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# **Commuter Response to Traffic Information on an Incident**

**Ronald Koo, Youngbin Yim**

**California PATH Working Paper  
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**COMMUTER RESPONSE TO TRAFFIC INFORMATION  
ON AN INCIDENT**

**A Survey of Southbound Commuters on US-101**

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## **ABSTRACT**

This paper presents and discusses how traffic information is obtained and how it affects travel behavior when a major freeway is congested. Immediately following a major highway incident south of San Francisco which caused congestion, a telephone survey was conducted of commuters who utilize the affected corridor of highway. The behavior of commuters before and during their commute at the time of the incident was determined, including obtaining traffic information and how the information influenced changes in route, mode of travel and departure time. The results of the survey suggest that commuter travel behavior is largely unaffected by individual incidents of congestion. Furthermore, although a fair proportion of commuters do obtain traffic information, they do not often modify their travel behavior in response. This study is one of several which collectively will provide insight into how travel behavior changes over time and allow us to assess the impact of the TravInfo traveler advisory telephone system (TATS) in the San Francisco Bay Area.

**Keywords:** travel behavior traffic information

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## **EXECUTIVE SUMMARY**

This working paper presents the preliminary results of the initial survey of commuters in the San Francisco Bay Area. As part of the TravInfo evaluation study, a case study was conducted among southbound commuters response to traffic information on incidents along US-101 south of San Francisco. The purpose of the study was to assess the effects of traffic information on a selected corridor in the presence of incidents. The selected corridor is a 16-mile segment of US-101 on the San Francisco Peninsula between the interchange of US-101 and SR 92 to the south and the interchange of US-101 and I-280 to the north. This segment of US-101 was selected based on the characteristics of: 1) the presence of heavy traffic congestion and commuter traffic, 2) availability of alternate modes and routes, and 3) availability of aggregate traffic data.

Survey participants were identified through the Caltrans Origin and Destination license plate surveys of southbound traffic on US-101. A panel survey approach was chosen to assess changes in travel behavior over time. A panel was created of 563 southbound commuters whose primary commute route includes the selected US-101 freeway segment during morning peak hours between 6 - 10 AM.

On July 10, 1997, a multiple-vehicle injury accident on southbound US-101 in San Mateo blocked the left two of four lanes, causing a backup of about five miles. The incident took over 30 minutes to clear and had a significant effect on traffic conditions. Beginning on the evening of the incidents and continuing for four days, telephone interviews were conducted with the panel participants. 107 interviews were completed with southbound commuters. Descriptive statistical methods were used to determine distributional profiles and association between variables.



The following are the summary findings of the southbound commuter survey.

- Over 95% of the survey participants were commuters traveled on US-101 to a major employment center, Silicon Valley. Nearly three-quarters (72.6%) of the southbound commuters had flexible arrival time.
- Despite the benefits of obtaining travel information, only 51.4% of respondents obtained information prior to leaving for their commutes, and of those who heard of congestion, 70.8% did not alter their departure time, mode of travel, or route. Most people learned about the incident from commercial radio broadcasts.
- Actually encountering the congestion had only a moderate effect on how commuters planned to obtain traffic information in the future: 50% said they were no more likely to obtain traffic information during their commute as a consequence of the congestion, and 65.7% said they were no more likely to obtain information before their commute.
- Of those who obtained traffic reports, 47.2% were unsure as to whether the information actually saved them travel time, which might suggest a reason for why so many commuters did not plan to receive more traffic information in the future. However, statistical analysis indicates that no such correlation exists, at least within this sample.

Ultimately, the results of the survey suggest that individual incidents do influence travel decisions to some extent if relevant information was obtained, yet a fair number of participants did not alter their trip. The net effect of the incident information was that 13.3% of the travel changed on the southbound traffic. The survey showed that the incident reports had the greater impact on departure time and route change than the impact on mode shift to mass transit from

driving. Similar results were obtained in previous studies conducted in the Los Angeles [1] and the Bay Area [2].

Although changes over time in traveler behavior cannot be determined until subsequent studies are completed, this study establishes the initial travel behavior tendencies of the selected survey panel. There is apparently much room for improvement in obtaining traffic information and, more importantly, using it.

It does not seem to be the case that commuters do not care about being slowed down by traffic congestion; rather, the likely explanation for the lack of response to information is that commuters generally do not believe that changing their travel plans will result in shorter travel times. The key, then, to persuading commuters to change their travel behavior in response to traffic information may lie in informing them of travel time or delay, information sources like TravInfo, and the potential benefits of alternative travel options.

## 1. INTRODUCTION

TravInfo is a Field Operational Test (FOT) of an open-access traveler information system for the San Francisco Bay Area. In operation since September 1996, TravInfo disseminates free, real-time traffic information to Bay Area travelers through the landline telephone system, and additional services are also available through a data broadcasting system to value-added resellers. The information is drawn off multiple public and private sources [3]. By dialing the centralized TravInfo telephone number, commuters can also access other multi-modal traveler information services, including transit and rideshare information. Its objective is not only to provide benefits to traffic operations and Bay Area travelers but also to stimulate the deployment of privately-offered advanced traveler information products and services. The TravInfo FOT is sponsored by the Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans).

The evaluation project as a whole includes four major test elements: 1) institutional evaluation, 2) technology assessment, 3) traveler response, and 4) network performance. The institutional element tests the value of public/private partnerships and related issues [4, 5]. The technology element assesses the data collection, integration and dissemination at the Traveler Information Center (TIC), where TravInfo information is managed. The traveler response portion investigates changes in individual travel patterns that result from TravInfo and traveler acceptance of and preference for TravInfo technologies. The network performance evaluation investigates whether TravInfo causes measurable changes in network travel times and transportation conditions.

Within the work plan for the traveler response evaluation is a Target (targeted geographical area) study that will be used to evaluate changes in traveler behavior and to assess the impact of TravInfo on a congested corridor in the presence of incident conditions under which TravInfo impacts/benefits are likely to be greatest. By repeatedly surveying a panel of corridor

commuters, the Target study evaluates the changes in their responses to improved travel information by TravInfo; thus we can calculate the consequent benefits in terms of travel time savings and other performance measures as well as determine profiles of the individuals who acquire traveler information through TravInfo. Traveler responses will then be tied to the network performance evaluation. This evaluation will rely on both the Target survey and field measurements of actual traffic conditions in the selected corridor to simulate the effects of real-life incidents.

The simulations will provide aggregate delay estimates for various incidents after TravInfo. The Target study is one of four traveler behavior evaluations—Broad Area, Target, Value-Added Reseller (VAR) customer and Traveler Advisory Telephone System (TATS)—all of which employ a survey methodology. The Broad Area study assesses the impact on the entire Bay Area traveler population; the VAR customer study assesses the impact on travelers with Advanced Traveler Information System (ATIS) devices; the TATS study assesses the impact on travelers who acquire TravInfo information through the telephone. The results of the first of six planned Target surveys are discussed in this paper. The first Target survey was conducted among southbound commuters on US-101 south of San Francisco.

An overview of previous related studies is presented in Section 2. A discussion of the methodologies used for the survey and data analysis is in Section 3. The key findings of the survey are then presented in Section 4 and a summary is in Section 5.

## **2. PREVIOUS STUDIES**

Over the past few years, several studies have addressed issues pertaining to commuter travel decisions during incidents. A study at the University of California at Davis investigated commuter route choices based on incidents relating to radio traffic reports in the Los Angeles metropolitan area [1]. Surveying two waves of morning commuters (in 1992 and in 1993), the

study found that commuter travel behavior is influenced by traffic reports on route choice but depends on perceptions of traffic information, freeway use, commute distance, gender, and the level of education. The study found that men and women behave differently; more men listen to traffic reports en route than women do; women more often take an alternate route or change departure time than men. In the Los Angeles metropolitan area, 36.5% of the survey participants listen to traffic reports before leaving home and 51.2% listen en route. Approximately 60% listen to reports pre-trip or en route. These results were similar to the study of Bay Area commuters in 1995 [2]. Los Angeles commuters tend to listen to traffic reports when they expect traffic problems in bad weather. Commuters' route choice is influenced more by observation on traffic congestion than by radio traffic reports.

Similar research on the travel behavior of Bay Area commuters was conducted in 1993 by surveying morning and afternoon commuters on the Golden Gate Bridge [6, 7]. Using the stated preference method, the study explored the potential use of ATIS in pre-trip and en route travel choices. The study found that when people became aware of an incident prior to departure, they expect to have travel time about a half hour longer than usual, but the actual delay was somewhat shorter. Of those who learned about congestion pre-trip, 45% maintained their original travel plan. Of those who altered the travel plan, 37% changed departure time, 21% took an alternate route, 2% shifted to public transit and 2% canceled the trip. In en route travel choices, the study showed that commuters who encountered congestion based on an incident expected about a 20 minute delay but experienced longer delay. Most drivers who had an option to take an alternate (20%) in fact did so but half of them eventually returned to the original route before completing the trip. Only 0.5% took public transit though 3.5% had an option to take it. The study found that people were reluctant to follow travel advice mainly because of their behavioral inertia. Accurate delay time information may influence travelers to a greater extent.

In 1996, researchers at the University of Texas at Austin investigated path-switching decisions by commuters in response to real-time traffic information using a multinomial probit model. The study found that the departure time and route-change decisions are predicated on the expectation of an improvement in travel time that exceeds a certain threshold depending on travel time to the destination and the importance of perceived information quality on user decisions [8].

A study of commuters on the Tokyo Metropolitan Expressway showed that taking an alternate route depends on drivers' perception of how much of travel time savings they can gain by obtaining traffic information [9] and on the experience of individual drivers [10].

Although these studies have dealt with the general effects of traffic information on changes in commuter behavior, they have not focused on the impact of traffic information on a selected corridor in the case of a specific incident. The present study looks at travel decisions based on a specific incident and how commuters made travel decisions based on incident information that they received.

### **3. METHODOLOGY**

To understand the effects of incident information on travel decisions, a corridor that offers several travel options was selected. The selected corridor for the Target surveys is a 20-mile segment of the US-101 corridor between the interchange of US-101 and SR-92 to the south and the interchange of US-101 and I-280 to the north (Figure 1). This segment was selected because:

1. It offers strong transit alternatives: Caltrains and SamTran.
2. There are alternate routes in the corridor that can serve as relievers in case of incidents: I-280 and parallel arterials.
3. Updated traffic data is now available: Caltrans District 4 recently completed installation of loop detectors.

4. This segment of the corridor is classified as one of the most congested and high accident corridors in the San Francisco Bay Area [11].
5. On and off ramps are easily identifiable for the network performance evaluation.
6. The Target study can benefit from an on-going Bay Area Origin and Destination (O & D) study [12].

**Figure 1. Selected segment of the US-101 corridor and the incident location**

### **3.1 Survey Panel Selection**

With the corridor selected, a panel survey methodology was employed to assess changes in travel behavior over time. The panel was to consist of people who regularly used the US-101 freeway segment during morning peak hours between 6 and 10 am. The first panel survey was one of six to be conducted in response to major incidents during the operational phase of the TravInfo FOT.

In September 1996, a panel of southbound and northbound morning commuters and frequent travelers on the selected corridor was recruited by Caltrans from the O & D survey of the US-101 corridor. The Caltrans O & D survey employed a video assisted (license plate) method to create an address file from the California Department of Motor Vehicles. Six video cameras were placed over the Oyster Point overpass (south of 3Com Park), recording license plate numbers on the first three (of four) lanes in each direction on September 19, 1996 from 6 to 10 am. Using the address file, Caltrans sent out a mail-back survey questionnaire to 12,000 households of southbound travelers and 10,000 households of northbound travelers requesting participants for telephone interviews about using the US-101 corridor. Of these, 563 southbound and 526 northbound commuters agreed to participate.

### **3.2 Incident Selection Criteria**

The incidents to be used had to satisfy the following criteria:

1. Must be located within the corridor.
2. Must have an effect lasting at least 30 minutes to ensure that a reasonable percentage of the population using the corridor is affected.
3. Must have a significant effect on traffic conditions, blockage of at least one lane on US-101 in a bottleneck, at a location and time where traffic normally is close to saturation.
4. Must not be “catastrophic” (e.g., cannot block entire freeway for many hours).



The duration of the effect and the number of lanes being closed were determined based on historical data analyses on the accident and incident rates.

### **3.3 Survey Questions**

The incident survey was designed to obtain the following information from the respondents:

#### *Incident-related questions*

- Source and content of traffic information received prior to and during commute (if any)
- How and why the traffic information did or did not affect respondent's departure time, mode of transportation and/or route
- Where congestion was encountered on US-101, if at all, and respondent's actions taken in response to congestion
- What alternate route was taken
- To what extent the incident has influenced respondent to obtain travel information before and/or during commute
- To what extent the traffic information obtained saved or cost time
- Respondent's perception of greatest benefits received from traffic information obtained

#### *Respondent Behavior*

- How frequently respondent typically changes departure time, mode of travel and/or route
- Respondent awareness and use of TravInfo
- How frequently respondent uses radio traffic reports before and during travel and television traffic reports

#### *Demographic Profile*

- Age
- Sex

- Race/ethnicity
- Occupation
- Whether or not working hours are flexible
- Education completed
- Household income
- How long respondent has lived in the Bay Area
- Number of cars in household
- How many licensed drivers in household

### **3.4 Survey Data Analysis**

Descriptive statistical techniques were used to determine distributional profiles of the sample. In some cases Chi-square and t-tests were used to compare means and proportions of responses. Bivariate and multivariate techniques were also used to determine relationships between variables. Binomial logit models were used to estimate factors affecting travel decisions.

## **4. SURVEY RESULTS**

The results presented in this paper are based on the survey of southbound commuters on US-101. US-101 is the primary route to Silicon Valley, a major employment center of the electronic and computer industry.

### **4.1 The Incident**

On July 10, 1997, an accident located on the selected corridor was reported at 7:39 am, producing effects that satisfied the predetermined criteria. A multiple-vehicle injury accident on

southbound US-101 in San Mateo blocked off the left two of four lanes, causing a backup that stretched about five miles. The accident scene was cleared by 8:17 am; however, a stalled semi-truck worsened the congestion situation for another 20 minutes.

Beginning on the evening of July 10, telephone interviews were conducted using a computer-aided telephone interview (CATI) system. All 563 southbound commuters who agreed to participate were contacted. Within three days of the accident, the interviews were completed. Since the O & D database of addresses and phone numbers was not gathered at the time of the accident, the survey was limited to include only those who were traveling southbound on this stretch of US-101 at the time of the accident and consequent congestion.

106 interviews were completed. The interview process was terminated after three days following the incident because it was believed that people might not remember clearly how they changed their behavior based on traffic information. Repeated calls were made up to five times. 36.9% of the sampling pool was unusable because of disconnected lines (19.5%) and business phone numbers (17.4%). Considering only those who answered the phone calls, a 53.5% response rate was obtained. The response rate was computed based on the ratio between the number of people who participated in the interview and the total number of people contacted. The interview took 14.5 minutes on average.

The survey results are presented in four parts: 1) sample characteristics, 2) traveler response to incident information, 3) Typical Respondent Behavior and TravInfo, and 4) modeling travel changes.

## **4.2 Sample Characteristics**

The survey participants were, on the whole, well-educated and financially well-off: all had high school diplomas, 75.5% were college graduates, 34.9% had gone to graduate school, 32.1%

reported household incomes of at least \$100,000. A likely explanation for these sample characteristics is that a large segment of commuters traveling southbound in the mornings on this stretch of US-101 are heading for work at relatively high-paid jobs in Silicon Valley. 94.3% of the panel was traveling to work that morning.

Compared to the Caltrans' Origin and Destination (O & D) survey, the age group between 45 - 64 in the sample was somewhat over-represented. When the survey data were weighted by the age distribution of the O & D survey, a small variation, between 1- 1.5%, was found between the weighted and unweighted samples. Therefore, the results presented in this paper are based on the analysis of the unweighted samples.

### **4.3 Responding to Traffic Information**

Since the purpose of this Target survey was largely to analyze how traffic information affects traveler behavior, there are two non-exclusive categories by which the survey participants who listen to traffic reports may be classified: those who received traffic information and heard of congestion before leaving home and those who received traffic information and heard of congestion while driving. Upon hearing of congestion before leaving home, a traveler can choose among any of three categories of travel change to try to avoid traffic: change in departure time, change in method (mode) of travel and change in route. Those who heard of the congestion only after leaving home usually would have only the option of changing their route.

Traffic information has some influence on the travel behavior of those who receive it before leaving home. 51.9% of survey participants recalled receiving a traffic report before leaving home the morning of the incident, of which 45.4% (23.6% of the total sample) recalled hearing of congestion on US-101 during these pre-departure reports (Table 1). Of this category, 72% did not alter their travel in any way.

**Table 1. Obtaining and utilizing the incident information on US-101 southbound**

Pre-trip	N=106	
Listened to traffic reports	51.9	
Recall hearing about congestion	23.6	45.6% of those who listen to traffic reports
Changed travel plan Changed departure time 1.9% Changed departure time & mode to transit 0.9% Changed mode to transit 0.9% Changed route 2.8	6.5	28.0% of those who heard of congestion
En route		
Continued to listen to traffic reports	37.7	72.7% of those who listened to pre-trip reports
Continued to listen to reports among those who heard of congestion	11.3	48% of those who heard of congestion pre-trip
Listen to en route traffic reports only	35.7	
Recall hearing about congestion en route only	28.3	
Changed route based on incident information	6.6	
Changed route by observation	5.7	
Summary		
Did not listen to reports at all	16.3	
Listen to pre-trip reports only	7.2	
Listen to en route reports only	35.7	
Listen to both pre-trip and en route reports	40.8	84% of this group did not changed route
Route change based on incident report - total	9.4	

Looking more closely at how commuters could have changed their travel plans, only 12% of this category changed their departure time as a result of receiving the report of congestion. Of those who had the information on congestion but did not change their departure time, 28.6% chose alternate routes; 47.6% did not change because they did not believe it would help.

Only 8% of the commuters who heard of the congestion before leaving decided to change their mode of travel to public transit from driving. Of those who did not change their mode of travel, 27.3% cited the explanation that mass transit is too inconvenient and 36.4% said there was no transit service accessible. And finally, of those who heard of congestion before leaving home, only 16.7% avoided US-101 to any extent by taking an alternate route. One third of those who did not change their routes did not believe an alternate route would be faster (33.3%) and 26.7% believed that the traffic would clear shortly, and 26.7% did not need to concern about the traffic

problem since the congestion was already cleared when they were traveling on US-101 southbound.

Nearly half (48%) of those who received traffic reports on US-101 before leaving home continued to receive them while commuting and about one third of survey participants obtained traffic reports after starting their trips. Of those who recalled hearing of congestion on US-101 while commuting, 23.3% decided to take alternate routes, and of those who actually encountered congestion on US-101 (including those who also received reports of congestion), 15.1% switched to an alternate route.

Cross-tabulation tables showed that 16.3% of the participants did not listen to traffic reports at all at the time of the incident, 7.2% listened to pre-trip reports only, 35.7% listened to en route reports only, and 40.8% listened to pre-trip and en route reports. A three-way nested table showed that 84.1% received both pre-trip and en route information but did not change routes. Interestingly the tables indicated that 4% of those who changed routes did not have any prior knowledge of traffic congestion. Fewer than half of those who received reports of congestion on US-101 could recall that the reports stated the cause of the congestion to be a multiple vehicle accident (45.2%).

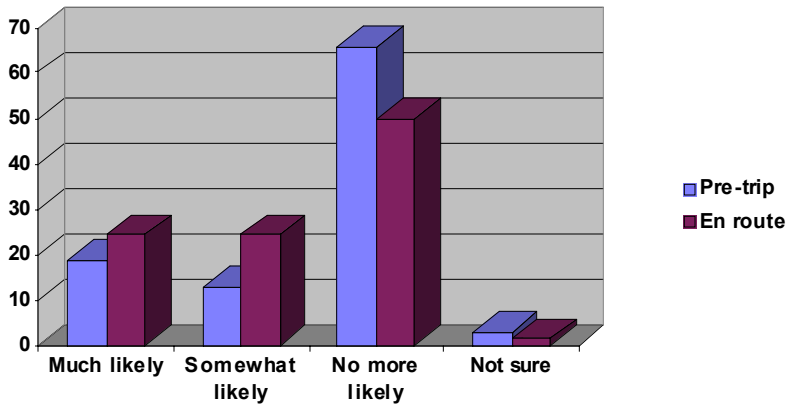
On average, respondents said this commute typically takes 45 minutes; during the morning of the incident, respondents on average said the commute took 9.8 minutes longer. Despite the slowdown, 65.7% of respondents who encountered congestion that morning said they were no more likely to obtain travel information prior to departing as a direct consequence of the traffic, and 50% said they were no more likely to obtain travel information during their commute either. Statistical analyses revealed that there were no significant correlations between demographic characteristics and the increased likelihood of obtaining traffic information. More specifically, age, income, and education did not seem to correlate with how much more likely respondents were to obtain traffic information as a consequence of the congestion. Age and the likelihood of

obtaining en route traffic information were marginally correlated (Spearman's  $p = .08$ ) to age. As expected, the likelihood of obtaining traffic information before leaving home was significantly related to the likelihood of obtaining information during commute (Spearman's  $p < .001$ ).

Commuters do not appear to be very responsive to traffic information in the morning of incident. A possible explanation for the lack of response to information is that commuters are unsure if changing behavior would ultimately result in shorter travel times. Interestingly, 47.2% of all respondents who obtained traffic reports were unsure about whether they felt the information they received saved them travel time (Figures 2 and 3). Almost 40% (39.3%) said the reports saved them time and 12.4% said they felt the reports actually cost them time. And statistical analysis showed that there was no significant correlation between how commuters actually encountering congestion benefited from obtaining traffic information and the likelihood that they would obtain information in the future. In other words, whether or not traffic information benefited them (travel time savings) that morning did not seem to be significantly related to whether or not they would obtain traffic information in the future. However the test showed that the perception of travel time savings that morning was marginally related to whether they would obtain traffic information after departure ( $p = .07$ ).

**Figure 2. Likelihood of acquiring traffic information based on the subject incident**

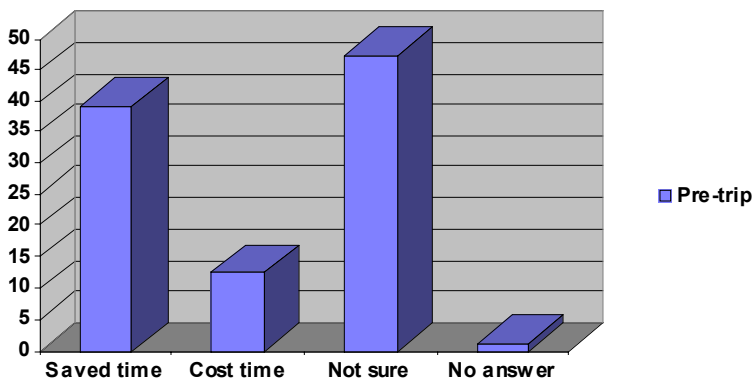
Percent of participants



Likelihood of acquiring traffic information

**Figure 3. Perceived benefits of traveler information**

Percent of participants



Perceived benefits

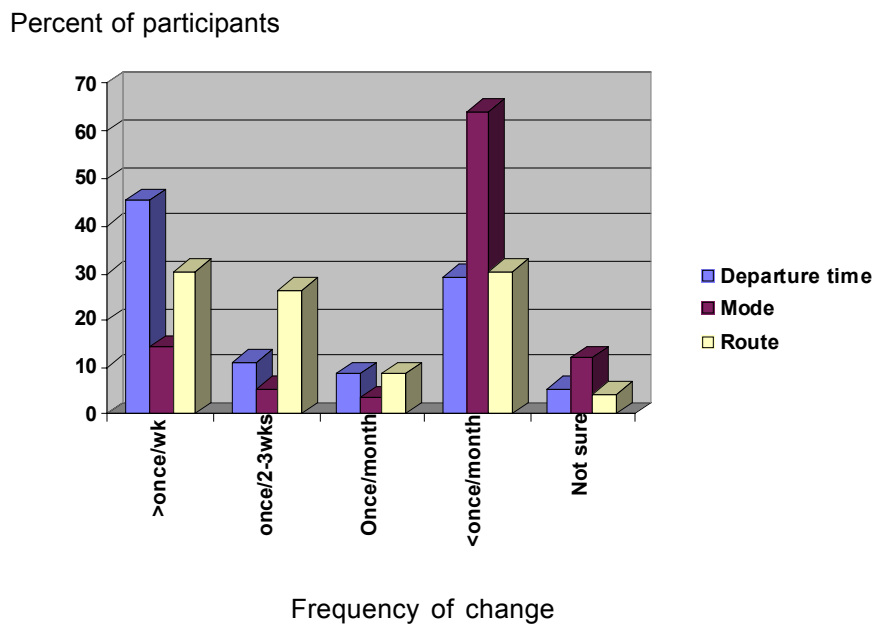
#### 4.4 Typical Respondent Behavior and TravInfo

To determine the typical travel behavior tendencies of the participants, they were asked about how frequently they changed their departure time, mode of travel, and route during the month prior to the interview (Figure 4). Departure time seemed to be the most frequently adjusted variable among the respondents. Of the respondents, 45.3% said they changed their departure



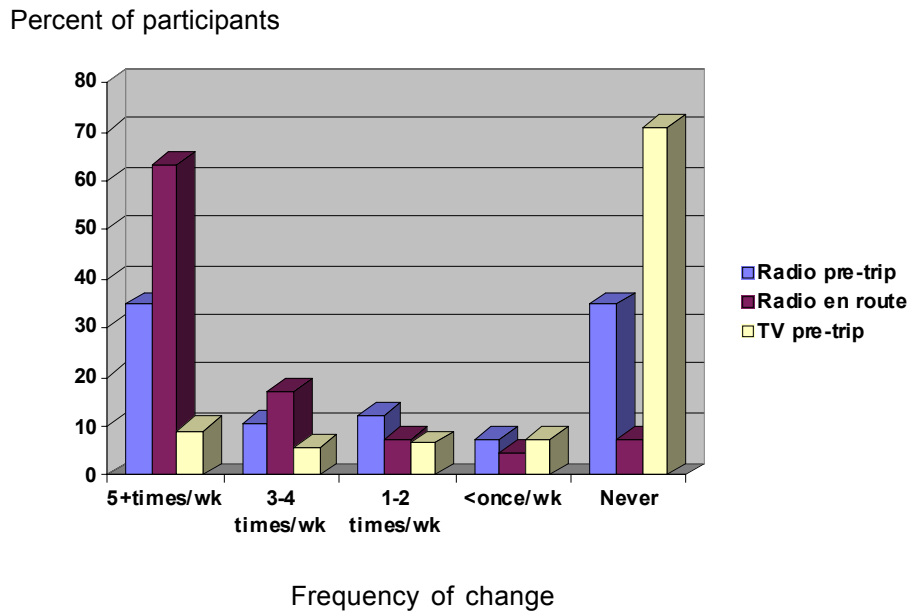
time once a week or more, while 29.2% said they changed less than once a month. Almost one-third (30.2%) said they changed their route once a week or more, and another 30.2% said they changed their route less than once a month. Mode of travel was the least frequently changed variable. Only 14.2% of respondents said they changed their mode of travel once a week or more, while 64.2% said they changed less than once a month.

**Figure 4. Frequency of changing departure time, route and mode of travel during the previous month**



To determine how much traffic information the participants typically receive, they were also asked about how frequently they listen to radio traffic reports prior to and during travel, as well as how frequently they tune into television traffic reports before departing (Figure 5). Of the participants, 63.2% listen to radio reports five or more times a week while driving, 34.6% listen five or more times a week before leaving, and 9.4% tune into television traffic reports five or more times a week. Of the participants, 70.8% said they never watch television traffic reports, while 34.9% said they never listen to traffic reports on the radio before leaving. Only 7.5% said they never listen to radio reports while commuting.

**Figure 5. Frequency of turning into radio and television traffic reports**



TravInfo was unfamiliar to most respondents, and of the few who had heard of TravInfo, none used it with any substantial frequency. Of the respondents, 91.5% of respondents had never heard of TravInfo. Of those recognized it, no one used it more than three times a month and most never used it at all.

### **Modeling Travel Behavior**

The research interest was to identify the primary determinants that would affect route change behavior. The hypotheses were that people who received relevant information would be more likely to change their route and that, in turn, the critical determinant of receiving relevant information would be the perceived quality of information. The assumption was that people would obtain traffic information frequently (at least every day) if they are satisfied with the information. Therefore, the quality can be measured on the basis of the frequency of information obtained. These hypotheses were tested using a series of regression analyses.

The first step of the analysis was whether the frequency of acquiring traffic information during the previous month was a critical determinant in obtaining traffic information on the morning of the incident. The binary logistic regression analysis showed that frequent listeners of radio traffic reports were likely to obtain relevant information on that morning and the frequency of acquiring information was a significant determinant in obtaining information relevant to commute trips (Table 2). However, receiving relevant information prior to departure was somewhat negatively correlated to route change ( $p = -.09$ ). The binary logit model also estimated that route change was influenced by the relevant information obtained en route but was not necessarily influenced by the relevant information obtained at home (Table 3). A possible explanation for this negative correlation though marginal is that many people who heard of the congestion before leaving home believe that traffic would clear shortly. This is supported by the data that over half of the participants who had the relevant traffic information prior to departure said that they believed traffic would clear shortly (27.9%) or in fact experienced no traffic congestion on US-101 southbound traffic (also 27.9%). To influence commuters to make route choices prior to departure, delay or travel time information could have a significant impact on pre-trip route choice decisions.

**Table 2. Logit model estimating the acquisition of relevant en route traffic reports**

Variable	B	Sig	R	Exp(B)
Freq. of obtaining en route info	0.948	0.0356	0.1344	2.5806
Constant	-0.9163	0.0143		
Log likelihood	129.2			
Goodness of fit	98.0			

**Table 3. Logit model estimating route change**

Variable	B	Sig	R	Exp(B)
En route relevant information	1.6812	0.0158	0.225	5.3722
Constant	-2.8126	0.0000		
Log likelihood	68.611			
Goodness of fit	93.964			

## **SUMMARY**

Although changes over time in traveler behavior cannot be determined until subsequent studies are completed, this study establishes the initial travel behavior tendencies of the selected survey panel. There is apparently much room for improvement in obtaining traffic information and, more importantly, using it. Despite the benefits of obtaining travel information, only 51.4% of respondents obtained information prior to leaving for their commutes, and of those who heard of congestion, 70.8% did not alter their departure time, mode of travel, or route. Actually encountering the congestion had only a moderate effect on how commuters planned to obtain traffic information in the future: 50% said they were no more likely to obtain traffic information during their commute as a consequence of the congestion, and 65.7% said they were no more likely to obtain information before their commute. Of those who obtained traffic reports, 47.2% were unsure as to whether the information actually saved them travel time, which might suggest a reason for why so many commuters did not plan to receive more traffic information in the future. However, statistical analysis indicates that no such correlation exists, at least within this sample.

When evaluating their typical travel behavior, apart from the day of the incident, respondents said departure time was the most frequently adjusted variable. Of the respondents, 45.3% said they changed their departure time once a week or more, while 30.2% said they changed their route once a week or more and only 14.2% said they changed their mode of travel once a week or more.

Most survey participants were unfamiliar with TravInfo, and those who were rarely used the service. TravInfo most likely has little overall effect on traveler behavior at present time. Ultimately, the results of the survey suggest that individual incidents do influence travel

decisions to some extent if relevant information was obtained, yet a fair number of participants did not alter their trip. The net effect of the incident information was that 13.3% of the travel changed on the southbound traffic. As found in the Broad Area survey, the incident reports had the greater impact on departure time and route change than the impact on mode shift to mass transit from driving. Similar results were obtained in previous studies conducted in the Los Angeles and the Bay Area.

It does not seem to be the case that commuters do not care about being slowed down by traffic congestion; rather, the likely explanation for the lack of response to information is that commuters generally do not believe that changing their travel plans will result in shorter travel times. The key, then, to persuading commuters to change their travel behavior in response to traffic information may lie in informing them of travel time or delay, information sources such as TravInfo, and the potential benefits of alternative travel options.

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