

TAHOE REGIONAL PLANNING AGENCY

TRAVEL MODE SHARE SURVEY

Summary of Results

December 2006



NuStats

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1. INTRODUCTION

This report documents the execution and summarizes the results of the 2006 Travel Mode Share (TMS) Survey for the Tahoe Basin. NuStats conducted the survey in August 2006 under sponsorship of the Tahoe Regional Planning Agency (TRPA).

1.1 SURVEY PURPOSE

The purpose of the survey was to capture accurate and reliable travel mode data of permanent residents, seasonal residents, and visitors to commercial and recreational sites within the Tahoe Basin. This survey will provide data necessary to support TRPA's current efforts to update its long-range regional plan.

1.2 SURVEY DESIGN

Because the sample was a "choice" sample and not a probability sample, the resulting data set was neither weighted nor expanded to reflect population parameters. The complete sampling plan is in Appendix H of this report.

1.3 SURVEY SUMMARY OUTCOMES

A total of 2,157 interviews were conducted. Of these, 742 were with full-time residents, 283 were with seasonal residents and 1,132 were with visitors. See Table 1 for further detail.

TABLE 1: SURVEY OUTCOMES BY LENGTH OF VISIT AND INTERVIEWING SITE

SITE OF INTERVIEWING LOCATION	FULL TIME RESIDENTS	SEASONAL RESIDENTS	VISITORS	TOTAL
North Shore	249	136	485	870
South Shore	493	147	647	1287
Total	742	283	1,132	2,157



2. METHODOLOGY

SURVEYOR SELECTION AND TRAINING

The surveyor staff was secured through Blue Ribbon Employment, a temporary employment agency located in South Lake Tahoe. Individuals selected to conduct data collection activities were required to have lived in the Tahoe Basin area a minimum of two years, have a minimum of two years of college education, be familiar with recreational and commercial areas surrounding the Tahoe Basin area, have an outgoing personality, be a minimum of 21 years of age, have excellent speaking skills, and have reliable personal transportation.

Surveyors were required to attend a four-hour training session held on Wednesday August 2, 2006, at the TRPA office from 9:00am to 1:00pm. During the training session, surveyors were advised about the purpose of the study, work schedule (survey times and location), dress code, and data collection methodology which stressed reading each question completely as worded, following skip patterns and full collection of all data elements.

The training session included a focused review of the questionnaire to familiarize the staff with each question and appropriate responses to be collected. Following the classroom style training session, surveyors broke out into groups of two and conducted mock interviews with each other prior to beginning actual data collection.

Documented training material was provided to each surveyor to retain as reference. A copy of the training manual is in Appendix E.

SURVEY SITES

TRPA staff and NuStats jointly selected 50 data collection sites based on the following criteria:

- Balance between North Lake Tahoe and South Lake Tahoe split (40% of sites and collected data secured from North Lake Tahoe sites and 60% of sites and collected data secured from South Lake Tahoe sites); and
- Anticipated activity level at each site.

Table 2 identifies the selected commercial survey sites including location, and collection goal:

TABLE 2: COMMERCIAL SITE SELECTION AND COLLECTION GOAL

LOCATION	SAMPLE TYPE	SHORE	TARGET COLLECTION GOAL
Bijou/al Tahoe	Commercial	South	26
Dollar Hill	Commercial	North	6
Homewood Commercial	Commercial	North	6
Incline Village Commercial	Commercial	North	60
Kings Beach Commercial	Commercial	North	40
Kingsbury Community Plan	Commercial	South	27
Meyers	Commercial	South	26
North Casinos	Commercial	North	20
North Stateline Non Casino	Commercial	North	25
Round Hill Community Plan	Commercial	South	50
Sierra Tract	Commercial	South	27
Ski Run	Commercial	South	50
South Stateline	Commercial	South	60
South Y Commercial	Commercial	South	60
Stateline Community Plan	Commercial	South	60
Sunnyside	Commercial	North	6
Tahoe City	Commercial	North	60
Tahoe Vista Commercial	Commercial	North	6
Tahoma Commercial	Commercial	North	5
<i>Total Collection Goal</i>			620

Tables 3 identifies the selected recreational survey sites including location, and collection goal:

TABLE 3: RECREATIONAL SITE SELECTION AND COLLECTION GOAL

LOCATION	SAMPLE TYPE	SHORE	TARGET COLLECTION GOAL
64-Acre Beach/Picnic Area	Recreational	North	37
Baldwin Beach	Recreational	South	40
Camp Richardson Resort	Recreational	South	40
Carnelian Bay Lake Access	Recreational	North	37
Cave Rock	Recreational	South	40
Commons Beach	Recreational	North	37
Community Ball Fields-LTCC	Recreational	South	40
Eagle Falls	Recreational	South	40
East Shore Beach Trailhead (Secret/chimney)	Recreational	North	37
El Dorado Beach/Boat Ramp	Recreational	South	40
Glen Alpine Trailhead	Recreational	South	40
Incline Village Tennis Complex	Recreational	North	37
Inspiration Point	Recreational	South	40
Kahle Community Park and Center	Recreational	South	40
King Beach Lake Access	Recreational	North	37
Lake Valley State Recreation Area	Recreational	South	40
Lakeside Beach Marina	Recreational	South	40
Logan Shoals Vista	Recreational	South	40
Meeks Bay Trailhead	Recreational	North	37
MS Dixie Entrance	Recreational	South	40
North Tahoe Regional Park	Recreational	North	37
Rec. Complex	Recreational	South	40
Regan Beach	Recreational	South	40
Sand Harbor Management Area	Recreational	North	37
Sawmill Pond	Recreational	South	40
Spooner Lake	Recreational	North	37
Sugar Pine Point State Park	Recreational	North	37
Tahoe City Marina	Recreational	North	36
Tahoe Paradise Park	Recreational	South	40
Tahoe State Recreation Area (William Layton Park)	Recreational	North	37
Zephyr Cove Marina/Resort	Recreational	South	40
<i>Total Collection Goal</i>			1,200

DATA COLLECTION METHODOLOGY

All data collection activities were conducted by intercept interview methodology by trained staff. Interviews averaged four to five minutes and were conducted with one member of a traveling party (either visitor, seasonal resident or full-time resident) age 18 or older.

Surveyors were provided with sampling instructions prior to the start of data collection efforts at each survey site. The sampling instructions defined whether to conduct a census sample of every travel party encountered (at low activity sites), or sample every Nth travel party at higher activity sites. Table 4 identifies the sampling methodology conducted at each commercial site, while Table 5 provides sampling methodology at recreational sites.

TABLE 4: COMMERCIAL DATA COLLECTION METHODOLOGY

LOCATION	SAMPLING METHOD USED
Bijou/al Tahoe	Census
Dollar Hill	Census
Homewood Commercial	Census
Incline Village Commercial	Every 2nd travel party
Kings Beach Commercial	Every 2nd travel party
Kingsbury Community Plan	Census
Meyers	Census
North Casinos	Census
North Stateline Non Casino	Census
Round Hill Community Plan	Every 2nd travel party
Sierra Tract	Every 2nd travel party
Ski Run	Every 2nd travel party
South Stateline	Every 3rd travel party
South Y Commercial	Every 3rd travel party
Stateline Community Plan	Every 3rd travel party
Sunnyside	Census
Tahoe City	Every 3rd travel party
Tahoe Vista Commercial	Census
Tahoma Commercial	Census

TABLE 5: RECREATIONAL DATA COLLECTION METHODOLOGY

LOCATION	SAMPLING METHOD USED
64-Acre Beach/Picnic Area	Census
Baldwin Beach	Every 3rd travel party
Camp Richardson Resort	Census
Carnelian Bay Lake Access	Census
Cave Rock	Census
Commons Beach	Census
Community Ball Fields-LTCC	Census
Eagle Falls	Every 2nd travel party
East Shore Beach Trailhead (Secret/chimney)	Census
El Dorado Beach/Boat Ramp	Every 2nd travel party
Glen Alpine Trailhead	Census
Incline Village Tennis Complex	Census
Inspiration Point	Every 2nd travel party
Kahle Community Park and Center	Every 3rd travel party
King Beach Lake Access	Census
Lake Valley State Recreation Area	Census
Lakeside Beach Marina	Every 2nd travel party
Logan Shoals Vista	Census
Meeks Bay Trailhead	Census
MS Dixie Entrance	Census
North Tahoe Regional Park	Census
Rec. Complex	Every 2nd travel party
Regan Beach	Census
Sand Harbor Management Area	Every 2nd travel party
Sawmill Pond	Census
Spooner Lake	Census
Sugar Pine Point State Park	Census
Tahoe City Marina	Census
Tahoe Paradise Park	Census
Tahoe State Recreation Area (William Layton Park)	Every 2nd travel party
Zephyr Cove Marina/Resort	Census

Surveyors were instructed to tally any travel party who refused to participate in the study. This refusal tally was used to calculate response rate. Overall, response rate for the study was 66% and is detailed by site in Appendix F of this report.

Publicity

Coulter and Associates was responsible for the development and placement of a comprehensive media notice detailing the sponsor, purpose and dates of the upcoming study. The media notice was released to local print and electronic media sources approximately four days prior to data collection. A copy of the notice is in Appendix D.

Logistics

Following survey site selection, TRPA, NuStats and Coulter and Associates conducted a joint effort to contact appropriate individuals at each site to advise about the study purpose, secure permission to conduct survey activities at the site, and define the survey timeframe. Contact was made by a variety of modes including e-mail, telephone and U.S. mail services.

Upon securing permission to survey at the sites, TRPA and NuStats conducted an extensive site review at each of the 50 survey locations prior to the start of data collection in order to identify surveyor staging locations that would minimize bias for encountering respondents traveling by one specific travel mode. For example, surveyors were not staged in parking lots where they would encounter nearly 100% travel by private automobile. Nor were surveyors staged near bus stop locations where the majority of respondents would be traveling by public transportation mode.

A deliberate effort was made to stage surveyors at locations within a site that allow for the highest degree of intercepting potential respondents who may travel to the site by a variety of travel modes. These included main entrances (at parks for example), sidewalks (in front of commercial centers), or main activity points (such as beaches and trailheads.) Table 6 identifies the number of surveyors and their staging location at commercial survey sites. Table 7 shows the same information for recreational sites.

TABLE 6: SURVEYOR STAGING FOR COMMERCIAL LOCATIONS

LOCATION	STAGING LOCATION
Bijou/al Tahoe	1 from Safeway to Big Daddy's on Hwy. 50, 2 in Rite Aid strip center, 1 along Harrison Ave., 1 between Longs Drugs and Heidi's Restaurant, 1 from west of Safeway on both sides of street to Harrison
Dollar Hill	2 covering East and West side of Hwy 28 from 7-11 (Fabian Road) to Old Mill Road.
Homewood Commercial	2 covering both sides of Hwy 89 from Homewood Ski Resort to Post Office
Incline Village Commercial	1 at Raley's center and strip center on same side, 1 on south side of Hwy 28 from 7-11 center to stores in block with Starbucks, 1 at stores on all 4 corners of Northwood Blvd and Village Center strip center.
Kings Beach Commercial	3 from Beach Street to Beaver Street along both sides of Hwy 28.
Kingsbury Community Plan	1 from Kahle Community park entrance to Bank of America strip mall on North side of Kingsbury Grade, 1 on South side of Kingsbury Grade also from Bank of America strip mall to Khale community park entrance, 1 from Khale community park entrance to HWY 50 on both sides, 1 at Lakeside Casino and liquor store
Meyers	2 on golf course side in retail area, 1 surveyor on hardware store side in retail area.
North Casinos	1 at Crystal Bay, Biltmore and Cal-Neva casino entrances (Goals revised by client)
North Stateline Non Casino	1 at stores on both sides of Hwy 28 from Biltmore parking lot to approximately Manor Ave. (Goals revised by client)
Round Hill Community Plan	Along sidewalk in front of all stores
Sierra Tract	2 from Sierra to Lodi on both sides of Hwy 50, 3 from Sierra to Blue Lake on both sides of Hwy 50
Ski Run	1 both sides of Hwy 50 between IHOP and McDonalds, 1 at Ski Run mall and up to Chevron

LOCATION	STAGING LOCATION
	Station at Hwy. 50, 1 along Hwy. 50 from Ski Run to Fairway, 1 at Ski Run mini mall, 1 at Mulligan mini-mall to Ravel Lodge, 1 covering stores between Larch Ave/Bowers Ave/Tamarack Ave/Sonora Ave
South Stateline	2 at Raley's shopping center mall, including restaurants at front, 1 along Hwy 50 from Alpen Sierra Coffee to Wildwood, 1 from Heavenly Village to Embassy Suites, 1 from Stateline to Park, 2 inside Heavenly Village, 1 inside Heavenly Village annex (miniature golf park)
South Y Commercial	1 person at Y Outlet shops and south on 50, 1 person on Millers Outlet side to north boundary on Hwy 50, 1 person at K-Mart center and south on Hwy. 50
Stateline Community Plan	4 from Stateline to Lake Parkway/Mont Bleu side, 3 from Stateline to Lake Parkway/Horizon side, 1 at casino back entrances on Mont Bleu side, 1 at casino back entrances on Horizon side
Sunnyside	2 covering both sides of Hwy 89 from General Store to Pineland Drive
Tahoe City	2 on North side of Hwy 28 from Lighthouse Center (East) to Albertson's at Hwy 28 and Hwy 89 intersection. 1 on South side of Hwy 28 from Lighthouse Center (East) to Chevron Station/raft rental (West) including Fanny Bridge and Comstock Village.
Tahoe Vista Commercial	1 from Agatam St. to Lauren on both sides of Hwy 28 and from Hwy 28 north on National Ave. on both sides of street.
Tahoma Commercial	1 person covering from laundry mart mini-mart to PDQ food mart on both sides of Hwy 89

TABLE 7: SURVEYOR STAGING FOR RECREATIONAL LOCATIONS

LOCATION	STAGING LOCATION
64-Acre Beach/Picnic Area	3 in parking area, picnic area and raft launch
Baldwin Beach	1 near restrooms and picnic area, 2 along beach
Camp Richardson Resort	1 at stores by ice cream shop, 1 at general market, 3 at beach, restaurant area, and boat rental area.
Carnelian Bay Lake Access	3 along beach access area to marina
Cave Rock	2 covering boat launch, kayak launch, parking lot and restroom areas
Commons Beach	2 in parking lot, beach front, playground and stairway down from Hwy 28 to beach.
Community Ball Fields-LTCC	1 at soccer field
Eagle Falls	2 at parking lot (at trailhead and on Hwy 89), trailhead and restroom
East Shore Beach Trailhead (Secret/chimney)	1 at trailhead and parking lot
El Dorado Beach/Boat Ramp	1 by bathroom, 2 along beachfront
Glen Alpine Trailhead	3 at trailhead and parking area
Incline Village Tennis Complex	1 at soccer field, one in front of recreation complete, 1 at tennis courts
Inspiration Point	1 at parking area (across street and within lookout) and overlook
Kahle Community Park and Center	2 covering parking lot, play ground, volleyball field
King Beach Lake Access	2 along beach and parking lot
Lake Valley State Recreation Area	At entrance to country club
Lakeside Beach Marina	2 on beach, 1 by playground and restrooms, 1 in parking lot
Logan Shoals Vista	1 covering parking lot and lookout area
Meeks Bay Trailhead	2 at parking areas and trailhead

LOCATION	STAGING LOCATION
MS Dixie Entrance	At ticket window, boarding line, walkway to boats
North Tahoe Regional Park	1 at ball fields, play ground, picnic areas and restrooms
Rec. Complex	2 at playground, 1 at recreation center entrance
Regan Beach	4 along beachfront, parking area, concession stand and playground
Sand Harbor Management Area	1 at parking lot, 1 on beach, 1 at boat launch
Sawmill Pond	1 around pond and at trailhead
Spooner Lake	3 covering all parking lot areas, restroom, trailheads
Sugar Pine Point State Park	2 at parking lot, bathrooms, entrance station
Tahoe City Marina	2 at boat docks and shore area
Tahoe Paradise Park	1 around pond, picnic benches and playground
Tahoe State Recreation Area (William Layton Park)	4 at entrance to park (by bridge), picnic area, museum, riverfront (This site is actually William Layton Park, across from 64 acres)
Zephyr Cove Marina/Resort	1 along beach/volleyball court/boat rental area, 1 along parking lot sidewalk/restrooms/snack shop, 1 around lodge/restaurant

Pilot Test

Due to the need to maintain a compressed data collection schedule, NuStats conducted a rolling pilot test on August 2, 2006 to assess methodology and data capture results. Data for the pilot test was collected at two sites: South Stateline and Stateline Community Plan. The pilot test revealed the methodology was sound and the questionnaire captured all data required for modeling purposes. The pilot test did, however, disclose that surveyors needed further instruction to probe on identified open-ended questions. Full documentation of the pilot test results is included in the technical memorandum in Appendix C.

Survey Dates

Data collection was conducted over a 13-day period from August 2 to August 15, 2006. On August 3, data collection was suspended in order to assess data collection results obtained from the pilot test conducted on August 2, 2006.

Sites to be surveyed each day were scheduled based on their proximity to each other and anticipated activity level on the scheduled survey day. For all but four sites, surveyors were able to meet or exceed the collection goal during one site visit. Table 8 identifies the date and time frame when survey activities occurred at commercial locations, and Table 9 shows the dates and times for recreational survey locations.

TABLE 8: COMMERCIAL DATA COLLECTION DAY AND TIME PERIOD

LOCATION	SURVEY DAY	SURVEY DATE	TIME
Bijou/al Tahoe	Sunday	8/6/2006	8:30am - 9:30am
Dollar Hill	Sunday	8/13/2006	9:15am - 10:10am
Homewood Commercial	Sunday	8/13/2006	2:10pm - 2:55pm
Incline Village Commercial	Wednesday	8/9/2006	9:00am - 12:00pm
Kings Beach Commercial	Thursday	8/10/2006	9:20am - 11:30pm
Kingsbury Community Plan	Monday	8/7/2006	3:45pm - 4:30pm

LOCATION	SURVEY DAY	SURVEY DATE	TIME
Meyers	Friday	8/4/2006	9:10am - 10:45am
North Casinos	Wednesday	8/9/2006	9:15am - 12:30pm
North Stateline Non Casino	Wednesday	8/9/2006	9:15am - 1:30pm
Round Hill Community Plan	Monday	8/7/2006	1:00pm - 3:30pm
Sierra Tract	Monday	8/14/2004	8:45am - 10:15am
Ski Run	Sunday	8/6/2006	9:45am - 12:15pm
South Stateline	Wednesday	8/2/2006	12:30pm - 2:30pm
South Y Commercial	Friday	8/4/2006	11:30am - 3:30pm
Stateline Community Plan	Wednesday	8/2/2006	2:50pm - 5:00pm
Sunnyside	Sunday	8/13/2006	10:30am - 11:15am
Tahoe City	Friday	8/11/2006	12:35pm - 3:40pm
Tahoe Vista Commercial	Thursday	8/10/2006	9:20am - 11:20am
Tahoma Commercial	Tuesday	8/8/2006	8:45am - 9:50am

TABLE 9: RECREATIONAL DATA COLLECTION DAY AND TIME PERIOD

LOCATION	SURVEY DAY	SURVEY DATE	TIME
64-Acre Beach/Picnic Area	Friday	8/11/2006	9:50am - 11:15 am
Baldwin Beach	Saturday	8/12/2006	1:30pm - 4:00pm
Camp Richardson Resort	Tuesday	8/15/2006	8:45am - 11:10am
Carnelian Bay Lake Access	Thursday	8/10/2006	1:00pm - 4:00pm
Cave Rock	Saturday	8/5/2006	8:50am - 2:00pm
Commons Beach	Friday	8/11/2006	9:45am - 12:00pm
Community Ball Fields-LTCC	Saturday and Sunday	8/12/2006 and 8/13/2006	8:30am-3:00pm, 12:00pm - 7:00pm
Eagle Falls	Tuesday	8/8/2006	1:20pm - 3:45pm
East Shore Beach Trailhead (Secret/chimney)	Saturday	8/5/2006	9:00am - 3:30pm
El Dorado Beach/Boat Ramp	Sunday	8/6/2006	1:30pm - 4:15pm
Glen Alpine Trailhead	Saturday	8/12/2006	9:15am - 11:50am
Incline Village Tennis Complex	Wednesday	8/9/2006	12:45pm - 4:00pm
Inspiration Point	Tuesday	8/8/2006	1:30pm - 4:20pm
Kahle Community Park and Center	Saturday	8/5/2006	12:45pm- 3:45pm
King Beach Lake Access	Thursday	8/10/2006	9:00am - 12:00pm
Lake Valley State Recreation Area	Friday	8/4/2006	9:00am - 2:00pm
Lakeside Beach Marina	Sunday	8/6/2006	3:30pm - 5:00pm
Logan Shoals Vista	Saturday	8/5/2006	12:45pm - 4:00pm
Meeks Bay Trailhead	Tuesday	8/8/2006	8:45am - 11:50am
MS Dixie Entrance	Monday	8/7/2006	8:30am - 12:00 pm and 1:15pm- 2:10pm
North Tahoe Regional Park	Sunday	8/13/2006	9:00am - 1:30pm
Rec. Complex	Sunday and Monday	8/6/2006 and 8/7/06	1:30pm-2:45pm and 8:00am- 11:30am
Regan Beach	Monday	8/14/2004	10:30am - 12:00pm, 1:15pm - 3:45pm

LOCATION	SURVEY DAY	SURVEY DATE	TIME
Sand Harbor Management Area	Thursday	8/10/2006	1:30pm - 3:45pm
Sawmill Pond	Friday & Saturday	8/4/2006 – 8/5/2006	9:45am - 5:00pm and 1:40pm - 4:40pm
Spooner Lake	Saturday	8/5/2006	8:45am - 11:15am
Sugar Pine Point State Park	Tuesday	8/8/2006	9:05am - 11:55am
Tahoe City Marina	Friday	8/11/2006	12:45pm - 2:45pm
Tahoe Paradise Park	Friday & Saturday	8/4/2006 – 8/5/2006	9:30am - 4:00pm and 10:45am - 1:40pm
Tahoe State Recreation Area (William Layton Park)	Tuesday	8/15/2006	12:45pm - 3:50pm
Zephyr Cove Marina/Resort	Monday	8/7/2006	8:30am - 12:00 pm

It should be noted that, in addition to regularly scheduled transit service in South Lake Tahoe and in North Lake Tahoe communities, a route that provided connections to West Shore destinations, including Eagle Falls and Inspiration Point, operated during summer 2006. This service, called the “Emerald Bay Shuttle,” linked up with trolley service from South Lake Tahoe.

SURVEY INSTRUMENT

The survey instrument was designed as an intercept instrument with respondent provided data recorded verbatim by interviewers. The questionnaire consisted of 21 primarily self-coded questions. The questionnaire was designed to obtain information in three major categories: residential status, travel patterns, and respondent demographics. A copy of the questionnaire is in Appendix A. Unweighted data frequencies for non-locational data elements are presented in Appendix B. As noted in Table 10, some of the required data elements were captured by means other than as a question on the questionnaire. This approach had multiple benefits: (1) the questionnaire was shorter to enhance response, and (2) data quality was improved by circumventing respondent-provided information.

TABLE 10: DATA ELEMENTS AND CAPTURE METHODOLOGY

DATA ELEMENT	CAPTURE METHOD
Survey Date	Control file
Survey Day	Control file
Data Collection Time	Control file
Survey Location	Control file
Full Time Resident	Respondent reported
Seasonal Resident	Respondent reported
Visitor	Respondent reported
Overnight Stay	Respondent reported
Length of Stay	Respondent reported
Number of Visits	Respondent reported
Housing Type	Respondent reported
Address	Respondent reported
Origin	Respondent reported
Origin Place	Respondent reported
Travel Mode	Respondent reported
Trip Purpose	Respondent reported

DATA ELEMENT	CAPTURE METHOD
Travel Party Size	Respondent reported
Visitor Party Size	Respondent reported
Employment Status	Respondent reported
Age	Respondent reported
Income	Respondent reported
Visitor Spending	Respondent reported
Gender	Visual determination

In-Field Questionnaire Editing

Following data collection, completed questionnaires underwent a cursory field review for editing and correction. This process involved checking that all questions were answered, verifying that cross street information was correct, and confirming collection site location was indicated. After each questionnaire was reviewed, a preliminary assessment was made that identified the questionnaire as a complete or non-complete. All questionnaires were sent to NuStats' home office in Austin, Texas, for scanning and verification.

In addition to questionnaire review, the NuStats Field Manager documented each day's activity including preliminary estimation of completed questionnaires, survey day/day, time, staging locations and data collection methodology in an Excel spreadsheet control file.

DATA PROCESSING

Data entry was conducted using scanning technology in order to minimize human error resulting from traditional data entry methods. The scanning process involved scanning batches of approximately 100 questionnaires to produce an image file of the documents. Data results derived from the image files were individually reviewed and verified by comparing the scanned image to the data contained in the data file. Text data (primarily origin and destination address information) were reviewed for the purpose of correcting misspellings and verifying that the scanner correctly read numeric data.

After questionnaires had been scanned and verified, these data were merged with the control file information (survey site, collection day/date/time, etc.) to create a master database. This database was reviewed, edited, and corrected using both manual and automated edit checks. The results of the data processing were linked to the field management system so that an accurate accounting of survey progress and status was maintained.

GEOCODING

The survey location data consisted of one location – overnight lodging location for those respondents who were staying overnight either in temporary or permanent housing. The geocode match rate is shown the table below. Specific details on geocoding procedures are in Appendix G of this report.

TABLE 11: GEOCODING MATCH RATE

LOCATION TYPE	MATCHED	UNMATCHED	TOTAL	MATCHED
Lodging	1,864	259	2,123	88%

Figure 1 below provides a graphical representation of all geocoded locations. Figures 2 and 3 map commercial and recreational sites, respectively.

FIGURE 1: OVERNIGHT LODGING LOCATIONS OF SURVEY RESPONDENTS

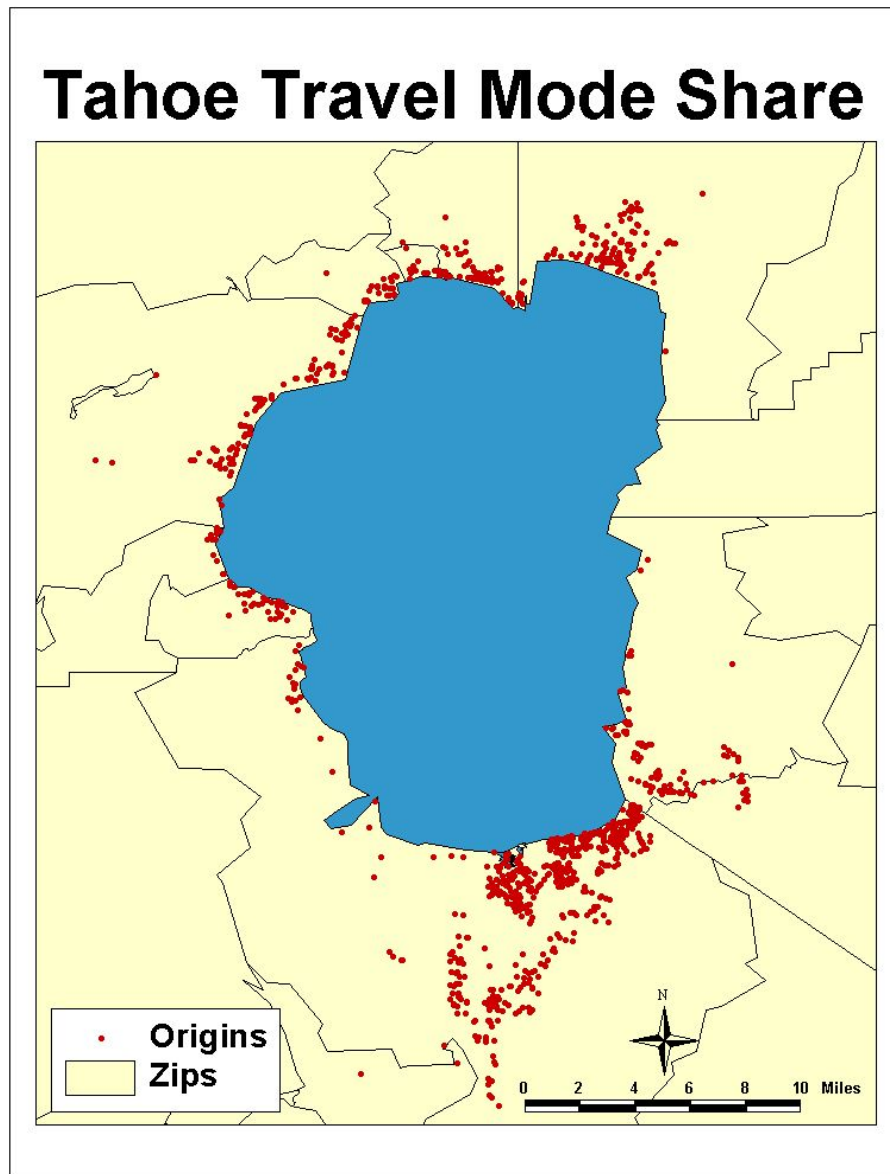


FIGURE 2: COMMERCIAL LOCATIONS OF SURVEY RESPONDENTS

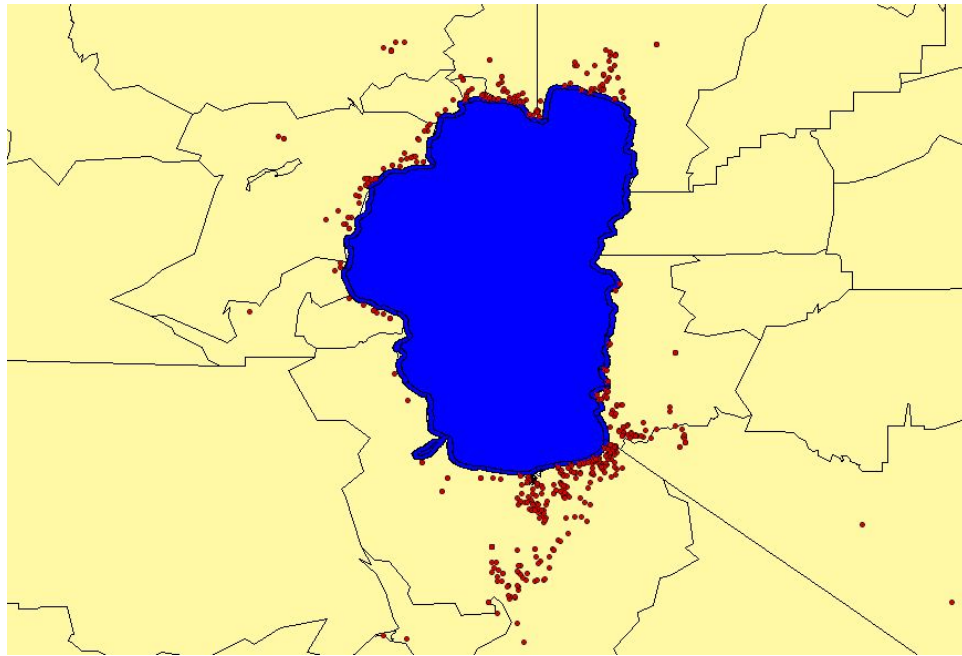
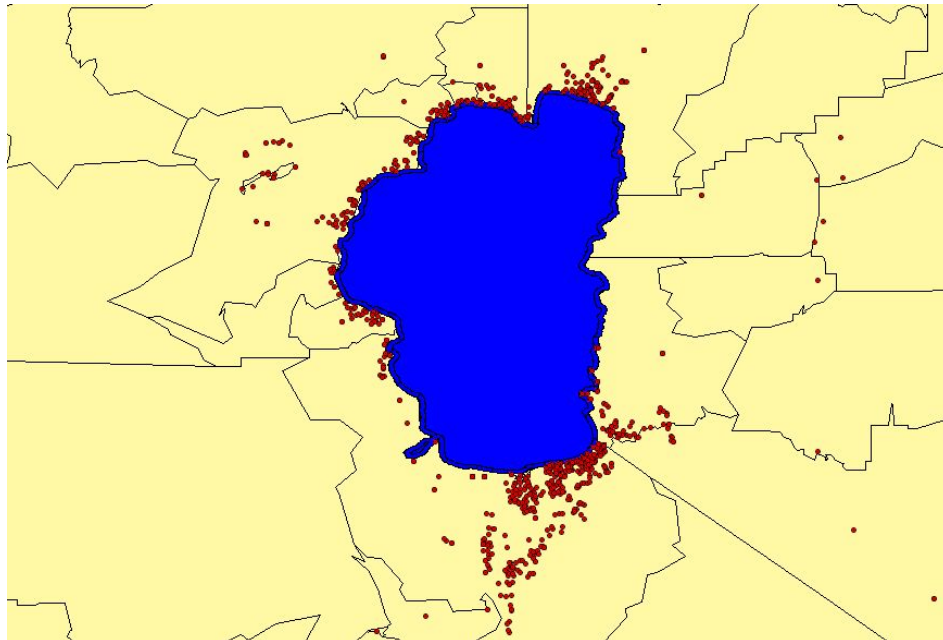


FIGURE 3: RECREATIONAL LOCATIONS OF SURVEY RESPONDENTS





3. DATA RESULTS

This section provides survey results. Because these interviews were conducted using a choice sample, the results presented represent only those participants who completed an interview. The final data set contains 2,157 complete, usable records.

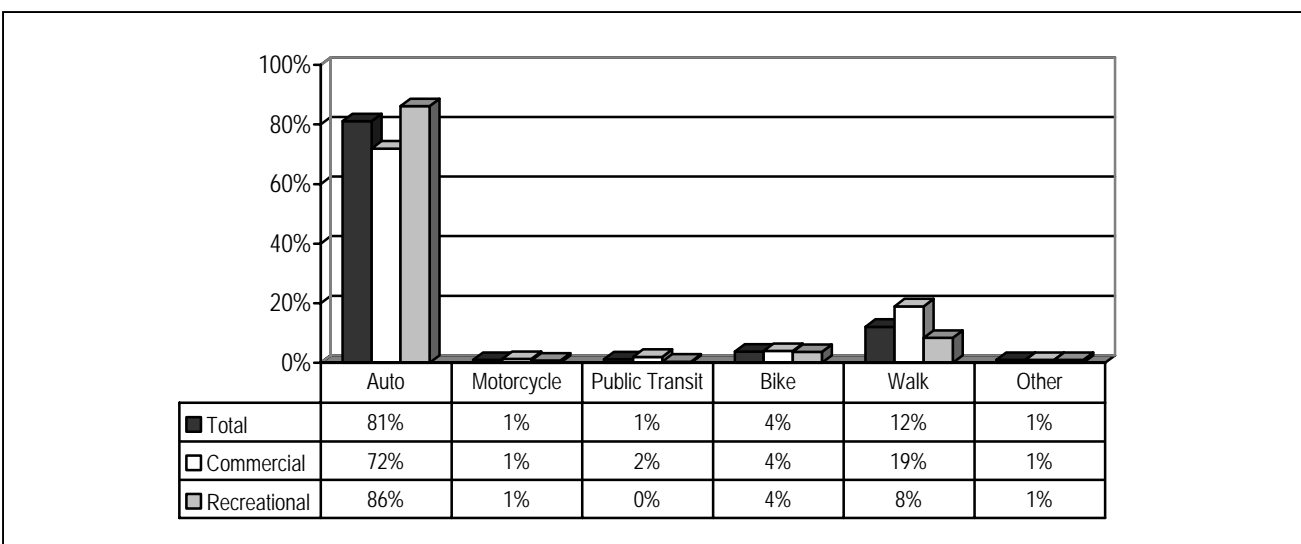
Where appropriate, the findings show the data in the aggregate as well as by sample type: commercial or recreational. Tables and graphics in this report display row percents unless otherwise indicated.

MODE SHARE RESULTS

As shown in the figure below, overall, most respondents (81 percent) reported using a car, truck, van or other automobile to get to the trip destination where they were surveyed. Less than 10 percent of respondents surveyed at recreational venues walked to the destination, while more than twice that amount walked to get to a commercial destination.

FIGURE 4: MODE TO LOCATION BY TOTAL AND SAMPLE TYPE

(N=2,157)



Other includes para transit, casino shuttle, private shuttle, and taxi/limo.

Tables 12 and 13 below show travel party size by mode of transportation to location where survey took place, and show commercial and recreational sites, respectively.

TABLE 12: TRAVEL SIZE BY MODE (COMMERCIAL)

PARTY SIZE	CAR/TRUCK/VAN/ MOTORCYCLE/MOPED	PUBLIC TRANSIT	BIKE	WALK	OTHER
1	47%	64%	65%	49%	5%
2	33%	23%	29%	31%	4%
3	8%	5%	3%	7%	0%
4	5%	9%	0%	5%	0%
5+	7%	0%	0%	7%	33%
RF	0%	0%	3%	1%	0%

Multiple response table based on 857 responses

TABLE 13: TRAVEL SIZE BY MODE (RECREATIONAL)

PARTY SIZE	CAR/TRUCK/VAN/ MOTORCYCLE/MOPED	PUBLIC TRANSIT	BIKE	WALK	OTHER
1	37%	86%	43%	44%	22%
2	34%	0%	27%	33%	13%
3	12%	14%	7%	8%	16%
4	13%	0%	14%	8%	25%
5+	14%	0%	9%	7%	2%
RF	0%	0%	0%	0%	0%

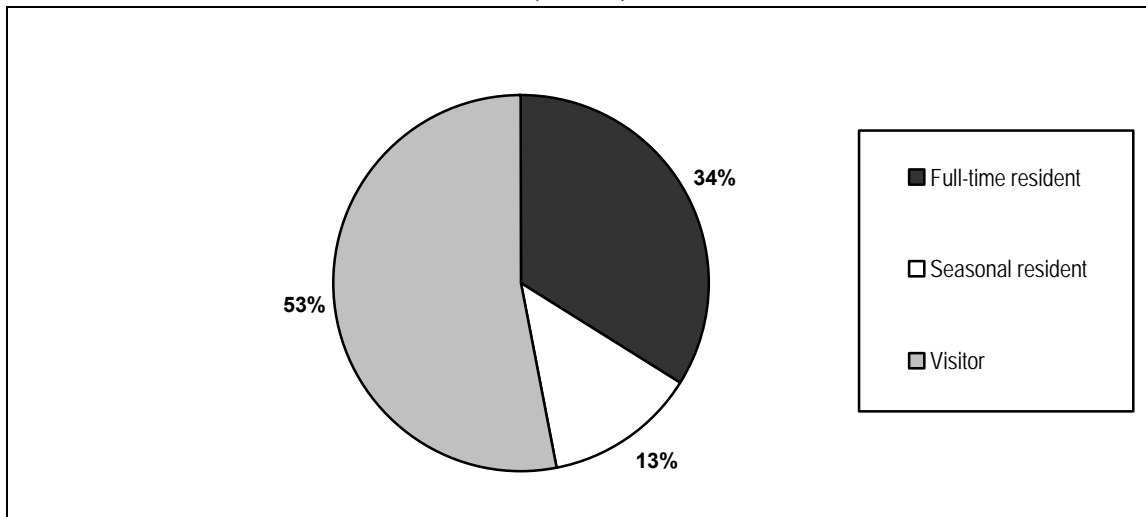
Multiple response table based on 1,452 responses

RESIDENT AND VISITOR DATA

Figure 5 suggests more than half of respondents reported they were visiting the Tahoe area at the time of the survey. About one-third were full-time residents of the region. Just under 15 percent were seasonal residents.

FIGURE 5: RESIDENCE STATUS

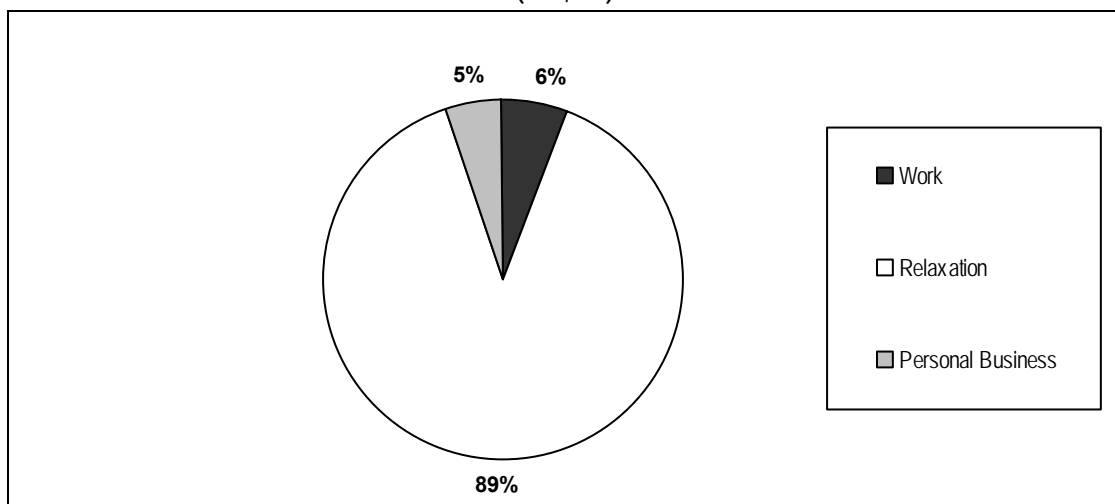
(N=2,157)



Visitors' primary purpose for visiting Tahoe was overwhelmingly relaxation. See Figure 6 for further detail

FIGURE 6: PRIMARY PURPOSE FOR VISIT TO TAHOE

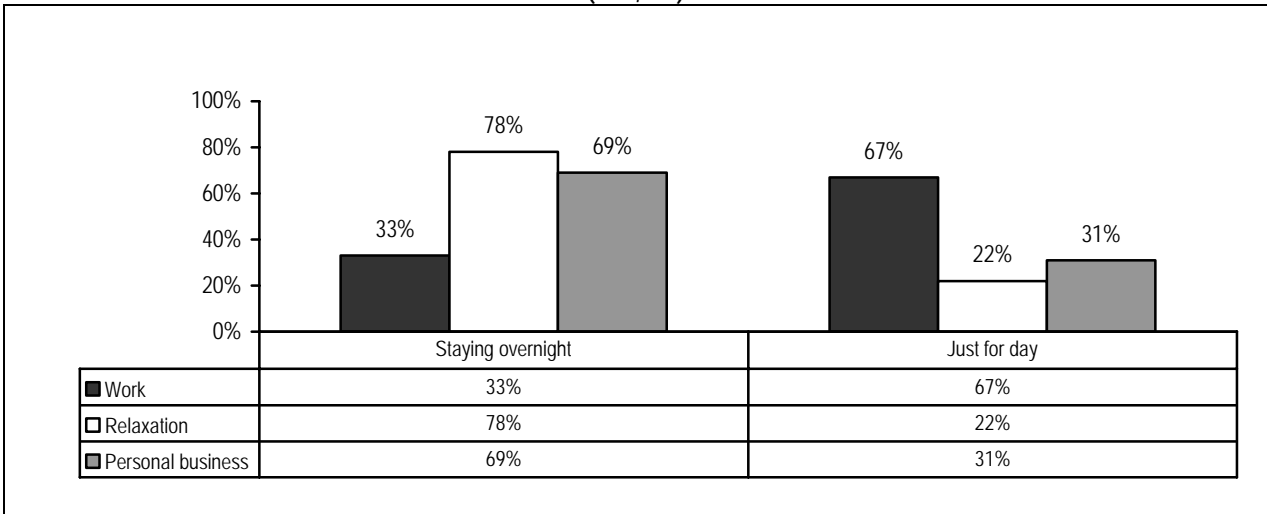
(N=1,132)



As shown in Figure 7, those visiting Tahoe for relaxation were primarily staying overnight (78 percent), while those in the area for work were primarily staying just for the day (67 percent). The majority (69 percent) of respondents in the region on personal business were staying overnight.

FIGURE 7: TRIP PURPOSE BY OVERNIGHT OR DAY VISIT

(N=1,132)



More than half of visitors and seasonal residents interviewed were staying in the area less than a week. Another 35 percent were staying 1 to 2 weeks. Less than five percent indicated they were staying in the Tahoe region for more than 3 months.

FIGURE 8: LENGTH OF VISIT

(N=1,106)

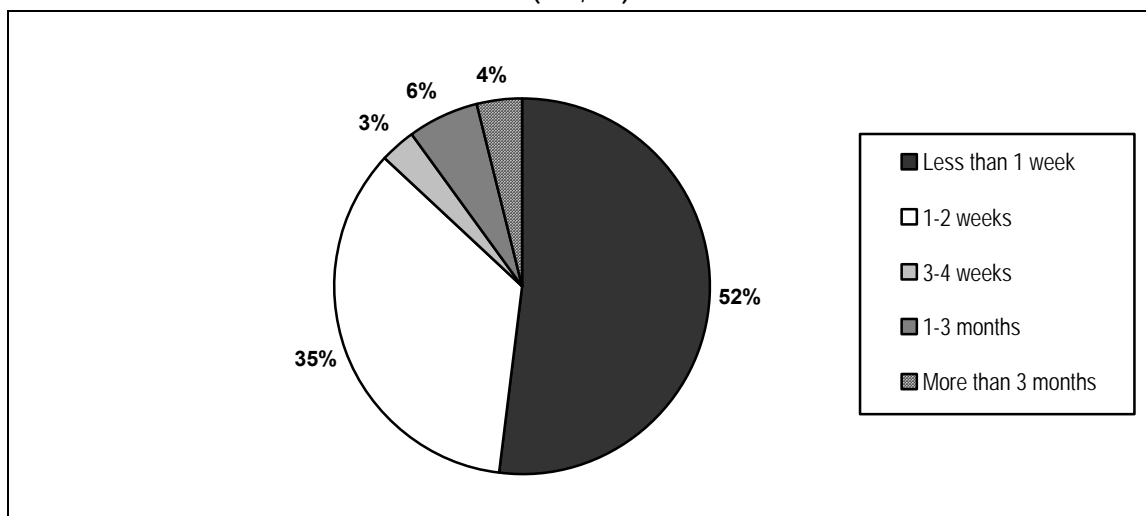
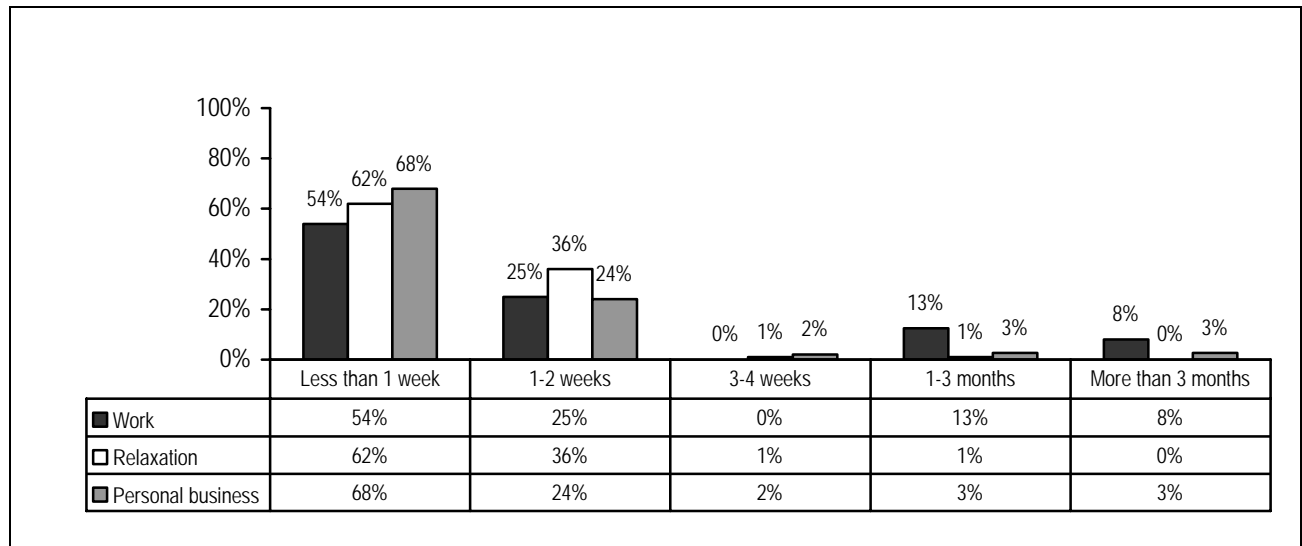


Figure 9 shows travel purpose by length of visit. As half of all visitors surveyed were in Tahoe for less than a week, it makes sense that the majority of visitors across all purposes (work, relaxation, or personal business) reported stays of less than one week. However, 68 percent of visitors on personal business were likely to be in the Tahoe Basin for less than one week, compared to 54 percent of work-related and 62 percent of relaxation related visits. Respondents (visitors) in town for relaxation were more likely to stay one to two weeks than were those in the area for either work or personal business.

FIGURE 9: TRAVEL PURPOSE BY LENGTH OF VISIT

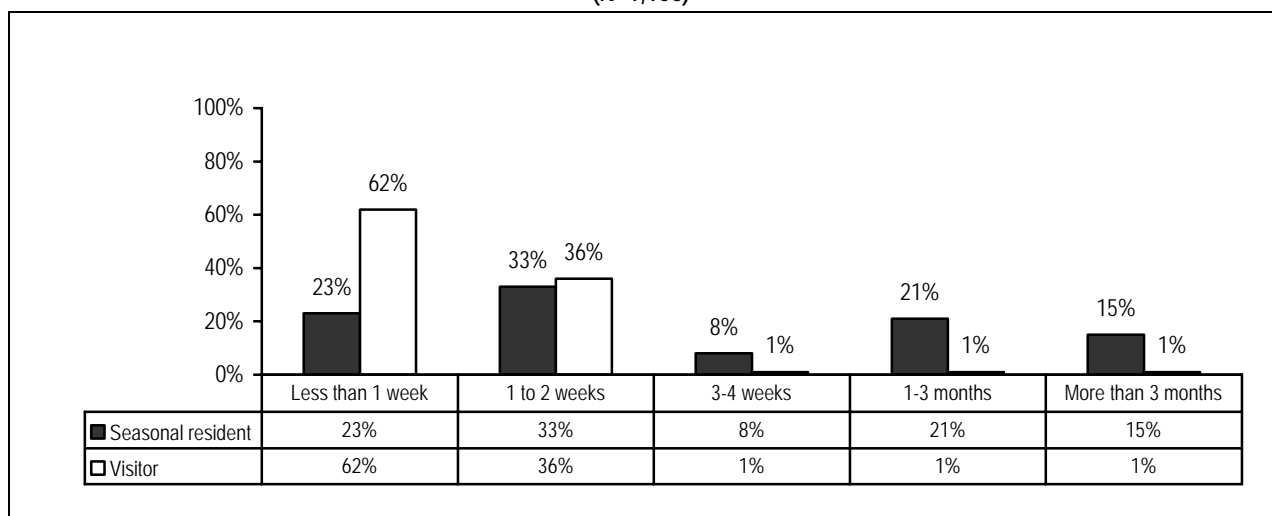
(N=833)



When looking at length of stay by residence type, one third of seasonal residents reported staying in the Tahoe area 1 to 2 weeks, and one fifth reported they would be in the area for 1 to 3 month. In comparison, almost two thirds of visitors reported stays of less than one week. See Figure 10 for further detail.

FIGURE 10: RESIDENCE STATUS BY LENGTH OF VISIT

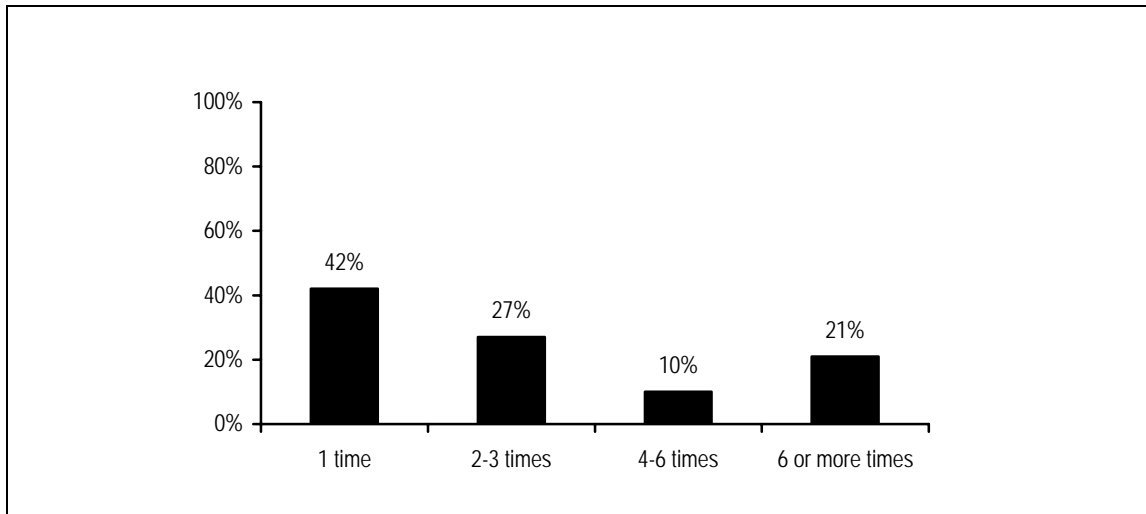
(N=1,106)



More than forty percent of those surveyed (visitors and seasonal residents) said they would make only one visit to the Tahoe Basin in 2006, while just over one quarter said they would make two or three trips to the region this year. Figure 11 also shows that another twenty percent said they will visit Lake Tahoe six or more times this year.

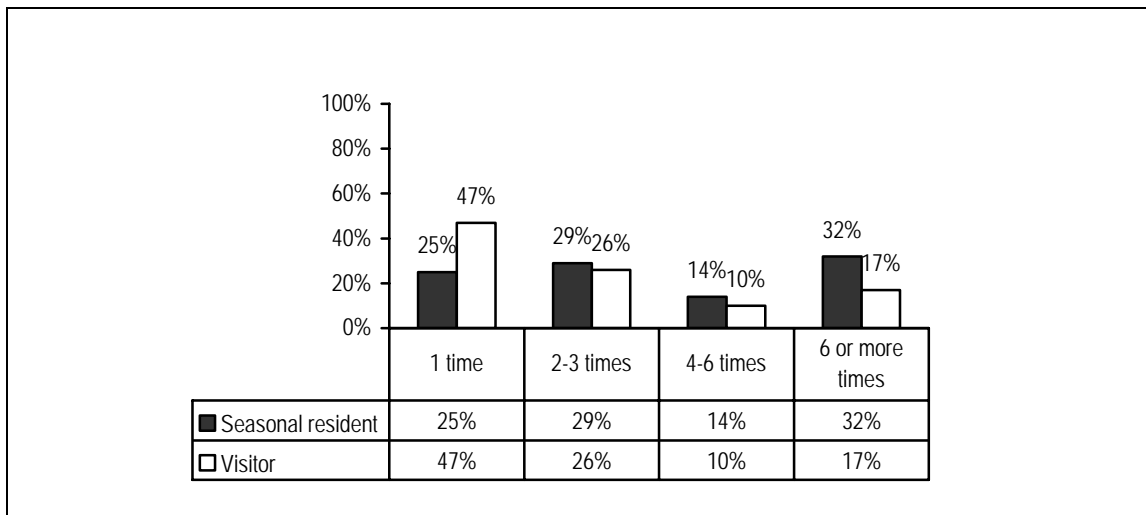
FIGURE 11: NUMBER VISITS TO LAKE TAHOE IN 2006

(N=1,362)



As illustrated in Figure 12, nearly one third of seasonal residents indicated visiting the Tahoe Basin six or more times in 2006, compared to 17 percent of visitors. About half of visitors were on their only trip to the region this year.

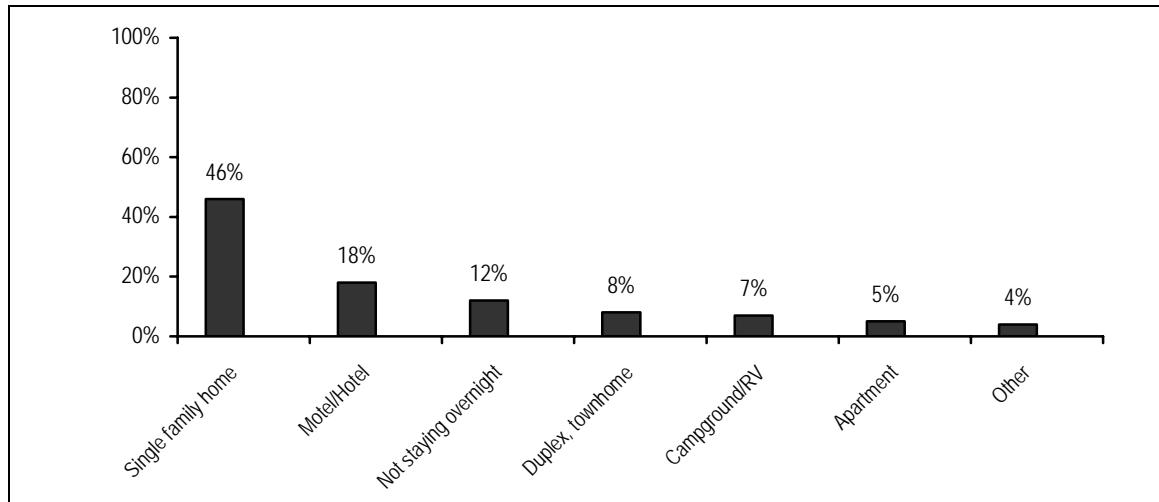
FIGURE 12: RESIDENCE STATUS BY NUMBER OF VISITS TO LAKE TAHOE IN 2006



Slightly more than 45 percent of all respondents were staying in (or live in) a single-family detached home; nearly 20 percent reported they were staying in a motel/hotel. See Figure 13 for further detail.

FIGURE 13: TYPE OF LODGING/DWELLING

(N=2,154)



Other includes mobile home.

When viewed by residence status, the data in Table 14 suggest visitors were staying in motels/hotels (30 percent) and in single-family homes (25 percent). Slightly more than 1 in 10 were staying in an RV or at a campground. About one quarter were not staying overnight in Tahoe. More than 60 percent of seasonal residents reported staying in single-family dwellings, with an additional 14 percent staying in a duplex or townhome, and 8 percent in a hotel/motel.

TABLE 14: RESIDENCE STATUS BY TYPE OF LODGING/DWELLING

(N=2,154)

	SINGLE FAMILY	DUPLEX / TOWNHOME	APARTMENT	MOBILE HOME	MOTEL / HOTEL	CAMPGROUND / RV	NOT STAYING OVERNIGHT	OTHER	TOTAL
Full-time resident	70%	9%	13%	2%	2%	1%	1%	2%	100%
Seasonal resident	62%	14%	5%	0%	8%	5%	1%	5%	100%
Visitor	25%	5%	0%	1%	30%	11%	24%	4%	100%

TRIP CHARACTERISTICS

Table 15 illustrates that nearly 40 percent of full-time residents surveyed at a commercial site reported their trip purpose as work, 20 percent said minor shopping and 12 percent said personal business. Seasonal residents most common trip purposes were minor shopping (28 percent), restaurants/bars (19 percent), and outdoor recreation (18 percent). Visitors reported most common trip purposes of outdoor recreation (28 percent), restaurants/bars (17 percent), and minor shopping (17 percent).

As seen in Table 16, full-time residents surveyed at recreational sites had trip purposes of outdoor recreation (30 percent) work (29 percent), and minor shopping (10 percent). Seasonal residents' most common trip purposes were outdoor recreation (61 percent) and minor shopping (10 percent). For visitors, the most common trip purposes were outdoor recreation (70 percent), restaurants/bars (6 percent), and minor shopping (5 percent).

TABLE 15: RESIDENCE STATUS BY TRIP PURPOSE (COMMERCIAL SITES)

(N=742)

	FULL-TIME RESIDENT	SEASONAL RESIDENT	VISITOR
At home activities	1%	0%	0%
At home – work	1%	0%	0%
Work	38%	6%	8%
Work related	6%	1%	1%
Restaurant/Bar	8%	19%	17%
Minor shopping	20%	28%	17%
Quick stop	5%	8%	6%
Personal business	12%	3%	4%
Outdoor recreation	3%	18%	28%
Indoor recreation	0%	1%	0%
Entertainment	0%	0%	3%
Casino gambling	2%	8%	8%
Visiting friend/relative	1%	1%	2%
Loop trip	1%	0%	3%
Other*	2%	7%	3%
Total	100%	100%	100%

TABLE 16: RESIDENCE STATUS BY TRIP PURPOSE (RECREATIONAL SITES)

(N=1,382)

	FULL-TIME RESIDENT	SEASONAL RESIDENT	VISITOR
At home activities	0%	0%	0%
At home – work	0%	0%	0%
Work	29%	6%	4%
Work related	5%	2%	1%
Restaurant/Bar	5%	6%	6%
Minor shopping	10%	10%	5%
Quick stop	3%	3%	2%
Personal business	7%	2%	2%
Outdoor recreation	30%	61%	70%
Indoor recreation	5%	4%	0%
Entertainment	0%	0%	1%
Casino gambling	1%	2%	3%
Visiting friend/relative	1%	1%	2%
Loop trip	2%	1%	2%
Other*	2%	2%	2%
Total	100%	100%	100%

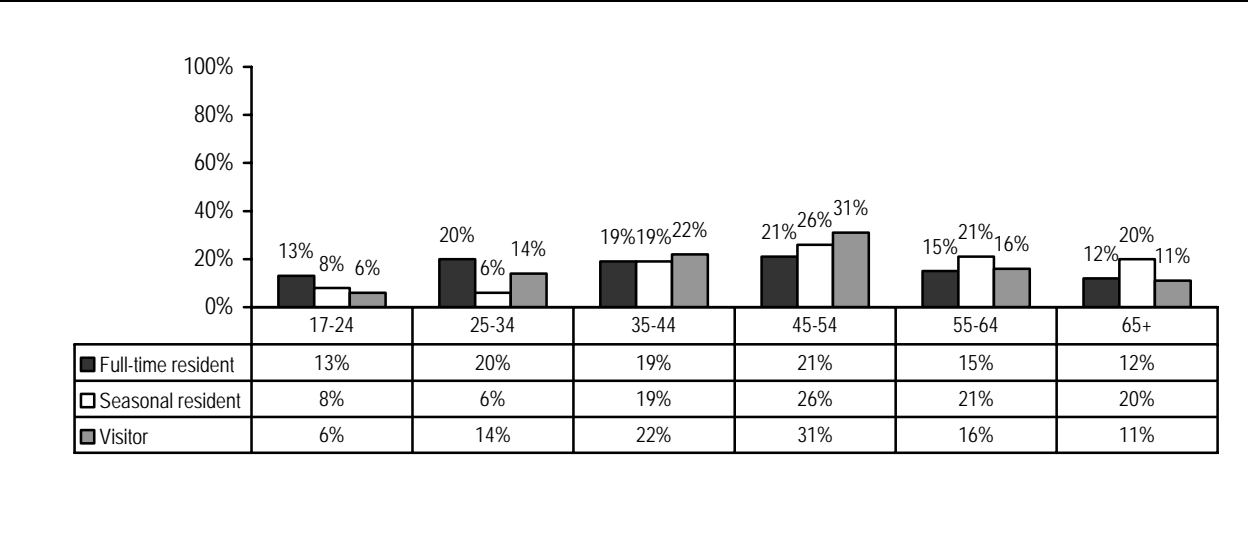
**Other includes major shopping, medical, religious, community /political meeting, picking up/dropping off someone, and riding along with someone.*

RESPONDENT CHARACTERISTICS

Most full-time residents surveyed were between 25 and 54, with nearly equal percentages among three age groups: 25 to 34 (20 percent), 35 to 44 (19 percent), and 45 to 54 (21 percent). Seasonal residents who participated in the survey tended to be age 45 or older. The majority (53 percent) of visitors surveyed were between 35 and 54, with most (31 percent) between 45 and 54. See Figure 14 for further detail.

FIGURE 14: RESIDENCE STATUS BY AGE

(N=2,147)



Mean age: Full time resident (44); seasonal resident (50); visitor (46)

As seen in Figure 15, Tahoe region respondents interviewed tended to be males, and visitors were slightly more likely than full-time residents or seasonal visitors to be male.

FIGURE 15: RESIDENCE STATUS BY GENDER

(N=2,157)

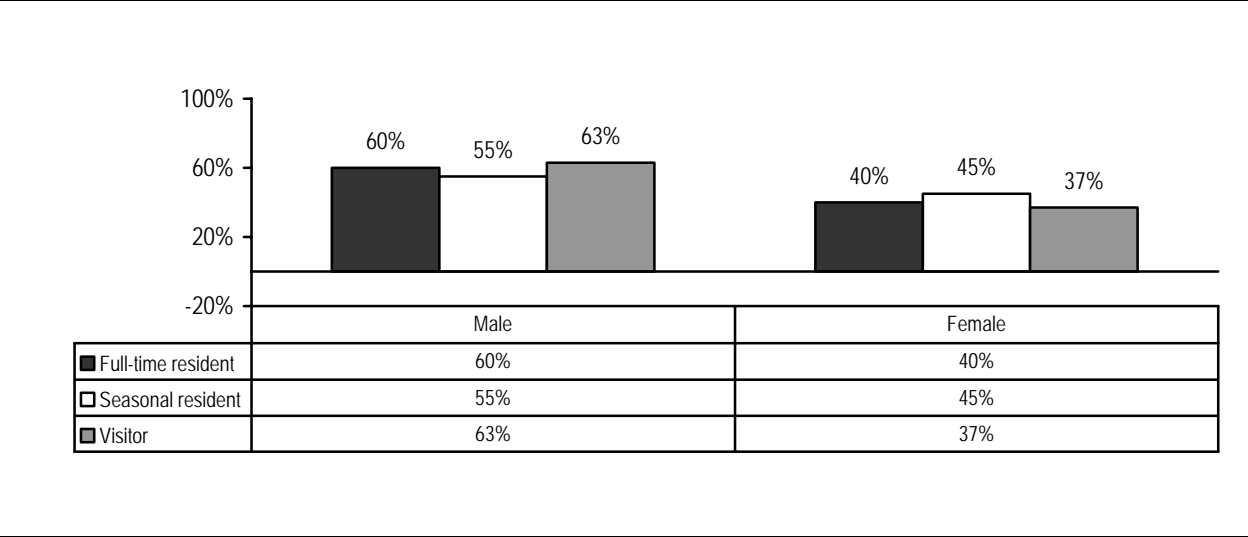
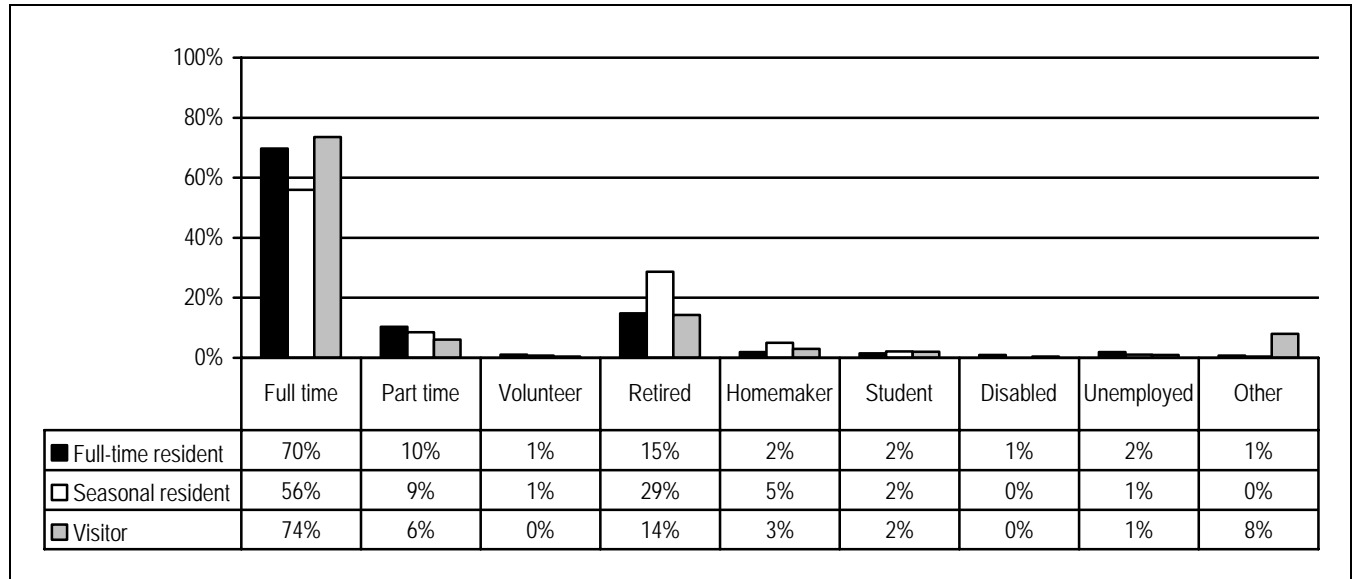


Figure 16 presents residence status by employment. Nearly 75 percent of visitors and 70 percent of full-time residents surveyed were employed full-time, while only 56 percent of seasonal residents were employed full time. Fourteen percent of visitors reported they were retired. About 30 percent of seasonal residents were retired, compared to 15 percent of full-time residents.

FIGURE 16: RESIDENCE STATUS BY EMPLOYMENT

(N=2,143)

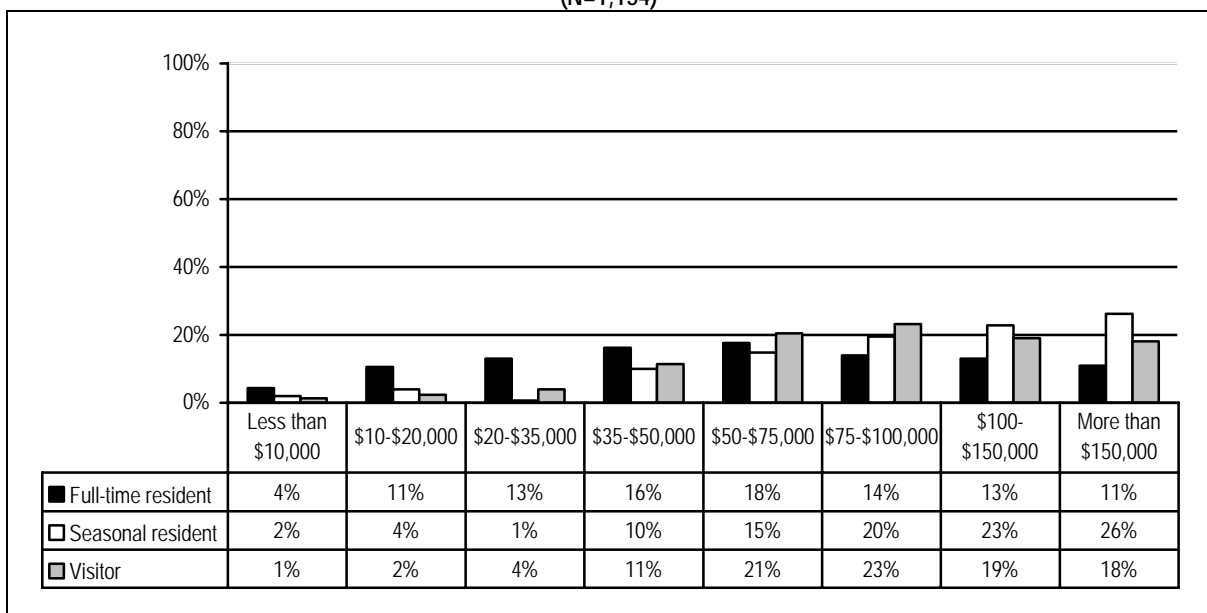


Multiple response question based on percent responses.

Seasonal residents and visitors were more likely than full-time residents to be in the highest income categories (\$75,000 and above), with nearly 70 percent of seasonal residents and 60 percent of visitors compared to 38 percent of full-time residents. Full-time residents were more likely to earn less than \$35,000 annually than were seasonal residents and visitors. See Figure 17 below for further detail.

FIGURE 17: RESIDENCE STATUS BY INCOME

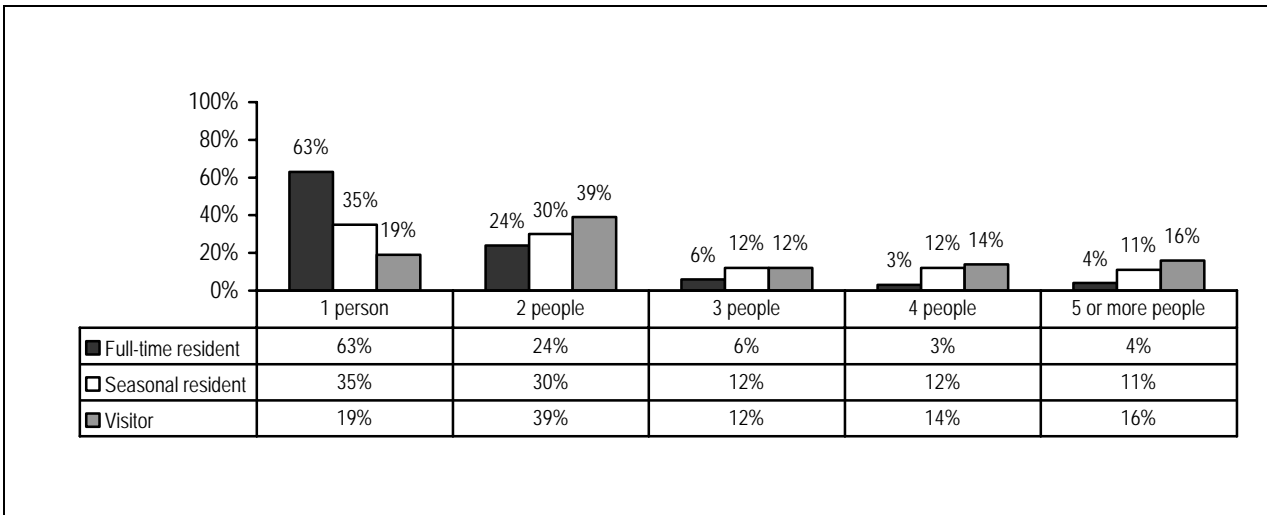
(N=1,154)



Visitors were more likely to be in a 2-person party on the trip about which they answered questions for the interview, while full-time residents were more likely to be alone. Visitors were also more likely to be in larger parties than were full-time residents. Seasonal residents showed minimal differences from visitors in terms of trip party size of 3 or more. See Figure 18 for further detail.

FIGURE 18: RESIDENCE STATUS BY TRIP PARTY SIZE

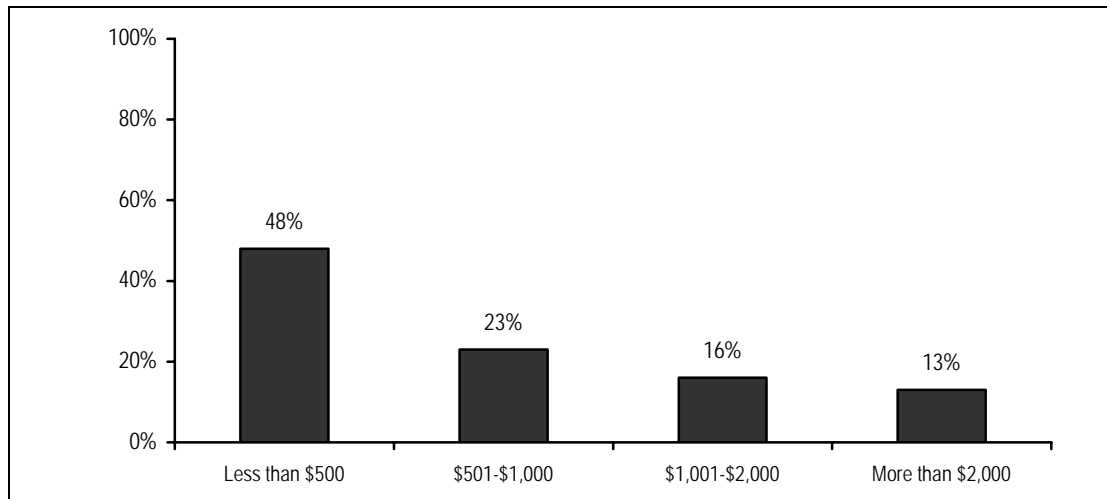
(N=2,152)



About half of visitors interviewed reported their travel party would spend less than \$500 on this trip to the Tahoe Basin. Figure 19 also shows that another 23 percent reported they would spend between \$501 and \$1,000. About 30 percent planned to spend more than \$1,000 on this trip.

FIGURE 19: AMOUNT PLAN TO SPEND ON THIS TRIP (VISITORS ONLY)

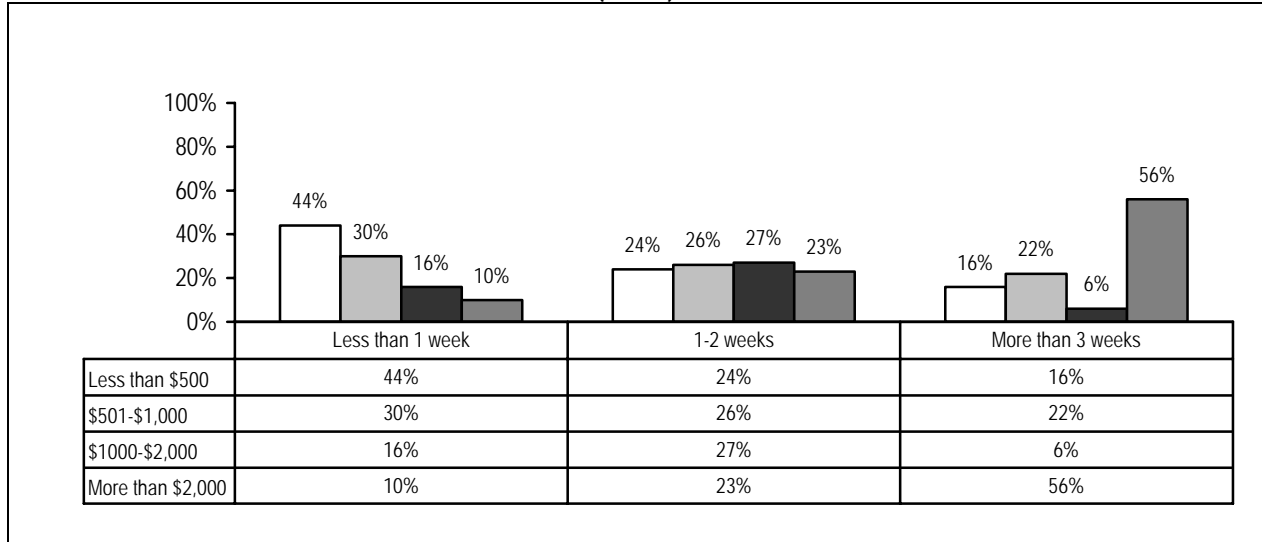
(N=1,072)



Most (44%) visitors staying in the Tahoe area for less than a week were planning to spend less than \$500, while the majority (56%) of those staying for 3 or more weeks planned to spend \$2,000 or more during their trip. See Figure 20 for further detail.

FIGURE 20: AMOUNT PLAN TO SPEND BY LENGTH OF VISIT (VISITORS ONLY)

(N=803)



Column percents total to 100%.



4. MODE SPLIT COMPARISON

One key goal of the TMS Survey is to identify mode splits among different resident types within the Tahoe Basin over time. Conducting this research effort on an annual basis will provide a mechanism to track these changes in mode split, and assess efforts at reducing the use of personal vehicles.

As 2006 was the first year the TMS Survey was conducted, no other survey data collected has been using the same survey instrument and methodology. However, in February and August of 2004, NuStats conducted Winter and Summer Visitor Surveys (respectively), in which mode split data of visitors to the Tahoe Basin were collected. In 2004, respondents were asked to report the travel mode for all trips made on their interviewer day. In the 2006 TMS, respondents were asked to report the travel mode for the trip to the location at which they were intercepted.

The data in Table 17 below suggest that the differing methodologies used for the 2004 Visitor Surveys and the 2006 TMS Survey, as well as the temporal variation between surveys, mean the data are not directly comparable. Regardless, one can detect some general consistencies among the surveys. Specifically, the most commonly reported travel mode was car truck or van. It should be note that these vehicles could have been rented owned or leased, and include taxis and limos. Other modes were utilized to a much lesser extent, including public transit, bikes and walking. The least utilized modes were motorcycles and RV/campers.

TABLE 17: MODE SPLIT COMPARISON – VISITOR SURVEYS AND TRAVEL MODE SHARE SURVEY
(N=1,132(TMS))

	WINTER SURVEY – DAY VISITOR	WINTER SURVEY – LONG TERM VISITOR	SUMMER SURVEY – DAY VISITOR	SUMMER SURVEY – LONG TERM VISITOR	TMS – VISITOR
Car/Truck/Van	67%	88%	95%	95%	83%
Motorcycle	0%	0%	1%	0%	1%
Public Transit	0%	3%	1%	1%	1%
Casino/Private Shuttle/Tour Bus	33%	8%	0%	2%	1%
Bike	0%	1%	1%	1%	3%
Walk	0%	0%	1%	1%	11%
RV/Camper	0%	0%	1%	0%	0%
Other, specify	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%

Note: Summer survey numbers derived from Figures 11 and 23, 2004 Summer Visitor Survey Report; Winter survey numbers derived from Figures 13 and 25, 2004 Winter Visitor Survey Report.

Due to the different methods employed between the three surveys, NuStats recommends these comparisons not be used as an accurate estimate of mode split over time. Rather, it would be more pertinent to conduct the Travel Mode Share Survey again in 2007, at which time those estimates can be compared to the 2006 estimates.



APPENDICES



APPENDIX A: SURVEY INSTRUMENT

Tahoe Travel Mode Share Survey

Hello. My name is _____ and I'm conducting a study on behalf of the Tahoe Regional Planning Agency. I'm interviewing residents and visitors in the region about their daily travel activities. This study will take no longer than 5-minutes and will benefit the community by providing information about local travel patterns for better transportation planning. The study is purely a research effort, your participation is voluntary and your answers will be completely confidential.

May I please conduct the survey with you?

- ☐ Yes- Great, we'll get right into the survey.
- ☐ No-Thanks for your time. I hope you have a pleasant day.
- ☐ DK/RF- Thanks for your time. I hope you have a pleasant day.

1. Are you a full time resident of the Tahoe Basin?

- ☐ Yes - Skip to Q8
- ☐ No

2. Are you a seasonal resident?

- ☐ Yes - Skip to Q6
- ☐ No

3. Or are you visiting the Tahoe Basin on vacation or business?

- ☐ Yes
- ☐ No - Go back to Q1

4. IF VISITOR

What is your primary purpose for visiting the Tahoe Basin?

- ☐ Work
- ☐ Relaxation → Specify: _____
- ☐ Personal Business → Specify: _____

5. IF VISITOR

Are you staying overnight or just visiting for the day?

- ☐ Overnight
- ☐ Day - Skip to Q7
- ☐ DK/RF

6. IF VISITOR/SEASONAL RESIDENT

How long will you be staying in Tahoe Basin?

- ☐ Less than 1 week
- ☐ 1-2 weeks
- ☐ 3-4 weeks
- ☐ 1-3 months
- ☐ More than 3 months
- ☐ RF

7. IF VISITOR/SEASONAL RESIDENT

How many times in 2006 will you or have you come to Lake Tahoe?

- ☐ 1 time
- ☐ 2-3 times
- ☐ 4-6 times
- ☐ Greater than 6 times

8. What best describes where you are staying?

- ☐ Single family detached (includes cabin)
- ☐ Duplex, 4-plex, town home
- ☐ Apartment
- ☐ Mobile home
- ☐ Motel/Hotel
- ☐ Campground (including RV, tents and campers)
- ☐ Not staying overnight
- ☐ Other, specify: _____

9. What is the name and address of the place you are staying?

Name: _____

Street Address (NO P.O. BOXES PLEASE): _____

Apt. #: _____ City: _____

Zip: _____

10. IF ADDRESS NOT KNOWN

What are the nearest cross streets?

Street #1 _____

Street #2 _____

Now I am going to ask you some questions about your trip to this location.

NAME LOCATION:

Name: _____

11. Where are you coming from?

- ☐ Home/lodging
- ☐ Work
- ☐ Shopping
- ☐ School/college
- ☐ Recreation/social visit
- ☐ Personal business/errand
- ☐ Medical
- ☐ Other

12. DO NOT ASK IF Q10=HOME

What is the name of that place?

Name: _____

13. How did you get here?**MULTIPLE RESPONSE - IF RESPONDENT REFUSES, TERMINATE INTERVIEW.**

1	2	3	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Car/Truck/Van (rented, owned or leased)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Motorcycle/Moped
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	School bus
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Public transit
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Para transit
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Casino shuttle
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Private shuttle
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Taxi/Limo
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Gondola
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Ferry
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bike
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Walk
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Other, specify: <input type="text"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	DK/RF - THANK AND TERMINATE

14. What is the primary purpose of this trip?

- ☐ At home activities (sleeping, watching TV, eating, personal care, etc.)
☐ At home - work related
☐ Work
☐ Work related
☐ Eating/drinking at restaurant/bar
☐ Minor shopping (grocery shopping, souvenir shopping, frequent, weekly basis, maintenance)
☐ Major shopping (Costco, appliance, car, on occasion)
☐ Quick stop (coffee, gas, etc.)
☐ Medical
☐ Personal business (bank, pay bill, etc)
☐ Outdoor recreation (beach, fishing, hiking, etc)
☐ Indoor recreation (bowling, ice skating, etc.)
☐ Entertainment (movie, sports event, show)
☐ Casino gaming
☐ Visiting friend/relative
☐ Religious
☐ Community/political meeting
☐ School
☐ Picking up someone
☐ Dropping off someone
☐ Loop trip (walking dog around block)
☐ Riding along with someone on their trip
☐ Other, specify:
☐ DK/RF

15. How many people, including yourself, are you traveling with today on this trip?

- | | |
|-------------------------|-------------------------|
| <input type="radio"/> 0 | <input type="radio"/> 0 |
| <input type="radio"/> 1 | <input type="radio"/> 1 |
| <input type="radio"/> 2 | <input type="radio"/> 2 |
| <input type="radio"/> 3 | <input type="radio"/> 3 |
| <input type="radio"/> 4 | <input type="radio"/> 4 |
| <input type="radio"/> 5 | <input type="radio"/> 5 |
| <input type="radio"/> 6 | <input type="radio"/> 6 |
| <input type="radio"/> 7 | <input type="radio"/> 7 |
| <input type="radio"/> 8 | <input type="radio"/> 8 |
| <input type="radio"/> 9 | <input type="radio"/> 9 |

16. IF VISITOR How many people are you traveling with during your stay in the Tahoe region?

- | | |
|-------------------------|-------------------------|
| <input type="radio"/> 0 | <input type="radio"/> 0 |
| <input type="radio"/> 1 | <input type="radio"/> 1 |
| <input type="radio"/> 2 | <input type="radio"/> 2 |
| <input type="radio"/> 3 | <input type="radio"/> 3 |
| <input type="radio"/> 4 | <input type="radio"/> 4 |
| <input type="radio"/> 5 | <input type="radio"/> 5 |
| <input type="radio"/> 6 | <input type="radio"/> 6 |
| <input type="radio"/> 7 | <input type="radio"/> 7 |
| <input type="radio"/> 8 | <input type="radio"/> 8 |
| <input type="radio"/> 9 | <input type="radio"/> 9 |

17. Which of the following currently describes your situation?**MULTIPLE RESPONSE**

- ☐ Employed full time
☐ Employed part time
☐ Regular volunteer
☐ Retired
☐ Full time homemaker
☐ Full time student, not working
☐ Disabled
☐ Unemployed, looking for work
☐ Unemployed, not looking for work
☐ Other, specify:
☐ DK/RF

18. What is your age?

- | | |
|-------------------------|-------------------------|
| <input type="radio"/> 0 | <input type="radio"/> 0 |
| <input type="radio"/> 1 | <input type="radio"/> 1 |
| <input type="radio"/> 2 | <input type="radio"/> 2 |
| <input type="radio"/> 3 | <input type="radio"/> 3 |
| <input type="radio"/> 4 | <input type="radio"/> 4 |
| <input type="radio"/> 5 | <input type="radio"/> 5 |
| <input type="radio"/> 6 | <input type="radio"/> 6 |
| <input type="radio"/> 7 | <input type="radio"/> 7 |
| <input type="radio"/> 8 | <input type="radio"/> 8 |
| <input type="radio"/> 9 | <input type="radio"/> 9 |

19. What was the total income by all members of your household in 2005?

- ☐ Above \$50k
☐ Below \$50k
☐ Less than \$10k
☐ \$10k-\$20k
☐ \$20k-\$35k
☐ \$35k-\$50k
☐ \$50k-\$75k
☐ \$75k-\$100k
☐ \$100k-\$150k
☐ Greater than \$150k
☐ DK/RF

20. If you are a visitor, how much money do you anticipate that your traveling party will spend on this trip to Tahoe?

- ☐ Less than \$500
☐ \$501-\$1,000
☐ \$1,001 - \$2,000.
☐ Greater than \$2,000

DO NOT ASK THIS QUESTION.**21. Gender**

- ☐ Male
☐ Female

Thank you!



APPENDIX B: DATA FREQUENCIES

Residence status

		FREQUENCY	PERCENT
Valid	1 Full time resident	742	34.4
	2 Seasonal resident	283	13.1
	3 Visitor	1132	52.5
	Total	2157	100.0

Do you consider yourself a full time resident of the Tahoe Region?

		FREQUENCY	PERCENT
Valid	1 Yes	742	34.4
	2 No	1415	65.6
	Total	2157	100.0

Do you consider yourself a seasonal resident?

		FREQUENCY	PERCENT
Valid	1 Yes	283	20.0
	2 No	1132	80.0
	Total	1415	100.0
Missing	System	742	
Total		2157	

What is your primary purpose for visiting the Tahoe Basin?

		FREQUENCY	PERCENT
Valid	1 Work	73	6.4
	2 Relaxation	1005	88.8
	3 Personal Business	54	4.8
	Total	1132	100.0
Missing	System	1025	
Total		2157	

Are you staying overnight or just visiting for the day?

		FREQUENCY	PERCENT
Valid	1 Overnight	845	74.6
	2 Day	287	25.4
	Total	1132	100.0
Missing	System	1025	
Total		2157	

How long will you be staying in the Tahoe Basin area?

		FREQUENCY	PERCENT
Valid	1 Less than 1 week	577	52.2
	2 1-2 weeks	388	35.1
	3 3-4 weeks	30	2.7
	4 1-3 months	66	6.0
	5 More than 3 months	45	4.1
	Total	1106	100.0
Missing	99 RF	22	
	System	1029	
	Total	1051	
Total		2157	

How many times in 2006 will you or have you come to Lake Tahoe?

		FREQUENCY	PERCENT
Valid	1 1 time	578	42.4
	2 2-3 times	362	26.6
	3 4-6 times	143	10.5
	4 Greater than 6 times	279	20.5
	Total	1362	100.0
Missing	99 Refused	53	
	System	742	
	Total	795	
Total		2157	

Do you live in a house, cabin, duplex, townhome, apartment, or mobile home?

		FREQUENCY	PERCENT
	1 Single family detached (includes cabin)	980	45.5
	2 Duplex, 4-plex, town home	166	7.7
	3 Apartment	116	5.4
	4 Mobile home	28	1.3
	5 Motel/Hotel	376	17.5
	6 Campground (including RV, tents and campers)	148	6.9
	7 Not staying overnight	285	13.2
	97 Other, specify	55	2.6
	Total	2154	100.0
Missing	99 RF	3	
Total		2157	

Do you live in a house, cabin, duplex, townhome, apartment, or mobile home? OTHER

		FREQUENCY	PERCENT
Valid		2102	97.5
	CAMPGROUND	1	.0
	CAMPING	1	.0
	CONDO	23	1.1
	DORMS COLLEGE	1	.0
	HIGH SIERRA	1	.0
	OUTSIDE	1	.0
	RV	1	.0
	TIMESHARE	24	1.1
	WILDERNESS	2	.1
	Total	2157	100.0

Where are you coming from?

		FREQUENCY	PERCENT
Valid	1 Home/lodging	1467	69.5
	2 Work	129	6.1
	3 Shopping	132	6.3
	4 School/College	1	.0
	5 Recreation/social visit	151	7.2
	6 Personal buisness/errand	66	3.1
	7 Medical	3	.1
	97 Other	161	7.6
	Total	2110	100.0
Missing	99 RF	47	
Total		2157	

How did you get to the place?

		FREQUENCY	PERCENT
Valid	1 Car/Truck/Van (rented,owned, or leased)	1749	81.1
	2 Motorcycle/Moped	21	1.0
	4 Public Transit	25	1.2
	5 Para Transit	2	.1
	6 Casino Shuttle	2	.1
	7 Private Shuttle	3	.1
	8 Taxi/Limo	1	.0
	11 Bike	82	3.8
	12 Walk	261	12.1
	97 Other, specify	11	.5
	Total	2157	100.0

How did you get to the place?

		FREQUENCY	PERCENT
Valid	1 Car/Truck/Van (rented, owned, or leased)	4	5.6
	4 Public Transit	4	5.6
	11 Bike	8	11.3
	12 Walk	55	77.5
	Total	71	100.0
Missing	System	2086	
Total		2157	

How did you get to the place?

		FREQUENCY	PERCENT
Valid	12 Walk	1	100.0
Missing	System	2156	
Total		2157	

How did you get to the place?

		FREQUENCY	PERCENT
Valid		2146	99.5
	BOAT	3	.1
	FIRE TRUCK	1	.0
	MOTOR HOME	1	.0
	ROLLER BLADE	1	.0
	RV	2	.1
	SKATEBOARD	1	.0
	WHEELCHAIR	2	.1
	Total	2157	100.0

What is the primary purpose of this trip?

		FREQUENCY	PERCENT
Valid	1 At home activities (sleeping, watching TV, eating, personal)	4	.2
	2 At home - work related	3	.1
	3 Work	272	12.8
	4 Work related	52	2.4
	5 Eating/drinking at restaurant/bar	115	5.4
	6 Minor shopping (grocery/souvenir shopping, frequently/weekly)	159	7.5
	7 Major shopping (Costco, appliance, car, on occasion)	8	.4
	8 Quick stop (coffee, gas, etc.)	58	2.7
	9 Medical	4	.2
	10 Personal business (bank, pay bill, etc.)	78	3.7
	11 Outdoor recreation (beach, fishing, hiking, etc.)	1169	55.0
	12 Indoor recreation (bowling, ice skating, etc.)	53	2.5
	13 Entertainment (movie, sports event, show)	12	.6
	14 Casino gaming	45	2.1
	15 Visiting friend/relative	24	1.1
	16 Religious	2	.1
	17 Community/political meeting	2	.1
	19 Picking up someone	3	.1
	20 Dropping off someone	5	.2
	21 Loop trip (walking dog around block)	30	1.4
	22 Riding along with someone on their trip	2	.1
	97 Other, specify	24	1.1
	Total	2124	100.0
Missing	99 DK/RF	33	
Total		2157	

RECODE: Party size

		FREQUENCY	PERCENT
Valid	1 1	789	36.7
	2 2	693	32.2
	3 3	215	10.0
	4 4	215	10.0
	5 5 or more	240	11.2
	Total	2152	100.0
Missing	9 RF	5	
Total		2157	

RECODE: Travel size

		FREQUENCY	PERCENT
Valid	1 1	93	9.0
	2 2	325	31.5
	3 3	117	11.3
	4 4	177	17.1
	5 5 or more	321	31.1
	Total	1033	100.0
Missing	9 RF	99	
	System	1025	
	Total	1124	
Total		2157	

Which of the following best describes your current situation?

		FREQUENCY	PERCENT
Valid	1 Employed full time	1499	69.9
	2 Employed part time	161	7.5
	3 Regular volunteer	12	.6
	4 Retired	342	16.0
	5 Full time homemaker	54	2.5
	6 Full time student, not working	30	1.4
	7 Disabled	9	.4
	8 Unemployed, looking for work	16	.7
	9 Unemployed, not looking for work	9	.4
	97 Other, specify	11	.5
	Total	2143	100.0
Missing	99 DK/RF	14	
Total		2157	

Which of the following best describes your current situation?

		FREQUENCY	PERCENT
Valid	2 Employed part time	8	18.6
	3 Regular volunteer	2	4.7
	4 Retired	9	20.9
	5 Full time homemaker	8	18.6
	6 Full time student, not working	9	20.9
	7 Disabled	2	4.7
	9 Unemployed, not looking for work	1	2.3
	97 Other, specify	4	9.3
	Total	43	100.0
Missing	System	2114	
Total		2157	

Age

		FREQUENCY	PERCENT
Valid	1 17 - 24	187	8.7
	2 25 - 34	317	14.8
	3 35 - 44	452	21.1
	4 45 - 54	576	26.8
	5 55 - 64	348	16.2
	6 65 and over	267	12.4
	Total	2147	100.0
Missing	9 RF	10	
Total		2157	

What was the total income by all members of your household in 2005?

		FREQUENCY	PERCENT
	1 Above \$50k	297	18.2
	2 Below \$50k	180	11.0
	3 Less then \$10k	27	1.7
	4 \$10k - \$20k	61	3.7
	5 \$20k - \$35k	75	4.6
	6 \$35k - \$50k	148	9.1
	7 \$50k - \$75k	217	13.3
	8 \$75k - \$100k	228	14.0
	9 \$100k - \$150k	204	12.5
	10 Greater then \$150k	194	11.9
	Total	1631	100.0
Missing	99 DK/RF	526	
Total		2157	

If you are a visitor, how much money do you anticipate that your traveling party will spend on this trip to Tahoe?

		FREQUENCY	PERCENT
Valid	1 Less then \$500	728	50.7
	2 \$501 - \$1,000	291	20.3
	3 \$1,001 - \$2,000	208	14.5
	4 Greater then \$2,000	208	14.5
	Total	1435	100.0
Missing	99 DK/RF	722	
Total		2157	

Gender

		FREQUENCY	PERCENT
Valid	1 Male	1308	60.6
	2 Female	849	39.4
	Total	2157	100.0



APPENDIX C: PILOT MEMORANDUM

MEMORANDUM

To: Karen Fink

Date: August 7, 2006

From: Della Santos

CC: Chris Simek and Deb Gomez

Re: Tahoe 2006 Travel Mode Pilot Survey Report

The Tahoe 2006 Travel Mode Pilot Survey took place on August 2, 2006 at two Tahoe south shore “high” volume commercial sites. The two sites selected for the pilot, based on their close proximity to the TRPA office, were South Stateline and Stateline Community Plan. The following memo briefly outlines the overall field application and data collection results.

The pilot began with a surveyor training session held at TRPA office. There were 8 surveyors who participated along with a NuStats representative, Karen Fink of TRPA and Ken Pence from the Forest Service. All surveyors were recruited from the local Blue Ribbon Personnel Staffing Agency. The two and half hour training session covered all aspects of intercept interviewing techniques including the methodology, schedule, target completion goals, review of the instrument, practice with mock interviews, refusal conversions, eligibility and respondent selection.

Overall, the pilot data collection effort went extremely well. The table below presents the pilot completion rates at the two sites.

PILOT SITE SELECTION	COMPLETES	TARGET GOAL	REFUSALS
South Stateline	72	60	119
Stateline Community Plan	72	60	102

On average, each interview took approximately 4 to 6 minutes to complete. Surveyors were instructed to walk along the sidewalks of the various selection sites and interview every 3rd traveler who appeared to be over the age of 18 years. This selection procedure worked well in the field.

On several questions it was noted that additional probing was required.

Problem: Q11 respondents were asked, “Where are you coming from?”

Some respondents would answer with the name of the survey site. For example, if they were at a store in Heavenly Village and intercepted at another store in the Heavenly Village they would say the name of the store.

Solution: Travelers should not be asked where they came from out of town, but where they came from before they entered this commercial area. If need be, the interviewer will describe the geographic boundaries of the commercial area.

Problem: Q14 where the traveler was asked, “What is their primary purpose for this trip?”

Some respondents were providing answers to over all purpose of their trip and not the primary purpose to come to the intercept site. For example, some respondent said they came to the site for “gaming” yet the intercept site was a commercial site not a casino site.

Solution: Interviewers were instructed to probe for primary purpose of the intercept site.

Problem: Q14. Some surveyors conveyed that they collected responses where respondents would say they came from their hotel. The problem was that the hotel was within the study site rather than a different travel site altogether.

For example, in the casino area people would walk from one casino hotel to another casino hotel.

Solution: If people came from their hotel within the commercial site to another location within the site, this is a legitimate home-based trip. For these kinds of trips, it is ok for the traveler to say that their mode of travel was "walk", that they came from "home" (Q11) and then the purpose of this walk trip in the commercial area.

At the end of the day, a debrief session took place where surveyors shared techniques and experiences in converting refusals. The session also provided improvement measures for the control file.

Additionally, some questions came up among surveyors as to intercept methodology. Surveyors have been informed about the following correct protocol for intercepting travelers:

- 1) Avoid sampling those coming out of lodging locations.
- 2) Since people under 17 are not eligible to take part in the survey, if someone is obviously under 17 they should not be included when the surveyor is counting to "n".
- 3) Those who have already been surveyed should be included in counting to "n", because it will be difficult to remember everyone and another surveyor may also have talked to them.

In conclusion, the pilot proved the study methodology is working well. Another conclusion is the training needs to include probing techniques so the questionnaire collects the intended responses. NuStats implemented this change.



APPENDIX D: PRESS RELEASE

128 Market Street
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TAHOE REGIONAL PLANNING AGENCY

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Email: trpa@trpa.org

NEWS RELEASE

Contact: Julie Regan, Communications Director, x237

For Release Immediately

August 1, 2006

TRAVEL MODE SURVEY BEGINS THIS WEEK

STATELINE, NV – A professional surveying company will be interviewing visitors and residents on behalf of the Tahoe Regional Planning Agency at several commercial and recreational locations throughout the Basin beginning Wednesday, August 2nd. The interviewing will take place throughout August 20th. Results from the Travel Mode Survey will be used to help plan alternative travel mode options around Lake Tahoe. This extensive survey will gather detailed information specifically on use of commercial and recreation areas from over 1,800 visitors and residents. The data will be used in the Pathway 2007 planning process.

“We strategically selected locations throughout Tahoe to insure integrity and credibility of the study and to make sure our findings are thorough and conclusive,” said Nick Haven, Senior Transportation Planner, TRPA. “In order to obtain the most accurate sampling, it is important for us to interview people throughout the entire Basin in one of our busiest months.” Haven added, “A couple of years ago we conducted travel-related surveys to update our transportation model, however, data collected from *this* study will primarily be used in planning for alternative modes of travel. Also, results will be tabulated, published, and made available to the public.”

The Travel Mode Survey is being conducted by NuStats, an independent, accredited surveying company, and the same firm who implemented previous transportation-related studies in Reno, Tahoe, Sacramento, and San Francisco.

For more information about the study, please contact Karen Fink, Transportation Planner, Tahoe Regional Planning Agency, at 775.588.4547, ext. 204 or kfink@trpa.org.

Created by California and Nevada, and an act of Congress in 1969, the Tahoe Regional Planning Agency cooperatively leads the effort to preserve, restore, and enhance the unique natural and human environment of the Lake Tahoe region now and in the future.

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APPENDIX E: INTERVIEWER TRAINING MANUAL

Introduction:

Welcome to the Travel Mode Survey team. You have been specially selected to work on an important survey conducted with visitors and residents of the Tahoe Basin Area. This study, sponsored by the Tahoe Regional Planning Agency, will be an essential factor for future planning efforts to improve non-auto travel in and around the North and South Shores of Lake Tahoe.

Work Schedule:

Orientation And Pilot Test: August 2, 2006

Full Study: August 4 – August 16, 2006 (Weekdays And Weekends)

Normally, Surveying Will Be Conducted From 8am To 5pm With A Break For Lunch. On Certain Days However, The Schedule May Be Altered By One Or Two Hours. Surveyors Will Be Working 40 Hours Per Week So The Supervisor Will Coordinate A Work Schedule To Allow For Days Off. Your Flexibility Is Appreciated So A Full Crew Is Working Monday Through Sunday.

Dress Code/Work Expectations:

You Will Be Provided With A TRPA T-Shirt To Wear Each Day You Are Surveying Along With A Cap And ID Badge. Please Wear All These Items To Project Legitimacy And A Professional Appearance For Your Work.

Since we will be working outdoors each day, feel free to dress comfortably for the heat. You may wear shorts if the bottom of the shorts reaches your finger tips, clean whole dark color jeans, khaki's, and sandals or flip flops. Please remove unusual piercings.

You are welcome to bring bottled water and a snack that will not melt in the heat. Remember that you will be carrying supplies with you so don't overload yourself with unnecessary items.

On days when it will be difficult to access a restaurant for the lunch break, your supervisor will be providing a picnic lunch.

The supervisor will advise you of lunch time and break periods. Please return promptly to work when break periods are over.

We want to carpool to locations as much as possible. Please plan to be at the meeting location 5 minutes prior to when the carpool is scheduled to leave. We cannot wait for late arrivals.

In the event of an emergency, please contact the supervisor.

Study Design

We will be surveying popular commercial and recreation sites located in the North and South Shore area of the Tahoe Basin. Typically, we will be surveying multiple sites in one day – but these sites will be close together so we don't lose much travel time.

Each site has a specific goal of interviews that needs to be conducted and all data completely and accurately collected. Your supervisor will advise you of the goal for each site. We will work as a team to make goal.

Work Tasks:

It is important that you are completely familiar with the survey instrument. Beside the practice you receive during training, practice independently with friends and family members. If you are unsure about what data a question is capturing, ask the supervisor for clarification.

As a surveyor, you will be approaching visitors and residents (over the age of 18) and asking them to participate in a brief five-minute survey. All information collected in the survey is confidential and not identified with any single individual. Participation is voluntary.

At each survey site, your supervisor will designate the location where you will be stationed to approach a respondent. Only one respondent in a traveling party may participate in the study. At certain sites, you may be asked to approach every nth travel party – in order to insure randomness of participation and not bias study results due to mode of travel or demographic self-selection. (Your supervisor will advise you daily about the approach pattern.)

Politely invite a member of the travel party to participate in the study by saying:

“Hello. My name is _____ and I’m conducting a very important study on behalf of the Tahoe Regional Planning Agency. I’m interviewing residents and visitors in the region about their daily travel activities. This study will take no longer than 5-minutes and will benefit the community by providing information about local travel patterns for better transportation planning. The study is purely a research effort, your participation is voluntary and your answers will be completely confidential.”

If a member of the travel party agrees to participate, confirm that he or she is 18 years old or older. If the participant is under age 18, attempt to interview another member of the travel part who meets the age requirements.

If no member of the travel party wishes to participate in the study, politely stress the importance of participating. If no one still wishes to participate, thank them for their time and tally the group as a single refusal.

Conduct the survey by reading each question on the questionnaire exactly as written. All questions must be answered in order for the questionnaire to count toward the interview site goal. Please completely fill in bubble responses and print text responses neatly.

IT IS EXTREMELY IMPORTANT that address information is fully collected and accurate. If a respondent does not know an exact address, show him/her the map you are provided with and determine exact cross streets. Verify that cross streets are identified correctly by finding that intersection on the map.

After you complete five interviews at a site, return the completed questionnaires to the supervisor so a count may be made to determine if goal has been reached. All questionnaires will be reviewed and surveyors will receive constructive feedback.

Finally, have fun, be friendly. Enjoy working on this project.



APPENDIX F: SITE SPECIFIC SURVEY RATES

SITE #	LOCATION	REFUSALS	COMPLETED SURVEYS	CONTACTS	REFUSAL RATE	RESPONSE RATE
0	Tahoe State Recreation Area at Sierra Terrace Drive	2	45	47	4%	96%
1	Lake Valley State Recreation Area	35	48	83	42%	58%
2	Sugar Pine Point State Park	6	38	44	14%	86%
3	El Dorado Beach/Boat Ramp	15	45	60	25%	75%
4	Rec. Complex	55	48	103	53%	47%
5	Regan Beach	10	46	56	18%	82%
6	Community Ball Fields-LTCC	10	41	51	20%	80%
7	Carnelian Bay Lake Access	19	45	64	30%	70%
8	King Beach Lake Access	10	45	55	18%	82%
9	Lakeside Beach Marina	15	49	64	23%	77%
10	Kahle Community Park and Center	12	45	57	21%	79%
11	Incline Village Tennis Complex	12	47	59	20%	80%
12	Tahoe City Marina	15	40	55	27%	73%
13	Cave Rock	18	42	60	30%	70%
14	Sand Harbor Management Area	2	47	49	4%	96%
15	Spooner Lake	4	40	44	9%	91%
16	North Tahoe Regional Park	5	37	42	12%	88%
17	Tahoe Paradise Park	13	40	53	25%	75%
18	Commons Beach	7	43	50	14%	86%
19	Tahoe State Recreation Area (William Layton Park)	20	46	66	30%	70%
20	64-Acre Beach/Picnic Area	15	41	56	27%	73%
21	Eagle Falls	9	41	50	18%	82%
22	East Shore Beach Trailhead (Secret/chimney)	6	41	47	13%	87%
23	Glen Alpine Trailhead	10	49	59	17%	83%
24	Inspiration Point	13	42	55	24%	76%
25	Logan Shoals Vista	17	42	59	29%	71%
26	Meeks Bay Trailhead	2	38	40	5%	95%
27	Sawmill Pond	4	41	45	9%	91%
28	Zephyr Cove Marina/Resort	9	46	55	16%	84%
29	MS Dixie Entrance	35	48	83	42%	58%
30	Camp Richardson Resort	22	47	69	32%	68%
31	Baldwin Beach	4	44	48	8%	92%
32	Bijou/al Tahoe	18	35	53	34%	66%
33	Dollar Hill	14	11	25	56%	44%
34	Homewood Commercial	9	10	19	47%	53%
35	Incline Village Commercial	34	69	103	33%	67%
36	Kings Beach Commercial	13	42	55	24%	76%
37	Kingsbury Community Plan	22	32	54	41%	59%
38	Meyers	29	31	60	48%	52%

SITE #	LOCATION	REFUSALS	COMPLETED SURVEYS	CONTACTS	REFUSAL RATE	RESPONSE RATE
39	North Stateline Non Casino	9	30	39	23%	77%
40	North Casinos	19	25	44	43%	57%
41	Round Hill Community Plan	48	60	108	44%	56%
42	Sierra Tract	16	44	60	27%	73%
43	Ski Run	67	67	134	50%	50%
44	South Stateline	102	71	173	59%	41%
45	South Y Commercial	73	71	144	51%	49%
46	Stateline Community Plan	119	72	191	62%	38%
47	Sunnyside	0	10	10	0%	100%
48	Tahoe City	57	62	119	48%	52%
49	Tahoe Vista Commercial	7	10	17	41%	59%
50	Tahoma Commercial	6	8	14	43%	57%
Total	N/A	1,093	2,157	3,250	34%	66%



APPENDIX G: GEOCODING METHODS

Geocoding Procedures

Geocoding of respondent provided housing address data consisted of two-stages. An automated batch run was first attempted in order to successfully geocode the addresses. The batch run attempted to match exact addresses or cross-streets obtained from respondents to a street coverage file provided by the TRPA. Addresses or cross-streets matching the coverage file were assigned an X/Y coordinate and a value of “M” for matched, and placed in the “AV_STATUS” field. Addresses or cross-streets not matched during the batch run were flagged with an “AV_STATUS” value of “U” for unmatched, and passed to the next stage of geocoding.

During the next stage, addresses were researched using a series of resources, including Switchboard.com, Google.com (Internet search engines), and DeLorme Street Atlas USA (mapping software). Addresses that were matched to an exact address or cross-streets during this stage were assigned an X/Y coordinate and an “AV_STATUS” of “M”. Addresses that fell outside the defined study area have an “AV_STATUS” of “O”. Addresses not geocoded were not assigned an X/Y coordinate, and were given the “AV_STATUS” of “U”. All addresses matching to some level of geography were then spatially joined to a TAZ coverage, and the appropriate TAZ number placed in the field “TAZ”.

The remaining unmatched addresses were then separated into two different categories. All Tahoe Basin area resident addresses were isolated to evaluate the uniqueness of the respondent's name, and were then researched case by case in Lexis Nexis to find their correct address. If the respondent's name was too commonplace for certainty, such as William Smith, then their address remained Unmatched. Resident address corrections were geocoded and given a "M" in the "AV_STATUS" field. For the remaining Unmatched addresses, in cases that were not null, we compared the address to the actual scanned image of the survey (and in many cases, we consulted the survey itself) to check for possible misspellings, or verification and scanning error. An example would be the similarities between a lower-case "u" and a lower-case "a". It is the type of error that is easily corrected, since most street names are in English. Corrections were made to the addresses and were given a "M" in the "AV_STATUS" field. The addresses where no corrections could be made remained as Unmatched.

Geocoding Quality Control

- Once geocoded, records were subjected to series of strict quality control checks. The checks included:
- All unmatched locations are run through the geocoding process for a final attempt to be geocoded.
- A random selection of 5% of the geocoded address file was reviewed in detail to ensure proper placement of the overall latitude/longitude points. This entails using ArcView and displaying the points on the street layer and comparing the points with DeLorme.
- Since a cross-street geocode does not reference a zone (zip code or city) in ArcView, all cross-street geocodes were queried and analyzed to ensure proper placement of the geocodes. (The ArcView default placement of a geocoded cross street places the point in the Southeast quadrant of that intersection).
- Visual quality control check by city. Geocoding was verified by querying of geocoding matches related to each city. Then these points were displayed in the map view in ArcView and visually confirmed, outlying locations were selected and confirmed to be correct.

- Global changes included correcting misspelled place names, misspelled city names, and correcting any other global address problems prior to each data delivery as well as one final pass on the complete location file.



APPENDIX H: SAMPLING PLAN

This document describes the sample design for the Tahoe Travel Mode Share Survey of Commercial and Recreational Areas. As such, it includes project objectives, the population of inference, description of the sampling frames, sample preparation, proposed sample sizes and conduct of the interview.

Project Objectives

The research objectives for this effort include:

- Gain an understanding of the travel mode split to commercial core areas as a whole in the Tahoe Basin;
- Gain an understanding of the travel mode split to recreation areas as a whole in the Tahoe Basin;
- Begin a data collection effort that can be repeated annually and ideally, expanded to the winter, producing a trend line that will show whether transportation strategies are working to increase non-auto mode share;

The sample methodology proposed here is designed to capture accurate and reliable travel mode data of residents, seasonal residents, and visitors to commercial and recreational sites within the Tahoe Basin region. This survey will provide data necessary to support the Tahoe Regional Planning Agency's (TRPA) current efforts to update its long-range Regional Plan.

Population of Inference

The population of inference (or population under study) consists of residents (both year round and seasonal) and visitors 18 years of age or older in the Tahoe region during the survey period.

Sampling Frame

The commercial sampling frame consists a list of 32 recreational locations within the Tahoe region. The recreational sampling frame consists a list of 19 commercial locations within the Tahoe region. These lists (which contained both North and South Shore sites) were provided to NuStats by TRPA and served as the basis for this sampling effort.

Proposed Sample Size

To accomplish the survey goals, NuStats proposes a sample plan that provides a confidence level of 95% with a standard error rate of 4.0 (or 600 samples) for the commercial core subgroup and 95% with a standard error of 2.8% (or 1,200 samples) for recreational sites subgroup. These sample sizes were determined by taking into account several considerations including desired levels of statistical precision, data needs, expected survey productivity, project schedule and project budget. The following formula was used to determine the standard error associated with the sample size.

$$\text{Standard Error} = 1.96 * (\sqrt{(0.5)(0.5)/n}), \text{ where } n = \text{sample size}$$

The 600 commercial surveys will be conducted at 19 sites across the Tahoe Region. Of these 600 commercial surveys, 60% will be conducted at South Shore sites, with the remaining 40% coming from North Shore sites.¹ An additional level of stratification was included to identify the expected level of activity at each interview location. These levels (determined by members of both TRPA and the NuStats

¹ This 60/40 split was also used in the Summer and Winter survey and is being repeated here for consistency.

project team) include low, medium and high activity and are included in Table 1 below in the “Rank” field. This rank variable was used as an additional level of stratification to determine the number of surveys estimated for each interview location. Within each “shore” an attempt was made to assign half of all interviews to high activity sites. Of the remaining sites, two-thirds of surveys were assigned to medium activity sites and the remaining surveys were assigned to low activity sites. Among sites of the same activity level, a near equal distribution of surveys was assigned. However, in some cases, rounding up or down was necessary. Furthermore, in some cases, it was necessary to deviate slightly from this method to differentiate the number of surveys coming from sites of different rank, as is the case with the two south shore commercial medium rank sites, where, based on the method described above, one would expect to see 60 surveys assigned to each of these sites. In order to differentiate from the high rank commercial sites, the number of assigned surveys to these two sites was reduced to 50.

TABLE H1: DISTRIBUTION OF COMMERCIAL SURVEYS BY INTERVIEW LOCATION

AREA	RANK	SHORE	SURVEYS
Dollar Hill	Low	North	6
Homewood Commercial	Low	North	6
Meyers	Low	North	5
Sunnyside	Low	North	6
Tahoma Commercial	Low	North	5
Tahoe Vista Commercial	Low	North	6
Cal-Neva	Low	North	6
Kings Beach Commercial	Medium	North	40
North Stateline Non Casino	Medium	North	40
Incline Village Tourist	Hi	North	60
Tahoe City	Hi	North	60
Subtotal North Shore	N/A	N/A	240
Bijou/Al Tahoe Cp	Low	South	26
Kingsbury Community Plan	Low	South	27
Sierra Tract	Low	South	27
Round Hill Community Plan	Medium	South	50
Ski Run	Medium	South	50
South Stateline	Hi	South	60
Stateline Community Plan	Hi	South	60
South Y Commercial	Hi	South	60
Subtotal South Shore	N/A	N/A	360
<i>Total</i>	N/A	N/A	600

The 1,200 recreational surveys will be conducted at 32 sites across the Tahoe Region. Of these 1,200 recreational surveys, 60% will be conducted at South Shore sites, with the remaining 40% coming from North Shore sites. See Table H2 for further detail.

TABLE H2: DISTRIBUTION OF RECREATIONAL SURVEYS BY INTERVIEW LOCATIONS

AREA	SHORE	SURVEYS
Sugar Pine Point State Park	North	34
Carnelian Bay Lake Access And Resource Enhancement - East	North	35
Kings Beach Lake Access	North	34
Incline Village Tennis Complex	North	35
Tahoe City Marina	North	34
Sand Harbor Management Area	North	35
Spooner Lake	North	34
North Tahoe Regional Park	North	35
Commons Beach	North	34
64-Acres Beach/ Picnic Area	North	34
East Shore Beach Trailhead (Secret/ Chimney)	North	34
Meeks Bay Trailhead	North	34
Tahoe State Recreation Area - Truckee River Outlet	North	34
Tahoe State Recreation Area - Truckee River Outlet	North	34
Subtotal North Shore	N/A	480
Lake Valley State Recreation Area	South	40
El Dorado Beach/ Boat Ramp	South	40
Recreation Complex	South	40
Regan Beach	South	40
Lakeside Beach/ Marina	South	40
Kahle Community Park And Center	South	40
Cave Rock	South	40
Eagle Falls Trailhead/ Picnic Area	South	40
Fallen Leaf Campground	South	40
Glen Alpine Trailhead	South	40
Inspiration Point	South	40
Logan Shoals Vista	South	40
Pope Beach	South	40
Sawmill Pond	South	40
Zephyr Cove Marina/ Resort	South	40
Camp Richardson Resort	South	40
Community Ball Fields-Ltcc	South	40
Tahoe Paradise Park	South	40
Subtotal South Shore	N/A	720
<i>Grand Total</i>	N/A	1,200

It is important to note that, while NuStats will make every effort to capture the number of completed surveys per site identified in Tables 1 and 2 above, the sample plan should be flexible enough to accommodate variations in activity levels at each site that differ from what is expected. As such, these numbers should be viewed as goals, not hard quotas, and, due to a lack of reliable empirical data that can be used to methodologically identify goals for each site, NuStats fully expects that deviations from the goals identified here will occur. The field manager will contact the TRPA project manager on a daily basis to identify if the goal is realistic based on field observation. If these variations do occur, NuStats will consult with TRPA on the best method for continued data collection and will not move forward with this method until all project team members reach agreement.

Sample Preparation

Upon approval of the sample plan, a letter describing the survey effort will be sent (via e-mail) to contact individuals at each of the interview locations. Following delivery, follow up phone calls will be made to each location to provide further information about the survey and answer any questions the site contacts may have.

Conduct of Interviews

Trained temporary staff will collect the data via intercept interviews.² Data collection will begin the first week of August with a rolling pilot, with full data collection anticipated to begin approximately 1 to 2 days later. Data collection will be completed no later than August 20, 2006. Both weekend and weekday interviewing will take place. Commercial sites ranked low will be primarily interviewed during weekend periods (Friday, Saturday and Sunday), while medium and high sites will be interviewed both weekend and weekday. Recreational sites will be interviewed during both periods. The survey period will encompass two weekend periods. Core data collection time will be from 10:00 A.M. to 5:00 P.M. However, flexibility will be retained for early morning work or evening work as necessary to accommodate special schedule needs.

Our sampling methodology assumes that only one person, age 18 or older, within a traveling party will be eligible to participate in the study. To minimize surveyor selection bias surveyors will be instructed to survey every nth party at sites with high activity level and perform a census study at sites with low or medium activity levels. Travel parties refusing to participate in the study will be tallied and recorded for tracking of response rates and for data weighting and expansion purposes (if individual site patronage volumes are available to use as the targeted expansion factor).

Surveyors will be stationed at locations that attempt to maximize both their exposure to potential respondents and their exposure to respondents utilizing different modes of transportation. The actual survey locations will be determined in conjunction with TRPA staff and site contacts during site visits that will be conducted prior to interviewer training. The following practices will be implemented to minimize bias introduced into the data as a result of interviewer location:

- In areas where interviewing is restricted to entrances and multiple entrances are present, interviewers will be instructed to move between entrances every 20-30 minutes.
- In areas where there is sufficient traffic, surveyors will intercept every nth travel party to minimize self-selection bias for travel mode or demographics. The survey pattern will vary based on activity level.

² Further information regarding interviewer training and conduct of the survey will be provided in the Interviewer Training Manual.

- At sites that offer “strip mall” like conditions (where multiple stores are present, one after another), emphasis will be placed on the fact that the interviewer is interested in collecting information regarding the last place the respondent was (origin) before they came to this general location (i.e., the commercial area or the recreation area - destination), as opposed to telling the interviewer they just came from a different store within that same commercial area, or that they left from home early in the morning but are now on their 4th location during the day.

NuStats feels by implementing these best management practices, TRPA will gain an accurate picture of the mode split in the region. Furthermore, the diversity of survey sites that have been selected for sampling purposes prohibits any one method of establishing interviewer location to consistently be applied to all sites, while maintaining the project scope, timeline and budget. For this reason, we respectfully request that TRPA allow NuStats to conduct the sampling as identified within this document.