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16. Abstract <p>This report summarizes the results of the survey of the North Central Expressway automobile and transit panelists conducted in May 1991. The results of the survey indicate that travel patterns in the corridor have not deteriorated significantly since the start of Expressway construction south of I-635. Panelists did report a slight reduction in the frequency of use of the Expressway. In addition, panelists indicated that they were leaving home for work approximately 5 minutes earlier than they did before construction began. However, travel times reported by panelists has not increased, and total tripmaking frequency in the corridor has not changed. Other details regarding the survey analysis and results are presented herein.</p>			
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**U.S. 75 NORTH CENTRAL EXPRESSWAY RECONSTRUCTION:  
NORTHWEST HIGHWAY SCREEN LINE AUTOMOBILE AND  
TRANSIT USER PANELS  
MAY 1991 SURVEY RESULTS**

Report 984-4

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## SUMMARY

The results of the second survey of automobile and transit users in conducted in May 1991 verify that traffic conditions and travel patterns in the North Central Expressway corridor have not deteriorated significantly since the start of Expressway reconstruction south of I-635. The following is a summary of the results of the survey:

1. The total number of trips per day reported by panelists did not change significantly between surveys. There was a small reduction in the number of trips per day on the North Central Expressway. However, actual volume counts taken on the Expressway at the times the surveys were conducted (2) do not indicate a significant reduction in Expressway demand. In addition, the perceptions of the majority of the panelists were that their tripmaking activity had not changed.
2. Overall, panelists reported leaving for work five minutes earlier in May 1991 than in May 1990. The November 1990 survey found panelists leaving for work 10 minutes earlier than in May 1990 (1). This trend may mean that departure times to work may be slowly returning to pre-construction levels. Departure times from work to home did not change between the May 1990 and May 1991.
3. Reported travel times to and from work in May 1991 averaged 2 to 3 minutes less than in May 1990. However, the majority of panelists did not perceive that travel times had changed significantly since the May 1990 survey.
4. Panelists who used the North Central Expressway reported the same small reductions in travel times from May 1990 to May 1991 as panelists who did not use the Expressway. This finding further supports the contention that North Central Expressway construction to date has not significantly affected traffic conditions.
5. The percentages of panelists driving alone, carpooling, and using transit to and from work did not change significantly between surveys.
6. The percentage of the panel who utilized the North Central Expressway to and from work decreased slightly between surveys.
7. The transit panel did not report significant changes in transit trip times. Likewise, rankings of overall transit service quality continue to be favorable, and was perceived to have remained fairly stable.



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## **DISCLAIMER**

This report is not intended to constitute a standard, specification, or regulation, and does not necessarily represent the official views and policies of the Texas Department of Transportation. This report is not intended for construction bidding or permit purposes.

## **INTRODUCTION**

This report documents the results of the second during-construction survey of the panel of automobile and transit commuters using the North Central Expressway corridor in Dallas, TX. The panel was established in May 1990, immediately prior to the start of construction on the North Central Expressway south of I-635 (LBJ Freeway). An extensive license plate survey was conducted on the Expressway and 7 adjacent routes in the corridor at Northwest Highway (Loop 12) to identify users of the corridor. Initial surveys were sent to the addresses of the registered owners of these vehicles. Meanwhile, an on-board rider survey of park-and-ride and express bus routes operated in the corridor by Dallas Area Rapid Transit (DART) was conducted to establish the transit panel. Of 8500 initial surveys mailed to Dallas area residents, 2658 (31.3 percent) were filled out and returned. A large number of these individuals (1825, or 21.5 percent of the original sample) agreed to participate in future surveys. The on-board bus survey resulted in 968 completed questionnaires from bus patrons, of which 581 (60.0 percent) agreed to participate in future surveys.

The first survey of the panel during construction was conducted in November 1990, nearly six months after the start of construction. Questionnaires were mailed to the 1825 automobile panelists and 581 transit panelists identified in the initial survey. Of these, 1049 automobile panel surveys were returned (a 57.4 percent response rate), as were 307 transit user surveys (yielding a 52.8 percent response rate). The results of the November survey were documented in a previous interim report (1).

The second survey was mailed to the panel in May 1991, one year after the start of construction. The purpose of this report is to compare and contrast the results of the May 1991 survey with the responses the panel provided prior to the start of construction (in May 1990). In this way, changes in panel attitudes, perceptions, and behavior can be tracked over time as construction progresses.

## **STUDY METHODOLOGY**

### **Automobile User Survey**

Two-part surveys were sent to 1049 automobile panelists in May 1991. However, 18 were returned (due to changes in panelists' residences), leaving 1031 surveys delivered. Of that total, 687 surveys were returned, yielding a response rate of 66.6

percent (slightly higher than the November 1990 survey). Panelists resided primarily in the north Dallas area and suburbs to the north, although a small fraction were from other parts of the city. The geographic distribution of panelists' residences and work locations was documented in the previous interim report (1).

A copy of the May 1991 survey sent to panelists is included in the appendix. The first part of the survey requested information concerning the panelist's overall tripmaking activity (i.e., the number of trips made per day for various purposes) and daily use of the North Central Expressway. Panelists were also asked directly whether they felt their tripmaking activity had changed since the start of construction. The final section of part 1 of the survey dealt with traffic information sources available in the corridor.

The second part of the survey focused specifically on the trips panelists made to and from work. The survey requested information about:

- Departure times to and from work,
- Travel times to and from work,
- Number and types of intermediate stops on the way to and from work,
- Travel mode,
- Vehicle occupancy,
- Entrance and exit ramps utilized if the motorists traveled on North Central Expressway, and
- Use of other routes (the Dallas North Tollway, various arterial streets) in the North Central Expressway corridor.

In addition to these questions, panelists were asked whether they felt their departure times and travel times had changed since the start of construction. This question allowed the actual changes in motorists responses over time to be directly compared to motorists' perceptions of how their behavior had changed.

## **Transit User Survey**

A one-page survey was sent to transit user panelists. A copy of the transit survey is provided in the appendix. A total of 307 transit surveys were mailed, of which 11 were undeliverable. Of those delivered, 202 transit surveys were subsequently returned, yielding an effective response rate of 68.2 percent (again slightly higher than in the November 1990 survey). The survey requested information about perceived transit

service quality in the corridor and about trip times using transit. As with the automobile panelists, transit panelists were also asked whether they felt the transit service quality and their trip times had changed since the start of North Central Expressway construction.

## **Data Processing**

For both surveys, initial screening questions asked the panelists whether their place of residence or work had changed since the first survey in May 1990. If the answer to one or both of these questions was yes, the data were not used in this analysis. The data will be retained in the database for possible use in the future, and the individual retained as a member of the panel.

Prior to mailing, a unique identification number was marked on each survey. This number was assigned to each panelist in May 1990 so that the responses each individual made in the subsequent surveys could be tracked. This experimental approach increases the statistical strength of the study and provides a method of directly monitoring changes in individual motorist behavior and perceptions over time. After checking the data and eliminating invalid responses, 687 total trip surveys and 586 work trip surveys were matched for subsequent analysis. The lower number of work trip surveys is due to the fact that some panelists work in their home or are retired and thus do not provide data on the work trip survey.

## **AUTOMOBILE SURVEY RESULTS**

### **Daily Tripmaking Characteristics**

#### Total Trips per Day

A summary of the total number of trips per day made by panelists in May 1990 and May 1991 is shown in Table 1. This number includes all trips made by panelists, whether or not they were made on the North Central Expressway. Overall, the average number of each type of trip (i.e., work, school, shopping, etc.) made per day did not change significantly between the May 1990 and May 1991 surveys. Likewise, the total number of trips made per day did not change significantly. However, the average number of trips that were made using the North Central Expressway decreased slightly between surveys. In May 1990, panelists reported using North Central Expressway an average of 1.336

times per day. In comparison, panelists in May 1991 indicated they used the Expressway an average of 1.196 times per day, a 10.5 percent reduction. If one divides the average number of trips on North Central Expressway by the total number of trips reported, it appears that the Expressway is serving a slightly smaller portion of all trips being made per day (46.7 percent of all trips in May 1990 compared to 42.2 percent of all trips in May 1991).

**TABLE 1. COMPARISON OF TOTAL TRIPS MADE PER DAY**

Type of Trip	May 1990	May 1991	Change	% Change
Work	1.089	1.106	+0.017	+1.6
School	0.115	0.147	+0.032	+27.8
Shopping	0.387	0.400	+0.013	+3.4
Eat a Meal	0.459	0.451	-0.008	-1.7
Social	0.257	0.247	-0.010	-3.9
Personal Bus.	0.405	0.380	-0.025	-6.2
Other	0.146	0.104	-0.042	-28.8
TOTAL	2.860	2.837	-0.023	-0.8
Trips on North Central Expressway	1.336	1.196	-0.140*	-10.5

\* Statistically significant at  $\alpha=0.05$  based on a comparison-of-means test.

Actual 24-hour volume data collected by TTI in May 1990 and May 1991 (2) on the North Central Expressway shows a very slight decrease, consistent with the lower number of trips reported by panelists. However, the actual decrease in volumes is much less than the 10.5 percent reduction reported by panelists, indicating that their perceptions may overstate any true changes in their behavior.

## Comparison of Actual Changes Versus Perceived Changes in Tripmaking Frequency

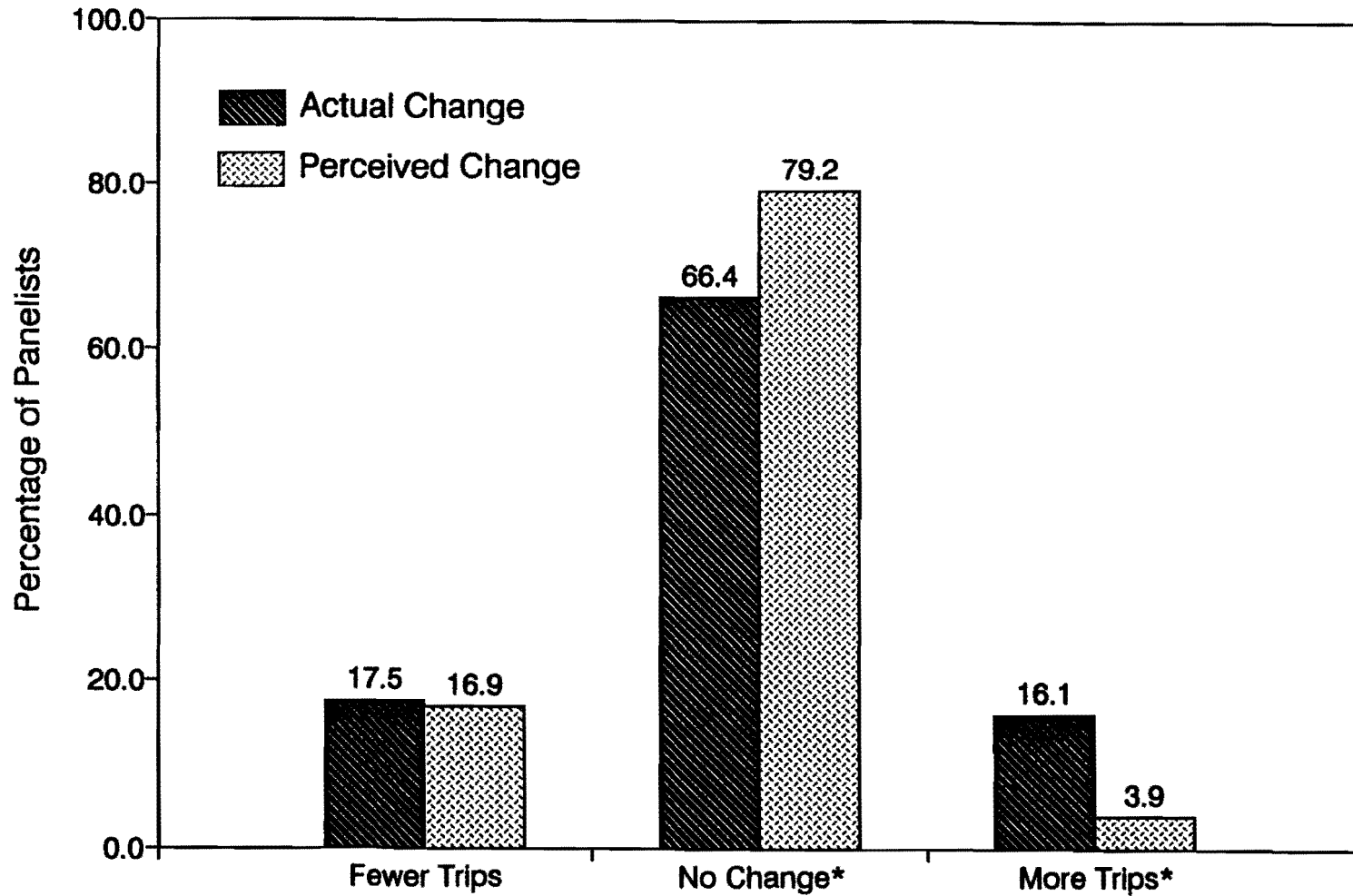
### *Total Trips Per Day*

Motorists were also asked directly on this survey whether they perceived that the total number of trips they made per day in May 1991 was more, the same, or less than the number they made in May 1990. At the same time, the actual change in the total number of trips reported by each panelist in the May 1990 and May 1991 surveys was computed, and grouped in a similar fashion: more trips, the same number of trips (plus or minus one trip to account for slight daily variations in tripmaking activity), or fewer trips. In this way, motorists' perceptions of how their tripmaking frequency had changed since construction began could be compared to the actual changes in frequency they reported in the two surveys. Such comparisons provide insight into how sensitive motorists are to actual changes that occur.

The actual versus perceived changes in total tripmaking frequency (on all routes) are summarized in Figure 1. Overall, 16.9 percent of the panelists believed they were making fewer total trips per day in May 1991 than in May 1990, which is equivalent to the 17.5 percent who actually reported fewer trips in May 1991 relative to May 1990. However, a higher percentage of the panelists perceived that they were making the same number of trips per day (79.2 percent) than actually reported the same number of trips per day (66.4 percent) in May 1991 and May 1990. This difference was statistically significant based on a test of proportions. Likewise, the percentage of panelists who believed that they were making more trips was significantly lower than the number of panelists who actually reported more trips per day in May 1991 than in May 1990 (3.9 percent versus 16.1 percent, respectively).

### *Trips Per Day on North Central Expressway*

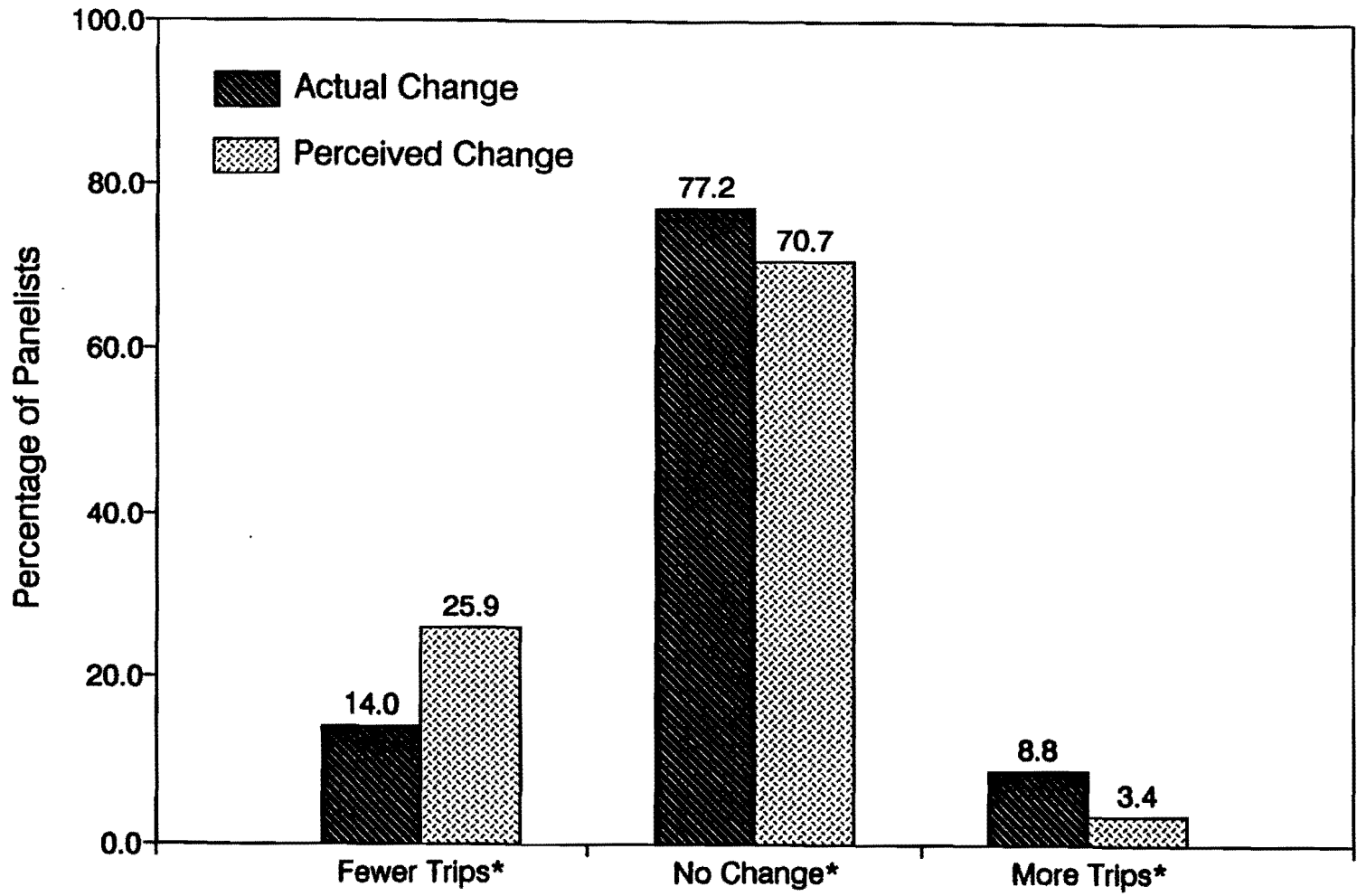
Panelists were also asked whether they felt the number of trips they made per day on North Central Expressway had decreased, remained the same, or increased since May 1990. The actual change in the number of trips reported on North Central Expressway in May 1991 and May 1990 was also determined to compare with panelist perceptions. These comparisons are shown in Figure 2. Motorist perceptions were found to be significantly different from actual changes for all trip frequency categories (fewer trips, same number of trips, or more trips). More panelists perceived that they were making fewer trips (25.9 percent) on the Expressway than they actually reported (14.0 percent). In contrast, fewer motorists perceived that they were making the same number of trips



\* Difference between actual and perceived changes are statistically significant at  $\alpha = 0.05$

Figure 1. Actual versus Perceived Changes in Total Daily Tripmaking Frequency (May 1990 to May 1991)





\* Difference between actual and perceived changes are statistically significant at  $\alpha = 0.05$

Figure 2. Actual versus Perceived Changes in Daily Tripmaking Frequency on North Central Expressway (May 1990 to May 1991)

on the Expressway than actually reported do so (70.7 percent versus 77.2 percent, respectively). Finally, only 3.4 percent of the panelists felt that they were making more trips on North Central Expressway in May 1991 than in May 1990, although 8.8 percent of the panel reported more trips per day on the Expressway in May 1991 than in May 1990. These results suggest that motorists perceived a greater reduction in tripmaking on the Expressway than actually occurred.

## **Work Trip Characteristics**

### Departure Times and Travel Times to and from Work

#### *Overall Panel Responses*

Table 2 summarizes the departure times and travel times reported by panelists for their trips to and from work. As the table illustrates, commuters departed for work about 5 minutes earlier in May 1991 than in May 1990. Meanwhile, the average reported travel time by motorists on their way to work decreased 2.6 minutes, from 29.1 minutes in May 1990 to only 26.5 minutes in May 1991. For the trip from work to home, the median departure time remained constant (5:00 pm). There was also a 3.6 minute decrease in the average work-to-home travel times reported by motorists, from 32.7 minutes in May 1990 to 29.1 minutes in May 1991. Even though these changes are significant from a statistical standpoint, they are small from a practical standpoint. The results suggest that construction is not yet having a major adverse impact upon travel times in the corridor.

#### *North Central Expressway Users versus Non-Users*

To determine whether construction was having a more significant impact upon travel times on the Expressway than on other routes in the corridor, travel times were compared for those panelists who use the North Central Expressway for all or part of the commute versus those who rely completely on other routes to and from work. The panel is made up of about equal numbers of both types of commuters (a 49/51 Expressway user/non-user split for the home-to-work trip, a 47/53 split for the work-to-home trip). Table 3 compares the change in average reported travel times for each group. The average reported travel times in May 1991 were less than those in May 1990 for both users and non-users of the Expressway. Overall, it does not appear that North Central Expressway users are experiencing more dramatic changes in travel time than those not using the Expressway.

**TABLE 2. COMPARISON OF DEPARTURE AND TRAVEL TIME CHARACTERISTICS  
May 1990 versus May 1991**

Characteristic	Home-to-work trip			Work-to-home trip		
	May 1990	May 1991	Change	May 1990	May 1991	Change
Median Departure Time	7:20 am	7:15 am	5 min earlier	5:00 pm	5:00 pm	---
Average Travel Time	29.1 min	26.5 min	2.6 min shorter*	32.7 min	29.1 min	3.6 min shorter*

\* Statistically significant at  $\alpha=0.05$  based on a comparison-of-means test.

**TABLE 3. COMPARISON OF TRAVEL TIMES:  
North Central Expressway Users Versus Non-Users**

	Average Change in Travel Time (Minutes)
Home-to-Work Trip:	
NCE <sup>a</sup> Users	-2.4*
Non-NCE Users	-2.8*
Work-to-Home Trip:	
NCE Users	-4.1*
Non-NCE Users	-2.9*

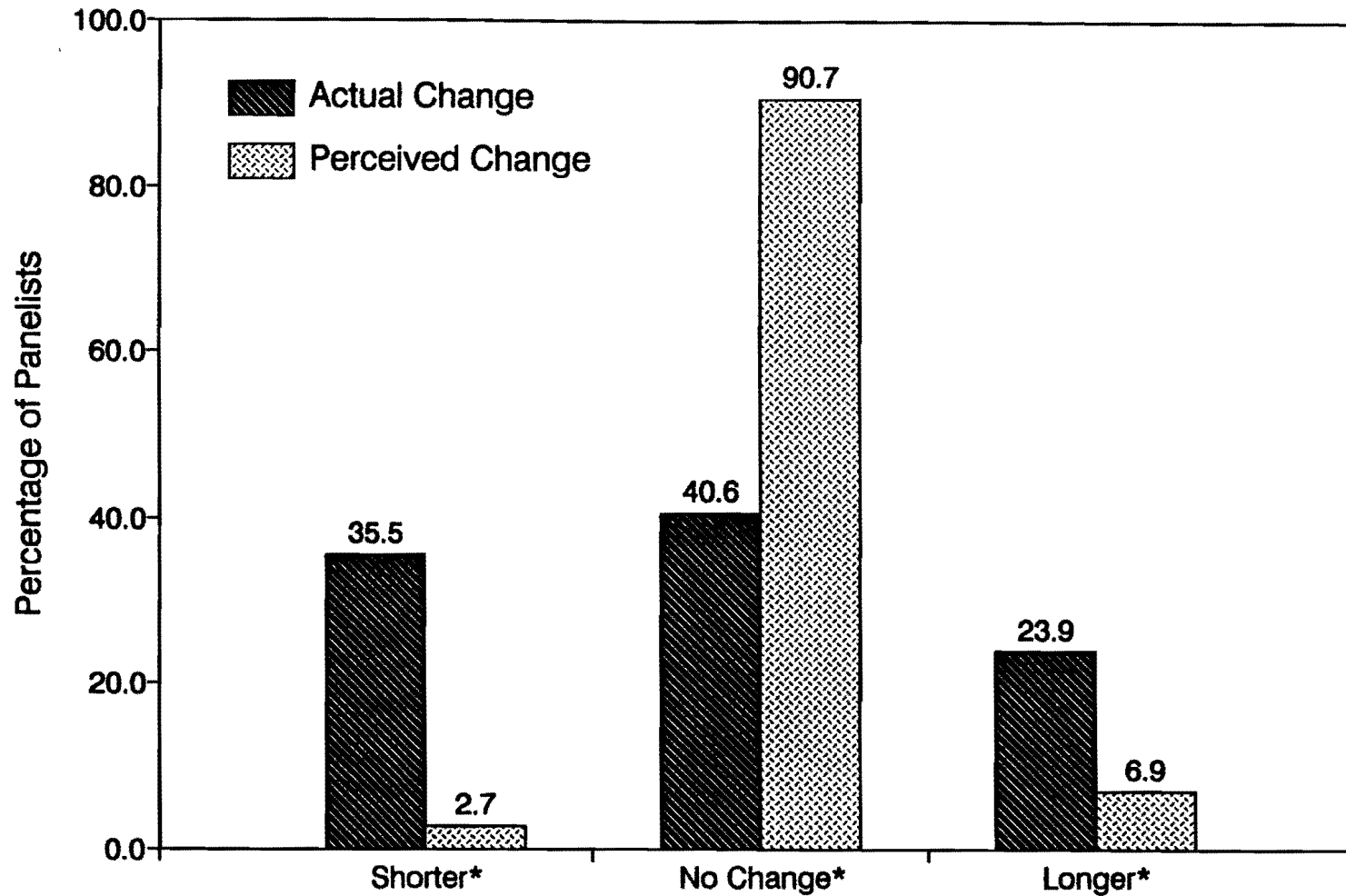
<sup>a</sup> NCE = North Central Expressway

\* Statistically significant at  $\alpha=0.05$  based on a comparison-of-means test.

*Actual Versus Perceived Changes in Work Trip Travel Times*

As was done for overall tripmaking frequencies, panelists were asked directly how much construction has impacted their travel time for trips to and from work. These responses were categorized according to whether they felt their travel times in May 1991 were shorter, the same, or longer than in May 1990. The actual change in travel times reported by each panelist in the two surveys was also computed and categorized in the same manner. Because experience has shown that motorists tend to round their travel time estimates to the nearest 5-minute interval, differences in travel times that were 4 minutes or less were grouped into the "no change" category.

Figure 3 illustrates the percentages of motorists who perceived that their home-to-work travel times were shorter, longer, or had not changed since May 1990, as well as the percentages of the panelists whose actual changes in reported travel times were shorter, longer, or had not changed. The overwhelming perception of motorists is that travel times have not changed (90.4 percent responded in this manner). Only 2.7 percent of the panelists believed that the home-to-work trips were shorter, and 6.9 percent believed they were longer. In contrast, actual changes in reported travel times were almost evenly divided among the three different categories (35.5 percent of the reported times were shorter, 40.6 percent were unchanged, and 23.9 percent were longer). The



\* Difference between actual and perceived changes are statistically significant at  $\alpha = 0.05$

Figure 3. Actual versus Perceived Changes in Home-to-Work Travel Times (May 1990 to May 1991)

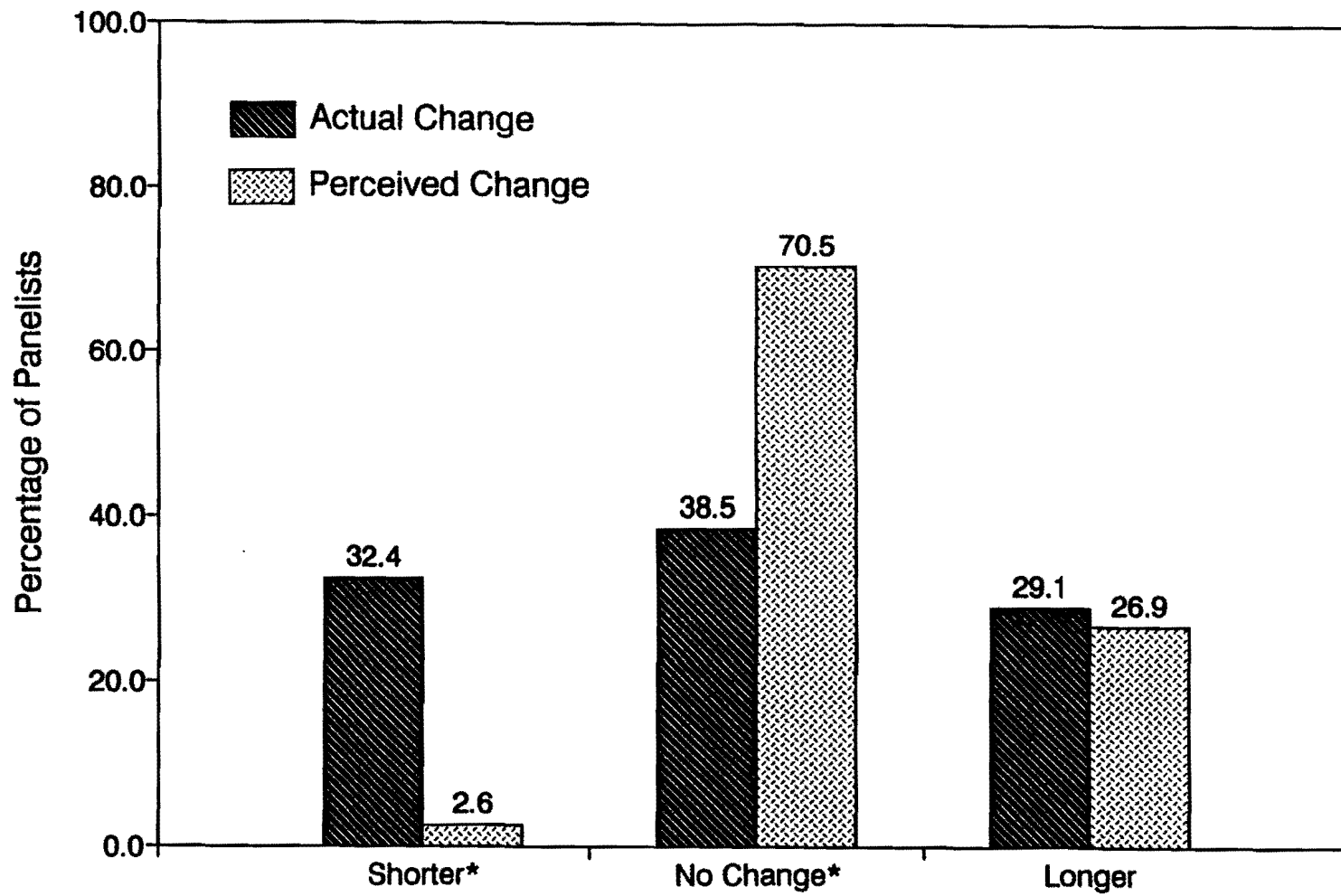
differences between the percentage of actual and perceived changes were statistically significant for each category (using a test of proportions).

Figure 4 compares the actual and perceived changes in the work-to-home trip travel times. A significant percentage (29.1 percent) of the panelists felt that their travel times were longer in May 1991 than in May 1990. The percentage of panelists who actually reported longer work-to-home travel times in May 1991 was 26.9 percent, not statistically different from panelist perceptions. Most panelists (70.5 percent) felt their travel time had not changed, significantly different than the 38.5 percent of the panelists who reported identical travel times in the two surveys ( $\pm 4$  minutes). Only 2.6 percent of the panelist believed they were experiencing shorter travel times in May 1991 than in May 1990. In contrast, 32.4 percent of the panel reported work-to-home travel times in May 1991 that were 5 or more minutes shorter than in May 1990.

In summary, the majority of panelists perceived that travel times to work and returning home had not changed since the start of construction. When actual changes in travel times were compared, however, the panelists were fairly evenly distributed among the shorter, no change, and longer travel time categories. It must be remembered that the question regarding perceptions of travel time changes is likely based on the panelist's judgement of typical travel times, whereas the actual changes of travel times are based on times reported for a particular day. Variations in travel conditions from day to day can be expected to cause travel times to vary even under normal situations. The fact that the actual changes were fairly evenly distributed among the categories suggests that the changes recorded are due primarily to these random daily variations, and that construction in general has not resulted in a dramatic shift towards longer travel times.

#### Intermediate Stops to and from Work

Tables 4 and 5 summarize the average number of intermediate stops panelists reported for the home-to-work and work-to-home trips, respectively. There was not a significant change in the frequency of stops made either to or from work. Panelists continued to make slightly more than twice as many stops during the work-to-home trips than for the corresponding home-to-work trip (0.871 stops/trips versus 0.380 stops/trip, respectively).



\* Difference between actual and perceived changes are statistically significant at  $\alpha = 0.05$

Figure 4. Actual versus Perceived Changes in Work-to-Home Travel Times (May 1990 to May 1991)

**TABLE 4. FREQUENCY OF INTERMEDIATE STOPS:  
Home-to-Work Trip**

Type of Stop	May 1990	May 1991	Change
School	0.082	0.094	+0.008
Shopping	0.034	0.044	+0.010
Eat a meal	0.061	0.058	-0.003
Personal Business	0.121	0.102	-0.019
Social/Recreation	0.007	0.029	+0.022
Other	0.064	0.053	-0.011
<b>TOTAL</b>	<b>0.369</b>	<b>0.380</b>	<b>+0.011</b>

\* Statistically significant at  $\alpha=0.05$  based on a comparison-of-means test.

**TABLE 5. FREQUENCY OF INTERMEDIATE STOPS:  
Work-to-Home Trip**

Type of Stop	May 1990	May 1991	Change
School	0.060	0.053	-0.007
Shopping	0.263	0.254	-0.009
Eat a meal	0.106	0.139	+0.033
Personal Business	0.241	0.235	-0.006
Social/Recreation	0.113	0.108	-0.005
Other	0.096	0.082	-0.014
<b>TOTAL</b>	<b>0.879</b>	<b>0.871</b>	<b>-0.008</b>

\* Statistically significant at  $\alpha=0.05$  based on a comparison-of-means test.



## Mode Choice

Figures 5 and 6 compare the travel mode by panelists to and from work. Driving alone continues to be the most common method of travel, preferred by more than 90 percent of the panelists. The percentages of drive-alone panelists has decreased approximately 2 percent for both home-to-work and work-to-home trips. Correspondingly small increases were observed in the percentages of panelists carpooling (up 2 to 3 percent) and using transit (up 1 to 2 percent). However, none of these changes were statistically significant, based on a test of proportions.

## Route Utilization

Panelists' route choices for trips to work and back home have not been dramatically affected by ongoing construction activities in the North Central Expressway corridor. Table 6 summarizes reported utilization of North Central Expressway and other routes in the corridor for the home-to-work trip. From May 1990 to May 1991, the use of the Expressway for the home-to-work trip by the panelists did decrease significantly, from 55.6 percent to 49.2 percent. Meanwhile, the proportion of the panel reportedly using Abrams increased slightly, from 5.6 percent in May 1990 to 8.5 percent in May 1991. Changes in the utilization of the other routes were too small to be considered statistically significant. Even with a slight reduction in use, the Expressway continues to be the most commonly utilized route by panelists for the trip to work.

The analysis of routes used for the trip from work to home is summarized in Table 7. Again, the Expressway is the most highly utilized route by panelists for their commute home. The difference in the proportion of panelists reportedly using this route (51.2 percent in May 1990 versus 46.8 percent in May 1991) was not found to be statistically significant. In fact, no statistically significant changes in usage were detected for any of the routes. However, the fact that the survey does show a slight reduction in the usage of the North Central Expressway for the trip from work to home is consistent with the reduction in usage for the home-to-work trip, and does suggest that a small percentage of panelists have changed travel routes and/or modes for their commuting trips.

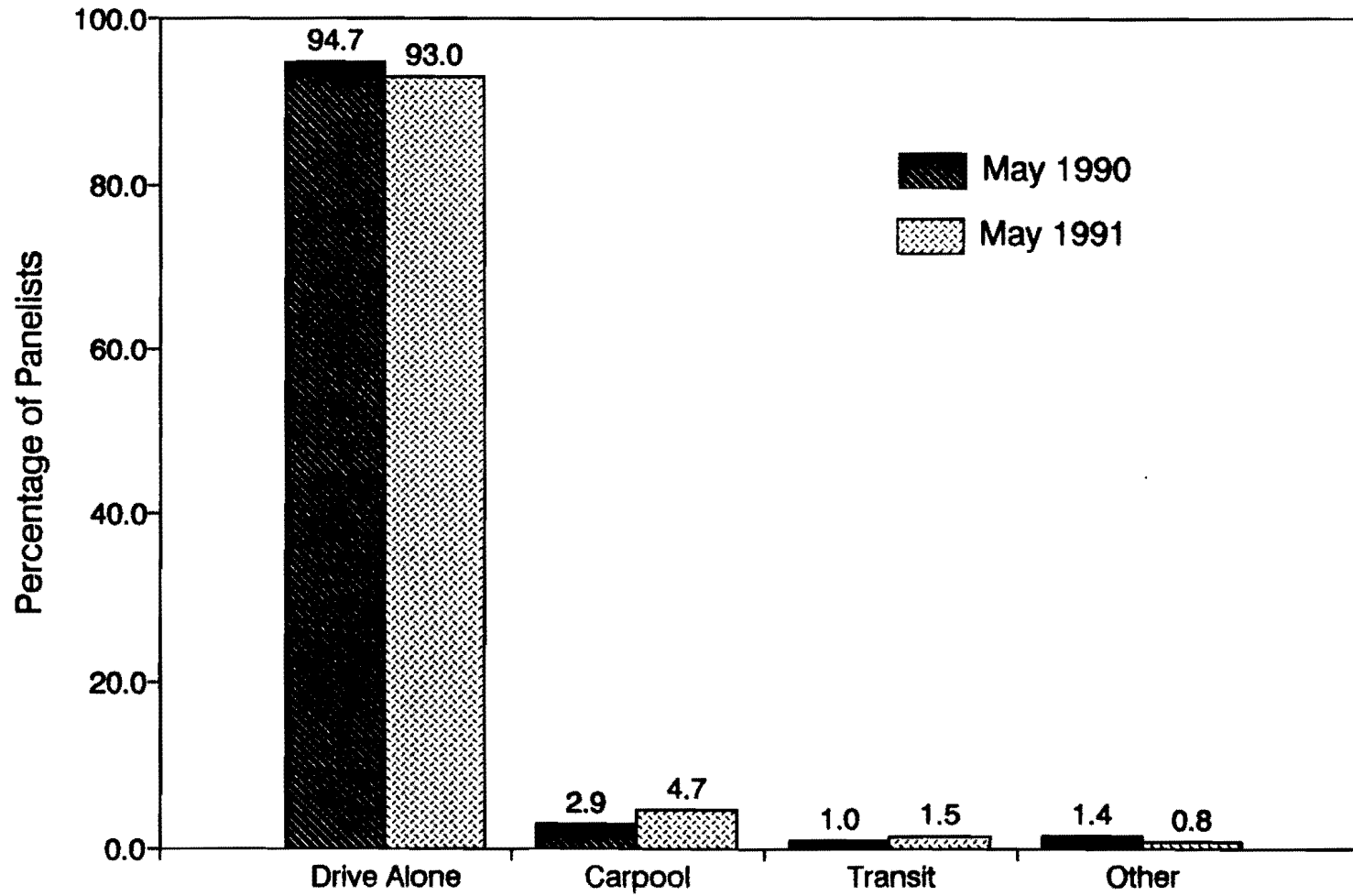


Figure 5. Comparison of Home-to-Work Mode Choices

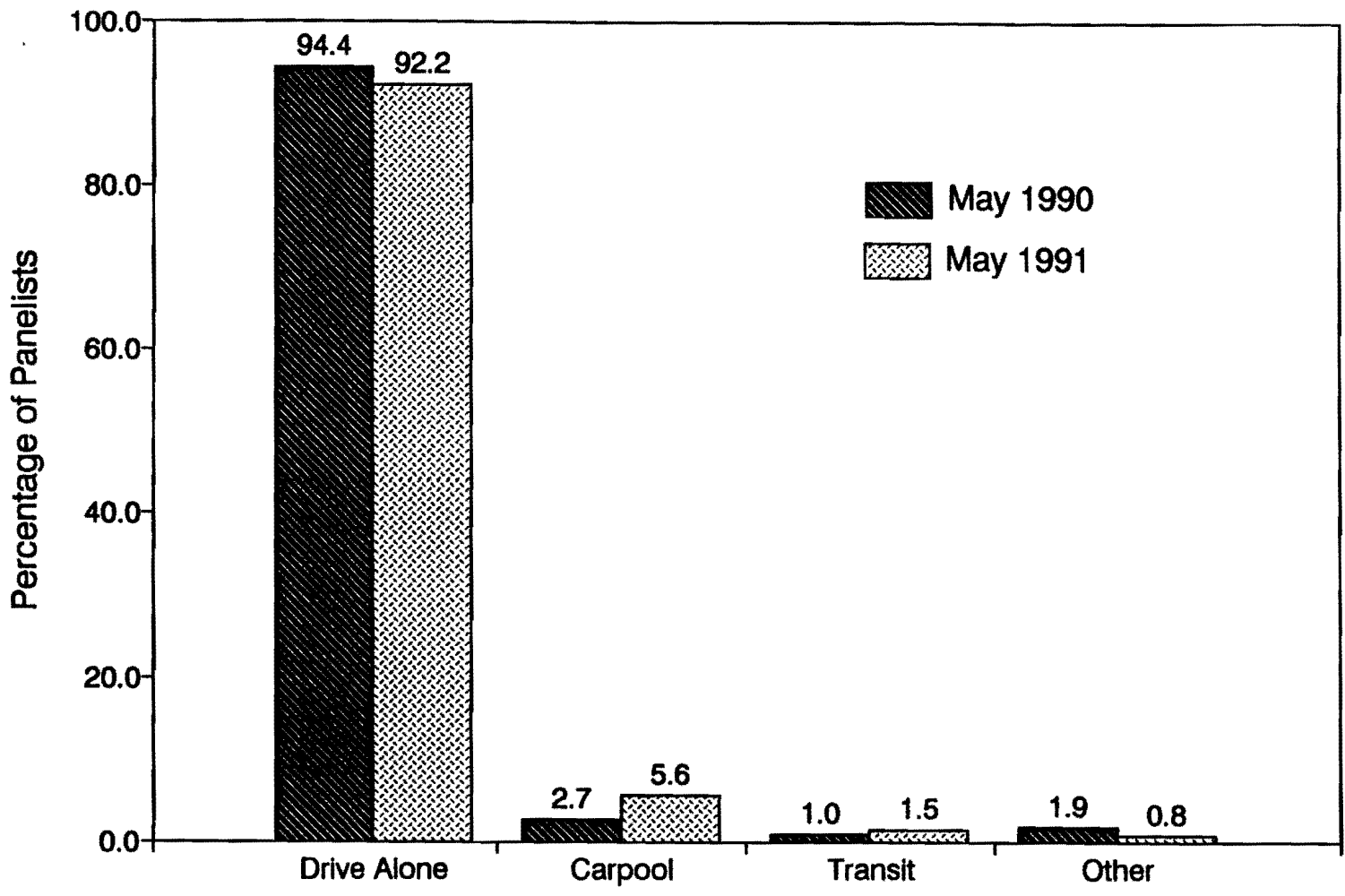


Figure 6. Comparison of Work-to-Home Mode Choices

**TABLE 6. ROUTE UTILIZATION: Home-to-Work Trip**

Roadway	Response Rate (%)		
	May 1990	May 1991	Change
North Central Expressway	55.6	49.2	-6.4*
Alternative Routes:			
Greenville	13.7	13.8	+0.1
Hillcrest	9.9	7.9	-2.0
Skillman	8.5	8.9	+0.4
Abrams	5.6	8.5	+2.9*
Dallas North Tollway	9.0	11.6	+2.6
Inwood	5.5	5.1	-0.4
Preston	9.4	9.4	0.0

\* Statistically significant at  $\alpha=0.05$  based on a test of proportions.

**TABLE 7. ROUTE UTILIZATION: Work-to-Home Trip**

Roadway	Response Rate (%)		
	May 1990	May 1991	Change
North Central Expressway	51.2	46.8	-4.4
Alternative Routes:			
Greenville	10.9	11.3	+0.4
Hillcrest	9.0	7.3	-1.7
Skillman	9.0	8.9	-0.1
Abrams	8.0	8.4	+0.4
Dallas North Tollway	10.4	12.0	+1.6
Inwood	6.7	4.6	-2.1
Preston	9.7	8.4	-1.3

\* Statistically significant at  $\alpha=0.05$  based on a test of proportions.

Beginning with the May 1991 survey, motorist utilization of several east-west routes in the corridor is also being monitored. Table 8 summarizes the utilization of these routes by the panelists for both the home-to-work and work-to-home trips. Use of these roadways is reported by only a small percentages of panelists.

**TABLE 8. UTILIZATION OF EAST-WEST ROUTES**

Roadway	Response Rate (%)	
	Home-to-Work Trip	Work-to-Home Trip
LBJ Freeway (I-635)	6.1	6.0
Forest	4.6	4.1
Walnut Hill	6.7	7.0
Northwest Hwy (Loop 12)	7.5	8.2
Lovers Lane	3.1	2.6
Mockingbird	3.8	3.8

**Traffic Information Sources**

Several survey questions related to the use and perceptions of the effectiveness of traffic information sources available to motorists in the North Central Expressway corridor. TTI first collected this information in November 1990 (the results of which have been documented in the previous interim report (1)). Data from the May 1991 survey are therefore compared to the November survey, rather than the May 1990 survey.

One source of traffic information being provided by TxDOT is a telephone hotline (WIDEN-75) which provides daily lane closure information to those who call. Table 9 summarizes the percentage of the panel who had ever used the hotline in November 1990 as well those who indicated ever using it in the May 1991 survey. The percent of panelists indicating that they had used the hotline was greater in the May 1991 survey.

Two questions were asked of the panelists concerning the changeable message signs located throughout the North Central Expressway corridor. The perceived usefulness of these signs has apparently increased slightly since the November 1990 survey. In the November survey, 53.6 percent of the panelists indicated that they felt the

signs were useful; in the May 1991 survey, this number was 59.1 percent. The advance warning provided by these signs was considered adequate by 53.9 percent of the panelists in November 1990 and 62.3 percent in May 1991.

Panelists were also questioned about their preferred source of daily construction information: newspaper, radio, and/or television. A comparison of the responses in the November 1990 and May 1991 surveys is also shown in Table 9. Between November and May, panelists' desires have not changed dramatically. However, there does appear to be slightly less interest in newspaper and television reports (down 6.8 and 2.1 percent, respectively), coupled with slightly greater interest in radio traffic reports (up 5.5 percent). Many panelists indicated a preference for two or even all three sources, emphasizing motorists' desires for construction and traffic information.

**TABLE 9. PANELIST PERCEPTIONS OF CONSTRUCTION INFORMATION SOURCES**

	Percent of Panelists Responding		
	Nov. 1990	May 1991	Change
Panelists using WIDEN-75 hotline	5.8	8.7	+2.9*
Panelists feeling that CMSs are useful	53.6	59.1	+5.5*
Panelists feeling that enough advance warning is provided by CMSs	53.9	62.3	+8.4*
Panelist preferences for receiving daily construction information:			
Radio	70.7	76.2	+5.5*
Newspaper	33.0	26.2	-6.8*
Television	26.5	24.4	-2.1

\* Statistically significant at  $\alpha = 0.05$  based on a test of proportions.

As a final question, panelists were asked what radio stations they typically listened to in their automobiles. The top six stations are shown in Table 10. The AM radio station KRLD was cited most often by panelists (23.0 percent). The next most listened to station by panelists was the FM station KVIL, mentioned by 12.7 percent of the panelists. These top six stations comprise more than 60 percent of the panel.

**TABLE 10. PANELISTS PREFERENCES OF DALLAS AREA RADIO STATIONS**

Call Letters	Radio Frequency	Percent
KRLD	1080. AM	23.0
KVIL	103.7 FM	12.7
KDGE	94.5 FM	7.6
KERA	90.1 FM	7.6
WRR	101.1 FM	6.1
KSCS	96.3 FM	5.5

## TRANSIT SURVEY RESULTS

### Trip Times

The transit user survey was designed to monitor two measures-of-effectiveness: (1) the estimated trip time by transit, and (2) panelist ranking of the overall quality of transit service provided in the North Central Expressway corridor. Figure 7 presents a comparison of trip times reported by panelists in the May 1990 and May 1991 surveys. There does appear to be a small, but statistically significant shift towards lower travel times in the May 1991 survey as compared to those reported in May 1990.

Figure 8 summarizes a comparison between perceived versus actual changes in transit trip times reported by panelists. More panelists perceived (75.6 percent) than actually reported (44.1 percent) no change; whereas fewer panelists perceived (9.0 percent) than actually reported (45.0 percent) shorter travel times. Approximately the same percentage of panelists perceived and actually reported longer travel times (15.4 and 10.9 percent, respectively).

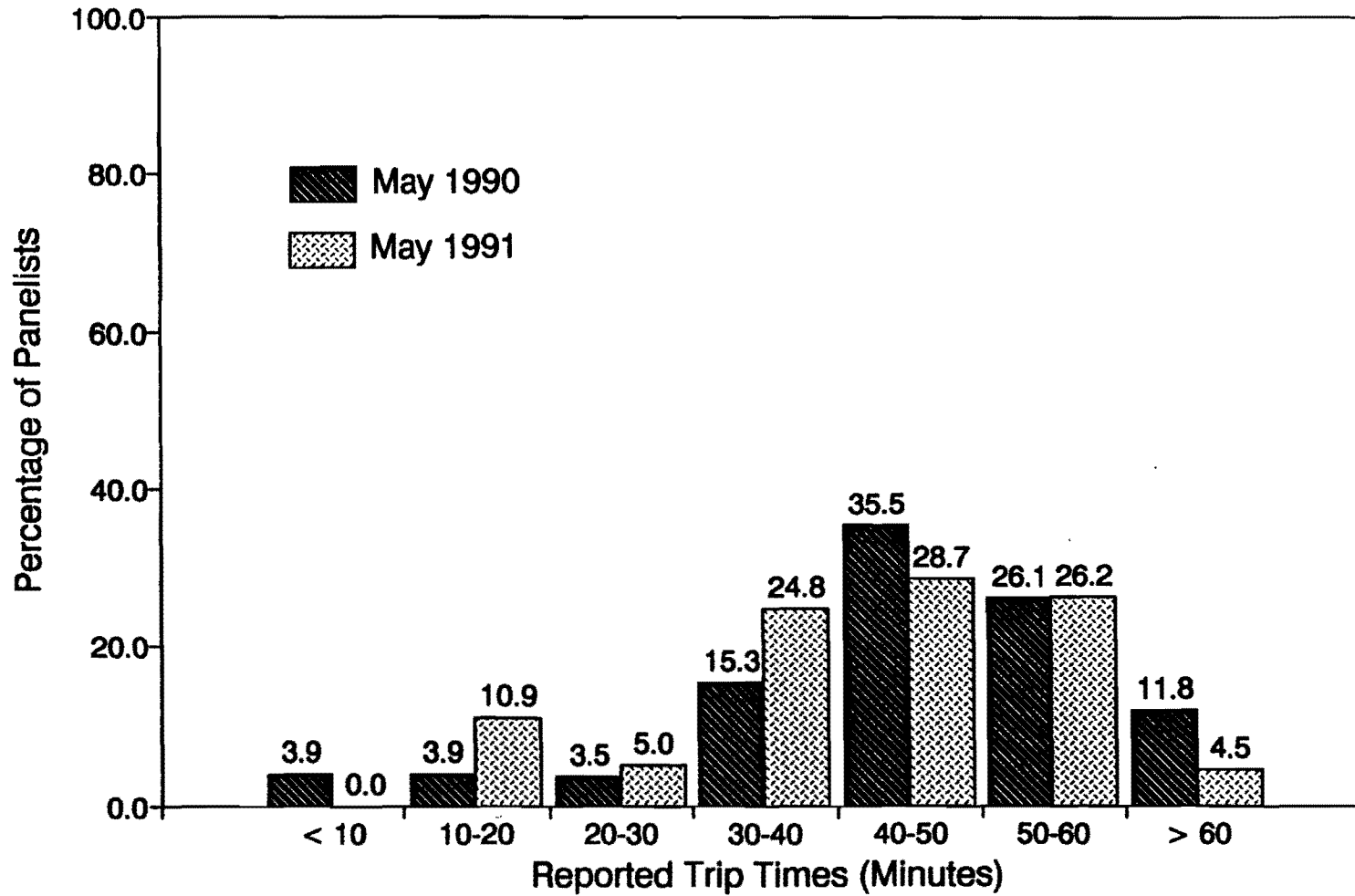
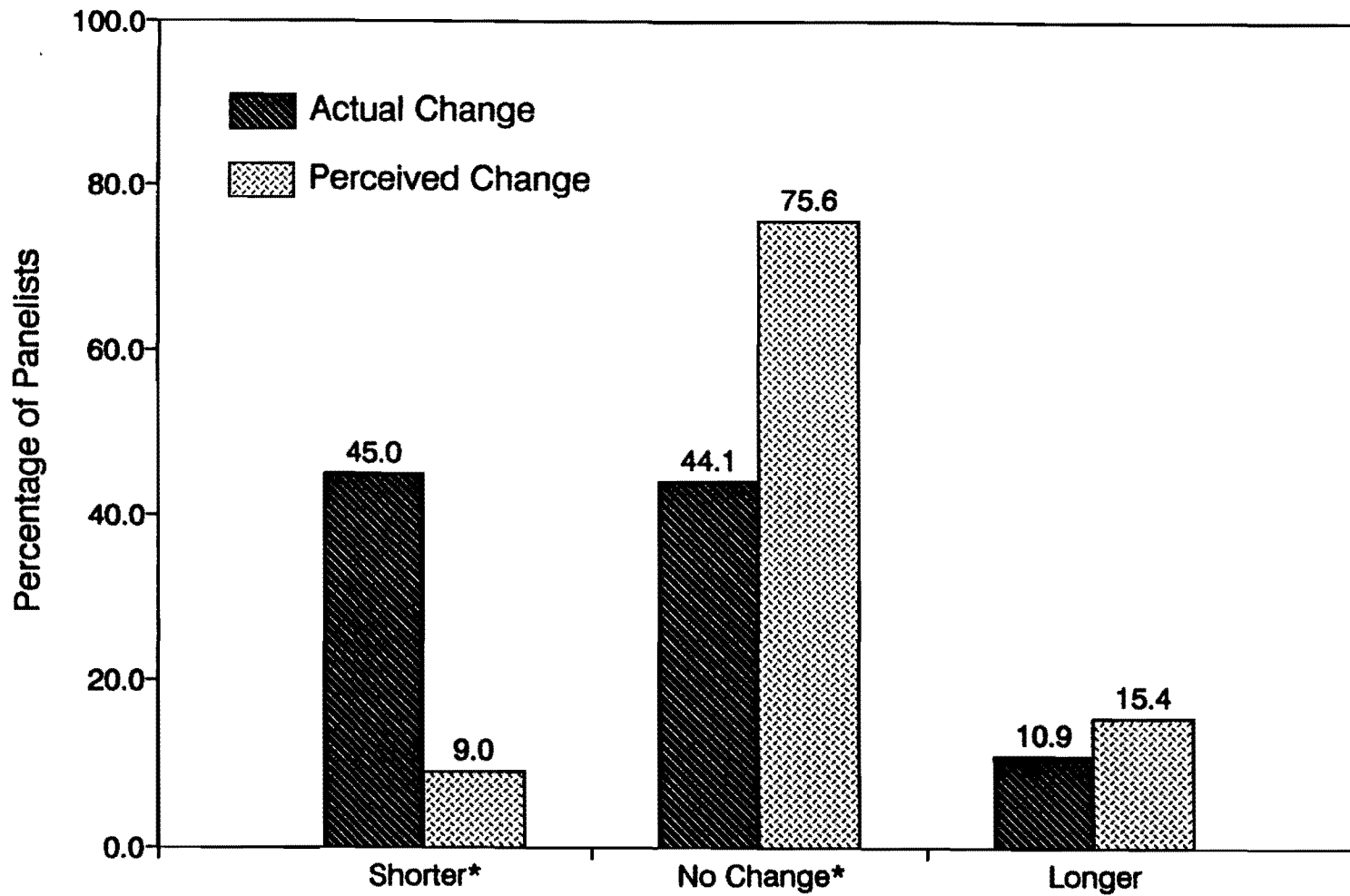


Figure 7. Comparison of Transit Trip Times





\* Difference between actual and perceived changes are statistically significant at  $\alpha = 0.05$

Figure 8. Actual versus Perceived Changes in Transit Trip Times (May 1990 to May 1991)

## **Quality of Transit Service**

Panelists' assessments of the quality of transit service in the corridor are summarized in Figure 9. Overall, very little change in the distribution of rankings (i.e., "excellent," "good," "fair," and "poor") was detected between the two surveys. The small decrease in excellent ratings and small increases in good, fair, and poor ratings were not statistically significant.

As with transit trip times, the changes in the transit quality ratings actually reported by the panelists were also compared to how panelists perceive that the quality had changed over time. The comparison of actual versus perceived changes in transit quality rankings are shown in Figure 10. As with most of the previous comparisons of perceived versus actual changes, more panelists perceived no change in transit quality (78.1 percent) than had actually made no change in quality ratings (67.0 percent). In contrast, fewer panelists perceived a change for the better than had actually reported better quality ratings. The percentage of panelists perceiving and reporting worse quality ratings was approximately equal.

## **FUTURE SURVEYS**

Both the automobile and transit panelists will continue to be surveyed in the future concerning their perceptions and reactions to the ongoing North Central Expressway construction project. These surveys will occur in May and in October of each year.

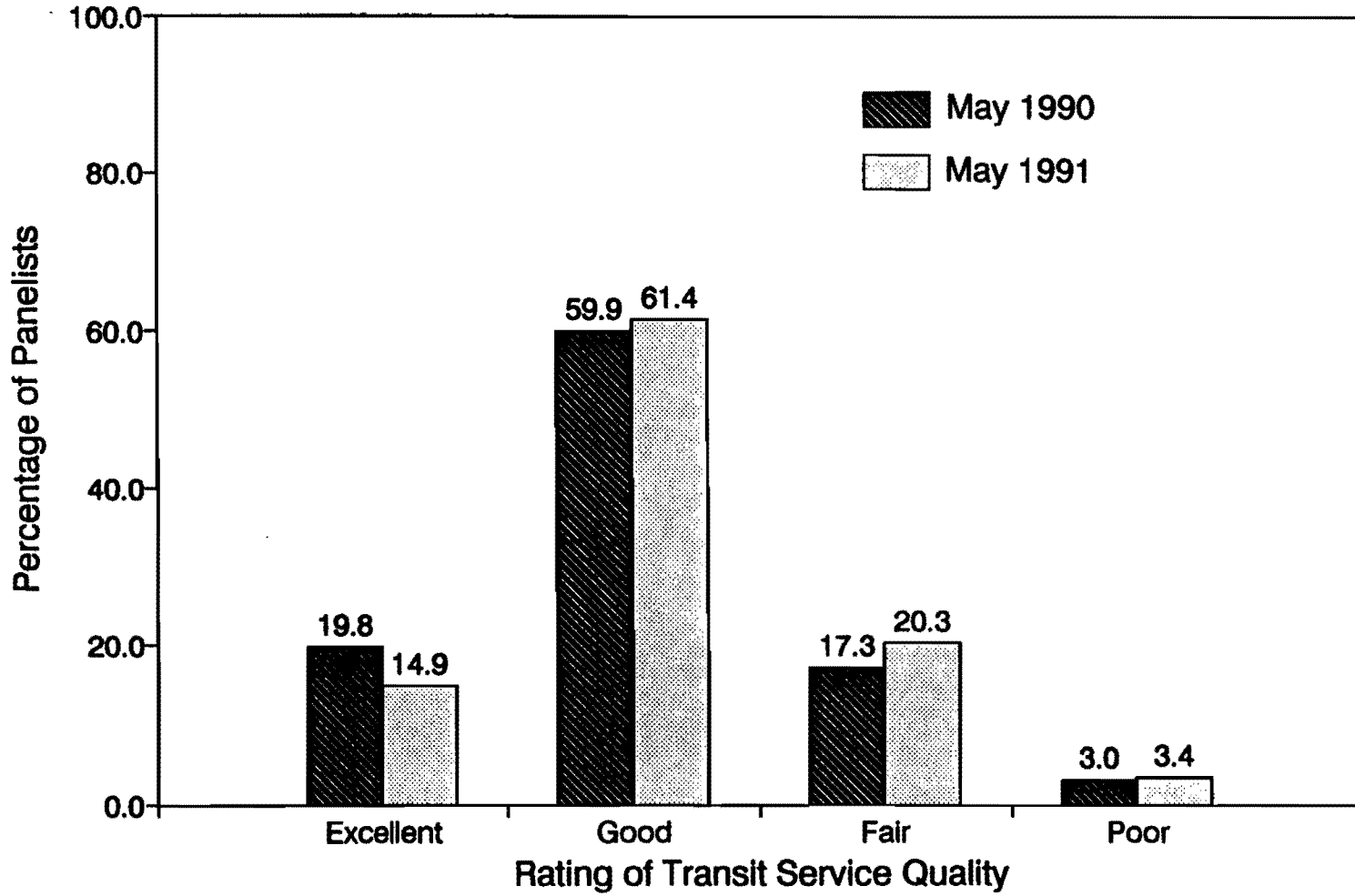
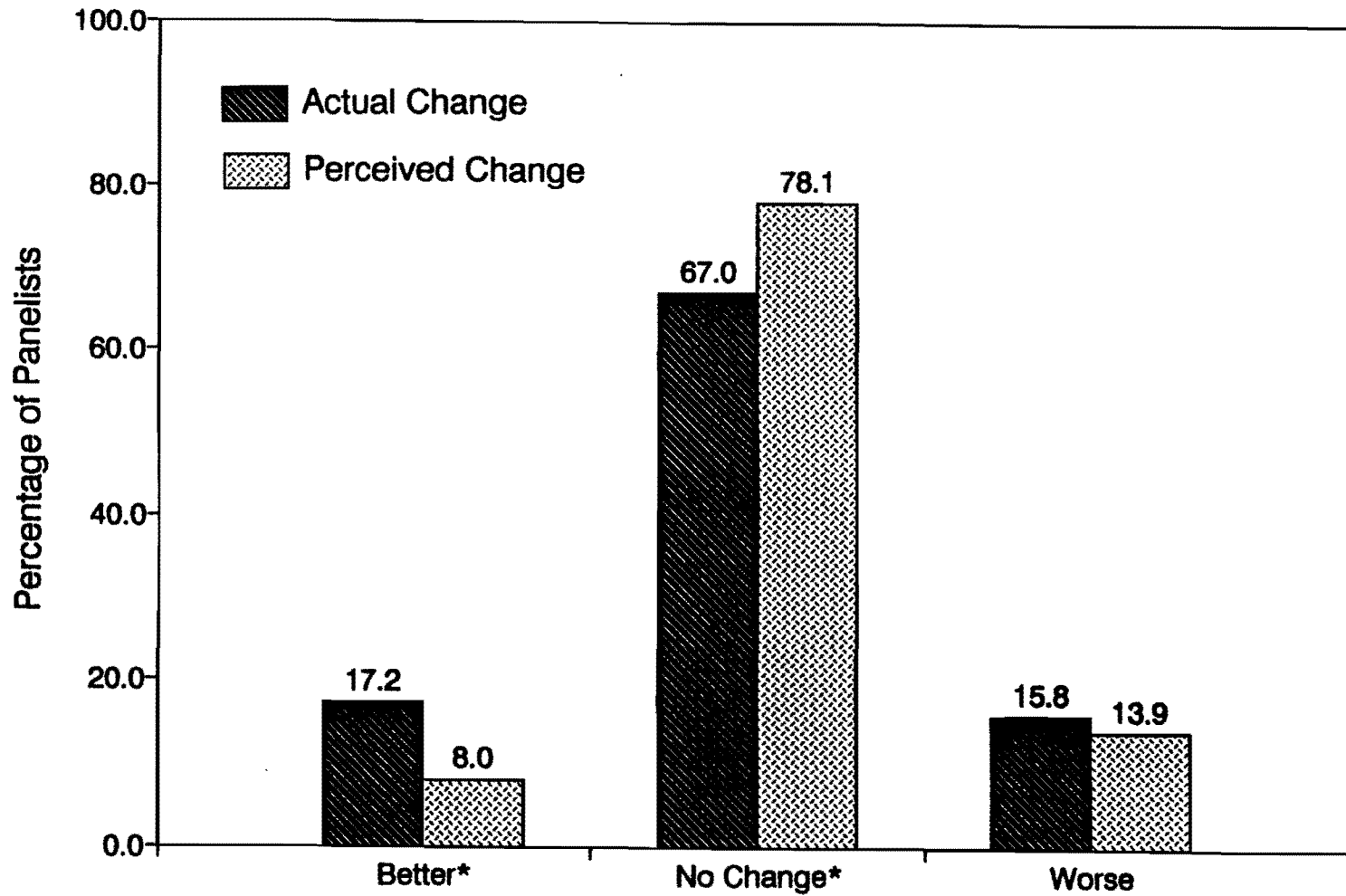


Figure 9. Comparison of Transit Service Quality Ratings



\* Difference between actual and perceived changes are statistically significant at  $\alpha = 0.05$

Figure 10. Actual versus Perceived Changes in Transit Service Quality Ratings (May 1990 to May 1991)

## REFERENCES

1. G.L. Ullman and R.A. Krammes. "U.S. 75 North Central Expressway Reconstruction: Northwest Highway Screen Line Automobile and Transit User Panels, November 1990 Survey Results." Research Report No. 9841E-3 prepared for the North Central Project Office, Texas State Department of Highways and Public Transportation, District 18, Dallas. Texas Transportation Institute, College Station, TX. May 1991.
2. S. D. Wohlschlaeger and R.A. Krammes. "US-75 North Central Expressway Reconstruction: October 1990 and May 1991 Traffic Conditions." Research Report 9841E-4 prepared for the North Central Project Office, Texas State Department of Highways and Public Transportation, District 18, Dallas. Texas Transportation Institute, College Station, TX. October 1991.