

Effects of the 1989 Loma Prieta Earthquake on Commute Behavior in Santa Cruz County, California

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The October 17, 1989, Loma Prieta earthquake in Northern California caused extensive damage to the region's transportation network and forced temporary commute modifications during the reconstruction period. Pre- and postearthquake commute characteristics on the major interregional highway connecting Santa Cruz County with the San Francisco Bay area are described and whether the enforced carpooling required during the highway reconstruction period caused any sustained changes in ridesharing behavior in this corridor is examined. On the basis of the two surveys conducted during and after the reconstruction period, it was concluded that 57 percent of survey respondents who were forced to carpool during the postearthquake reconstruction period chose to continue ridesharing after the highway returned to normal operations. Survey respondents indicated that the greatest incentives to continue carpooling were cost savings and ease of finding suitable carpool partners. Those who discontinued ridesharing most often cited irregular work hours as the reason. Implications for rideshare marketing are discussed.

On October 17, 1989, northern California was rocked by a 7.1 (Richter scale) earthquake. The epicenter of the Loma Prieta earthquake was located in the Santa Cruz Mountains 80 mi south of San Francisco. Damage to the region's transportation network forced temporary commute behavior modifications throughout the San Francisco Bay area.

The pre- and postearthquake commute characteristics on State Route 17, the major interregional highway connecting Santa Cruz County with the San Francisco Bay area, are described and whether the unique enforced carpool requirement during the postearthquake reconstruction period caused any sustained ridesharing behavior changes in this corridor is examined. Findings from two commuter surveys conducted in the reconstruction and postreconstruction period are presented and implications for rideshare marketing are discussed.

BACKGROUND

A coastal county located 50 mi south of San Francisco on the Monterey Bay, Santa Cruz County is separated from the San Francisco Bay area by the Santa Cruz Mountains. The primary access route into the county is State Route 17, a four-lane highway traversing 13 mi of mountainous terrain between Scotts Valley in Santa Cruz County and Los Gatos in Santa

Clara County. Other routes into the county include State Route 1, a two-lane highway along the California coast, State Route 9, a two-lane road through the mountains into the San Lorenzo Valley, and State Routes 129 and 152, both two-lane roads in the southern end of the county (Figure 1). There are no high-occupancy-vehicle restrictions on any roads in the county.

Out-Commuting to Neighboring Santa Clara Valley

Out of a total Santa Cruz County workforce of 122,700 people (California Employment Development Department 1990), it is estimated that approximately 20 percent commute to work on Route 17—"over the hill"—into the Santa Clara Valley (also known as "Silicon Valley") or the San Francisco Bay area. This significant level of out-commuting can be attributed primarily to a major jobs-housing imbalance in the Santa Clara Valley, forcing Santa Clara Valley employees to seek housing in surrounding counties, and significantly higher-paying jobs in the Santa Clara Valley than in Santa Cruz County. In addition, Santa Cruz County is perceived as having a desirable suburban coastal environment in contrast to the more urban environment of the San Francisco Bay area.

State Route 17

Route 17 between Scotts Valley in Santa Cruz County and Los Gatos in Santa Clara County includes steep grades, sharp curves, few or nonstandard shoulders, and concrete median barriers. The posted speed limit is 50 mph. This segment ranks sixth statewide with 62 accidents/mile/year in 1989. Route 17 becomes Interstate 880 in San Jose.

Average daily traffic volumes on Route 17, the primary commute route over the hill, have increased significantly over the past 10 years, from 38,000 in 1980 to 59,000 in 1989. In addition to general population and traffic growth, much of this increase in traffic volumes is caused by increased commuting.

Route 17 handles most commodity movement to and from the county; there is a restriction on large trucks on Route 152 and on a portion of Route 9. With five major quarries operating in the county, large trucks loaded with sand and gravel slow to a crawl on the steep uphill grade. This has a significant effect on the capacity of the four-lane highway, especially when one sand truck tries to pass another.

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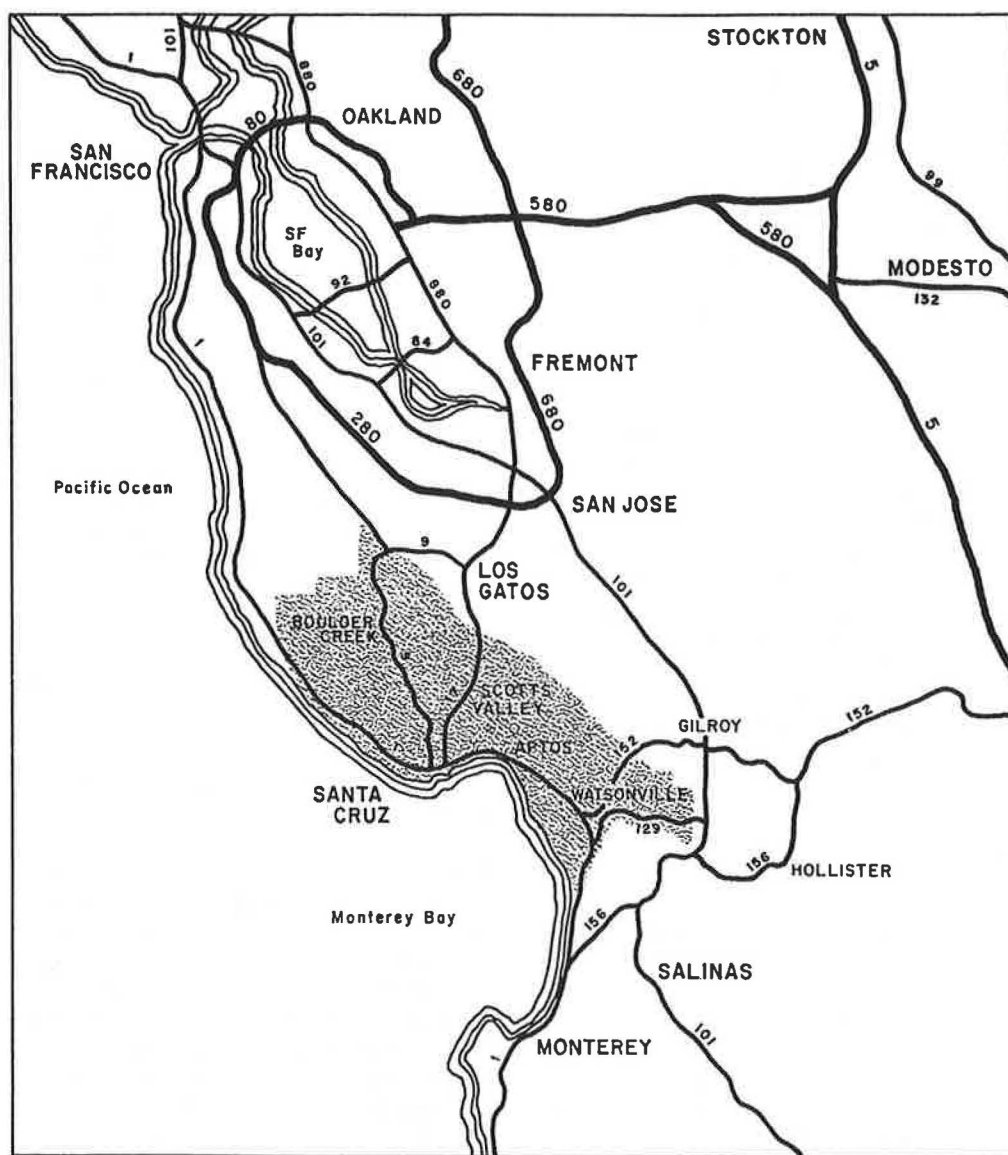


FIGURE 1 Regional location of Santa Cruz County.

Preearthquake Share-A-Ride Program

A Santa Cruz County share-a-ride program emphasizing ride-matching and marketing was instituted in 1979 with the objective of increasing vehicle occupancy countywide. It soon became clear that the primary local market for ridesharing was the Route 17 commuters; the longer commute distance and difficult highway conditions provide tangible incentives for commuters to consider ridesharing. Currently, 14 vanpools operate daily over Route 17. In 1989, vehicle occupancy on Route 17 during the a.m. peak was 1.23 persons/vehicle, compared with a ratio of 1.18 on Route 1, the major intracounty commute corridor.

In 1984, an annual rideshare open house was instituted at an inn conveniently located right off Route 17 in Santa Cruz. The annual event has attracted a high degree of media attention over the years and Route 17 commuters have become familiar with ridesharing options through this event as well

as through informational highway signs, periodic media campaigns, special mailers, and other marketing programs.

OCTOBER 17 EARTHQUAKE

The October 17, 1989, Loma Prieta earthquake caused significant damage to the regional highway network. Route 17 was closed completely by four major landslides and other pavement damage; a bridge on Route 1 collapsed, forcing detours onto local arterials; three bridges on major local arterials were closed because of structural damage; and landslides and pavement damage closed many roads in the rural areas, including alternate routes over the hill. It was determined that restoring access to Route 17 was a high priority and efforts were concentrated on that issue in the following weeks.

Route 17 Operations During Reconstruction Period

In the days following the earthquake, local officials pressed California Department of Transportation (Caltrans) officials to provide limited access to Route 17 commuters during the repair period. An interim plan was drafted that attempted to balance Caltrans' need to clear hundreds of thousands of tons of dirt and rock off of the highway with local residents' need to get to work over the hill, as well as to the airport and other facilities in San Jose; mountain residents' need to access their homes, many of them damaged and without water or other services; and the need to maintain access for trucks, emergency vehicles, and construction equipment.

On the sixth day after the earthquake, Highway 17 was opened to carpools of three or more persons. Convoys of about 100 vehicles were led over the highway by California Highway Patrol (CHP) officers, using one lane in each direction to bypass the landslide-damaged areas; speed was limited to 35 mph. Trucks were allowed between 8 p.m. and 5 a.m. only and transit vehicles, mountain residents with a pass, and emergency or construction vehicles were allowed at any time. A checkpoint on each side of the mountain was manned by two different CHP divisions.

The first week of this operation was chaotic. Enforcement of the carpool restriction by the two CHP divisions was inconsistent; it was unclear to the public, the CHP, and Caltrans whether the carpool requirement was two or three persons; and the number of single-occupant drivers with mountain resident passes seemed to multiply a hundred-fold. Repair operations were being hampered by the volume of traffic on the highway and the few available alternate routes were jammed. Travel times over the hill increased from 40 min under normal operations to 2 to 4 hr.

By the end of the first week, local and state officials agreed to modify the requirements and to enforce them consistently throughout the repair period. The carpool requirement was reduced to two persons and carpools were allowed during the peak periods only, from 5 a.m. to 9 a.m. and from 3 p.m. to 7 p.m.; other restrictions remained the same.

Emergency Transit Services and Other Transportation Options

In addition to the reopening of Route 17 under restricted operation, Caltrain commuter rail service between San Francisco and San Jose was temporarily extended along the existing Southern Pacific Railroad (SPRR) line from San Jose to Salinas, with a stop in south Santa Cruz County. New public bus transit service was also instituted over Route 17 by Santa Clara County Transit, in cooperation with the local Santa Cruz Metropolitan Transit District, and new park-and-ride lots were designated.

When employers and commuters called the Regional Transportation Commission for information on rideshare matching, emergency transit services, or road restrictions, they often volunteered information on other options being used to cope with post-earthquake highway restrictions. Some Santa Clara County employers set up temporary vanpools for their Santa Cruz County residents; others subsidized hotel expenses to enable their employees to remain in the vicinity rather than

drive over the hill every day. Some commuters stayed home and telecommuted 1 day or more per week; others stayed with friends or family over the hill.

Those who chose to use alternate routes, primarily Route 9, found extensive delays and long travel times; a temporary signal on Route 9 in Boulder Creek was installed to mitigate some of the problems caused by doubling traffic in that corridor. The public was kept informed about road closures and detours, highway restrictions, alternate routes, new transit services, and other options by daily press releases and media contacts.

Normal Operations Restored One Month Later

Route 17 was restored to normal operations 1 month after the earthquake. Caltrain service to Salinas was abruptly discontinued 1 week earlier because of liability insurance complications. The new public transit service over the hill, the Highway 17 Express Bus, is still in operation, although its long-term future is uncertain because of financial considerations. Approximate daily ridership on this route is currently 700; the service has attracted a vocal and active ridership and provides an economical and convenient alternative to automobile commuting over the hill.

Share-A-Ride Program Response After the Earthquake

In response to the need of commuters to establish carpools, the Share-A-Ride program went into high gear before and following the reopening of Route 17 under the enforced carpool requirement and other operational restrictions. All available Regional Transportation Commission staff, advisory committee members, temporary help, and friends who volunteered their services, were recruited and trained to provide instant ridematching services on an extended schedule.

In the first 2 weeks after the earthquake, the program enrolled approximately 900 applicants, which is equivalent to the number of applicants normally enrolled in 1 year. It is assumed that many other carpoolers found each other through their workplace or in their neighborhood.

Before the earthquake, share-a-ride callers had to wait 5 to 7 days to receive a computer matchlist of potential rideshare partners by mail. After the earthquake, share-a-ride set up a manual ridematching system that permitted callers to be instantly matched and given names and telephone numbers of possible carpool partners over the phone. Current information on the Highway 17 Express Bus and the South County Caltrain service was also provided. This approach proved to be one element in the success of the enforced carpool restriction on Route 17.

POSTEARTHQUAKE ROUTE 17 COMMUTER SURVEYS

Survey Objectives

The primary objective of the Route 17 Commuter Carpool Survey Project was to identify changes in the frequency of

ridesharing by commuters who were subjected to carpool restrictions on Route 17 during the postearthquake reconstruction period. The secondary objective was to identify Route 17 commuter attitudes and perceptions about ridesharing.

The survey results indicate the extent to which the temporary enforced carpooling was followed by changes in ridesharing behavior for survey respondents. In addition, the survey results suggest marketing strategies to increase ridesharing.

Methodology

Two surveys were conducted, the first while Route 17 carpool restrictions were in place, the second 6 months later. The questionnaires of both surveys had eight multiple-choice questions and ended with an open-ended question regarding the Route 17 commute. Survey results were compiled and analyzed using the statistical analysis and data management program, SPSS/PC+. Each survey was pretested on 10 individuals.

To encourage a large response for each survey, commuters who returned the forms and included the optional name and address were eligible for one of six prize drawings. In addition, an open-ended question asking how to improve the Route 17 commute also may have encouraged individuals to respond. Finally, the controversy surrounding enforced carpooling itself probably increased the willingness of commuters to complete and return the questionnaire.

The discussion of results only pertains to survey respondents. No attempt was made to conduct a random-sample survey.

First Survey

A total of 2,000 questionnaires was distributed over a 2-day period to each vehicle occupant on the Santa Cruz County side of the highway during the morning commute hours of 5 to 9 a.m. at the Route 17 CHP carpool convoy checkpoint a few days before Route 17 was restored to normal operations; 587 (29 percent) of the forms were completed and returned by prepaid return mail.

Second Survey

Six months later, in April 1990, the follow-up questionnaire was mailed to the 565 respondents of the first survey who had

provided their names and addresses. Questionnaires were color coded on the basis of intent to continue ridesharing indicated from the first survey; 187 (33 percent) of the follow-up questionnaires were answered and returned.

DISCUSSION OF FINDINGS

Changes in Frequency of Ridesharing

The extensive damage caused by the Loma Prieta earthquake and the reconstruction that followed forced changes in daily commute habits. The question was whether enforced carpooling during Route 17 earthquake repair caused any changes in commuter attitudes towards ridesharing.

Intent to Continue Ridesharing

In the first survey, respondents were asked to indicate their frequency of ridesharing 1½ months before the earthquake. In September 1989, almost half of the survey respondents (47 percent) did not rideshare at all; 28 percent shared rides every day; 10 percent shared a ride 3 to 4 days per week; and 14 percent shared the ride 1 to 2 days per week.

When survey respondents were asked if they intended to continue ridesharing after Route 17 was repaired and reopened to normal conditions, the majority (62 percent) said yes, 23 percent said no, and 16 percent were uncertain.

Table 1 is a cross tabulation between preearthquake rideshare frequency of survey respondents and their intent to continue ridesharing after Route 17 resumed normal operations. As the table indicates, of the respondents who did not rideshare before the quake, 31 percent said that they intended to continue ridesharing after carpool restrictions were lifted, 41 percent said that they did not plan to continue ridesharing, and 28 percent were uncertain.

The reasons selected by survey respondents who indicated that they planned to return to driving alone were irregular work schedule (54 percent), need car for work (19 percent), carpooling is inconvenient (14 percent), other (7 percent), personal preference (4 percent), carpooling takes too long (2 percent) and incompatibility with carpool partners (1 percent).

Rideshare Frequency in January 1990

The second survey asked respondents whether they shared a ride in January 1990, 1½ months after Route 17 returned to normal operations and ridesharing mandates were lifted.

TABLE 1 RIDESHARE FREQUENCY BEFORE LOMA PRIETA EARTHQUAKE VERSUS INTENT TO CONTINUE RIDESHARING AFTER ROUTE 17 RESTRICTIONS ARE REMOVED

		HOW OFTEN DID YOU RIDESHARE PRIOR TO THE EARTHQUAKE?			
		Every day	3-4 days /wk	1-2 days /wk	Not at all
DO YOU INTEND TO CONTINUE RIDESHARING AFTER HWY. 17 IS REOPENED?	Yes	98%	93%	60%	31%
	No	1%	4%	23%	41%
	Don't Know	1%	4%	18%	28%
		n = 164	n = 83	n = 58	n = 273

Previous Carpoolers

Figure 2 shows the number of survey respondents who had been sharing rides before the earthquake, their intent to continue or discontinue ridesharing, and whether they actually shared a ride in January 1990.

Fifty-three percent of the first survey's respondents shared a ride before the earthquake. Of the total number of first survey's respondents who shared a ride before the earthquake, 87 percent intended to continue ridesharing after carpool restrictions were lifted, 8 percent intended to resume driving alone, and 5 percent were uncertain whether they would rideshare or resume driving alone.

A total of 187 of the second surveys were returned; 97 (52 percent) were from individuals who had shared a ride before the earthquake; 86 (89 percent) of these individuals continued to rideshare in January 1990, whereas 11 (11 percent) stopped ridesharing.

This latter group of 11 preearthquake carpoolers who were postearthquake noncarpoolers is of particular interest. Five of these individuals stopped carpooling over Route 17 because their commute had changed; they either moved closer to work, moved away to find another job, or found a new job closer to home.

Other survey responses by this particular group indicated that irregular work hours and the need for a car for work prevented them from continuing to carpool after the earthquake although they were ridesharing before the earthquake. When they were contacted by phone, these respondents elaborated that their change in attitude was in part influenced by the disaster; some were worried about being caught in the Route 17 congestion during another earthquake and asked that their hours be changed.

Others quit their regular carpool so that they could drive their own vehicles. By having their personal vehicles acces-

sible to them at their workplace, these commuters felt that they could respond more quickly to their families' needs in an emergency without having to rely on their carpool drivers.

Carpool Converts

Figure 3 shows the numbers and percentages of survey respondents who did not rideshare before the earthquake, their intent to continue or discontinue ridesharing, and whether they actually shared a ride after the earthquake in January 1990.

Forty-seven percent of first survey respondents did not rideshare before the earthquake. Of the total number of first survey respondents who did not rideshare before the earthquake, 33 percent intended to continue after carpool restrictions were lifted, 38 percent intended to resume driving alone, and 29 percent were uncertain whether they would rideshare or drive solo.

Almost an equal number of preearthquake noncarpoolers (90) completed and returned the second survey as preearthquake carpoolers (97) discussed in the previous section.

Of the surveyed individuals who did not rideshare before the earthquake, more than half (51 individuals or 57 percent) continued to rideshare in January 1990, whereas 39 individuals (43 percent) stopped ridesharing over Route 17.

Of particular interest in the results of the second survey is the actual rideshare behavior of individuals who said in November that they did not intend to continue carpooling. Of the survey respondents who indicated that they did not rideshare before the earthquake and did not intend to continue ridesharing, 24 percent actually continued to rideshare in January 1990. Of this preearthquake noncarpooling group, those who were uncertain whether they would continue to carpool were split in their actual behavior, with 55 percent ridesharing in January and 45 percent driving alone. Eighty-six percent

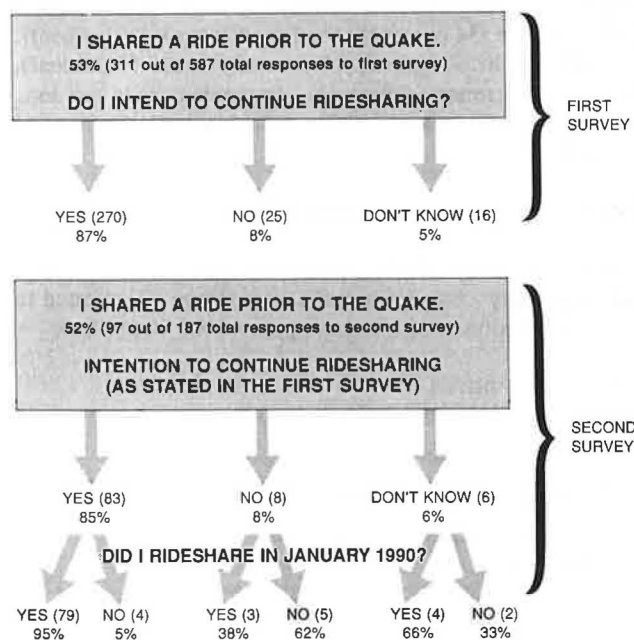


FIGURE 2 January ridesharing behavior of individuals who shared a ride before the earthquake.

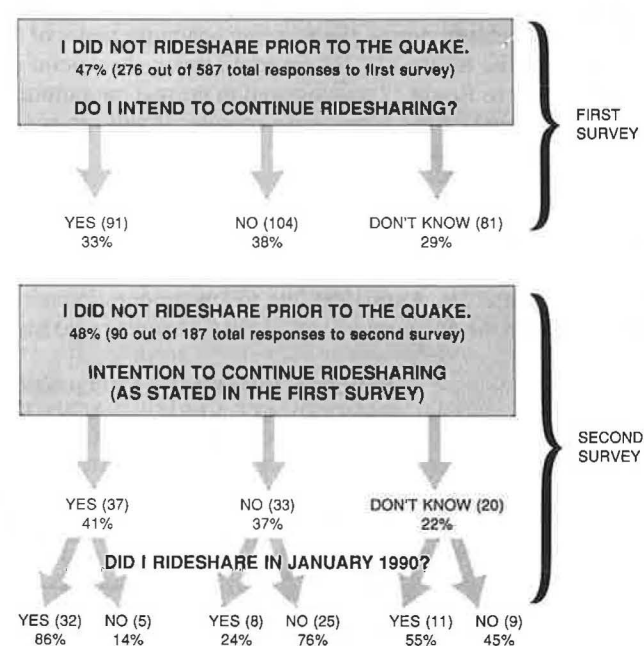


FIGURE 3 January ridesharing behavior of individuals who did not rideshare before the earthquake.

of those that intended to rideshare did actually rideshare in January.

Of these prior drive-alone respondents who indicated that they continued to rideshare after the earthquake, over half (52 percent) shared a ride every work or school day, 26 percent shared a ride 3 or 4 days per week, and 22 percent shared a ride 1 or 2 days per week.

What convinced them to continue to rideshare although the Route 17 ridesharing mandate was removed? Forty-two percent of this group of postearthquake carpool converts found the cost savings of ridesharing the best reason to continue. The second largest response was the people with whom they shared the ride (22 percent), followed by the enjoyment of ridesharing (12 percent), environmental preservation (12 percent), and finally, less stress (10 percent).

Some of these carpool converts indicated changes that made possible their switch from driving solo to doubling or tripling up. Several individuals noted on their surveys that their employer allowed them to adjust their hours to carpool successfully. Other respondents stated that they better coordinated their work schedules with carpool members.

Finding a compatible carpool and the camaraderie among rideshare partners was the second strongest reason to continue carpooling or vanpooling. It suggests that the Route 17 enforced carpool requirement prompted commuters to make the necessary changes and to find other commuters who shared or could easily share commute times and destinations. Once this relationship (and the carpool) was established, the carpool continued although the mandate to rideshare was lifted.

Persistent Solo Drivers

The survey provided information about the population of commuters who drove alone before the earthquake, shared a ride while Route 17 was being repaired, but were still persistent on resuming driving alone when the highway resumed normal operations. This group of persistent solo drivers is also shown in Figure 3; they composed 43 percent of survey respondents (39 individuals) who stopped ridesharing over Route 17 after it reopened.

The majority (60 percent) of these individuals indicated that they had irregular work schedules and terminated their rideshare arrangements. Twenty-two percent halted ridesharing because it was inconvenient, 8 percent because of personal preference, 5 percent for miscellaneous reasons, and 2 percent each for a change in work schedule and a change in ridesharing partners.

The other survey choices, change in residence or change in work location, were not chosen by survey respondents as factors in ending the ridesharing arrangement after the highway reopened.

Rideshare Marketing Implications

In addition to surveying the change of Route 17 ridesharing behavior after the earthquake repairs were completed, the questionnaires asked commuters about changes resulting from ridesharing, reasons for not sharing the ride, and incentives to increase ridesharing.

Changes Resulting from Ridesharing

Respondents to the second survey who continued to rideshare after the earthquake were asked to select the biggest changes experienced as a direct result of ridesharing. From a list of six options, respondents could choose as many as they wanted. The selected changes are shown in Figure 4 by the order of frequency. It should be noted that the over-the-hill commute is significant—at least 13 mi one way over the Santa Cruz Mountains.

Of the respondents to the second survey who continued to share the ride in January 1990, 22 percent cited saving money and 22 percent cited less wear and tear on their vehicle as direct changes produced by ridesharing. The cost of driving alone versus cost savings of ridesharing seems to be the major recurrent incentive towards ridesharing.

Twenty-one percent cited less stress as attributable to ridesharing. This might be especially true for Route 17, which is known for its steep grades, sharp curves, limited sight distances, and narrow shoulders.

Eighteen percent cited environmental preservation, 13 percent cited better use of time, and 4 percent cited meeting new people as changes ascribed to ridesharing.

Reasons for not Sharing Ride

Of the respondents who never shared a ride before the earthquake, an irregular work schedule was cited by 56 percent as the primary reason for driving alone. Other inhibitors to ridesharing included needing the car for work (16 percent), not knowing any potential pool partners (10 percent), the inconvenience of carpooling (9 percent), personal preference (5 percent), miscellaneous reasons (4 percent), and ridesharing takes too long (0.2 percent).

The inability to rideshare because of an irregular work schedule is a barrier to ridesharing echoed by many commuters in this survey as well as in other studies. However, work hours may not be as irregular or unmatchable as perceived.

One survey respondent commented, "I work 6 a.m. to 3 p.m. Who would share such odd hours?" Actually, in the

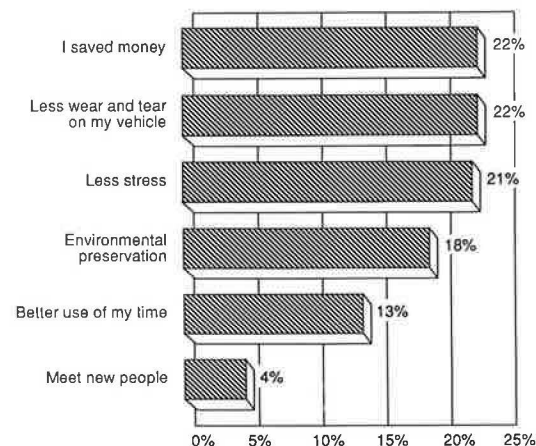


FIGURE 4 Changes resulting from ridesharing on the basis of 481 responses.

current Santa Cruz Share-A-Ride data base of 868 registrants, at least 10 percent stated that they actually worked or preferred the hours of 6 a.m. to 3 p.m. or had flexible enough schedules where they might be able to work that shift.

The second highest inhibitor to ridesharing indicated by survey respondents was the need for a car for work purposes. Specific respondents' comments implied that several of these individuals were involved in sales or service-oriented professions that required the use of their personal vehicle. However, needing a car for work does not exclude these individuals from ridesharing, because many current drivers of carpools can use their vehicle during the day while their passengers do not.

Several respondents indicated that they might be willing to leave a vehicle over the hill for workday purposes and then commute over Route 17 using alternative transportation, like train service, if that service were attractive and available.

Biggest Incentive to Resume Ridesharing

Several second-survey respondents who stopped ridesharing after Route 17 reopened to normal operations were asked to select the greatest incentives needed to renew their interest in ridesharing. From a list of 10 options, respondents could choose as many as they wanted. The selected changes are shown in Figure 5 by the order of frequency.

Several respondents did not answer this question and included handwritten notes beside this question indicating that no incentives would be large enough for them to rideshare again. The questionnaire should have included that response as an option.

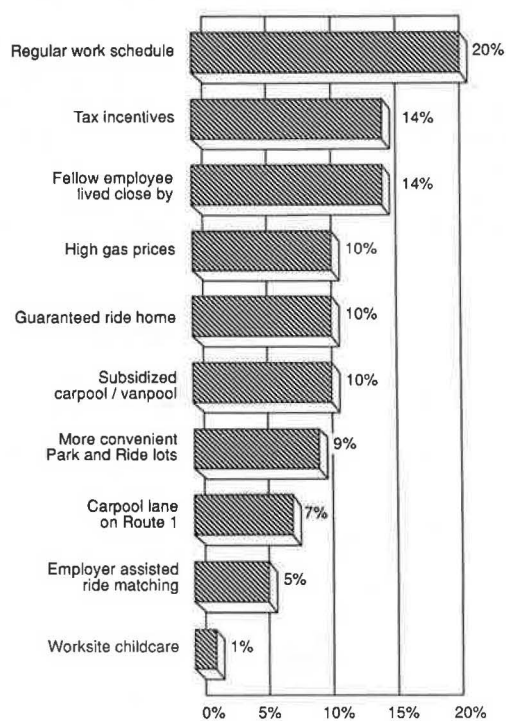


FIGURE 5 Incentives needed to resume ridesharing on the basis of 174 responses.

Of the second survey's respondents who stopped ridesharing after the carpool restrictions were lifted, 20 percent indicated regular work schedules, 14 percent cited tax incentives, 14 percent cited if a fellow employee lived close by, 10 percent cited high gas prices, 10 percent cited a guaranteed ride home, and 10 percent cited subsidized carpools or vanpools as incentives to resume ridesharing. Another 9 percent cited more park-and-ride lots, 7 percent a carpool lane on Route 1, 5 percent employer-assisted ride matching, and 1 percent worksite childcare as incentives to start ridesharing again.

According to these results, the broader implementation of flexible work hours to accommodate ridesharing, as was allowed by some employers temporarily after the earthquake, would assist in car- or vanpool formation. Bringing potential carpool partners together through small, focused home- or work-end match groups should also increase ridesharing.

To supplement more flexible work hours and improved information exchanges between potential carpool members, company vehicles should be made available for midday business and guaranteed transportation should be made available for individuals who must work late (or leave early) and miss their car- or vanpool.

NEED FOR ADDITIONAL RESEARCH

Despite the limitations in the methodology of the two surveys, the survey results indicate a potential promising hypothesis for further research: a high proportion of long-distance commuters will continue to rideshare given an adequate impetus to start sharing the ride in the first place. It would be necessary to conduct a statistically significant random sample survey of long-distance commuting population to test this hypothesis. Because of emergency conditions under which this study was conducted, such an effort was beyond the scope of this study.

CONCLUSIONS

Pre- and postearthquake rideshare frequency and Highway 17 commuters' attitudes about ridesharing have been examined through the analysis of surveys issued before and after enforced carpooling over Route 17 was in effect.

Although the number of the survey responses was small and there was no attempt to do a representative sample of Highway 17 commuters, some clear conclusions about the behavior of survey respondents can be made. The results of the two surveys indicate that mandated ridesharing over Route 17 did influence the ridesharing patterns of a number of survey respondents after the highway returned to normal operations. Of the second-survey respondents who did not rideshare before the earthquake, more than half (57 percent) continued to rideshare after carpool restrictions were lifted. Furthermore, more than half of these carpool converts shared a ride regularly every work or school day.

Several rideshare marketing implications can also be derived from the surveys' results. Increasing the awareness of the cost effectiveness of ridesharing versus driving solo remains a key factor in influencing commuters to leave their car at home. Cost savings was cited by survey respondents as

the strongest incentive to continue carpooling and as the largest change resulting from ridesharing. Additional cost savings was also a popular incentive for solo drivers to switch to ridesharing.

Increasing the cost savings of ridesharing can be accomplished through encouraging employer subsidization of carpools or vanpools, instituting rideshare tax credits or increasing the costs associated with driving alone.

This survey study suggests that commute alternative programs that focus on getting commuters to try ridesharing, transit, telecommuting, or other alternatives to driving alone have a potential for success in encouraging them to continue using these commute alternatives. This "try-it-you'll-like-it"

approach can provide an incentive for commuters to rideshare on a trial basis similar to the postearthquake temporary enforcement of ridesharing over Route 17.

The information presented suggests that different approaches should be taken to address different groups of commuters. The Loma Prieta earthquake was the impetus for some individuals to modify their commute modes and patterns and start to rideshare. To persuade other commuters to use alternative transportation and leave their cars at home requires a collection of creative strategies to effectively counter their inclination to remain solo drivers.

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