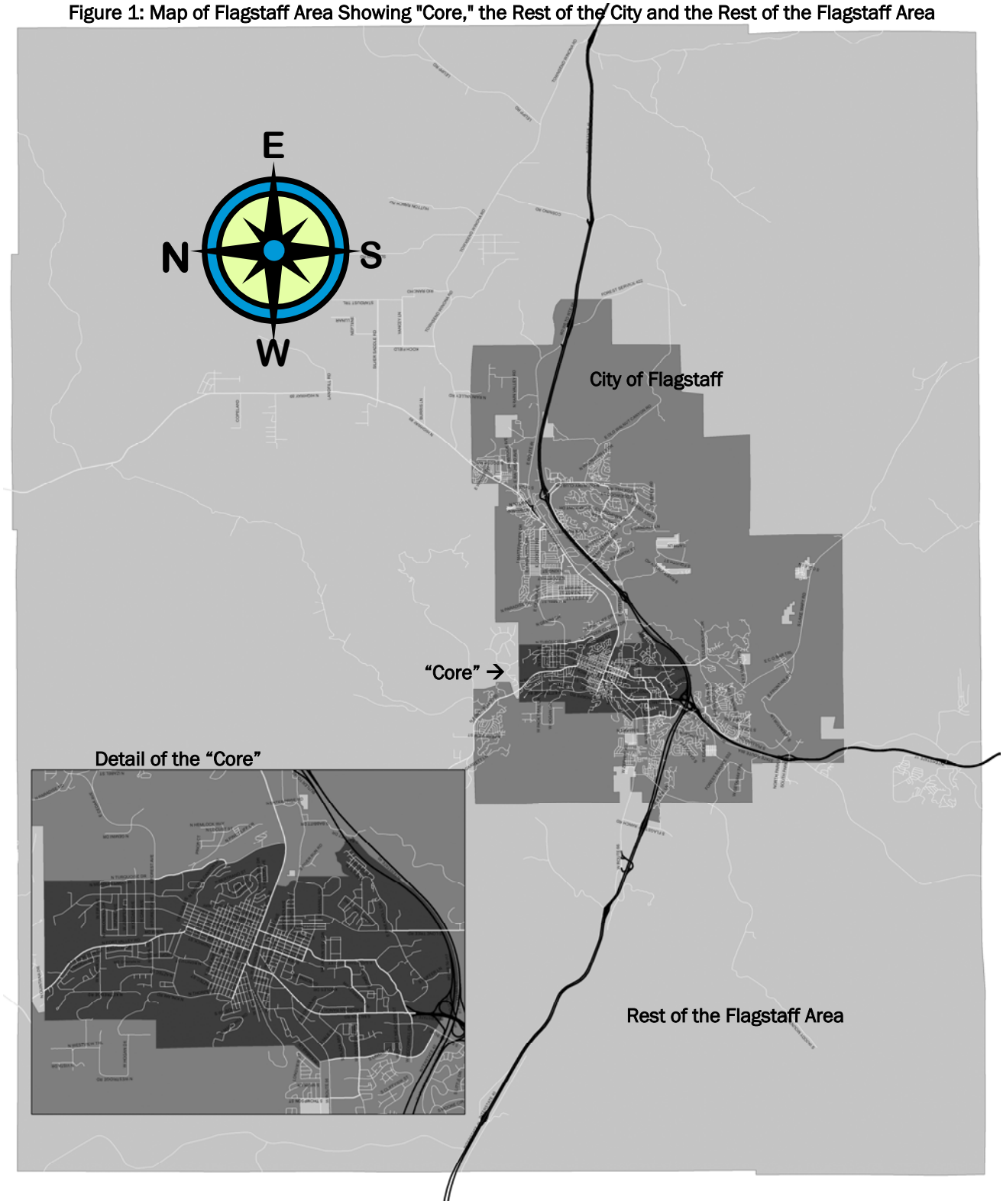
Figure 1: Map of Flagstaff Area Showing "Core," the Rest of the City and the Rest of the Flagstaff Area



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Modal Share

Transportation mode choice or "modal share" can be defined as a method of dividing travel into all available transportation modes and can refer to the number of modes, number of trips or number of miles traveled. This study uses the number of trips and number of miles when calculating modal share, and classifies the modes as single-occupancy vehicle (SOV), multiple-occupancy vehicle (MOV),[1] transit (including school bus), foot, bicycle and other motorized vehicles such as motorcycles and trucks.[2]

As shown in Figure 2, over half of all the **trips** made by respondents were made by driving alone. About 1 in 5 trips were made in multiple-occupant vehicles, while 12% of trips were made by walking, 7% by biking, and 2% via transit. When examining the proportion of miles traveled by the various modes, the proportion of miles traveled by vehicle was somewhat greater, with nearly two-thirds of all miles traveled accounted for by SOVs, almost 30% by MOVs, 1% by transit, 3% by bicycle and 1% by walking (see Figure 3). Motorized vehicles can be expected to account for a greater share of miles traveled compared to trips traveled, as walking and biking modes are generally used only for shorter trips.

Figure 2: Modal Share of All Trips

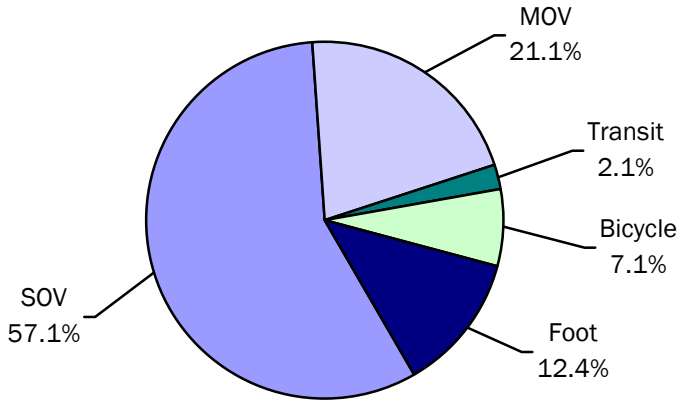
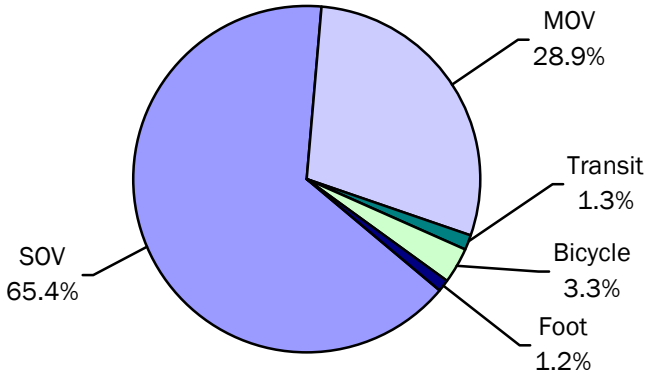


Figure 3: Modal Share of All Miles Traveled



[1] A single-occupancy vehicle refers to an automobile, van, truck or motorcycle which has only one occupant; a multiple-occupancy vehicle is an automobile, truck or motorcycle with more than one occupant.

[2] These modes were recoded into the SOV and MOV categories, based on the number of occupants in the vehicle. Truck and motorcycle trips make up a very small proportion of the trips made.

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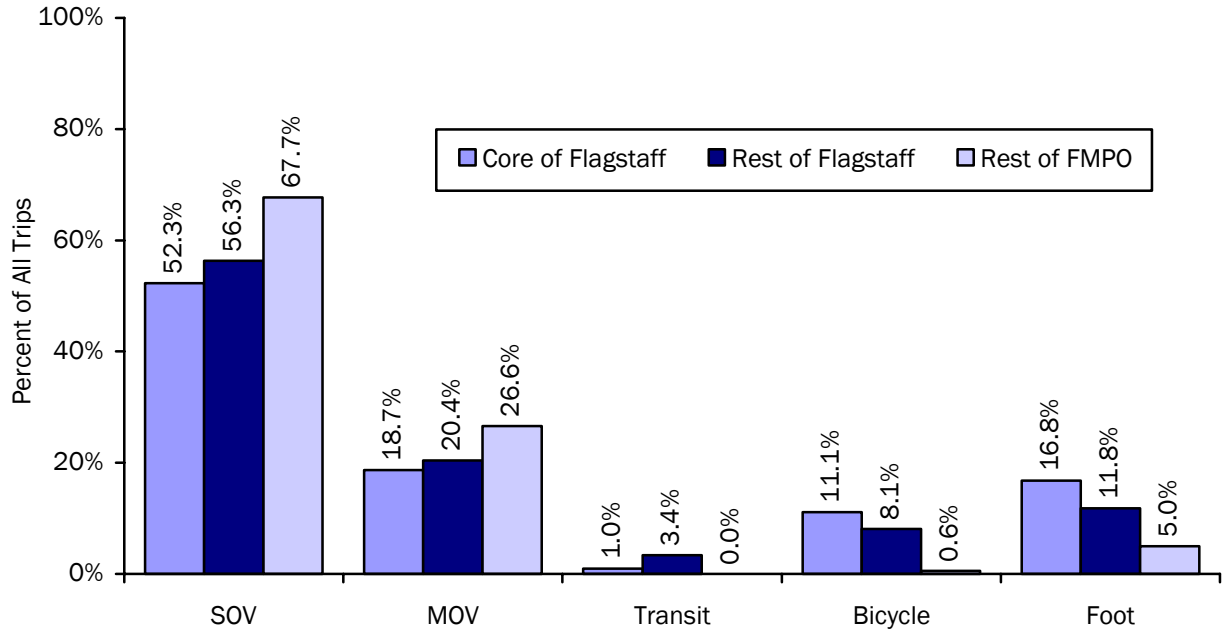
Examination of modal share by area of residence showed that those who lived in the "core" area of the city of Flagstaff were less likely to have made trips by driving alone (52%) than were those who lived in the rest of the city (56%) or in the remainder of the Flagstaff Metropolitan Planning Organization (FMPO) area (68%, see Figure 4). Likewise, those who lived in the core were more likely to have made trips by bicycling or walking than those who lived outside the core area. The survey results show a positive relationship between land use and transportation. People are more willing to walk and bike if they are located in the core because the land use patterns and accommodations make it a more viable option. The FMPO should think about transit and mobility differently in each of the geographic areas. There may need to be a focus on walkability and mode share within the core and a focus on levels of service in the outlying areas where mode shift is less likely.

Figure 4: Modal Share of All Trips by Area of Residence



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The 2001 National Household Transportation Survey (NHTS, formerly the National Personal Transportation Study (NPTS)), commissioned by the U.S. Department of Transportation, studied the travel patterns of the nation as a whole using a diary methodology similar to the one used in this research project. Although the NHTS data were collected five years previous to the Flagstaff area trip diary data, the comparisons may also be helpful in understanding how Flagstaff travel patterns may differ from those seen nationally.

As shown in Table 1, Flagstaff area residents were more likely to make trips by walking or bicycling compared to residents nationwide. Flagstaff area residents' use of private vehicles was somewhat lower compared to the U.S. The proportion of trips made via transit was similar, around 2% of all trips. When the proportion of miles traveled was compared (see Table 2), Flagstaff area residents were more similar to residents nationwide, although the proportion of miles traveled by bike or foot was still somewhat higher for Flagstaff area residents than for U.S. residents, while bus and transit trips were somewhat lower. The NHTS includes trips made by children age 15 and under, so this may account for the higher proportion of miles traveled by school bus and public transit compared to the adults and youth age 16 and over surveyed for this study. However, given that the NHTS includes "children trips," it is even more meaningful that SOV mode share was lower among Flagstaff residents.

Table 1: Modal Share of All Trips, Flagstaff Compared to the U.S.

Travel Mode	Flagstaff Area 2006		NHTS 2001*	
SOV	57.1%	78.2%	37.8%	87.0%
MOV	21.1%		49.2%	
Public Transportation/Transit	2.1%		1.7%	
Walk	12.4%		8.8%	
School Bus	0.1%		1.7%	
Bike	7.1%		0.8%	
Total	100.0%		100.0%	

**The NHTS 2001 included all persons, including those age 15 and younger.*
The Flagstaff data include persons aged 16 and older.

Table 2: Modal Share of All Trip Miles, Flagstaff Compared to the U.S.

Travel Mode	Flagstaff Area 2006		NHTS 2001*
SOV	65.4%	94.3%	95.3%
MOV	28.9%		
Public Transportation/Transit	1.3%		2.5%
Walk	1.2%		0.5%
School Bus	0.0%		1.5%
Bike	3.3%		0.1%
Total	100.0%		100.0%

**The NHTS 2001 included all persons, including those age 15 and younger.*
The Flagstaff data include persons aged 16 and older.

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Modal Share of the Work Commute

Trips made as part of the work commute were identified for special analysis, including trips directly between home and work and trips linked during the work commute.[3] As not all respondents had a work commute, the data in the following tables are based on a smaller number of respondents and trips. Almost three-quarters of work commute trips were made by driving alone (see Figure 5). Transit accounted for a very small proportion of the work commute trips (less than 1%), while 3% were made by bicycle and 9% by foot. When the modal share of work commute **miles** is examined, the proportion traveled by driving alone was nearly 80% (see Figure 6), while less than 3% were made by using the bus, biking or walking.

Figure 5: Modal Share of Work Commute Trips

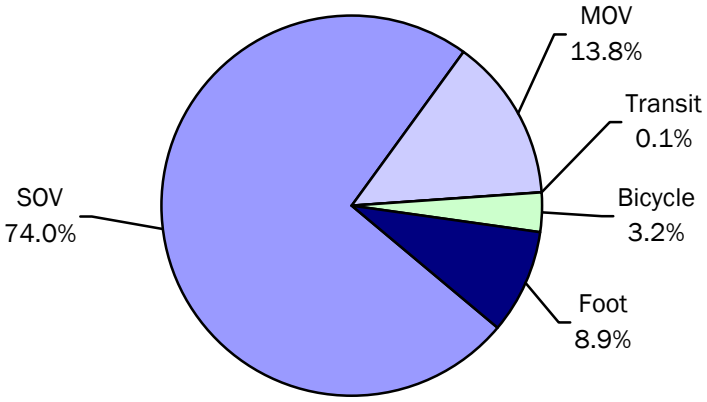
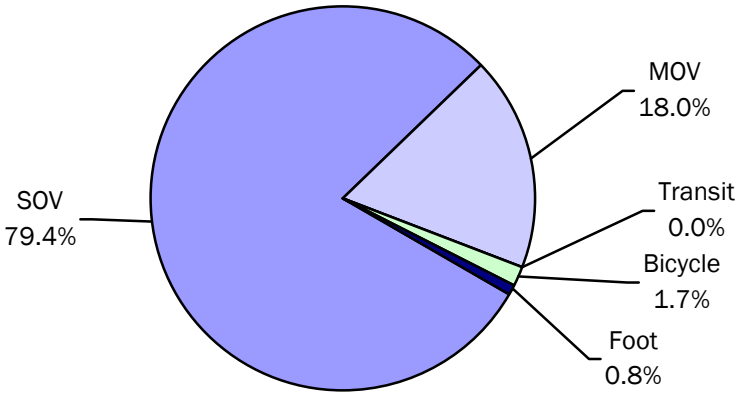


Figure 6: Modal Share of Work Commute Miles Traveled



[3] See page 24 for a description of how trips were categorized. Using this trip classification scheme as displayed in Figure 14, the "home-based work" commute trips could be determined. Still, a small percentage of the work commute would not be accounted for when a work trip was "linked," that is, a trip where the person makes a stop on the way to or from work. For example, if the participant stopped at the post office on the way to work, the first trip would be classified as "home-based other" and the second trip would be categorized as "non-home based." Neither of these legs of the trip would be counted as the work commute. Similarly, if a participant picked up a child from school on the way home, neither trip would be classified as "home-based other." To be sure trips were identified as part of the work commute, another code was created which allowed the trips to be distinguished as "linked." All the linked trips are included in the analysis of "work commute" trips.

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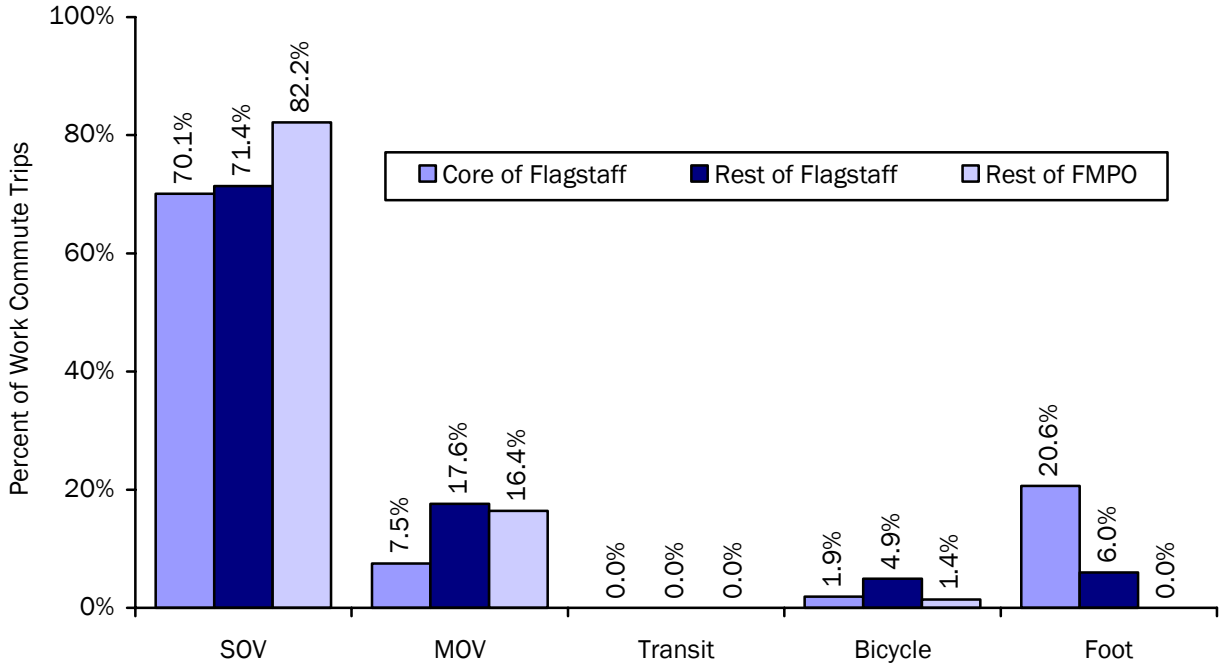
The modal share of work commute trips made by those living in the three different areas of the FMPO is displayed in Figure 7. Those who lived in the core area (see Figure 1 for a map of the area) were more likely to have made work commute trips by walking (21% of their work commute trips) than were those who lived in the rest of the city (6%) while none of the work commute trips made by those who lived outside the city were made by walking. Those in the area outside the city made a somewhat greater proportion of work commute trips by driving alone (82%) than those in the city (about 70%).

There is a definite difference between the mode share in the core versus the rest of Flagstaff and the MPO. With 20.6% of the work commute trips within the core being made on foot this shows that the land use patterns within the core area encourage and influence travel behavior. As the distance between work and home increases the mode shifts. Residents located in the rest of Flagstaff were more likely to bicycle to work or ride in a MOV than in the core and rest of the FMPO. Subsequently those located in the rest of the FMPO were most likely to ride in a SOV on their work commute.

Figure 7: Modal Share of Work Commute Trips by Area of Residence



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The 2001 NHTS also analyzed trip-making behavior for the work commute. When the modal share of work commute trips was compared, Flagstaff area residents made a smaller proportion of trips by private vehicle compared to residents of the U.S. as a whole (Table 3), with a larger proportion of work commute trips made by walking or bicycling, although a smaller proportion were made by transit. However, when the modal share of work commute miles traveled was examined (see Table 4), the proportion of work commute miles traveled by private vehicle of Flagstaff area residents was similar to that of U.S. residents. The proportion of miles traveled by transit for the work commute by Flagstaff area residents was less than that of U.S. residents, but the proportion of miles traveled by bike or foot by Flagstaff area residents was greater than that of U.S. residents.

Table 3: Modal Share of Work Commute Trips, Flagstaff Compared to the U.S.

Travel Mode	Flagstaff Area 2006		NHTS 2001
SOV	74.0%	87.8%	92.7%
MOV	13.8%		
Public Transportation/Transit		0.1%	3.7%
Walk		8.9%	3.1%
School Bus		0.0%	0.1%
Bike		3.2%	0.4%
Total		100.0%	100.0%

Table 4: Modal Share of Work Commute Miles, Flagstaff Compared to the U.S.

Travel Mode	Flagstaff Area 2006		NHTS 2001
SOV	79.4%	97.4%	95.7%
MOV	18.0%		
Public Transportation/Transit		0.0%	3.7%
Walk		0.8%	0.1%
School Bus		0.0%	0.3%
Bike		1.7%	0.1%
Total		100.0%	100.0%

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The 1990 and 2000 Census report modal share estimates for the "Journey to Work". The data were derived by asking residents about their usual mode of travel to work. These results are displayed below for City of Flagstaff residents and all U.S. residents (see Table 5). Similar results are seen comparing the Census data of Flagstaff area residents to the U.S. as a whole as were observed in comparing the 2006 Flagstaff Trip Diary Survey data to the 2001 NHTS; Flagstaff area residents were more likely to have made work commute trips by bicycling or walking than was the U.S. employed population as a whole, but less likely to have made work commute trips via transit. From 1990 to 2000, the proportion of employed Flagstaff residents getting to work by driving alone remained constant, while a small increase in drive alone work commute trips was observed nationally. As with all U.S. residents, walking trips for the work commute decreased for employed Flagstaff area residents from 1990 to 2000. In the Flagstaff area, though, small gains were seen in carpooling, bicycling and working from home from 1990 to 2000.

Table 5: Census Journey to Work Data, Flagstaff Compared to the U.S.

	Percent of Employed Residents Using Each Mode			
	Flagstaff Area*		U.S.	
Travel Mode	2000	1990	2000	1990
Drive alone	71.1%	71.0%	75.7%	73.2%
Carpooled	14.7%	12.8%	12.2%	13.4%
Transit	0.6%	0.5%	4.6%	5.1%
Bicycle	2.8%	2.3%	0.4%	0.4%
Walk	5.8%	9.2%	2.9%	3.9%
Other	0.8%	1.1%	1.0%	1.1%
Worked at home	4.2%	3.1%	3.3%	3.0%
TOTAL	100.0%	100.0%	100.0%	100.0%

**Coconino CCD (subdivision of Coconino County)*

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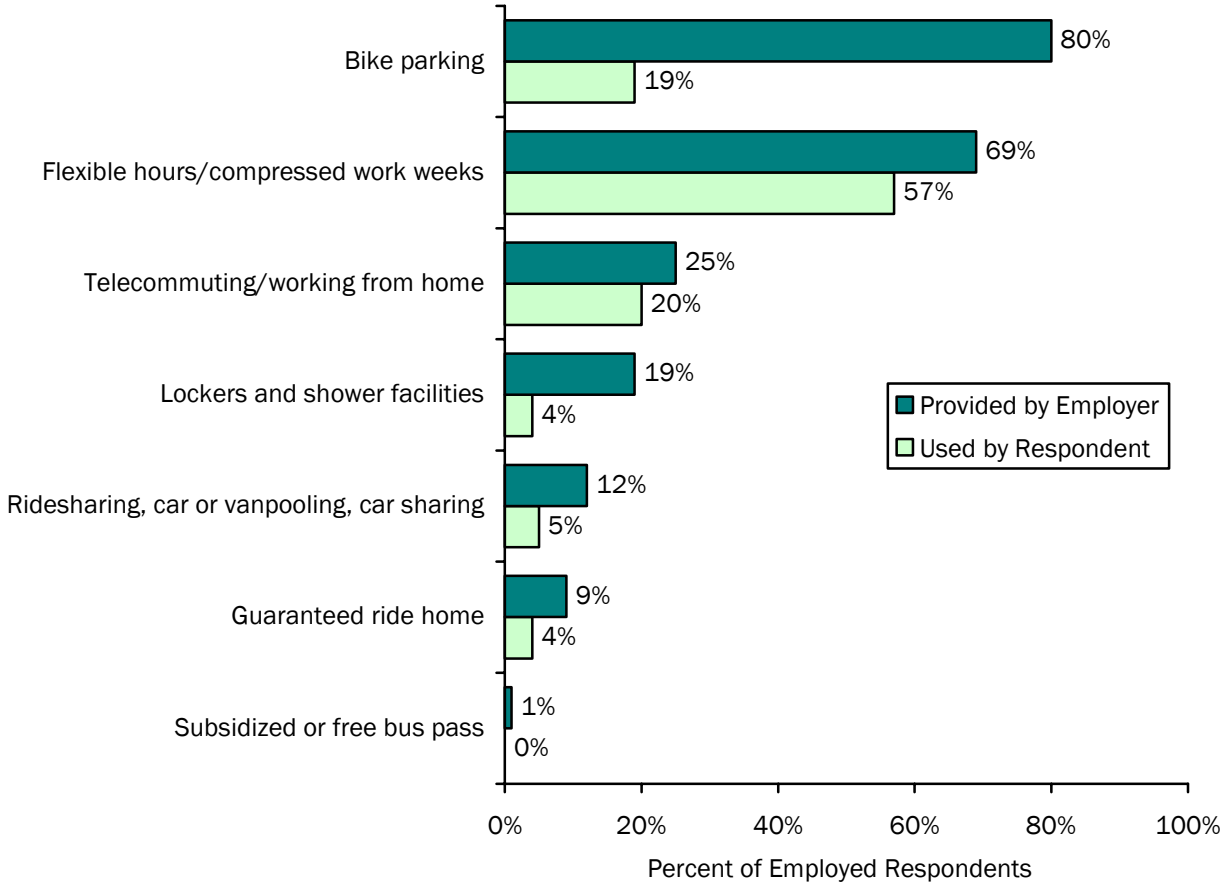
Alternative Work Commute Options Offered by Employers

On the two page survey that accompanied the trip diary, respondents were asked a few additional questions about transportation in the Flagstaff area. Those who were employed were asked whether their employer provided facilities or programs to encourage a variety of transportation options. Respondents were also asked whether they had ever availed themselves of these options. Over two-thirds of respondents reported that their employer offered bike parking or flexible hours. Only in 1 in 5 of all employed respondents had ever used bike parking, while over half had taken advantage of flexible hours or compressed work week. About a quarter of respondents' employers offered the opportunity for telecommuting or working from home; about 1 in 5 respondents reported having ever telecommuted. Lockers and shower facilities were offered by 19% of respondents' employers, ridesharing opportunities by 12% of employers, a guaranteed ride home by 9% of employers and a subsidized or free bus pass by only 1% of respondents' employers. These options had only been used by 5% or less of respondents.

Figure 8: Employed Respondents Access to and Use of Employer-Provided Transportation Options



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Modal Share of Northern Arizona University Students' Travel

Undergraduate student enrollment at the University of Northern Arizona (NAU) was about 11,000 in the 2006/2007 academic year (http://home.nau.edu/about/default.asp). Thus, students account for about 14% of Flagstaff area residents during the school year; about 18% of those responding to the survey identified themselves as a student at NAU. The transportation choices made by the students for all trips are displayed in Figure 9, and for the school commute trips in Figure 10.[4]

The modal share for this group was somewhat different than the rest of the population due to the students' high use of alternate modes; 47% of all trips made by University students were made by driving alone (see Figure 9), compared to 57% of all respondents' trips (see Figure 2). An even smaller proportion of the school commute trips of University students were made by driving alone (34%), while a greater proportion were made by other modes. Biking and walking trips accounted for just over 60% of the school commute trips (29% by bicycle and 31% by foot).

Figure 9: Modal Share of All Trips Made by NAU Students

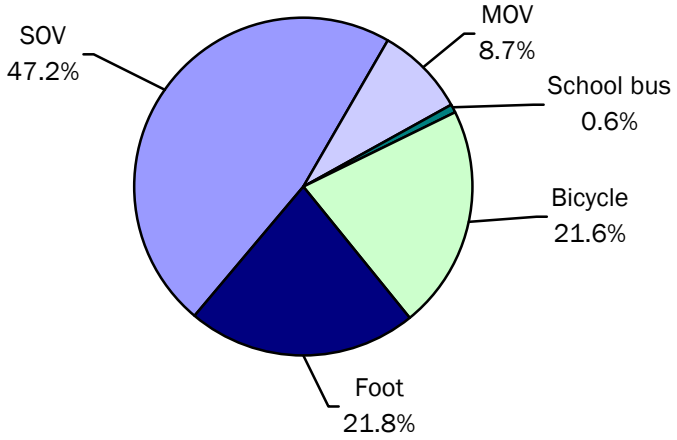
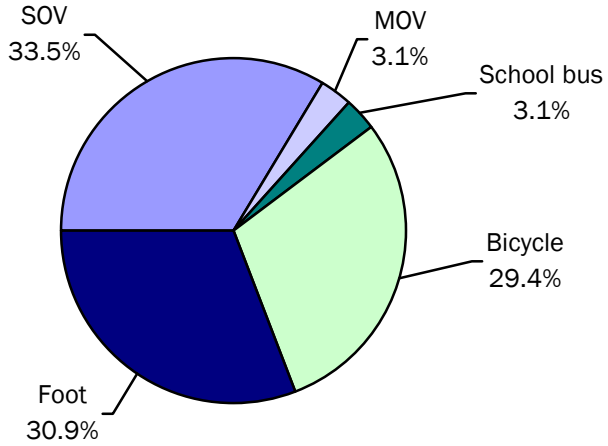


Figure 10: Modal Share of NAU Students' School Commute



[4] Included in this figure are trips for which the recorded purpose was "school". School trips were not linked as work commute trips were, so parts of the trip that were linked would not be included. For example, if a student walked 2 blocks to the bus, rode the bus for 1 mile, and then walked 3 blocks to school, only the last leg of that trip would be recorded as "school". The other two legs would be recorded as "change travel mode."

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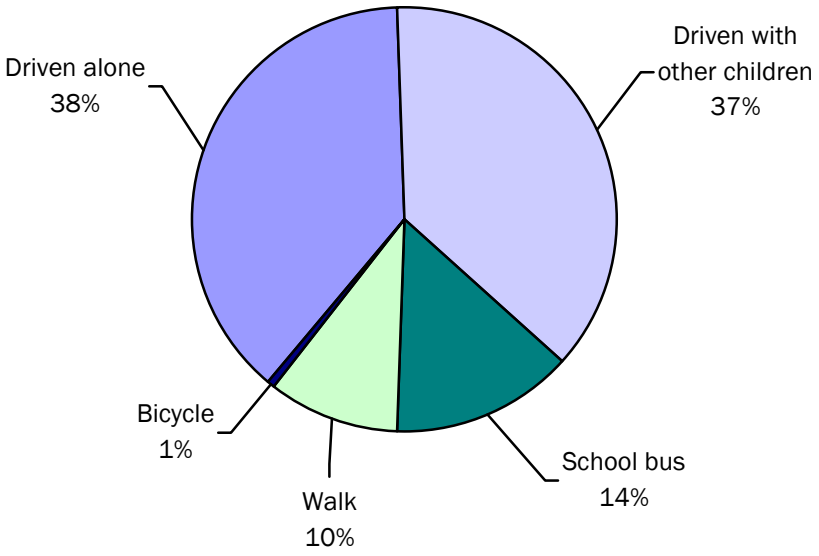
Modal Share of Children's School Commute

About 22% of those participating in the trip diary survey reported their household included one or more children under age 16. Those with school-age children were asked how their children got to and from school. As shown in Figure 11, most children were driven to school, either by themselves (38%) or with other children (37%). The next most common transportation method was a school bus, used by 14% of children. About 1 in 10 of the children walked to and from school, while only 1% bicycled.

Figure 11: Modal Share of Respondents' Children's School Commute



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Trip Characteristics

This section of the report explores the characteristics of the trips made by Flagstaff area residents. Table 6, below, displays summary trip characteristics for all trips, regardless of mode of travel. On average, respondents took about 5 trips during the 24 hour period assigned to them, with an average trip length of about 5.3 miles. The average trip took about 17 minutes to complete. Total miles traveled per person was 27 miles in a 24 hour period. Approximately 5% of respondents made no trips on their assigned travel day.

Those who lived in the "core" area of the city traveled fewer miles per day and made trips of shorter distances than did those who lived in the rest of the city (see Table 7). Those who lived outside of the city traveled an even greater number of miles per day and had trips of greater length.

Table 6: Summary Trip Characteristics of Trips Made Via All Modes

Trip Characteristics	
Average number of trips per day per person	5.3 trips per person
Average number of miles traveled per day per person[5]	27.5miles per person
Percent of people who did not leave the house on assigned travel day	5.5% of respondents
Average number of trips per day per person who made at least one trip	5.6 trips per person
Average number of miles traveled per day per person who made at least one trip[5]	29.1miles per person
Average estimated trip length in miles[5]	5.3 miles
Average estimated trip time in minutes	16.6 minutes
Average miles per hour	17.0 mph

Table 7: Summary Trip Characteristics of Trips Made Via All Modes by Area

Trip Characteristics	Core of Flagstaff	Rest of Flagstaff	Rest of FMPO
Average number of trips per day per person	5.2 trips per person	5.5 trips per person	4.9 trips per person
Average number of miles traveled per day per person[5]	21.3 miles per person	27.6 miles per person	34.1 miles per person
Percent of people who did not leave the house on assigned travel day	5.3% of respondents	6.6% of respondents	3.0% of respondents
Average number of trips per day per person who made at least one trip	5.5 trips per person	5.9 trips per person	5.1 trips per person
Average number of miles traveled per day per person who made at least one trip[5]	22.6 miles per person	29.6 miles per person	35.4 miles per person
Average estimated trip length in miles[5]	4.3 miles	5.1 miles	6.9 miles
Average estimated trip time in minutes	14.2 minutes	17.2 minutes	17.4 minutes

[5] Trip Diary Study participants are asked to record the estimated distance in miles or blocks of every trip they make. Thus, trip distance is not measured objectively, but is determined by the respondents' self report.

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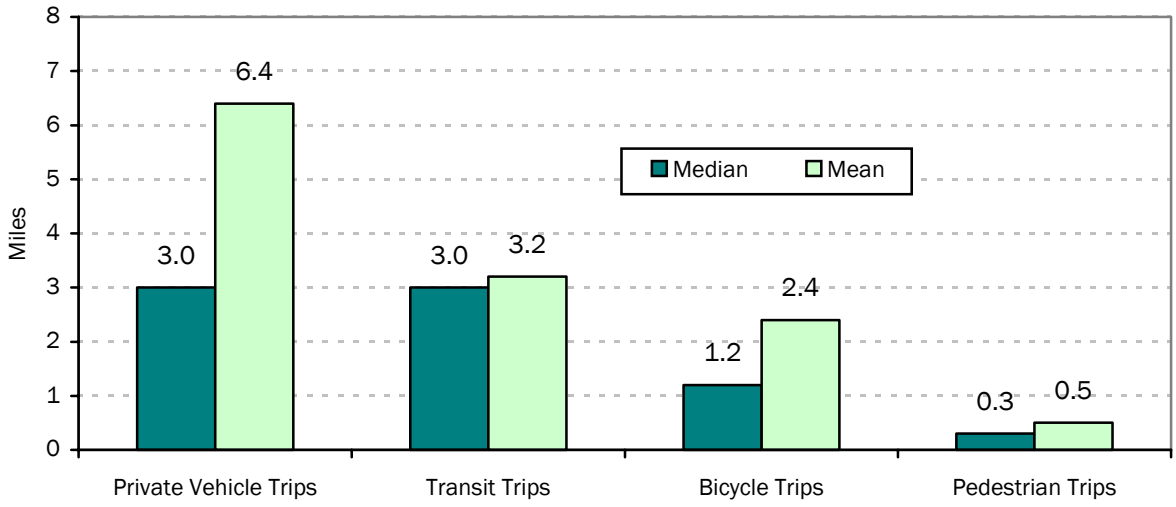
Trip Distance

In Figure 12 trip distances are exhibited by mode of travel. As would be expected, trips made by walking or biking tended to be of shorter distance than were trips made in motor vehicles (bus or private vehicle). The median trip length (indicating the trip distance at which half the trips are of that length or longer and half are shorter) of private vehicle and transit trips was 3.0 miles, compared to a median trip length of 1.2 miles for bicycle trips and 0.3 miles for trips made by foot.

Figure 12: Trip Distance by Travel Mode



Most bicycle and pedestrian trips were less than 2.5 miles in distance. Trips of this distance comprised about 10% of trips made via private vehicle, indicating a small but significant market exists in Flagstaff for shifting trips from the private vehicle to non-motorized modes.

Table 8: Trip Distance by Mode of Travel

	Percent of Trips				
Trip Distance	Private Vehicle	Transit	Bicycle	Pedestrian	All Modes
0 - 0.49 miles	3.8%	0.0%	7.6%	53.1%	9.8%
0.5 thru 0.99 miles	6.1%	0.0%	8.5%	26.0%	8.4%
1.00 thru 2.49 miles	29.5%	8.3%	49.2%	19.3%	29.1%
2.50 thru 4.99 miles	30.0%	75.0%	23.7%	1.6%	27.3%
5.00 thru 9.99 miles	18.2%	16.7%	6.8%	0.0%	15.6%
10.00 thru 14.99 miles	6.9%	0.0%	4.2%	0.0%	5.7%
15.00 thru 19.99 miles	1.7%	0.0%	0.0%	0.0%	1.3%
20.00 or more miles	3.7%	0.0%	0.0%	0.0%	2.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

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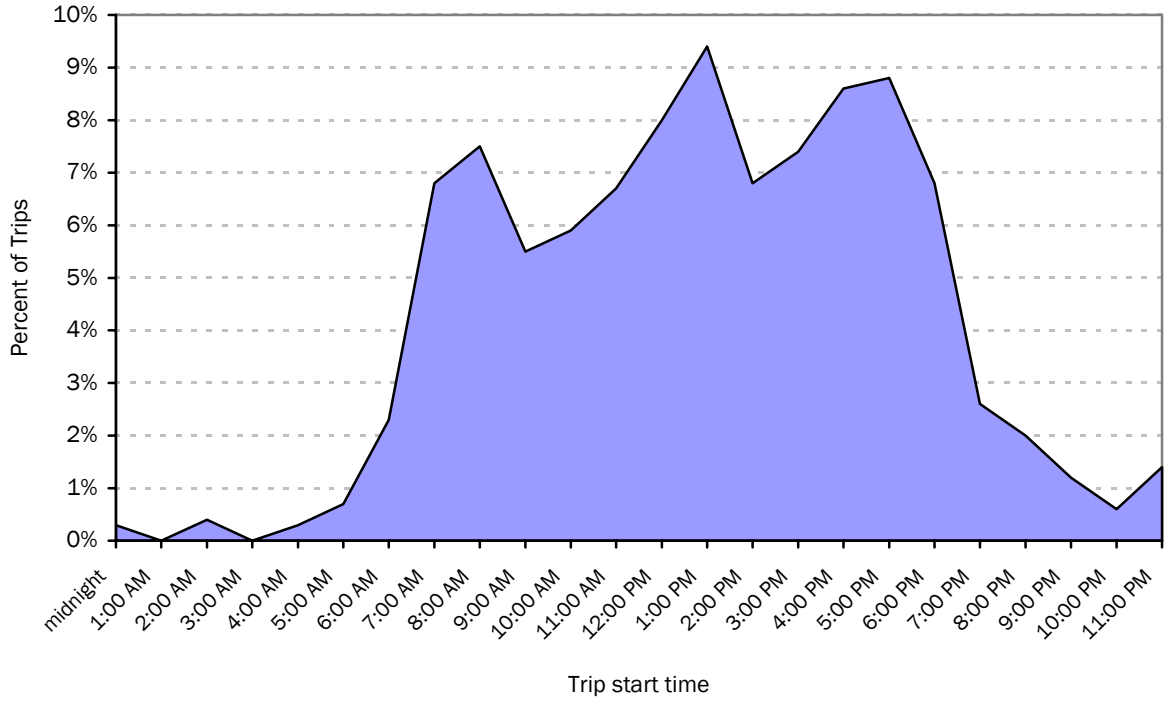
Trip Start Times

Trip start and end times were recorded by respondents as they kept track of their travel throughout the day. The graph in Figure 13 shows when travel activity took place. Most travel occurred between 6:00 am and 8:00 pm, with spikes during the morning commute time (about 8:00 am), and the afternoon commute time (about 4:00 pm to 6:00 pm). Another peak in travel occurs around the noontime lunch hour.

Figure 13: Trip Start Time



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Purpose of Travel

In addition to recording information about the time of day and mode of transportation used for each trip, respondents were also asked to document the purpose of each trip they made. Table 9 shows the reasons for travel by trips made, and by miles traveled, while Table 10 and Table 11 show the modal share by trip purpose and the purpose of trips by the mode of travel used to make the trip. Aside from the "go home" trips (about 1 in 3 of all trips), work trips accounted for one of the largest proportion of trip purposes; 22% of trips and 26% of miles.

Trips made for the work commute, personal business and social or recreation purposes were most likely to have been made by single-occupancy vehicles, while trips made to eat a meal or drive a passenger were least likely to have been made by driving alone.

Table 9: Trip Purpose

Purpose of Trip	Percent of Trips	Percent of Miles
Go home	30%	35%
Work commute	12%	13%
Other work/business	10%	13%
Drive passenger	6%	11%
Personal business	11%	10%
Social/recreation	9%	8%
Shopping	9%	5%
School	5%	2%
Eat a meal	5%	2%
Change travel mode	3%	1%
Other	<1%	<1%
Total	100%	100%

Table 10: Modal Share by Trip Purpose

Modal Share of All Trips	Go home	Work commute	Other work/business	Drive passenger	Personal business	Social/ recreation	Shopping	School	Eat a meal	Change travel mode
SOV	56.2%	61.3%	57.0%	40.0%	77.0%	75.0%	40.6%	47.0%	37.1%	44.2%
MOV	23.3%	19.0%	28.4%	2.7%	9.8%	9.7%	21.9%	29.3%	60.9%	0.9%
Transit	2.5%	0.0%	1.4%	0.0%	0.0%	0.0%	8.3%	2.7%	0.0%	12.9%
School bus	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bicycle	6.5%	12.2%	11.5%	25.4%	3.9%	5.3%	5.1%	3.2%	0.0%	0.0%
Foot	11.6%	7.4%	1.6%	29.2%	9.4%	10.0%	24.1%	17.8%	2.1%	42.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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Table 11: Trip Purpose by Mode of Travel

Purpose of Trip	Percent of Trips					
	SOV	MOV	Transit	School bus	Bicycle	Foot
Go home	29.6%	33.2%	34.7%	0.0%	27.6%	28.1%
Work commute	15.7%	5.4%	0.0%	0.0%	6.3%	8.8%
Other work/business	13.2%	4.6%	0.0%	0.0%	7.4%	8.1%
Drive passenger	4.0%	17.6%	0.0%	0.0%	0.0%	1.0%
Personal business	12.0%	10.1%	0.0%	0.0%	19.2%	6.7%
Social/recreation	6.3%	9.2%	34.7%	0.0%	6.3%	17.2%
Shopping	9.2%	12.4%	6.0%	0.0%	14.8%	1.2%
School	3.2%	0.6%	0.0%	100.0%	16.2%	10.7%
Eat a meal	4.0%	6.8%	6.0%	0.0%	2.2%	7.0%
Change travel mode	2.4%	0.1%	18.6%	0.0%	0.0%	10.5%
Other	0.4%	0.0%	0.0%	0.0%	0.0%	0.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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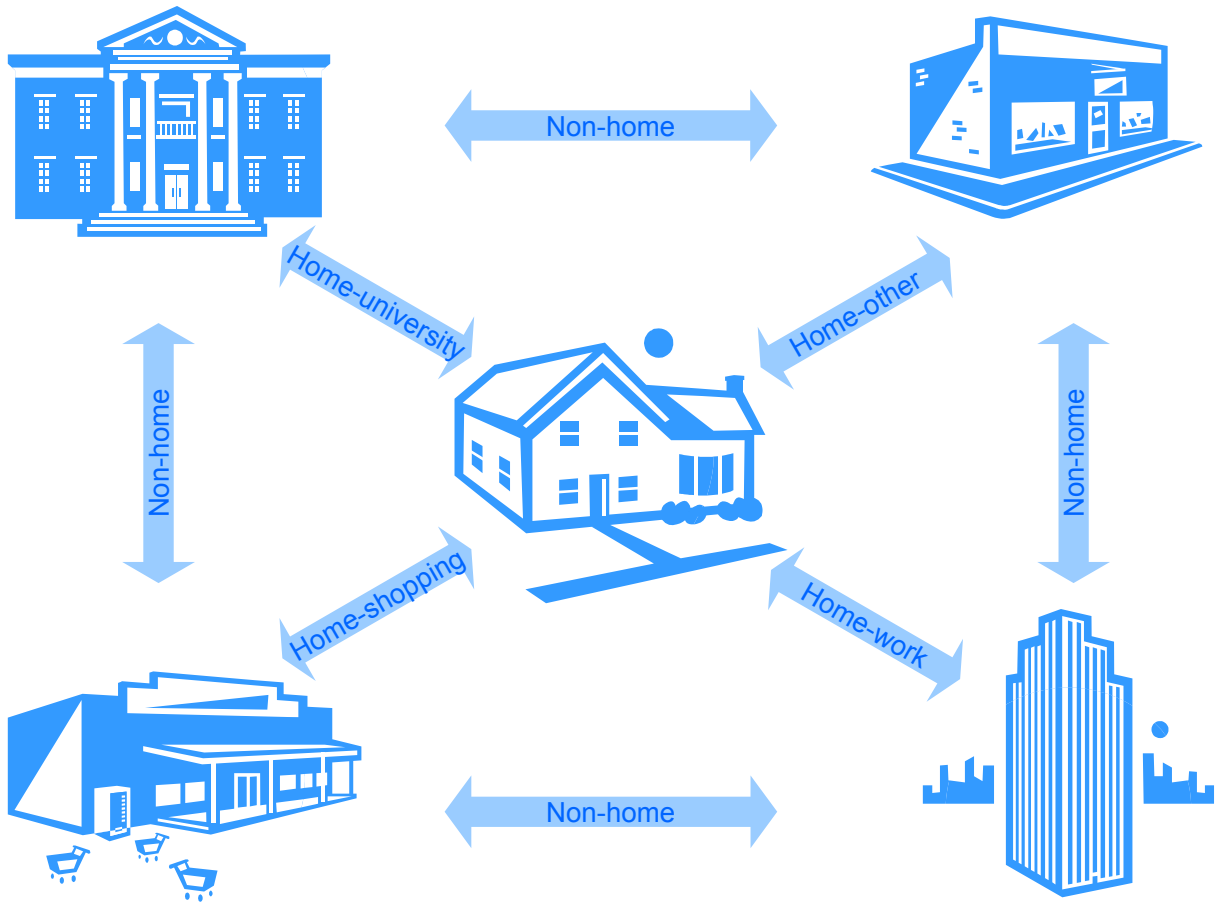
Traditional transportation planning has often focused on origins and destinations of trips, particularly those based at home or work, to study trends regarding trip purpose. Thus trips have often been classified in more aggregated categories of purpose depicting "home-based work" trips, "home-based other" trips and "non-home" trips. For the purposes of the Flagstaff Trip Diary Survey, two additional trip purposes were added to the classification scheme, as shown in Figure 14.[6] All trips were coded into one of these five categories.

Figure 14: Trip Typology



[6] This coding scheme was adapted from the Puget Sound Council of Governments Travel Study, 1985, with the addition of home-shopping and home-University trip types.

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Nearly two-thirds of respondents' trips were made directly to or from home (see Figure 15). Two percent of all trips were made between home and shopping; 6% between home and the University; 16% between home and work; and 39% between home and another type of location (e.g., social/recreation, personal business, etc.). About 2 in 5 of trips were made between non-home origins and destinations, meaning these trips both started **and** ended somewhere other than the respondent's home. This shows that commuter trips are not the highest number of trips. Since the rush hour commute trips do not account for the highest number of trips, more creative and less restrained broad based transportation planning solutions should be implemented rather than providing accommodations for the peak travel times.

The average trip length of home-work, home-shopping and non-home-based trips was about 6 miles (see Table 12); while trips between home and the University were somewhat longer on average (7 miles), and trips between home and other destinations were a bit shorter (4 miles). Although trips between home and work or between home and shopping were of similar distance, on average, the trip duration was shorter for home-shopping trips (12 minutes) than for home-work trips (17 minutes). Trips between home and the University took 17 minutes to make, on average, while non-home-based trips took nearly 20 minutes to make. Trips between home and other destinations took about 11 minutes to complete.

About 80% of trips made directly between home and work were made by driving alone (see Table 14 on the next page), while the other trip types were less likely to have been made via SOV; trips between home and the University were the types least likely to have been made via SOV (41%).

Figure 15: Trip Type

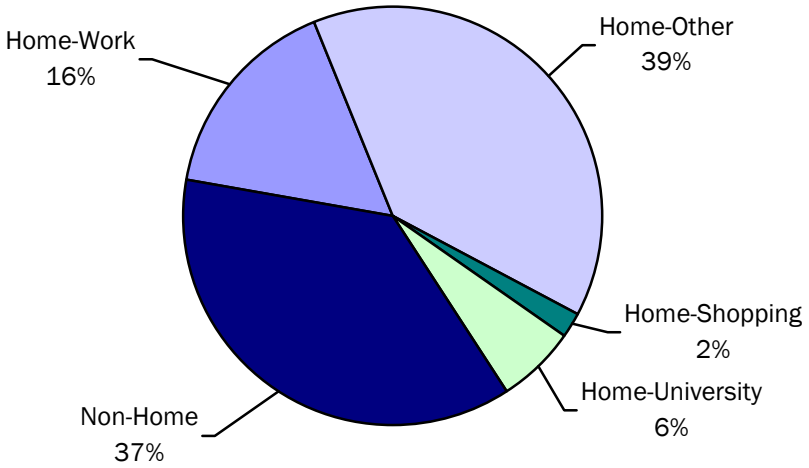

Table 12: Average Trip Length and Duration by Trip Type

Trip Characteristics	Home-Work	Home-Shopping	Home-University	Home-Other	Non-Home
Average estimated trip length in miles[5]	5.8 miles	5.8 miles	7.0 miles	3.9 miles	6.0 miles
Average estimated trip time in minutes	16.9 minutes	12.4 minutes	19.0 minutes	11.3 minutes	19.6 minutes

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Table 13: Trip Type by Mode of Travel

Purpose of Trip	Percent of Trips					
	SOV	MOV	Transit	School bus	Bicycle	Foot
Home-Work	22.3%	6.7%	0.0%	0.0%	6.7%	12.1%
Home-Shopping	2.8%	3.4%	0.0%	0.0%	1.4%	0.6%
Home-University	4.3%	1.4%	69.3%	100.0%	14.3%	4.9%
Home-Other	34.6%	53.8%	17.3%	0.0%	31.4%	38.3%
Non-Home	35.9%	34.6%	13.3%	0.0%	46.3%	44.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 14: Modal Share by Trip Type

Modal Share of All Trips	Percent of Trips				
	Home-Work	Home-Shopping	Home-University	Home-Other	Non-Home
SOV	78.8%	64.6%	41.1%	51.2%	55.4%
MOV	8.9%	28.6%	5.0%	29.6%	19.9%
Transit	0.0%	0.0%	24.8%	1.0%	0.8%
School bus	0.0%	0.0%	2.0%	0.0%	0.0%
Bicycle	3.0%	3.9%	17.0%	5.8%	9.0%
Foot	9.3%	2.9%	10.1%	12.4%	15.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

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Comparisons of Trip Characteristics of U.S. Residents to Flagstaff Area Adult Residents

Table 15 below compares the trip characteristics of travel completed by Flagstaff area residents to trips made by residents across the U.S. As noted before, the NHTS included travel by residents of all ages (including those under age 16), while the Flagstaff Trip Diary Survey included only those aged 16 or older. The average number of trips made per day was slightly higher for Flagstaff area residents than what was observed nationally. The average trip length, however, was much shorter. The number of vehicles per household was similar for Flagstaff area residents as compared to U.S. residents. The number of bicycles per household was higher in Flagstaff compared to the U.S. As has been observed elsewhere (e.g. Table 1, Table 3), Flagstaff area residents were more likely to travel by bicycle compared to national statistics, but differences in the way the question was asked may also account for the differences observed; on the NHTS respondents were queried about "adult-sized" bicycles while no such specification was made on the Flagstaff survey.

Table 15: Household and Travel Characteristics, Flagstaff Compared to the U.S.

Characteristic	Flagstaff Area 2006	NHTS 2001*
Average number of trips	5.3 trips per person per day	4.1 trips per person per day
Average trip length, all trips	5.3 miles	9.9 miles
Average work-related trip length	6.5 miles	14.6 miles
Average trip duration, all trips	16.6 minutes	18.7 minutes
Average work-related trip duration	16.8 minutes	24.8 minutes
Personal vehicles per household	1.86 vehicles per household	1.90 vehicles per household
Bicycles per household**	1.62 bicycles per household	0.86 bicycles per household

** The NHTS data are for all persons, including those 15 and under. The Flagstaff data are only for those aged 16 and older.*
***The NHTS specified "adult-sized" bicycles.*

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Trip Chaining

Trip chaining refers to "strings" of trips that are linked; for example, combining a trip to the post office with a trip to the grocery store. Trips recorded by study participants were coded as "chains" if the time spent at the destination was less than 20 minutes. Not all trip chains may be considered chaining of errands; other types of trips may also typically result in a chain: trips to pick up or drop off a passenger usually are chained (e.g., dropping off a child at school on the way to work) or trips made via multiple modes (e.g., walking to a bus stop and then riding the bus to work).

Over half of respondents made at least one trip chain on the day they recorded their travel for the study (see Table 16 below). About 33% of respondents' trips were considered a segment of a "chained" trip; 5% as part of a work commute chain and 26% as part of a chain not associated with the work commute (see Figure 16).

Figure 16: Trip Chaining

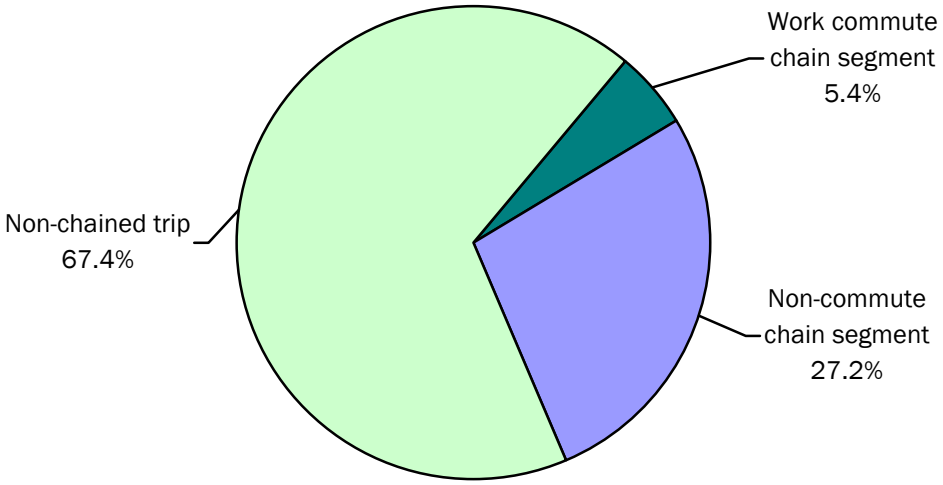

Table 16: Number of Trip Chains Made by Respondents

Number of Trip Chains Made	Percent of Respondents
None	47.9%
1	24.8%
2	19.8%
3	5.8%
4	1.5%
5	0.3%
Total	100.0%

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Table 17 through Table 22 display additional information about trip chaining. Chained trip segments that were not part of the work commute were somewhat less likely to have been made by SOV than were unchained trips or trip segments that were part of a work commute (see Table 17). Trips made by residents who lived within the City of Flagstaff were more likely to be part of a chain than were trips made by those who lived outside of the city limits (see Table 19). Likewise, trips made by those who lived in multi-family (attached) housing units were more likely to have been part of a chain than were trips made by those who lived in single-family detached housing units (see Table 20).

Table 17: Modal Share by Trip Chaining

	Percent of Trips		
Modal Share of All Trips	Non-chained trip	Non-commute chain segment	Work commute chain segment
SOV	58.6%	53.2%	62.1%
MOV	17.7%	26.6%	26.1%
Transit	2.8%	1.2%	.4%
School bus	.2%	.0%	.0%
Bicycle	7.1%	8.0%	3.7%
Foot	13.6%	11.1%	7.7%
Total	100.0%	100.0%	100.0%

Table 18: Trip Chaining by Mode of Travel

	Percent of Trips					
Trip Chaining	SOV	MOV	Transit	School bus	Bicycle	Foot
Non-chained trip	63.1%	51.7%	81.4%	100.0%	60.8%	67.4%
Non-commute chain segment	29.8%	40.3%	17.3%	0.0%	35.9%	28.6%
Work commute chain segment	7.1%	8.0%	1.3%	0.0%	3.4%	4.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 19: Trip Chaining by Area

Trip Chaining	Core of Flagstaff	Rest of Flagstaff	Rest of FMPO
Non-chained trip	61.0%	63.5%	79.0%
Non-commute chain segment	32.9%	30.6%	17.7%
Work commute chain segment	6.2%	5.9%	3.4%
Total	100.0%	100.0%	100.0%

Table 20: Trip Chaining by Type of Residence

Trip Chaining	Detached Housing Unit	Attached (or Group Quarters)
Non-chained trip	65.7%	69.5%
Non-commute chain segment	27.5%	27.7%
Work commute chain segment	6.8%	2.8%
Total	100.0%	100.0%

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Table 21: Modal Share by Trip Chaining by Area

Mode Share of All Trips	Core of Flagstaff			Rest of Flagstaff			Rest of FMPO		
	Non-chained trip	Non-commute chain segment	Work commute chain segment	Non-chained trip	Non-commute chain segment	Work commute chain segment	Non-chained trip	Non-commute chain segment	Work commute chain segment
SOV	71.7%	62.5%	67.8%	57.5%	54.9%	52.5%	56.3%	32.4%	82.1%
MOV	22.8%	30.9%	32.2%	19.5%	20.3%	27.4%	11.4%	44.7%	17.9%
Transit	0.0%	0.0%	0.0%	4.8%	1.9%	0.7%	1.5%	0.0%	0.0%
School bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bicycle	1.0%	0.0%	0.0%	7.4%	9.8%	6.3%	11.1%	13.1%	0.0%
Foot	4.5%	6.5%	0.0%	10.9%	13.1%	13.1%	19.7%	9.8%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 22: Trip Chaining by Trip Purpose

Trip Chaining	Go home	Personal business	Shopping	School	Work commute	Other work/ business	Social/ recreation	Eat a meal	Drive passenger	Change travel mode
Non-chained trip	81.2%	28.2%	46.5%	69.1%	73.5%	54.8%	72.4%	71.0%	33.7%	0.0%
Non-commute chain segment	15.6%	66.2%	46.8%	30.3%	10.2%	40.2%	27.3%	22.8%	45.4%	94.8%
Work commute chain segment	3.2%	5.5%	6.7%	0.6%	16.3%	5.0%	0.3%	6.2%	21.0%	5.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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Deliveries to the Home or Work

Study participants were asked whether they had any goods or services delivered to their work or home, as receipt of deliveries might reduce the need to make certain kinds of trips. About 6% of respondents had received at least one delivery on their assigned travel day (see Table 23). Just over 40% of these respondents felt that the delivery took the place of a drive alone a trip (see Table 24).

Table 23: Deliveries Received by Respondents

On the day you completed the travel diary, did you have any goods or services delivered to your work or home, such as a meal (pizza, etc.), groceries, haircuts or other goods and services? (Please include deliveries for items you ordered by phone, through a mail order catalogue, or via modem or Internet.)	Percent of Respondents
No, did not receive deliveries	93.8%
Yes, received deliveries	6.2%
Total	100.0%

Table 24: Replacement of Trips by Receipt of Deliveries

Did the delivery substitute for a travel trip you might have made to seek the good or service?	Percent of Respondents
Yes	43.7%
No	56.3%
Total	100.0%

Trip Characteristics of the Work Commute

The travel characteristics of work commute trips are displayed in Table 25, and compared to results from the 2001 National Household Transportation Study. The average commute distance of Flagstaff area residents was 6.5 miles, less than half the distance of the average national work commute. The average duration of the work commute trip was about 17 minutes for Flagstaff area residents, significantly shorter than the national average commute duration of about 25 minutes. This shows that the commuting trends in Flagstaff are positive and the FMPO is providing transportation solutions that are keeping the commute time to a minimum.

Table 25: Summary Trip Characteristics of All Work Commute Trips

Work Commute Trip Characteristics	Flagstaff Area 2006	2001 NHTS*
Average estimated trip length in miles	6.5 miles	14.6 miles
Average estimated trip time in minutes	16.8 minutes	24.8 minutes
Average miles per hour	20.6 mph	---

**Source: 2001 National Household Transportation Study*

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Personal Motorized Vehicle Trip Characteristics

Table 26 and Table 27 summarize the trip characteristics for automobile trips. About three-quarters of respondents made at least one SOV trip on their assigned travel day. The average number of SOV trips per person per day was 3.0. About a third of respondents had made at least one MOV trip on their assigned travel day. The average trip distance was about 6 miles for SOV trips and about 7 miles for MOV trips. The average trip duration in minutes was about 16 minutes for SOV trips, and about 20 minutes for MOV trips.

Table 26: Summary Trip Characteristics of Single Occupancy Vehicle Trips

Trip Characteristics	
Average number of SOV trips per day per person	3.0 trips per day
Percent of people making at least one SOV trip	75.5% of respondents
Average number of SOV trips per day per person who made at least one SOV trip	4.0 trips per day
Average estimated trip length in miles	6.2 miles
Average estimated trip time in minutes	16.2 minutes
Average miles per hour of SOV trips	20.0 mph

Table 27: Summary Trip Characteristics of Multiple Occupancy Vehicle Trips

Trip Characteristics	
Average number of MOV trips per day per person	1.1 trips per day
Percent of people making at least one MOV trip	32.5% of respondents
Average number of MOV trips per day per person who made at least one MOV trip	3.3 trips per day
Average estimated trip length in miles	7.2 miles
Average estimated trip time in minutes	19.9 minutes
Average miles per hour of MOV trips	20.5 mph

Vehicle Occupancy

The average vehicle occupancy for all automobile trips was about 1.4 persons per vehicle; for MOV trips the average vehicle occupancy was about 2.5 persons per vehicle. Of all personal vehicle trips, 72% were made with just a single occupant.

Table 28: Vehicle Occupancy

Number of Occupants	Percent of Trips
1	72.4%
2	19.1%
3	5.6%
4 or more	2.9%
Total	100.0%
Average vehicle occupancy for all automobiles	1.41 persons
Average vehicle occupancy for autos with at least two passengers	2.47 persons

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Transit Trip Characteristics

Few of the trips made by those participating in the trip diary survey were made via transit. About 5% of respondents had made at least one transit trip on their assigned travel day (see Table 29). Of those who had made at least one trip, the average number of transit trips per day was 2.4 trips. The average transit trip was 3.2 miles in length. All transit trips were taken on Route 4 (data not shown in a table or figure). Even fewer respondent trips were made by school bus; less than 1% of respondents reported making a trip on a school bus (see Table 30).

Table 29: Summary Trip Characteristics of Transit Trips

Trip Characteristics	
Average number of transit trips per day per person	0.1 trips per day
Percent of people making at least one transit trip	4.7% of respondents
Average number of transit trips per day per person who made at least one transit trip	2.4 trips per day
Average estimated trip length in miles	3.2 miles
Average estimated trip time in minutes	23.1 minutes
Average miles per hour of transit trips	8.6 mph

Table 30: Summary Trip Characteristics of School Bus Trips

Trip Characteristics	
Average number of school bus trips per day per person	0.01 trips per day
Percent of people making at least one school bus trip	0.6% of respondents

When asked whether they had an annual bus pass which allows unlimited bus rides, only 1% of those participating in the study reported they had such a pass (see Table 31).

Table 31: Bus Pass Status

Do you have an annual pass that allows you unlimited bus rides?	Percent of Respondents
No	99%
Yes	1%
Total	100%

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Study participants were asked how far their home and their workplace were from a bus stop. Many of employed respondents (40%) had a bus stop less than a block from their workplace (see Table 33), while only 13% lived less than a block from a bus stop (see Table 32). Forty-three percent of respondents lived within a quarter-mile of a bus stop, while 63% of employed respondents worked within a quarter-mile from a bus stop. Fifteen percent or more were not sure how far the nearest bus stop was from their home or worksite. The FMPO has found that 60% of homes are within quarter mile of a bus stop; it may be that residents are unaware of the stops closest to their home, or are not very good at estimating the distance of the stop from their home.

Table 32: Distance from Home to Bus Stop

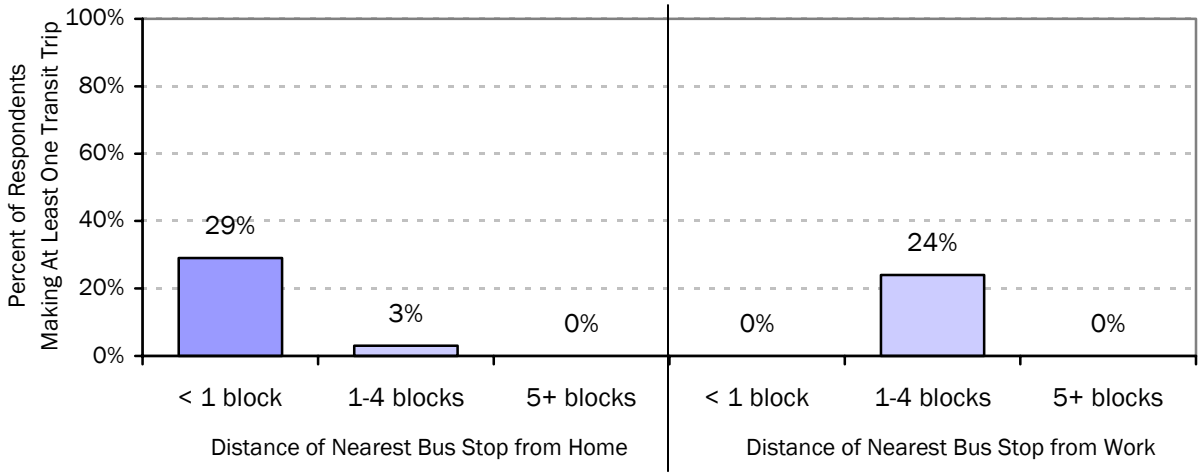
About how close is the nearest bus stop to your residence?	Percent of Respondents
less than 1 block	13%
1-4 blocks (about 330 feet to a quarter-mile)	30%
4-8 blocks (quarter-mile to a half-mile)	10%
8-16 blocks (half-mile to a mile)	11%
More than 16 blocks (more than a mile)	21%
Don't Know	15%
Total	100%

Table 33: Distance from Work to Bus Stop

About how close is the nearest bus stop to your primary work place?	Percent of Employed Respondents
less than 1 block	40%
1-4 blocks (about 330 feet to a quarter-mile)	23%
4-8 blocks (quarter-mile to a half-mile)	7%
8-16 blocks (half-mile to a mile)	4%
More than 16 blocks (more than a mile)	8%
Don't Know	18%
Total	100%

As can be seen in Figure 15, distance from a bus stop is associated with using the bus. Those who lived or worked within 4 blocks of a stop were more likely than those who lived further to make at least one bus ride on their assigned travel day.

Figure 17: Bus Ridership by Distance from a Bus Stop



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Non-Vehicle Trip Characteristics: Walking and Biking

About a quarter of study participants had made at least one walking trip on their assigned travel day (see Table 34) and 9% had made at least one bike trip (see Table 35). Those who had walked made between 2 and 3 walking trips during the 24 hour period they recorded their travel; those who had biked made about 4 bike trips on average during their assigned travel day. With an average walking trip length of 0.5 miles, this shows that residents are already willing to walk further than the 0.25 miles needed to support mixed-use development and higher densities. Acceptance of a 0.5 mile (10 minute) walk is important because it suggests the potential for integrating land-use and transportation design in order to create pedestrian conducive environments. The FMPO could build upon the already existing walkable culture by encouraging better design practices and design strategies.

Table 34: Summary Trip Characteristics of Walking Trips

Trip Characteristics	
Average number of walking trips per day per person	0.6 trips per day
Percent of people making at least one walking trip	25.2%
Average number of walking trips per day per person who made at least one walking trip	2.6 trips per day
Average estimated trip length in miles	0.5 miles
Average estimated trip time in minutes	13.4 minutes
Average miles per hour of walking trips	2.4 mph

Table 35: Summary Trip Characteristics of Bicycle Trips

Trip Characteristics	
Average number of bicycle trips per day per person	0.4 trips per day
Percent of people making at least one bicycle trip	9.1%
Average number of bicycle trips per day per person who made at least one bicycle trip	4.1 trips per day
Average estimated trip length in miles	2.4 miles
Average estimated trip time in minutes	13.8 minutes
Average miles per hour of bicycle trips	9.6 mph

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Biking for the Work Commute and for Recreation

More than half of respondents reported they had not ridden a bicycle at all for recreation trips in the past month; about 4 in 5 had not ridden a bicycle for the work commute in the past month. About 17% said they had rode a bike for recreation purposes 2 or more times a week during the past month. About 13% had ridden a bike for the work commute 2 or more times per week during the previous month.

Table 36: Bicycle Use for the Work Commute and for Recreation

In the last month, about how frequently have you ridden a bicycle:	Percent of Respondents	
	For Recreation	For Commuting
Five or more times a week	1%	7%
2 to 4 times a week	16%	6%
Once a week	10%	2%
Twice a month or less	17%	5%
Never	57%	80%
Total	100%	100%

Vehicle and Bicycle Ownership and Availability

Households can be classified according to their ratio of number of vehicles to eligible drivers. If the ratio is 1 or greater, this household can be considered to have "high vehicle availability."[7] Persons in households with high vehicle availability tend to drive alone more often. A great majority of households participating in the trip diary study had 1 or more vehicles per household member age 16 or older (84%, see Table 37). The average number of vehicles per household was 1.86.

Bicycle availability was also measured through the survey. Over half of the households studied had 1 more bikes per household member of any age. The average number of bicycles per household was 1.62.

Table 37: Vehicle and Bicycle Ownership and Availability

Number of Occupants	Percent of Trips
Average vehicle availability (per person in household 16 or older)	1.03 vehicles per person 16+
Average number of motorized vehicles per household	1.86 vehicles per household
Percent of households with 1 or more vehicles per household member age 16 or older	84% of households
Average bicycle availability (per person in household of any age)	0.88 bicycles per person
Average number of bicycles per household	1.62 bicycles per household
Percent of households with 1 or more bikes per household member	56% of households

[7] Puget Sound Council of Governments: "Household Travel Surveys, 1985-1988 Puget Sound Region"; June 1990.

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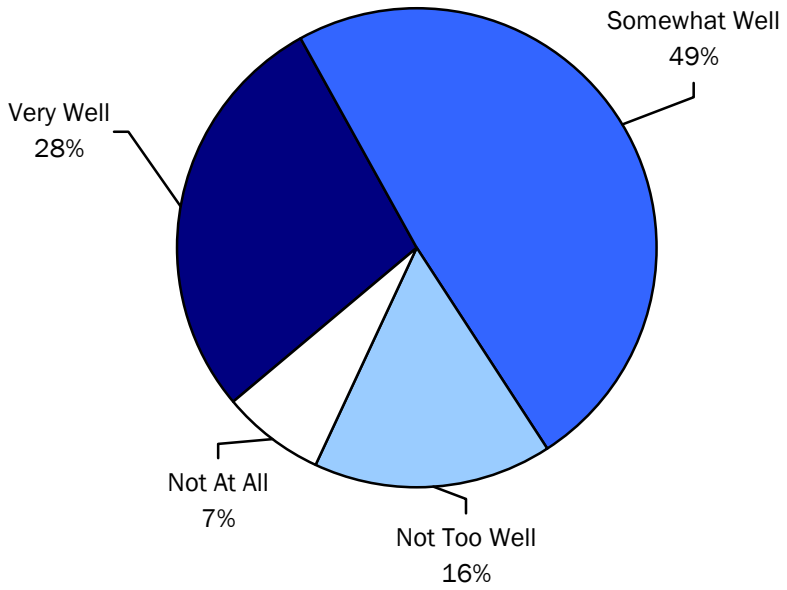
Resident Perceptions of Travel in the Flagstaff Area

In addition to measuring travel behaviors, a survey which accompanied the trip diary asked respondents to rate various aspects of the regional transportation system. About three-quarters felt the overall transportation system does "very well" or "somewhat well" in meeting their travel needs (see Figure 18).

Figure 18: Rating of the Region's Transportation System

The transportation system in our region consists of roads, buses, sidewalks, Flagstaff Urtban Trails System (FUTS) trails, and bike facilities. How well do you feel the transportation system meets your travel needs?



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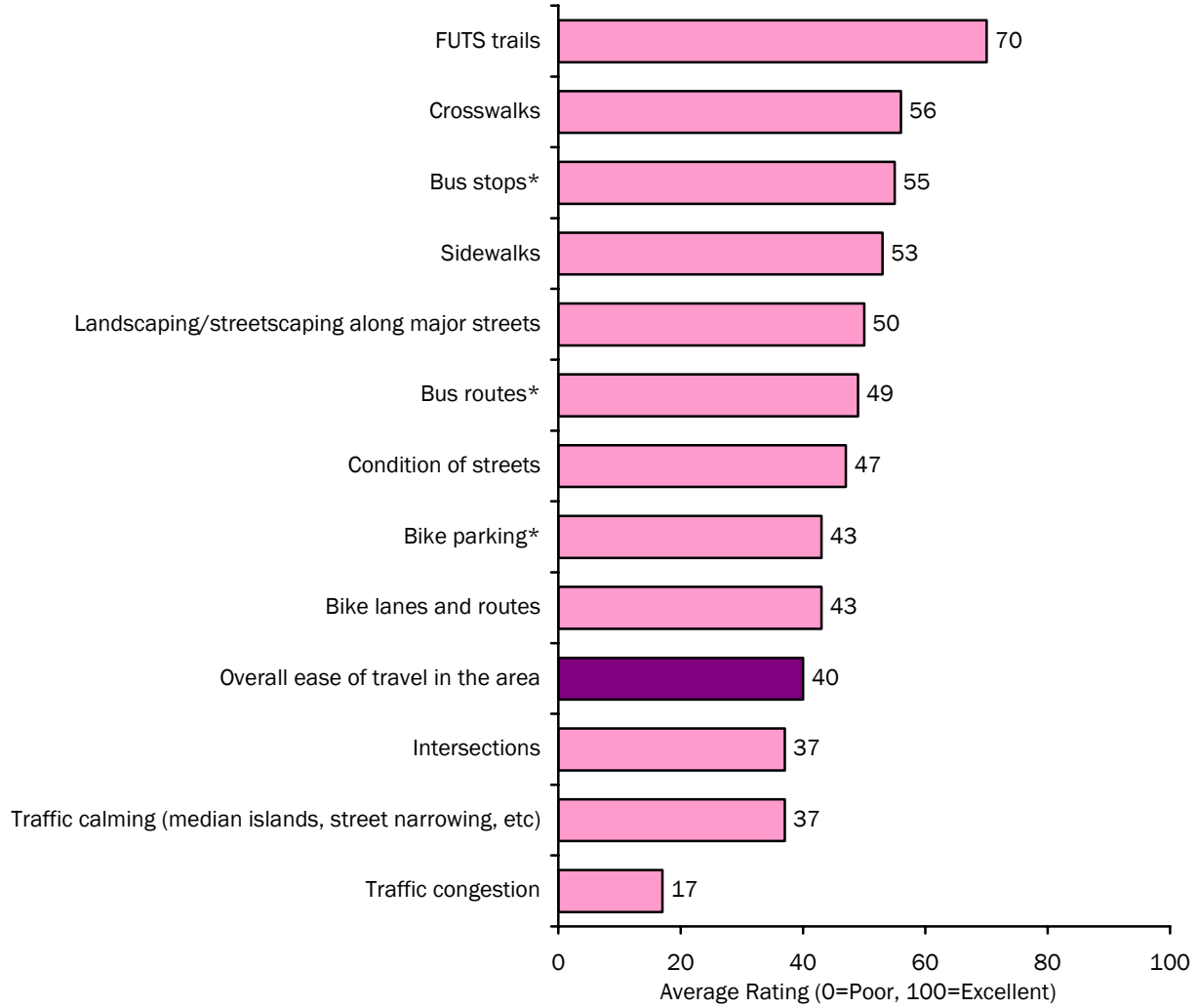
Residents' ratings of the different features of the transportation system were converted into an average rating on the 100-point scale where 0 represents the worst possible rating and 100 the best possible rating. If everyone rated a particular characteristic as "excellent," then the result would be 100 on the 100-point scale. Likewise, if all respondents gave a "poor" rating, the result would be 0 on the 100-point scale. If the average rating was "good," then the result would be 67 on the 100-point scale; "fair" would be 33 on the 100 point scale. Use of this converted scale allows for comparison to other jurisdictions, where different question wording and response scales may have been used.

The average rating for overall ease of travel was below the midpoint of the range; 40 on the 100-point scale (see Figure 19). The highest rated aspect of the transportation system was the Flagstaff Urban Trails System (FUTS) trails (70 on the 100-point scale). Crosswalks, bus stops and sidewalks had average ratings of the midpoint of the scale. Landscape/streetscaping received an average rating of 50, while the remainder of the items included on the survey received ratings below 50. Traffic congestion received an especially low rating of 17 on the 100-point scale.

Figure 19: Transportation Ratings



**More than 30% of respondents reported they didn't know enough about this service to give a rating (see Table 55 on page 46).*

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Comparisons to Other Jurisdictions

On a report card, an "A" mark is usually a 90 or above. Few services actually receive ratings as high as 90 on the 100-point scale, in part because certain kinds of services tend to be thought less well of by residents in many communities across the country, while other services get better ratings. For example, police protection tends to be received better than street maintenance by residents of most American cities. Where possible, the better comparison is not from one service to another within the jurisdiction, but from a particular jurisdiction's services to services like them provided by other jurisdictions. National Research Center, Inc. (NRC) has collected citizen surveys conducted in about 400 jurisdictions in the United States. Responses to over 6,000 survey questions dealing with resident perceptions about the quality of community life and services provided by local government were recorded, analyzed and stored in an electronic database. The jurisdictions in the database represent a wide geographic and population range.

Comparisons to several of the ratings from the Flagstaff area trip diary survey results are provided when similar questions were included in the NRC database, and where there were at least five other jurisdictions in which the question was asked. Where comparisons were available, several numbers are provided. The first is the average rating given by Flagstaff area respondents. The second is the rank assigned to this rating among jurisdictions where a similar question was asked. It is followed by the number of jurisdictions that asked a similar question. Fourth, the rank is expressed as a percentile to indicate its distance from the top score. This rank (5th highest out of 25 jurisdictions' results, for example) translates to a percentile (the 80th percentile in this example). A percentile indicates the percent of jurisdictions with identical or lower ratings. Therefore, a rating at the 80th percentile would mean that Flagstaff's rating is equal to or better than 80% of the ratings from other jurisdictions. Conversely, 20% of the jurisdictions where a similar question was asked had higher ratings.

Alongside the rank and percentile appears a comparison: "above norm," "below norm" or "similar to norm." This evaluation of "above," "below" or "similar to" comes from a statistical comparison of the rating to the norm (the average rating from all the comparison jurisdictions where a similar question was asked). Differences of **5 or more points** on the 100-point scale between Flagstaff's ratings and the average based on the appropriate comparisons from the database are considered "statistically significant," and thus are marked as "above" or "below" the norm. When differences between Flagstaff's ratings and the national norms are **4 points or less**, they are marked as "similar to" the norm.

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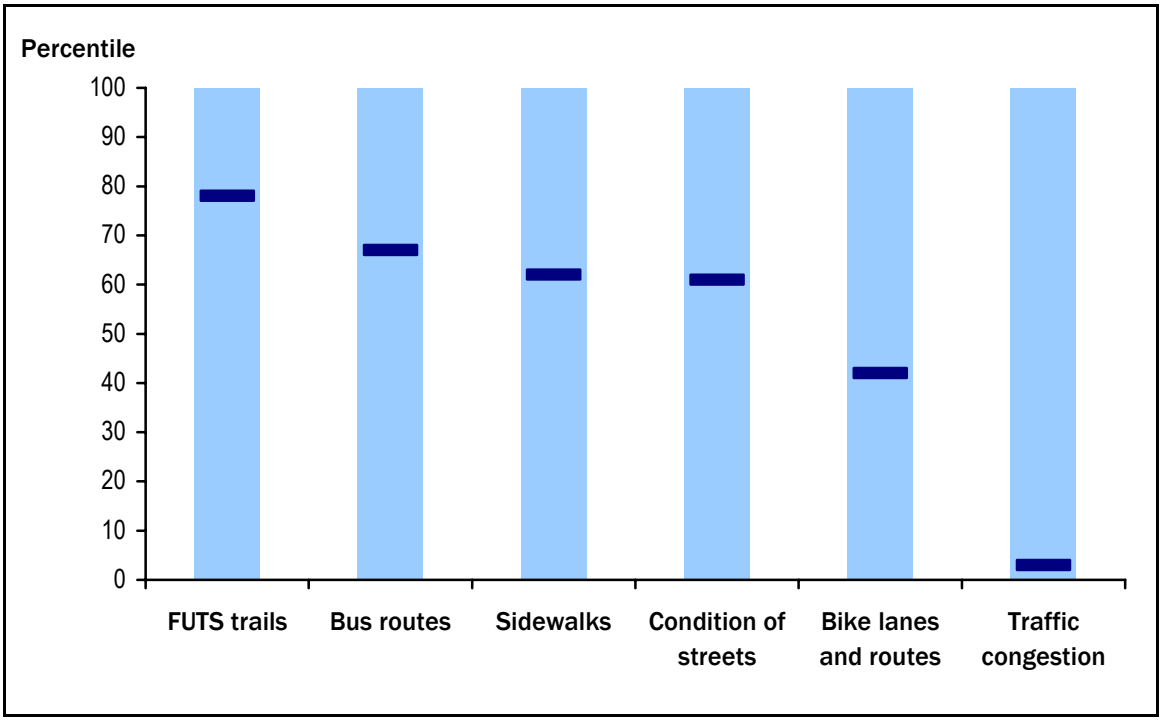
As shown in Table 38 and Figure 20 below, 4 of the 6 ratings able to be compared to normative data were statistically significantly above the normative comparison. These aspects of the transportation system included FUTS trails, bus routes, sidewalks and condition of streets. Bike lanes/routes and traffic congestion were statistically significantly below the normative comparison.

Table 38: Normative Comparisons of Flagstaff Area Residents' Ratings of the Transportation System

	City of Flagstaff Rating*	Rank	Number of Jurisdictions for Comparison	City of Flagstaff Percentile	Comparison of Flagstaff Rating to Norm
FUTS trails	70	9	37	78%ile	Above the norm
Bus routes	49	22	63	67%ile	Above the norm
Sidewalks	53	12	29	62%ile	Above the norm
Condition of streets	47	34	85	61%ile	Above the norm
Bike lanes and routes	43	65	111	42%ile	Below the norm
Traffic congestion	17	68	69	3%ile	Below the norm

**Average rating (0=poor, 100=excellent).*

Figure 20: Normative Comparisons of Flagstaff Area Residents' Ratings of the Transportation System



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In addition to rating features of the transportation system, respondents were asked how they had voted on a proposition to increase in the transit tax in the previous general election. About half reported they had not voted at all, while 34% reported they had voted in favor of increasing the transit tax and 16% said they had opposed the transit tax (see Figure 21). Responses to this question differed from the actual election results; Proposition 403 was defeated, with about 55% of those who voted voting against the measure and 45% supporting it. There may be several reasons for this discrepancy: 1) Respondents may not remember their vote correctly; this is referred to as "recall bias." In this instance, those who lived outside of the city did not vote on this proposition; however, 40% of those who lived outside the city said they had voted on this issue (see Table 39). 2) Respondents may be reporting what they believe is the more acceptable answer to this question, a bias referred to as social desirability bias; respondents may believe they "should" have supported the proposition, and reported doing so even though they had actually voted against it. 3) Finally, those who chose to participate in the study may differ from the general population in having a greater interest in and higher use of alternative modes of transportation and a more favorable view of the role of government in promoting alternative modes of transportation, and thus study respondents may have actually been more likely to have voted for the proposition.

Figure 21: Vote Cast for the Transit Tax

Did you vote in favor of increasing the transit tax (Proposition 403) on last May's general election?

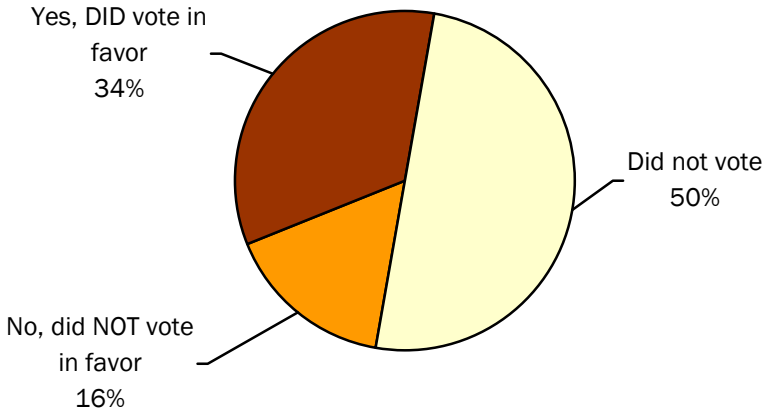

Table 39: Vote Cast for the Transit Tax by Area of Residence

Vote Cast	Core of Flagstaff	Rest of Flagstaff	Rest of FMPO
Did NOT vote in favor	19.0%	17.9%	10.8%
DID vote in favor	17.5%	42.9%	32.4%
Did not vote	63.5%	39.1%	56.8%
Total	100.0%	100.0%	100.0%

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Reasons for voting against the transit tax were solicited from those who had opposed the tax increase. The most common reasons cited were not using transit and feeling that taxes were already too high (see Table 40). The next most frequently given explanations were feeling that the cost was too high for the benefit, or not believing that transit service should be paid for through taxpayer revenues.

Table 40: Reasons for Voting Against the Transit Tax

Why did you choose to vote against the transit tax?	Percent of Respondents Who Voted Against the Transit Tax*
I do not use transit	43%
Taxes are already too high	43%
The cost was too high for the benefit	22%
I do not think taxpayers should pay for transit service	20%
I am not familiar with the transit system	16%
Not enough information was provided	11%
Other	15%

**Percents may add to more than 100% as respondents could give more than one answer.*

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Appendix A: Respondent Demographics

Characteristics of the survey respondents are displayed in the tables and charts on the following pages of this appendix. In addition, the complete set of responses to question 12 from the household survey are displayed.

Table 41: Employment Status

Are you employed?	Percent of respondents
No	21%
Yes, part-time	26%
Yes, full-time	53%
Total	100%

Table 42: Respondent's Annual Household Income

About how much was the TOTAL 2005 income before taxes for your household as a whole?	Percent of respondents
less than $14,999	9%
$15,000 to $24,999	13%
$25,000 to $49,999	26%
$50,000 to $74,999	25%
$75,000 to $99,999	15%
$100,000 to $149,999	9%
$150,000 or more	3%
Total	100%

Table 43: Respondent's Residence

Please check the one choice below which best describes the kind of residence in which you live.	Percent of respondents
A detached single family home	58%
A duplex or triplex	3%
A multi-family unit (e.g., apartments or condominiums)	27%
A townhouse	4%
A mobile home	3%
Group quarters (e.g., dormitory, fraternity or sorority, nursing home, etc.)	4%
Other	1%
Total	100%

Table 44: Respondent's Tenure

Do you rent or own your residence?	Percent of respondents
Rent	41%
Own	59%
Total	100%

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Table 45: Members of Household Under the Age of 16

How many are under 16?	Percent of respondents
None	79%
One	14%
Two	5%
Three or more	2%
Total	100%

Table 46: Members of Household 16 Years or Older

How many are 16 or older?	Percent of respondents
One	31%
Two	56%
Three	9%
Four or more	4%
Total	100%

Table 47: Length of Residency in Flagstaff

How many years have you lived in or near Flagstaff?	Percent of respondents
One year or less	26%
2 to 5 years	24%
6 to 10 years	16%
11 to 15 years	9%
16 to 20 years	6%
21 to 25 years	4%
26 to 30 years	8%
More than 30 years	7%
Total	100%

Table 48: Student at Northern Arizona University

Are you a student at the Northern Arizona University?	Percent of respondents
No	82%
Yes	18%
Total	100%

Table 49: Respondent's Gender

What is your gender?	Percent of respondents
Male	48%
Female	52%
Total	100%

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Table 50: Respondent's Age

Which category contains your age?	Percent of respondents
16 to 24 years old	18%
25 to 34 years old	24%
35 to 44 years old	13%
45 to 54 years old	25%
55 to 64 years old	11%
65 years or older	8%
Total	100%

Table 51: Respondent's Race

Which category best describes your race?	Percent of respondents*
African American/black	0%
Caucasian/white	95%
Asian or Pacific Islander	2%
Native American	1%
Other	2%

**Percents may total more than 100 as respondents could select more than one response.*

Table 52: Respondent's Ethnicity

Which category best describes your ethnicity?	Percent of respondents
Hispanic	2%
Non-Hispanic	98%
Total	100%

Table 53: Respondent's Education

How much education have you completed?	Percent of respondents
0 to 11 years of school	2%
high school	7%
some college or associate's degree	33%
Bachelor's degree	29%
Graduate/professional degree	29%
Total	100%

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Table 54: Ratings of the Transportation System Where Respondents Had an Opinion
("Don't Know" Responses Excluded)

Please rate each of the following aspects of transportation in Flagstaff.	Excellent	Good	Fair	Poor	Total
Sidewalks	10%	47%	34%	8%	100%
Crosswalks	10%	55%	26%	9%	100%
FUTS trails	29%	54%	16%	2%	100%
Bike lanes and routes	9%	32%	40%	20%	100%
Bike parking	12%	25%	45%	18%	100%
Condition of streets	5%	43%	40%	12%	100%
Traffic calming (median islands, street narrowing, etc)	1%	31%	43%	24%	100%
Traffic congestion	0%	7%	34%	58%	100%
Intersections	1%	31%	47%	21%	100%
Landscaping/streetscaping along major streets	9%	42%	39%	10%	100%
Bus stops	8%	58%	24%	10%	100%
Bus routes	12%	40%	30%	18%	100%
Overall ease of travel in the area	4%	29%	49%	18%	100%

Table 55: Ratings of the Transportation System with "Don't Know" Responses Included

Please rate each of the following aspects of transportation in Flagstaff.	Excellent	Good	Fair	Poor	Don't Know	Total
Sidewalks	9%	45%	35%	9%	3%	100%
Crosswalks	10%	53%	24%	11%	2%	100%
FUTS trails	22%	44%	12%	2%	20%	100%
Bike lanes and routes	7%	26%	32%	17%	18%	100%
Bike parking	7%	16%	30%	12%	36%	100%
Condition of streets	5%	44%	38%	12%	1%	100%
Traffic calming (median islands, street narrowing, etc)	1%	30%	39%	22%	9%	100%
Traffic congestion	1%	7%	33%	58%	2%	100%
Intersections	1%	31%	44%	22%	1%	100%
Landscaping/streetscaping along major streets	9%	40%	39%	9%	3%	100%
Bus stops	4%	33%	13%	7%	44%	100%
Bus routes	5%	22%	14%	12%	48%	100%
Overall ease of travel in the area	3%	28%	47%	21%	1%	100%

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Appendix B: Selected Study Results by Trip and Respondent Characteristics

The selected survey results by demographics are compared in this appendix. Responses that are significantly different ($p < .05$, meaning that the probability that difference observed are due to chance alone is less than 5%) are marked with gray shading.

Table 56: Modal Share of All Trips by Respondent Characteristics

Modal Share of All Trips	Respondent's Gender		Respondent's Age			Student at Northern Arizona University?		Are you employed?		
	Female	Male	18 to 34	35 to 54	55+	No	Yes	No	Yes, part-time	Yes, full-time
SOV	51.5%	62.2%	42.9%	65.2%	73.2%	58.7%	47.2%	52.9%	46.7%	63.7%
MOV	30.1%	10.9%	22.8%	21.5%	17.2%	24.6%	8.7%	32.1%	18.7%	18.2%
Transit	0.5%	4.2%	4.7%	0.0%	0.2%	2.7%	0.0%	1.2%	0.0%	3.9%
School bus	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.6%	0.6%	0.0%	0.0%
Bicycle	6.1%	8.6%	12.8%	3.3%	1.0%	3.6%	21.6%	0.9%	16.5%	4.6%
Foot	11.3%	14.2%	16.4%	9.8%	8.4%	10.3%	21.8%	12.2%	18.1%	9.5%
Other	0.2%	0.0%	0.0%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 57: Modal Share of All Trips by Respondent Characteristics

Modal Share of All Trips	Tenure with group quarters			Respondent's Household Type			Annual Household Income		Percent of households with children under 16	
	Own	Rent	Group quarters	Detached units	Attached units	Group quarters	Under $50,000	$50,000+	No children	Have children
SOV	59.3%	53.4%	32.3%	59.4%	53.5%	32.3%	52.5%	59.2%	62.5%	43.5%
MOV	29.3%	9.2%	12.9%	28.7%	9.1%	12.9%	13.8%	28.6%	12.9%	45.4%
Transit	0.0%	6.0%	0.0%	0.5%	5.5%	0.0%	5.1%	0.1%	2.7%	1.0%
School bus	0.0%	0.0%	3.2%	0.0%	0.0%	3.2%	0.0%	0.0%	0.0%	0.0%
Bicycle	2.9%	15.5%	0.0%	3.7%	14.4%	0.0%	12.5%	3.8%	9.0%	3.5%
Foot	8.3%	15.8%	51.6%	7.5%	17.4%	51.6%	16.1%	8.2%	12.7%	6.6%
Other	.2%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	.2%	0.2%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Responses that are statistically significantly different are marked with gray shading.

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Table 58: Modal Share of All Trips by Respondent Characteristics

Modal Share of All Trips	Ratio of Autos to Drivers		HH own any bikes?		Area			
	Less than 1 vehicle per driver	1 or more vehicles per driver	No	Yes	Rest of FMPO	Rest of Flagstaff	Core of Flagstaff	Dorm
SOV	23.7%	63.6%	64.7%	53.4%	67.8%	56.2%	52.1%	33.3%
MOV	21.8%	21.6%	14.6%	23.8%	26.7%	20.3%	18.7%	19.0%
Transit	11.0%	0.5%	7.2%	0.4%	0.0%	3.5%	1.1%	0.0%
School bus	0.8%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	4.8%
Bicycle	25.2%	3.9%	0.0%	9.8%	0.6%	8.2%	11.0%	0.0%
Foot	17.5%	10.3%	13.1%	12.4%	4.9%	11.8%	16.7%	42.9%
Other	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.5%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 59: Modal Share of Work Commute Trips by Respondent Characteristics

Modal Share of Work Commute Trips	Respondent's Gender		Respondent's Age			Student at Northern Arizona University?		Are you employed?		
	Female	Male	18 to 34	35 to 54	55+	No	Yes	No	Yes, part-time	Yes, full-time
SOV	67.2%	78.0%	59.8%	80.0%	82.8%	73.9%	66.0%	---	63.5%	76.3%
MOV	22.1%	7.3%	21.9%	10.5%	6.9%	14.4%	13.2%	---	8.7%	14.9%
Transit	0.3%	0.0%	0.0%	0.0%	1.0%	0.1%	0.0%	---	0.0%	0.2%
School bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	---	3.8%	3.2%
Bicycle	3.0%	3.6%	1.6%	4.8%	2.1%	2.7%	7.6%	---	24.1%	5.0%
Foot	6.9%	11.2%	16.7%	4.2%	7.1%	8.6%	13.2%	---	0.0%	0.3%
Other	0.5%	0.0%	0.0%	0.5%	0.0%	0.3%	0.0%	---	63.5%	76.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	---	100.0%	100.0%

Note: Responses that are statistically significantly different are marked with gray shading.

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Table 60: Modal Share of Work Commute Trips by Respondent Characteristics

Modal Share of Work Commute Trips	Tenure with group quarters			Respondent's Household Type			Annual Household Income		Percent of households with children under 16	
	Own	Rent	Group quarters	Detached units	Attached units	Group quarters	Under $50,000	$50,000+	No children	Have children
SOV	74.3%	71.7%	57.1%	74.3%	72.1%	57.1%	68.5%	76.0%	77.1%	60.7%
MOV	17.0%	10.8%	0.0%	17.9%	8.9%	0.0%	16.0%	13.1%	10.4%	31.4%
Transit	0.2%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.2%	0.2%	0.0%
Bicycle	3.6%	3.2%	0.0%	4.5%	1.4%	0.0%	1.4%	4.8%	3.7%	2.3%
Foot	4.5%	14.3%	42.9%	2.8%	17.6%	42.9%	14.0%	5.4%	8.3%	5.6%
Other	0.4%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.4%	0.3%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 61: Modal Share of Work Commute Trips by Respondent Characteristics

Modal Share of Work Commute Trips	Ratio of Autos to Drivers		HH own any bikes?		Area			
	Less than 1 vehicle per driver	1 or more vehicles per driver	No	Yes	Rest of FMPO	Rest of Flagstaff	Core of Flagstaff	Dorm
SOV	40.4%	79.1%	87.5%	67.9%	82.8%	71.4%	69.3%	100.0%
MOV	31.1%	12.1%	9.5%	15.9%	15.9%	17.6%	7.2%	0.0%
Transit	0.0%	0.1%	0.0%	0.2%	0.0%	0.2%	0.0%	0.0%
Bicycle	0.9%	3.8%	0.0%	4.4%	1.2%	4.9%	2.0%	0.0%
Foot	27.6%	4.6%	3.1%	11.2%	0.0%	5.9%	20.7%	0.0%
Other	0.0%	0.3%	0.0%	0.3%	0.0%	0.0%	0.8%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: Responses that are statistically significantly different are marked with gray shading.

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Table 62: Proportion of Respondents Making at Least ONE Trip Via Each Mode

Travel Mode	Respondent's Gender		Respondent's Age			Student at Northern Arizona University?		Are you employed		
	Female	Male	18 to 34	35 to 54	55+	No	Yes	No	Yes, part-time	Yes, full-time
Single-Occupancy Vehicle	76.1%	74.6%	64.7%	85.6%	77.9%	77.2%	65.9%	69.8%	67.6%	81.9%
Multiple-Occupancy Vehicle	45.4%	20.8%	34.1%	37.6%	23.2%	36.9%	17.0%	37.1%	31.4%	32.1%
Bus (Transit)	1.6%	8.3%	10.9%	0.0%	0.7%	5.9%	0.0%	3.2%	0.0%	7.9%
School Bus	1.3%	0.0%	1.5%	0.0%	0.0%	0.0%	3.6%	3.0%	0.0%	0.0%
Bicycle	10.4%	8.2%	15.4%	6.3%	1.5%	6.0%	24.1%	2.5%	21.1%	6.2%
Foot	25.5%	26.5%	35.3%	21.8%	12.7%	20.7%	49.0%	19.9%	41.3%	20.5%

Note: Numbers in each cell represent the proportion of respondents who made at least ONE trip by that mode.

Table 63: Proportion of Respondents Making at Least ONE Trip Via Each Mode

Travel Mode	Tenure with group quarters			Respondent's Household Type			Annual Household Income		Percent of households with children under 16	
	Own	Rent	Group quarters	Detached units	Attached units	Group quarters	Under $50,000	$50,000+	No children	Have children
Single-Occupancy Vehicle	84.3%	65.1%	50.0%	82.7%	65.2%	50.0%	68.5%	81.9%	74.9%	80.2%
Multiple-Occupancy Vehicle	44.4%	19.6%	16.7%	42.8%	19.0%	16.7%	24.9%	42.3%	21.8%	78.7%
Bus (Transit)	0.3%	11.9%	.0%	1.4%	11.1%	0.0%	10.6%	.3%	5.5%	3.3%
School Bus	0.0%	0.0%	16.7%	0.0%	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%
Bicycle	7.1%	13.5%	0.0%	7.6%	13.1%	0.0%	12.0%	8.2%	9.7%	9.0%
Foot	20.0%	32.2%	50.0%	18.2%	36.0%	50.0%	29.2%	19.6%	26.4%	19.3%

Note: Numbers in each cell represent the proportion of respondents who made at least ONE trip by that mode.

Note: Responses that are statistically significantly different are marked with gray shading.

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Table 64: Proportion of Respondents Making at Least ONE Trip Via Each Mode

Travel Mode	Ratio of Autos to Drivers		HH own any bikes?		Area			
	Less than 1 vehicle per driver	1 or more vehicles per driver	No	Yes	Rest of FMPO	Rest of Flagstaff	Core of Flagstaff	Dorm
Single-Occupancy Vehicle	38.4%	82.9%	72.7%	77.1%	87.1%	75.8%	67.1%	50.0%
Multiple-Occupancy Vehicle	39.1%	33.0%	25.0%	37.2%	38.3%	34.3%	24.5%	25.0%
Bus (Transit)	17.0%	2.7%	13.5%	1.2%	0.0%	7.6%	2.8%	0.0%
School Bus	4.1%	0.0%	2.2%	0.0%	0.0%	0.0%	0.0%	25.0%
Bicycle	17.9%	7.9%	0.0%	13.3%	1.3%	9.1%	16.7%	0.0%
Foot	30.0%	24.4%	25.8%	26.1%	10.8%	27.6%	30.2%	50.0%

Note: Numbers in each cell represent the proportion of respondents who made at least ONE trip by that mode.

Note: Responses that are statistically significantly different are marked with gray shading.

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Table 65: Quality of Transportation by Respondent Characteristics

	Respondent's Gender		Respondent's Age			Student at Northern Arizona University?		Are you employed		
	Female	Male	18 to 34	35 to 54	55+	No	Yes	No	Yes, part-time	Yes, full-time
How well do you feel the transportation system meets your travel needs?	65	66	70	62	65	65	69	67	64	66
Sidewalks	51	55	61	50	42	52	60	44	59	54
Crosswalks	57	55	59	53	53	55	57	50	56	59
FUTS trails	74	65	72	68	68	71	65	70	70	70
Bike lanes and routes	47	39	43	43	45	45	37	46	40	44
Bike parking	45	42	50	37	37	44	39	35	46	45
Condition of streets	46	48	52	45	41	45	59	41	56	46
Traffic calming (median islands, street narrowing, etc)	38	36	37	38	35	36	42	36	42	34
Traffic congestion	20	13	17	17	13	17	17	14	20	16
Intersections	41	34	35	40	39	37	40	39	41	36
Landscaping/streetscaping along major streets	50	49	52	47	49	48	58	49	56	47
Bus stops	55	55	55	53	59	57	42	56	47	58
Bus routes	46	52	49	45	55	51	36	50	40	53
Overall ease of travel in the area	39	40	40	41	38	41	35	37	39	41

Note: Numbers in each cell represent average ratings (where 100=the most positive response and 0=the least positive response).

Note: Responses that are statistically significantly different are marked with gray shading.

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Table 66: Quality of Transportation by Respondent Characteristics

	Tenure with group quarters			Respondent's Household Type			Annual Household Income		Percent of households with children under 16	
	Own	Rent	Group quarters	Detached units	Attached units	Group quarters	Under $50,000	$50,000+	No children	Have children
How well do you feel the transportation system meets your travel needs?	62	72	60	62	72	60	67	65	68	60
Sidewalks	48	59	58	49	60	58	57	49	56	44
Crosswalks	54	59	50	54	59	50	55	55	57	52
FUTS trails	70	69	67	69	72	67	73	68	69	74
Bike lanes and routes	43	42	53	40	47	53	43	43	41	48
Bike parking	38	52	25	40	52	25	44	43	44	42
Condition of streets	45	50	60	45	50	60	51	44	49	42
Traffic calming (median islands, street narrowing, etc)	35	38	50	37	35	50	37	37	37	33
Traffic congestion	15	19	20	15	19	20	17	17	15	21
Intersections	38	37	33	37	39	33	36	37	37	38
Landscaping/streetscaping along major streets	50	49	58	49	50	58	51	48	50	47
Bus stops	52	60	33	53	60	33	54	56	56	52
Bus routes	45	54	0	48	52	0	47	50	50	45
Overall ease of travel in the area	37	45	33	36	47	33	45	35	41	35

Note: Numbers in each cell represent average ratings (where 100=the most positive response and 0=the least positive response).

Note: Responses that are statistically significantly different are marked with gray shading.

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Table 67: Quality of Transportation by Respondent Characteristics

	Ratio of Autos to Drivers		HH own any bikes?		Area			
	Less than 1 vehicle per driver	1 or more vehicles per driver	No	Yes	Rest of FMPO	Rest of Flagstaff	Core of Flagstaff	Dorm
How well do you feel the transportation system meets your travel needs?	67	66	65	66	57	65	75	56
Sidewalks	59	52	54	52	50	51	59	67
Crosswalks	62	55	58	55	58	58	50	56
FUTS trails	78	69	71	69	67	70	72	67
Bike lanes and routes	46	42	49	42	40	45	41	50
Bike parking	46	43	57	40	47	42	47	22
Condition of streets	54	46	47	47	44	48	48	56
Traffic calming (median islands, street narrowing, etc)	37	36	33	39	37	33	42	44
Traffic congestion	24	15	17	17	14	17	17	11
Intersections	44	36	33	40	39	37	37	33
Landscaping/streetscaping along major streets	53	49	50	50	48	51	50	50
Bus stops	47	56	65	51	59	50	62	N/A
Bus routes	55	48	59	44	50	45	54	N/A
Overall ease of travel in the area	47	39	42	39	34	40	44	33

Note: Numbers in each cell represent average ratings (where 100=the most positive response and 0=the least positive response).

Note: Responses that are statistically significantly different are marked with gray shading.

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Appendix C: Study Methods

Study Design

Sample Selection

Approximately 2,100 households within the boundaries of the Flagstaff Metropolitan Planning Organization area were selected to participate in the survey using a stratified, systematic sampling method on addresses within carrier routes. (Systematic sampling is a method that closely approximates random sampling by selecting every Nth address until the desired number of households are chosen. Carrier routes are mail carrier delivery zones defined by the USPS.) Attached housing units (e.g., apartment, condominiums) were over-sampled to compensate for detached housing unit residents' tendency to return surveys at a higher rate. An individual within each household was randomly selected to complete the survey using the birthday method. (The birthday method selects a person within the household by asking the "person whose birthday has most recently passed" to complete the questionnaire. The underlying assumption in this method is that day of birth has no relationship to the way people respond to surveys.)

An additional 300 students were selected from student group quarters, that is, the dorms at the Northern Arizona University.

Recruitment

Selected households were mailed a pre-notification postcard informing them they had been randomly selected to participate in the Travel Diary Study, while the selected students in University group quarters were sent an e-mail prenotification. One week after their pre-notification, the full travel study packets were sent to all those selected for the study. Additionally, a reminder postcard was sent to residents one week after the travel study packets were sent.

The Travel Diaries

The diary materials (see *Appendix D: Survey Materials*) were mailed to the participants in households a week in advance, describing the study, explaining the materials and assigning a travel day. The subjects were instructed to call the research staff if they had any questions or problems. Assigned travel days came from the week of October 2-6, 2006 (Monday through Friday). If a respondent was unable to complete the diary on their assigned day (e.g., they would be out of town) they were instructed to complete the diary exactly one week from their originally assigned day.

Response Rates

Nearly 9% of the trip diary surveys mailed to households (~184) were estimated to be undeliverable because the housing unit was vacant or the postal service was unable to deliver the survey as addressed. Of the 2,216 eligible households and dormitory students, 320 completed the survey, providing a response rate of 14%.

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Weather Conditions During the Study Period

The weather conditions during the week of October 2nd are shown in Table 68 below. Some precipitation was experienced towards the end of the week; typically Flagstaff is fairly dry in the autumn. According to worldclimate.com, the typical rainfall observed in the entire month of September is 2.4" and in October is 1.5". The temperatures observed during the period were similar to those expected during this time frame; the average daily high temperature in September is 73 °F and in October is 63 °F, while the average daily low temperature is 41.2 °F in September and 31 °F in October.

Table 68: Weather Conditions During the Study Period

Flagstaff Weather*	Monday October 2	Tuesday October 3	Wednesday October 4	Thursday October 5	Friday October 6
High Temperature	72 °F	69 °F	72 °F	72 °F	70 °F
Low Temperature	41 °F	39 °F	35 °F	38 °F	48 °F
Inches of Precipitation	---	---	---	trace	0.8"

**From the NOAA National Data Centers, as recorded at the FLAGSTAFF 4 SW station*

Analysis of Results

Cleaning and Coding of Data

Once received, the diaries were prepared for the analysis. Every diary was examined to ensure that it was filled out correctly with accurate trip descriptions. A very common mistake was to count round trips as one trip rather than two. For ease in keypunching the diary data were transferred to coding sheets, disregarding origin and destination data which would not be used for this report. Three other variables were coded at this time: 1) the type of trip made – see Figure 14 on page 24 for the categories coded, 2) if the trip was a "link" in the work commute, and 3) if the trip had both origin and destination outside the Flagstaff area. In addition, if the respondent had not reported the distance of the trip, MapQuest.com was used to fill in an estimate of the trip distance. Motorcycle and taxi trips were recoded into SOV or MOV trips, based on the number of people in the vehicle. These categories comprised a very small number of trips, and have not proven useful for transportation planning purposes.

Data Entry, Weighting and Analysis

The data from the travel diary coding sheets and household travel surveys were data entered into electronic datasets using a key and verify methodology. This means that the data were entered twice and the two datasets compared. Where there were discrepancies, the results were compared to the hard copy survey and keyed correctly. These plain-text datasets were then imported into SPSS®, a statistical software package, for analysis. For the most part, simple descriptive statistics were presented in the body of the report.

Using the assigned unique identifier, the household travel survey responses were matched with the travel diary information. Two types of datasets were created: a trip-level dataset, where every record in the dataset represented a single trip, and a person-level dataset, where every record in the dataset represented a single person.

Due to the differences in travel behavior by various socioeconomic groups, the participants' responses were statistically weighted. Using the data from the 2000 Census for the Coconino

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subdivision (as defined by the Census) of Coconino County, the results were adjusted to give more weight to the travel of those who were under represented in the sample. Table 69 on the next page displays the socioeconomic breakdown of the unweighted and weighted data along with the 2000 Census data population norms. Rows which are shaded indicate the variables used for the weighting. In all residential studies, people who live in attached or rented housing, are younger or male respond at a lower rate than do those who live in detached or owned housing, are older or are female. In communities that include a University, the under-response by younger males is often quite large compared to the other age/gender groups.

Table 69: Weighting Table

	Population Norm*	Unweighted Data	Weighted Data
Tenure			
Own home	56%	82%	57%
Rent home	41%	17%	40%
Group Quarters	4%	1%	4%
Housing Unit Type			
Detached unit	56%	79%	61%
Attached unit	40%	20%	35%
Group Quarters	4%	1%	4%
Ethnicity - Adults only			
Hispanic	12%	2%	2%
Not Hispanic	88%	98%	98%
Race - Adults only			
White	83%	94%	94%
Non-white	17%	6%	6%
Age			
18-34 years of age	43%	15%	42%
35-54 years of age	39%	48%	38%
55+ years of age	19%	37%	19%
Gender			
Female	51%	65%	52%
Male	49%	35%	48%
Gender and Age			
Females 18-34	21.2%	12%	23%
Females 35-54	19.7%	33%	20%
Females 55+	9.7%	20%	9%
Males 18-34	21.6%	4%	20%
Males 35-54	18.8%	15%	19%
Males 55+	9.0%	16%	10%
Household Income**			
Less than $25,000	28%	10%	22%
$25,000 to $99,999	61%	73%	67%
$100,000 or more	10%	17%	12%

**Source: 2000 Census **Household income in 1999*

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Appendix D: Survey Materials

This Appendix contains the instruments and materials used for the data collection of the 2006 Trip Diary Study. Included are:

Pre-notification postcard

Diary packet cover letter to Flagstaff area residents

Diary packet cover letter to group quarters University students

Travel Diary instructions

Travel Diary card

Travel Diary Overflow sheet

Household Survey

Reminder postcard

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Dear Flagstaff or Flagstaff-Area Resident,

Travel is something we all do and can be frustrating at times. We are inviting a member of your household to be part of a small group of residents who will keep a simple travel log for a single day during the week of October 2, 2006. Basically, the log will show how you get where you're going and how long it takes you to get there. This will help the City of Flagstaff and Coconino County better understand existing travel patterns and work to improve your travel experience.

Your household was chosen at random and your participation will be completely confidential. We are only mailing travel logs to a small number of Flagstaff area residents, so your participation is extremely important. The results will be used in transportation planning to improve our community.

Your travel log will arrive on or before the week of October 2, at which time you'll receive your assigned log day. Many thanks in advance for your help.

Sincerely,

Matt Ryan
Chairman,
Coconino Board of Supervisors

Joseph "Joe" C. Donaldson
Mayor,
City of Flagstaff

Dear Flagstaff or Flagstaff-Area Resident,

Travel is something we all do and can be frustrating at times. We are inviting a member of your household to be part of a small group of residents who will keep a simple travel log for a single day during the week of October 2, 2006. Basically, the log will show how you get where you're going and how long it takes you to get there. This will help the City of Flagstaff and Coconino County better understand existing travel patterns and work to improve your travel experience.

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Mayor,
City of Flagstaff

Coconino County
219 East Cherry Avenue
Flagstaff, AZ 86001

Coconino County
Board of Supervisors
Matt Ryan, *District 3, Chairman*
Louise Yellowman, *District 5, Vice Chair*
Carl Taylor, *District 1*
Elizabeth C. Archuleta, *District 2*
Deb Hill, *District 4*

City of Flagstaff
City Council
Joseph "Joe" C. Donaldson, *Mayor*
Karen Cooper, *Council*
Joe Haughey, *Council*
Kara Kelty, *Council*
Scott Overton, *Vice-Mayor*
Rick Swanson, *Council*
Al White, *Council*

City of Flagstaff
211 West Aspen Avenue
Flagstaff, AZ 86001

Dear Flagstaff Area Resident,

We all travel and transportation is an important concern in the Flagstaff area. The City of Flagstaff and Coconino County, with the Flagstaff Metropolitan Planning Organization, work to accommodate your travel needs by conducting studies, preparing plans, and making transportation improvements. To meet your travel needs, we've built and repaired roads, bicycle and pedestrian paths, and added bus routes in the area. Periodically we also turn to our residents to get information on their travel so that we can understand existing travel patterns and work to improve your travel experience.

Now you can help! I am inviting a member of your household to be a part of a small group of residents who will keep a simple travel log for a single day during the week of October 2, 2006. It's similar to one of the Nielson diaries for logging television viewing but it has a different purpose. Basically, the log will show how you get where you're going and how long it takes you to get there. Your household was chosen at random and your participation will be completely confidential.

Because we want to know what the travel circumstances are for all of the Flagstaff area, we need a representative sample of residents in our community. **That's why it's so important that the person in your household who completes the travel diary be a household member who is in town on that day age 16 or older and who most recently had a birthday.** Year of birth should not be considered.

If that person (the one who's at least 16 and most recently had a birthday) is willing to help with this simple but very important project, he or she should complete the enclosed household survey, read the enclosed instructions and complete the travel diary on **MONDAY October 2.** The survey and travel diary should be mailed to National Research Center, Inc. (the company conducting the study) using the enclosed postage-paid envelope. If you have questions, call Paula or Erin toll-free at 1-877-467-2462 and they'll be happy to talk with you.

Thank you very much! The log is easy to complete and will be helpful to our community.

Sincerely,

Matt Ryan
Chairman,
Coconino Board of Supervisors

Joseph "Joe" C. Donaldson
Mayor,
City of Flagstaff

Coconino County
219 East Cherry Avenue
Flagstaff, AZ 86001

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Scott Overton, *Vice-Mayor*
Rick Swanson, *Council*
Al White, *Council*

City of Flagstaff
211 West Aspen Avenue
Flagstaff, AZ 86001

Dear Northern Arizona University Student,

We all travel and transportation is an important concern in the Flagstaff area. The City of Flagstaff and Coconino County, with the Flagstaff Metropolitan Planning Organization, work to accommodate your travel needs by conducting studies, preparing plans, and making transportation improvements. To meet your travel needs, we've built and repaired roads, bicycle and pedestrian paths, and added bus routes in the area. Periodically we also turn to our residents to get information on their travel so that we can understand existing travel patterns and work to improve your travel experience.

Now you can help! We are inviting you to be a part of a small group of residents who will keep a simple travel log for a single day during the week of October 2, 2006. Basically, the log will show how you get where you're going and how long it takes you to get there. You were chosen at random and your participation will be completely confidential.

Students at NAU are a large part of Flagstaff's population, and it is essential that we get information about student's transportation behavior in order to plan for this important segment of our community.

Please complete the enclosed household survey, read the enclosed instructions and complete the travel diary on **MONDAY October 9.** The survey and travel diary should be mailed to National Research Center, Inc. (the company conducting the study) using the enclosed postage-paid envelope. If you have questions, call Paula or Erin toll-free at 1-877-467-2462 and they'll be happy to talk with you.

Thank you very much! The log is easy to complete and will be helpful to our community.

Sincerely,

Matt Ryan
Chairman,
Coconino Board of Supervisors

Joseph "Joe" C. Donaldson
Mayor,
City of Flagstaff

2006 Flagstaff Travel Diary Study
TRAVEL SURVEY INSTRUCTIONS

THE MATERIALS
This packet contains:

a) a cover letter and these instructions
b) a Travel Diary
c) an overflow sheet, if needed to record more trips than fit on the Travel Diary
d) a Household Travel Survey
e) a postage paid return envelope.

Please review the materials briefly before continuing to read the instructions. If any materials are missing, please call Paula or Erin of National Research Center, Inc. at 303-444-7863, and materials will be mailed to you.

YOUR TRAVEL DIARY DAY
The day selected for you to record your travel on the enclosed Travel Diary is **MONDAY, October 2, 2006**. You should keep your travel diary on this day regardless of weather or number and type of activities you have planned.

IMPORTANT: You should not change your travel behavior just because you are keeping this diary. If you were going to take the car, take the car. If you were planning to go by bus, go by bus. Don't let the fact that you are recording your travel influence how or whether you go places.

Honest responses of your travel behavior for a single day whether your travel is typical or unusual are needed for this study to be reliable. Please record all trips whether you are a passenger, driver or pedestrian. If you will be out of town or have a problem with the day you have been assigned, you may complete the diary on the same day of the next week (on Monday, October 9th).

COMPLETING THE TRAVEL DIARY
The travel diary is the 8½" x 11" card included in this packet. You should take this card with you on **Monday**, your assigned travel diary day. On it you will report every trip you make, beginning at 12:01 am (that is, right after midnight of the previous day) until 12:00 midnight on your assigned travel diary day.

WHAT IS A "TRIP"?
A trip is a one-way journey that takes you further than one city block (about 200 yards) from your original location. Examples of trips include:

1) You take your car to work 6 miles away
2) You walk 2 blocks to the grocery store
3) You carpool with another person 12 blocks to a bus stop (bus pick-up)
4) You ride your bike 2 miles along Schultz Creek for enjoyment
5) You jog around Buffalo Park for exercise
6) You take the bus to Phoenix for a concert.

Examples of what does **NOT** count as a "trip" include:

1) You walk across the hall to use the photocopier;
2) You drive to the next building (less than 200 yards away) for a business meeting;
3) You skateboard across the street to the neighbor's house.

A round trip counts as two trips. For example:

1) You drive to the grocery store and back. Record two trips on your diary.
2) You go for a half-hour jog or bike ride. (This is counted as two trips because you leave home on the first leg of the trip and return home on the second leg. Your "destination" is your halfway point.)

(continued on reverse side)

What if you don't make any trips during the day assigned to you? There is a box on the Travel Diary form you can check if you make no trips on your assigned travel day. Please check this box, and complete the Household Survey. It is important that we get an accurate picture of travel patterns within Flagstaff, including the number of people who make no trips.

What if you make more than 9 trips during the day assigned to you? The Travel Diary allows you to record up to 9 trips. If you take more than this number on your assigned day, please use the overflow sheet. If you make more trips than can be recorded on the Travel Diary and overflow sheet, call the National Research Center, and they will either record your trips over the phone, or send you more overflow sheets.

What if you work a job that requires frequent travel on the day assigned to you? If you work a job that requires you to make many trips during the 24-hour period (e.g., cab driver, pizza delivery driver, sales person), please call National Research Center. Paula or Erin will give you special instructions for completing your Travel Diary.

What about trips with multiple stops? Record each leg of the trip. An example:

> *You walk with your 8-year old to school, then catch the bus to downtown Flagstaff to shop, then return home, stopping to pick up a prescription at the drugstore. This would be counted as four trips. Outbound from your home the destination is the school. The next destination is downtown. Inbound back to your home, record first the stop at the drugstore, and then your home.*

What about walking to a bus stop (or other trips with changes of travel mode)? Please record every leg of a trip, even when it is just to change travel modes. For example, if you ride your bike to the bus stop (1 mile), then take the bus to Woodlands Village (5 miles) and then walk 5 blocks to work, all three of those trips should be recorded on the Travel Diary form. The purpose of the first two trips would be to "change travel mode", while the third would be "work commute".

What about bus transfers? Stops only to transfer from one bus to another do not count as separate trips.

EXAMPLE OF A COMPLETED TRAVEL DIARY

Jane Smith drove from her home at 307 East Juniper Avenue to work at NAU, first dropping her 9 year old daughter at Puente de Hozho Elementary School. At noon, Jane walked to South San Francisco Street for lunch (4 blocks from the building on campus where she works). After work, Jane picked up her daughter and drove home. She jogged for two miles around Buffalo Park before dinner. When dinner was over, Jane and her family rode their bikes downtown for ice cream.

The Travel Diary example on the next page shows how Jane's form would be completed. Please note the following:

1. Jane's travel to work with her daughter is counted as **two** trips; the first is with her daughter to the elementary school -- this trip is designated as "drive a passenger"; the second is from the school to work, and is counted as a "work commute" trip.
2. Although Jane is going to a "school" (NAU), it is for the purpose of work, and is designated as a "work commute" trip.
3. Jane records her trip (walking) **to** lunch as well as her trip **from** lunch back to work (two trips). Her trip back to the school is recorded as "other work/work-related", because she is returning to her workplace, although the purpose of the lunch was not a work-related meeting.
4. After work, Jane's trip to pick up her daughter (even though the daughter is not in the car) is designated as a trip to "drive a passenger."
5. Jane counts her jog around Buffalo Park as **two** trips, even though she made no stops between leaving home and returning home. "Jogging" and "running" are considered "walking" for the purposes of this travel diary.
6. When the family rides their bikes downtown for an ice cream, this is a "snack" and is designated as "social/recreation" rather than eating a meal.

The **INSTRUCTIONS FOR COMPLETING THE TRAVEL DIARY** on the reverse side of the example diary give more detailed information about completing your diary form. Please contact Paula or Erin at National Research Center, Inc. toll-free at 1-877-467-2462 if you have any other questions. Thank you very much for your participation in this study.

EXAMPLE OF A COMPLETED TRAVEL DIARY

(See previous page for descriptions of Jane's travel on her assigned day.)

2006 Flagstaff Travel Diary

Please record all of your trips, whether you are a passenger, driver, or pedestrian.
The information on the first row is included only as an example. Please refer to the instructions if you are not sure how to record your trip.

Name: Jane Smith **Address:** 307 E. Juniper Ave **City/State/Zip:** Flagstaff, AZ **DIARY DATE:** October 2	**STARTING POINT ADDRESS** **Street Address:** SAME **City/State/Zip:** **Nearest Cross Streets:** Juniper & Turquoise	**I did not leave the house today:** ❑ **If using motor vehicle, list odometer reading:** at beginning of day: 79645 at end of day: 79661

trip #	DESTINATION (address, building or nearest cross streets)	trip start time hour:min	trip start time am/pm	trip arrival time hour:min	trip arrival time am/pm	trip purpose	travel method	est. trip miles	number of people in vehicle (inc. yourself) children	number of people in vehicle (inc. yourself) adults
1	Puente de Hozho Elementary School 4th & Linda Vista	7:13	AM	7:22	AM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	2	1	1
2	NAU- Centennial Building Beaver & DuPont	7:35	AM	7:48	AM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	4	0	1
3	Morning Glory Cafe Benton & San Francisco	12:00	Noon	12:10	PM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	4 blocks		
4	NAU &	12:45	PM	12:55	PM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	4 blocks		

trip #	DESTINATION (address, building or nearest cross streets)	trip start time hour:min	trip start time am/pm	trip arrival time hour:min	trip arrival time am/pm	trip purpose	travel method	est. trip miles	number of people in vehicle (inc. yourself) children	number of people in vehicle (inc. yourself) adults
5	Puente de Hozho E.S. 4th & Linda Vista	4:05	PM	4:20	PM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	4	0	1
6	Home &	4:25	PM	4:36	PM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	2	1	1
7	Buffalo Park &	4:50	PM	5:06	PM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	1		
8	Home &	5:06	PM	5:24	PM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	1		
9	Downtown Aspen & Leroux	6:15	PM	6:40	AM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	1.5		
10	Home &	7:05	PM	7:30	PM	1. go home; 2. personal business; 3. shopping; 4. school; 5. work commute; 6. other work/business; 7. social/recreation; 8. eat a meal; 9. drive passenger; 10. change travel mode; 11. other:	1. car or light truck (**driver**); 2. car or light truck (**passenger**); 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5; 4. school bus; 5. large commercial truck; 6. motorcycle; 7. taxi (passenger); 8. bicycle; 9. walk; 10. other:	1.5		

Instructions for Completing the Travel Diary

2006 Flagstaff Travel Diary

Please record all of your trips, whether you are a passenger, driver, or pedestrian.
The information on the first row is included only as an example. Please refer to the instructions if you are not sure how to record your trip.

Name: _____
Address: _____
City/State/Zip: _____
DIARY DATE: _____

STARTING POINT ADDRESS
Street Address: _____
City/State/Zip: _____
Nearest Cross Streets: _____ & _____

I did not leave the house today: ☐

If using motor vehicle, list odometer reading:
at beginning of day: _____
at end of day: _____

trip #	DESTINATION (address, building or nearest cross streets)	trip start time hour:min	am/pm	trip arrival time hour:min	am/pm	trip purpose	travel method	est. trip miles	number of people in vehicle (incl. yourself) children	adults
1	_____ & _____	__:__		__:__		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10. change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ☐66 ☐2 ☐3 ☐4 ☐5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			

Please remember to fill in the date of the day you complete the travel diary!

Record the location at which you are beginning your travel for the day. If it is your home (the same address as in the information box), you may just write "SAME" however be sure to include the Nearest Cross Streets.

If you did not make any trips in the 24-hour period, you should indicate so by checking this box. Please make sure you have filled out your name, address and the diary date assigned to you; you do not need to complete the rest of the diary.

Please include yourself as one of the adults if you are in a vehicle! "Children" refer to those under age 18 who would not be able to drive themselves. (Include 16 and 17 year old children as adults if they have a driver's license.)

Please list the address, building or nearest intersection to the location you are going. You do not need to determine the precise address of every location if you can name an intersection, or a building/store, which is common enough to be recognized (e.g., "Buffalo Park").

Go Home: A trip from some other location to your usual place of residence.
Personal Business: Travel which is made to obtain services, not products. (E.g. bank, post office, doctor, auto repair.)
Shopping: Travel to shop or to purchase products.
School: Travel by a student to college or school. Travel by a teacher or other employee to the school where employed should be classified as a work commute trip. If you are driving a student to school, the trip should be classified as "drive a passenger."
Work Commute: Travel to or from your workplace.
Other Work/business: Travel done for work, to someplace other than the workplace. (E.g., sales calls, trips to purchase office supplies for work.)
Social/Recreation: Trips made when no business is transacted. (E.g., parties, participatory sports, cultural or athletic events, church activities, visits to friends.)
Eat a Meal: Examples include going to a restaurant, going to a friend's house for dinner, or home from work for lunch. Stops for snacks or refreshments should be classified as "social/recreation".
Drive a Passenger: Use this category for trips or stops to pick up or deliver someone to a specific location. (E.g., taking a friend to the store, picking up a child from school.)
Change Travel Mode: If you drive your car, walk more than one block, or ride your bike to catch the bus, this is a "change travel mode" trip. However, if you transfer from one bus to another, it should not be included in this category because you traveled in buses without changing travel modes. (Be sure to record all the routes you used to make the trip.)
Other: Any trip you make which does not seem to fit in the categories listed should be put in the "other" category. Please list what the trip purpose was in the blank provided. Also, if you have a question as to where to put a certain trip because you can't decide between two categories, list it in the "other" category.

You can record the number of blocks instead of miles if it is easier, but PLEASE write in "blocks" on your form, so we don't mistake it for miles. If you are in a vehicle with an odometer, please check it at the beginning and end of each trip you make.

Please try to keep good estimates of the start and arrival times. These are the start and arrival times of the TRIP, not of the reason you are making the trip. For example, if you go to the store, please record the time you left for the store (trip start time), and then the time you arrived at the store (trip arrival time). When you leave the store, please record the time you left the store (trip start time), and then the time you arrived at your next destination (trip arrival time). The time you leave the store is not the trip arrival time of the first trip; we are only interested in the duration of the actual trip to the store, not how much time was spent at the store.

Be careful if you select "car or light truck", because there are two answers for this category -- passenger or driver. If you use one of these categories, please also fill in the number of adults and children in the vehicle (including yourself as one of the adults). "Large commercial truck" refers to large trucks used by businesses for commercial purposes.

2006 Flagstaff Travel Diary

Please record all of your trips, whether you are a passenger, driver, or pedestrian.
The information on the first row is included only as an example. Please refer to the instructions if you are not sure how to record your trip.

Name: _____
Address: _____
City/State/Zip: _____
DIARY DATE: _____

STARTING POINT ADDRESS
Street Address: _____
City/State/Zip: _____
Nearest Cross Streets: _____ **&** _____

I did not leave the house today: ❑

If using motor vehicle, list odometer reading:
at beginning of day: _____
at end of day: _____

trip #	DESTINATION (address, building or nearest cross streets)	trip start time hour:min	trip start time am/pm	trip arrival time hour:min	trip arrival time am/pm	trip purpose	travel method	est. trip miles	number of people in vehicle (inc. yourself) children	number of people in vehicle (inc. yourself) adults
example	Puente de Hozho Elementary School Fourth & Linda Vista	7:13	AM	7:22	AM	1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:	2 miles	1	1
1	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			
2	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			
3	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			

trip #	DESTINATION (address, building or nearest cross streets)	trip start time		trip arrival time		trip purpose	travel method	est. trip miles	number of people in vehicle (inc. yourself)	
		hour:min	am/pm	hour:min	am/pm				children	adults
4	_____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
5	_____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
6	_____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
7	_____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
8	_____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
9	_____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			

Flagstaff Overflow Sheet

trip #	DESTINATION (address, building or nearest cross streets)	trip start time		trip arrival time		trip purpose	travel method	est. trip miles	number of people in vehicle (inc. yourself)	
		hour:min	am/pm	hour:min	am/pm				children	adults
10	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			
11	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			
12	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			
13	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			
14	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			
15	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other:	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other:			

trip #	DESTINATION (address, building or nearest cross streets)	trip start time		trip arrival time		trip purpose	travel method	est. trip miles	number of people in vehicle (inc. yourself)	
		hour:min	am/pm	hour:min	am/pm				children	adults
16	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
17	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
18	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
19	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
20	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			
21	_____ _____ & _____	___ : ___		___ : ___		1. go home 2. personal business 3. shopping 4. school 5. work commute 6. other work/business 7. social/recreation 8. eat a meal 9. drive passenger 10.change travel mode 11. other: _____	1. car or light truck (**driver**) 2. car or light truck (**passenger**) 3. bus/transit: route(s): ❑ 66 ❑ 2 ❑ 3 ❑ 4 ❑ 5 4. school bus 5. large commercial truck 6. motorcycle 7. taxi (passenger) 8. bicycle 9. walk 10. other: _____			

National Research Center, Inc.
3005 30th Street
Boulder, CO 80301
303-444-7863

2006 Flagstaff Travel Diary Study
HOUSEHOLD TRAVEL SURVEY

Please complete the following survey regarding your household and return it with your Travel Diary in the enclosed postage-paid envelope. This survey should take only a few minutes. It is important because it will help research staff to better understand trip-making patterns in the area, your opinions about trip-making, and how representative the people who participated in the diary study are in relation to Flagstaff area residents as a whole. Your answers to this survey will be kept in strict confidence and only used in group form. Thank you for your time and help!

GENERAL TRAVEL INFORMATION

1. **On the day you completed the travel diary**, did you have any goods or services delivered to your work or home, such as a meal (pizza, etc.), groceries, haircuts or other goods and services? (Please include deliveries for items you ordered by phone, through a mail order catalogue, or via modem or Internet.)
   - ❑ No ➔ *Go to question #3*
   - ❑ Yes ➔ **From how many different sources did you receive deliveries?** ..... _____ *sources*

2. Did the delivery or deliveries substitute for a travel trip you might have made to seek the good or service?
   - ❑ No
   - ❑ Yes

3. About how close is the nearest bus stop to your residence?
   - ❑ less than 1 block
   - ❑ 1-4 blocks (about 330 feet to a quarter-mile)
   - ❑ 4-8 blocks (quarter-mile to a half-mile)
   - ❑ 8-16 blocks (half-mile to a mile)
   - ❑ More than 16 blocks (more than a mile)
   - ❑ Don't know

4. Do you have an annual pass that allows you unlimited bus rides?
   - ❑ No
   - ❑ Yes, an Eco-Pass
   - ❑ yes, provided by my employer
   - ❑ yes, provided by my school
   - ❑ yes, purchased myself

5. Did you vote in favor of increasing the transit tax (Proposition 403) on last May's general election?
   - ❑ No
   - ❑ Yes ➔ *Go to question #7*
   - ❑ Did not vote ➔ *Go to question #7*

6. Why did you choose to vote against the transit tax? (Please check all that apply).
   - ❑ I do not use transit
   - ❑ The cost was too high for the benefit
   - ❑ Taxes are already too high
   - ❑ I do not think taxpayers should pay for transit service
   - ❑ Not enough information was provided
   - ❑ I am not familiar with the transit system
   - ❑ Other _____

7. Are you employed?
   - ❑ No ➔ *Go to question #11*
   - ❑ Yes, part-time
   - ❑ Yes, full-time

8. Please write in the address, building and/or nearest cross streets of your primary work place.

   Building or address: _____

   Nearest cross streets: _____

   & _____

   City: _____

9. About how close is the nearest bus stop to your primary work place?
   - ❑ less than 1 block
   - ❑ 1-4 blocks (about 330 feet to a quarter-mile)
   - ❑ 4-8 blocks (quarter-mile to a half-mile)
   - ❑ 8-16 blocks (half-mile to a mile)
   - ❑ More than 16 blocks (more than a mile)
   - ❑ Don't know

10. For each of the following, please indicate which your employer makes available to you and which you have used in the past 6 months.

	Employer Provides?		*Used in last 6 months?*	
	Yes	No	Yes	No
Flexible hours/ compressed work weeks	❑	❑	❑	❑
Telecommuting/ working from home	❑	❑	❑	❑
Ridesharing, car or van pooling, car sharing.....	❑	❑	❑	❑
Bike parking.....	❑	❑	❑	❑
Lockers and shower facilities ..	❑	❑	❑	❑
Guaranteed ride home.....	❑	❑	❑	❑
Subsidized or free bus pass ...	❑	❑	❑	❑

11. The transportation system in our region consists of roads, buses, sidewalks, Flagstaff Urban Trails System (FUTS) trails, and bike facilities. How well do you feel the transportation system meets your travel needs?
    - ❑ Very Well
    - ❑ Somewhat Well
    - ❑ Not Too Well
    - ❑ Not At All

12. Please rate each of the following aspects of transportation in Flagstaff.

	Excellent	Good	Fair	Poor	Don't Know
Sidewalks	1	2	3	4	5
Crosswalks	1	2	3	4	5
FUTS trails	1	2	3	4	5
Bike lanes and routes	1	2	3	4	5
Bike parking	1	2	3	4	5
Condition of streets	1	2	3	4	5
Traffic calming (median islands, street narrowing, etc)	1	2	3	4	5
Traffic congestion	1	2	3	4	5
Intersections	1	2	3	4	5
Landscaping/streetscaping along major streets	1	2	3	4	5
Bus stops	1	2	3	4	5
Bus routes	1	2	3	4	5
Overall ease of travel in the area	1	2	3	4	5

HOUSEHOLD INFORMATION

13. How many usable passenger cars, vans and light trucks does your household own or normally have use of? ..... _____ *vehicles*

14. How many usable bicycles does your household have?..... _____ *bicycles*

15. In the last month, about how frequently have you ridden a bicycle:

For Recreation
- ❑ Five or more times a week
- ❑ 2 to 4 times a week
- ❑ Once a week
- ❑ Twice a month or less
- ❑ Never

For Commuting
- ❑ Five or more times a week
- ❑ 2 to 4 times a week
- ❑ Once a week
- ❑ Twice a month or less
- ❑ Never

16. About how much was the TOTAL 2005 income before taxes for your household as a whole? In the total, please include income before taxes as well as money from all sources for all persons living in your household

- ❑ less than $14,999
- ❑ $15,000 to $24,999
- ❑ $25,000 to $49,999
- ❑ $50,000 to $74,999
- ❑ $75,000 to $99,999
- ❑ $100,000 to $149,999
- ❑ $150,000 or more

17. Please check the one choice below which best describes the kind of residence in which you live.

- ❑ A detached single family home
- ❑ A duplex or triplex
- ❑ A multi-family unit (e.g., apartments or condominiums)
- ❑ A townhouse
- ❑ A mobile home
- ❑ Group quarters (e.g., dormitory, fraternity or sorority, nursing home) → *go to question #21*
- ❑ Other: _____

18. Do you rent or own your residence?

❑ Rent ❑ Own

19. Please record the number of household members in each of the following age categories. (**Please remember to include yourself.**)

How many are under 16? ..... _____

How many are 16 or older? ..... _____

20. For all children (under the age of 16) living in your household, please check the box that indicates their **most frequently used travel mode to school.** (*If no children live in your household, or none that attend school, please go to question #21)*

Most frequent travel mode to school	Child #1	Child #2	Child #3	Child #4	Child #5
Walk					
Bicycle					
School bus					
Mountain Line bus					
Charter bus					
Driven alone					
Driven with other children					

INDIVIDUAL INFORMATION

21. How many years have you lived in or near Flagstaff? ..... _____ *years*
(Please mark "0" if less than 6 months.)

22. Are you a student at the Northern Arizona University?

❑ No ❑ Yes

23. What is your gender?

❑ Male ❑ Female

24. Which category contains your age?

- ❑ 16 to 24 years old
- ❑ 25 to 34 years old
- ❑ 35 to 44 years old
- ❑ 45 to 54 years old
- ❑ 55 to 64 years old
- ❑ 65 years or older

25. Which category best describes your race?

- ❑ African American/black
- ❑ Caucasian/white
- ❑ Asian or Pacific Islander
- ❑ Native American
- ❑ Other

26. Which category best describes your ethnicity?

❑ Hispanic ❑ Non-Hispanic

27. How much education have you completed?

- ❑ 0 to 11 years of school
- ❑ high school
- ❑ some college or associate's degree
- ❑ bachelor's degree
- ❑ graduate/professional degree

Dear Flagstaff or Flagstaff-Area Resident,

This is a friendly reminder:
Please complete your travel diary!

You are part of only a small group of residents who will keep a simple travel log for a single day this week.

Study results will help the City of Flagstaff and Coconino County better understand existing travel patterns and work to improve your travel experience.

If you have questions, or did not receive your packet, please call National Research Center, the organization conducting the study, toll-free at 1-877-467-2462.
Ask for Paula or Erin.

Sincerely,

Matt Ryan *Chairman,*
Coconino Board of Supervisors

Joseph "Joe" C. Donaldson
Mayor, City of Flagstaff

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