

VII-2. SURVEY & WORKSHOP FINDINGS

This section presents:

1. A summary of transportation issues raised from citywide and neighborhood community-based participatory planning;
2. An analysis of existing Santa Cruz travel behavior based on telephone survey data; and
3. Workshop findings on the barriers to changing Santa Cruz travel behavior.

RESULTS FROM COMMUNITY-BASED PARTICIPATORY PLANNING

A key innovation of the MTS is the use of several data sources and community participatory planning efforts to identify citywide and neighborhood transportation issues.

Data was collected and analyzed from twelve neighborhood meetings, two citywide Mobility Festivals, a telephone survey of residents of the City, research based on previous surveys, and city and UCSC planning data .

TRANSPORTATION ISSUES

Citywide Priorities

To the open-ended telephone survey question, "*What is the single biggest transportation problem in Santa Cruz?*" 41% felt "traffic and too many cars," followed by 21% who commented "inadequate public transportation," which includes "not enough buses/bus routes" (8%), and "inadequate bus schedules and times" (4%).

At the first Mobility Workshop the top five citywide transportation concerns of respondents are:

1. Traffic congestion on city streets (16%) and freeway congestion (16%)
2. Lack of bike lanes and bike routes (11%)
3. Driver's lack of respect for pedestrian right-of-way (10%)
4. Downtown parking (8%) and Beach traffic (8%)
5. Lack of bus service (7%)

The summary findings of the twelve neighborhood workshops indicate that traffic issues comprise 45% of the total responses. Bicycle and transit issues were raised 16% and 15% of the time, respectively. Pedestrian issues represented 8% of all transportation issues. 12% of the groups felt either inadequate planning (i.e., auto-oriented development) or general livability for city residents as transportation issues. Parking issues received the least attention from workshop participants at only 4%.

Traffic Findings

For the 45% of total responses at the workshops, people considered traffic congestion as a citywide arterial street issue, while traffic impacts on neighborhood streets were related to cut-through and speed traffic. The traffic issues identified are:

- Traffic Congestion 53%
- Cut-Through Traffic 19%
- Travel Speed 13%
- Aggressive Driving 8%
- Safety 4%
- Truck Traffic 3%

Bicycle Findings

Three issues were raised regarding bicycle-related transportation at the workshops: route connectivity, safety, and facility adequacy (Facility adequacy refers to maintenance, signing, on-street parking, bike racks, etc.). Many of the workshop groups felt that the bike lanes were not safe or were inadequate because of the high volume and speed of adjacent traffic. Bicycle riding at night was also identified as an issue. Overall:

- Route Connectivity 45%
- Bicycle Safety 38%
- Facility Adequacy 17%
- Bicycle Safety 38%
- Facility Adequacy 17%

Transit Findings

The workshop responses emphasized the need to increase transit frequency, expand bus route coverage, and expand hours of operation in Santa Cruz.

The groups also frequently raised the quality of the transit commute experience. Reviewing travel diaries suggests that many of these concerns relate to a variety of transit issues such as bikes and dogs on the bus, noise, smell, and transit information dissemination. Overall:

- Bus Frequency 34%
- Service Characteristics 28%
- Bus Route Coverage 19%
- Commute Service 19%

Pedestrian Findings

The workshop participants focused on safety and adequacy of facilities. Sidewalk maintenance, obstructions (i.e., utility poles, boxes) and night visibility were the primary facility adequacy issues raised during these discussions. Sidewalk connectivity was also mentioned but much less frequent than safety and adequacy. In summary:

- Pedestrian Safety 54%
- Facility Adequacy 33%
- Sidewalk Connectivity 13%

Neighborhood Issues

The top five neighborhood transportation issues of respondents to the Mobility Workshop are:

1. Speeding traffic in neighborhoods (18%)
2. Bike lanes or bike path routes (16%)
3. Parking in residential areas (11%)
4. Cut-through traffic in neighborhoods (11%)
5. Lack of sidewalks (11%) and bike lane or path maintenance (11%)

It is important to note that at the Mobility Workshop, compared to the citywide telephone survey, walkers and bicyclists were over-represented and transit riders under-represented. Therefore transit is most likely the number two issue, and bicycle concerns number three.

SANTA CRUZ TRAVEL BEHAVIOR

Based on the Bregman survey, several key conclusions and observations can be made regarding resident's patterns of behavior related to who are the major travel groups, their time-of-day, trip purpose, travel modes and mobility geography.

Travel Groups

Who are the primary groups of people who travel in Santa Cruz? Six groups answered the survey question regarding their main occupation, full and part-time employed, students, retired, homemakers and not-currently employed. For statistical purposes, only four groups had a sufficient sample size from which to draw valid conclusions, full and part-time employed, students and retired people. Clearly, full-time employed people travel by SOV the most, and they also have a higher percentage of people who have families with children.

Mobility Geography

What is the pattern of originations and destinations for people who live, work and visit Santa Cruz? According to the workshop findings 60 percent of the participants made a commute trip with both an origin and destination within Santa Cruz . About 73 percent made a personal trip and 67 percent made a recreational trip with both origins and destinations within Santa Cruz.

Santa Cruz is approximately 4 miles across, and although hilly in places, the typical travel distance is 2 to 3 miles. Therefore the short travel distance suggests solution strategies such as reducing bicycle barriers and transit barriers through the City, to encourage non-single occupant vehicle cross-town trips.

Time-of-Day

What are the peak travel times for travel in Santa Cruz? The key finding is that even though travel times are diverse throughout the day and week for different travel groups and trip purposes, there is a common pattern of convergence. From a review of the survey data for the four survey times - 7:00 to 10:00 AM, 10:00 AM to 1:00 PM, 1:00 PM - 4:00 PM and 4:00 PM to 7:00 PM - not surprisingly, even though there is roughly the same number of travelers at the two peak periods of 7:00 - 10:00 AM and 4:00 to 7:00 PM peak, the PM period has the highest number of trips, due to trip linking and errands.

Travel Mode

What travel modes do people take for different trip purposes and differing times of day? According the telephone survey, and in comparison to national transportation data collected from the US census for 1990 from the national transportation journey to work data, Table 1 presents travel mode splits for all trips city wide. The key finding is that for Santa Cruz residents asked how they traveled in the previous week, 73% responded that they drove alone, compared to 80 % nationally, yet 31% take other modes compared to 20% nationally.

Table 1: Mode Split for Journey to Work, Santa Cruz and US

Travel Mode	Santa Cruz	US
Auto	65%	80%
Carpool	5%	11%
Transit	13%	5%
Walk/bike/other	13%	4%

Source: 1st Telephone Survey

Travel Purpose

According to the workshop travel diaries, Table 2 presents travel mode by trip purpose for all trips citywide, for Santa Cruz. Santa Cruz has fewer personal and shopping trips than national data, and greater work and school trips.

Table 2: Comparison of Trip Purpose Santa Cruz and US

Trip Purpose	Santa Cruz	US
Personal	18%	25%
Social	25%	25%
Shopping	13%	20%
Work	30%	21%
School	14%	9%

Source: 1st Telephone Survey

According to the telephone survey, and in comparison to national transportation data, Table 3 presents travel purposes for all trips.

Table 3: Travel Mode by Trip Purpose

Mode	Trip Type			
	Commute	Personal	Recreation	Average All Trips
Auto	70%	72%	69%	70%
Bike	18%	18%	8%	18%
Transit	8%	3%	1%	4%
Walk	5%	7%	12%	8%

Source: Workshop I Travel Diary

The key findings are that for Santa Cruz residents:

For the work trip, for Santa Cruz residents, 65% to 73% drive alone, and 25% take other modes, per Table 1.

- 30% of all trips are work trips, compared to 21 % nationally.
- 14% are school trips compared to 9% nationally.
- 31% are personal and shopping trips, compared to 45% nationally.

Contributors to Peak Hour Congestion

Based on the telephone survey, the following conclusions can be drawn as to who are the travel groups and their trip purposes that most significantly contribute to citywide

traffic congestion. The data also suggest which travel groups have the greatest opportunity to reduce congestion if they change travel modes, as well as which groups are the easiest to influence.

Four statistically significant groups emerged from the survey: full-time employed, part-time employed, students and retired. The two other groups, homemakers and other did not have a statistically significant sample size from which to draw general conclusions.

Data indicates that the PM peak is the period with the worst traffic congestion, from 4 - 7 PM.

Mode Split

The data indicates that at the peak PM period, from 4 - 7 PM, for all four-travel groups, 80% used a car (68% drove alone and 12% carpooled) and 20% bicycled, walked or rode transit. Of these travel groups, full and part-time employed comprised 84% of the trips, and students and retired 16% as shown in Table 4.

Table 4: Travel Mode by Travel Group 4-7:00 PM peak

	Mode					Total
	SOV	Carpool	Bus	Bike	Walk	
Full-time	53%	7%	2%	4%	3%	69%
Part-time	9%	2%	2%	1%	0%	15%
Student	4%	2%	4%	2%	1%	13%
Retired	2%	0%	1%	1%	0%	4%
Total	68%	12%	8%	8%	4%	100%

Trip Purpose And Mode By Travel Group

Full-time employed: 86% percent of all PM peak travel is by car. A surprise finding is 8% travel by bicycle. 68% of PM peak travel is to or from work/school with 32% shopping, social, personal or other, per Table 5.

Table 5: Full-Time Employed Travel Mode by Trip Purpose 4-7:00 PM peak

SOV	Mode					Total
	Carpool	Bus	Bike	Walk		
Work/School	53%	7%	1%	5%	2%	68%
Shopping	12%	2%	0%	1%	1%	16%
Social/Personal	6%	3%	1%	2%	0%	11%
Other	3%	0%	0%	1%	1%	5%
Total	75%	11%	3%	8%	4%	100%

Part-time employed: Though only 15 percent of all PM peak hour travelers, the key finding is that only 49% drive alone, with 29% carpooling and 11% riding a bus per Table 6.

Table 6: Part-Time Employed Travel Mode by Trip Purpose 4-7:00 PM peak

	Mode					Total
	SOV	Carpool	Bus	Bike	Walk	
Work/School	31%	16%	7%	5%	2%	62%
Shopping	5%	7%	4%	0%	0%	16%
Social/Personal	13%	5%	0%	0%	0%	18%
Other	0%	0%	0%	0%	4%	4%
Total	49%	29%	11%	5%	5%	100%

Students: At 13% of all PM peak hour travelers, the key finding is that only 38% drive alone, with 32% by bus and 15% by bicycle per Table 7.

Table 7: Student Travel Mode by Trip Purpose 4-7:00 PM

	Mode					Total
	SOV	Carpool	Bus	Bike	Walk	
Work/School	26%	6%	24%	15%	0%	71%
Shopping	3%	0%	0%	0%	6%	9%
Social/Personal	6%	3%	9%	0%	0%	18%
Other	3%	0%	0%	0%	0%	3%
Total	38%	9%	32%	15%	6%	100%

Retired: At 4% of all PM peak hour travelers, the key finding is only 36 percent drive alone, with 29% by bus and 29% by bike per Table 8.

Table 8: Retired Travel Mode by Trip Purpose 4-7:00 PM

	Mode					Total
	SOV	Carpool	Bus	Bike	Walk	
Work/School	21%	0%	0%	0%	0%	21%
Shopping	7%	7%	14%	14%	0%	43%
Social/Personal	7%	0%	14%	14%	0%	36%
Other	0%	0%	0%	0%	0%	0%
Total	36%	7%	29%	29%	0%	100%

Students, part-time employed and retired together comprise 32% of all travelers during the PM peak, and account for 75% of bus, 42% carpool, 39% bike and 56% walk trips.

Children trips: For all children trips during the day, 81% are by car. Surprisingly 9% are by walking. 90% of all trips are by full and part-time employed. During the PM peak, children trips comprise only 4% of all trips. The peak period for children trips is from 1 to 4 PM, comprising 8% of the total number of trips.

The above analysis is useful in determining the following:

- Travel groups most susceptible to a shift in mode from single occupant vehicles;
- Trip purposes most susceptible to a shift in mode from single occupant vehicle; and
- Travel groups by trip purpose for which to target MTS concepts to maximize change in mode.

This allows specific targeting of travel groups and trip purposes when implementing MTS concepts and social marketing programs. If a travel group for a particular trip purpose is already utilizing alternative modes to a high extent, than it is less beneficial to target that group and purpose for change. Key findings are:

Travel Groups with High Level of Alternative Mode Use

- Part-time workers use carpools for 29% of trips, particularly work trips (16%);
- Students use transit and bicycles for 47% of trips, particularly school/work trips (39%); and
- Retired persons use transit and bicycles for 58% of trips, particularly shopping and social/personal trips.

Travel Groups with High Level of Single Occupant Auto Mode Use

- Full-time workers drive alone for 75% of their trips, mostly for work/school trips (53%), shopping trips (12%), and personal/social/other trips (9%); and
- Part-time workers have the second highest drive alone share of 49% for work/school (31%), shopping (5%), and social/personal (13%).

Target Travel Groups and Trip Purposes to Change Travel Behavior

The following travel groups and trip purposes are best suited for focusing efforts to change travel behavior:

- Full-time workers shifting to carpool and transit for work and shopping trip purposes;
- Part-time workers shifting to carpool and transit for work/school trip purposes and bike and walk for shopping and social/personal trip purposes:

- Students shifting to carpool and transit for work/school trips, to transit and bike for shopping trips, and to bike and walk for social/personal trips; and
- Retired persons shifting to carpool and transit for work/school trips.

BARRIERS TO CHANGING TRAVEL BEHAVIOR

Workshop participants were asked to identify barriers (real or perceived) to using a transportation mode other than a private vehicle for each trip type commute, personal, and recreation. According to the findings lifestyle choices, lack of transit facilities and lack of bike facilities were the three most mentioned barriers.

Each is discussed below in order of responses received. Lifestyle choices and transit barriers represented the majority of the barriers for all three trip types. Lifestyle choices include requirements for a car at work, the need to pick-up/drop-off children, convenience, and the need to run multiple errands. These choices are often based on land use characteristics in the community and well-defined habits.

Changing lifestyle choices is an evolving process requiring a combination of education and long-range strategic land use planning to open opportunities for residents to adjust lifestyle choices.

Transit barriers focused on immediate bus transit issues such as providing more frequent service, reducing the walking distance to bus stops, and providing improved transit information.

A combination of short and long-range transit strategies can address many of the barriers raised by residents in the following paragraphs.

Commute Trips (318 responses received)

Lifestyle was identified by 36 percent of the workshop participants as a key barrier to using a transportation mode other than a car for commute trips. About 34 percent of the participants identified transit issues as a key barrier. While about 14 percent of the participants identified bicycle issues as a key barrier to using a transportation mode other than a car.

Participants responding that ***lifestyle*** was a key barrier to using a transportation mode other than a car for commute trips, over one-third of the responses (37 percent) stated that they needed their automobile for work-related functions. About 25 percent stated a need for their car for errands and another 15 percent needed their car to pick-up/drop-off children while commuting.

Participants stating that they could use ***transit*** as an alternative transportation mode identified several barriers. General bus service inadequacies represented about 45 percent

of the responses made by workshop participants. Comments included bus routes do not connect, early / late service is not provided, and insufficient bike rack capacity. Infrequent service was specifically mentioned by about 28 percent of the participants and about 18 percent identified travel time as a transit barrier.

Participants stated that they could use a **bike** as an alternative to a commute trip except for three barriers: safety, bike connectivity, and facility adequacy. About 75 percent of the respondents stated that either safety or bike connectivity were the critical barriers preventing them from using their bikes as an alternative to the car.

Personal Trips (362 responses received)

Lifestyle was identified by 45 percent of the workshop participants as a key barrier to using a transportation mode other than a car for personal trips. About 28 percent of the participants identified transit issues as a key barrier. While about 18 percent of the participants identified bicycle issues as a key barrier to using a transportation mode other than a car.

Over 40 percent of the responses that stated that **lifestyle** was a barrier to personal trips stated that they needed their automobile for errands. Freedom to make errands as needed was identified by 25 percent of the responses while about 12 percent identified the need for a car to pick-up/drop-off children and work-related trips.

With respect to **transit** general bus service inadequacies represented about 25 percent of the responses made by workshop participants. Comments included bus routes do not connect, early/late service is not provided, and insufficient bike rack capacity. Infrequent service was specifically mentioned by over 45 percent of the participants and about 20 percent identified travel time as a transit barrier.

The workshop participants stated that they could use a **bike** as an alternative to a personal trip except for three barriers including safety, bike connectivity, and facility adequacy. About 75 percent of the respondents stated that either safety or bike connectivity were the critical barriers preventing them from using their bikes as an alternative to the car. Theft was identified by about 15 percent of the participants as a barrier.

Recreation Trip (267 total responses)

Unlike commute and personal trips, a large portion (38 percent) of the participants identified inadequate transit service as a key barrier to using a transportation mode other than a car for recreation trips. About 36 percent of the participants identified lifestyle issues as a key barrier. While about 18 percent of the participants identified bicycle issues as a key barrier to using a transportation mode other than a car.

Those who could use **transit** identified three barriers including general service deficiencies, service frequencies, and travel time barriers. General bus service inadequacies represented about 30 percent of the responses made by workshop participants. Comments included bus routes do not connect, early / late service is not provided, and insufficient bike rack capacity.

Infrequent service was specifically mentioned by over 30 percent of the participants and about 20 percent identified travel time as a transit barrier.

Participants that responded that **lifestyle** was a key barrier to using a transportation mode other than a car identified freedom representing about 40 percent of the responses. Either pick-up/drop-off children or work-related trips were identified by about 15 percent, while about 30 percent identified the need to make multiple errands as a barrier to using an alternative to the car.

About 90 percent of the respondents stated that either safety bike connectivity or facility adequacy were the critical barrier preventing them from using their bikes as an alternative to the car. Theft was identified by about 10 percent of the participants as a barrier.

