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16. Abstract

This report documents the results of the traffic data collection efforts during the third year (October 1992 and May 1993) of reconstruction on the US-75 North Central Expressway south of the I-635 LBJ Freeway. Traffic conditions and patterns have been monitored during October 1989 and May 1990 (before construction) and during October 1990, May 1991, October 1991, May 1992, October 1992, and May 1993 (during the first three years of the project). The traffic monitoring efforts during October 1992 and May 1993 included traffic data collection and automobile user surveys. The traffic data collection efforts included screen line traffic volume counts, vehicle occupancy and classification counts, and travel time runs. The automobile user surveys are documented in a separate report. The results indicate that the reconstruction activities underway during the October 1992 and May 1993 data collection efforts had little impact on peak period, peak direction traffic conditions and patterns in the corridor.

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US-75 NORTH CENTRAL EXPRESSWAY RECONSTRUCTION:

OCTOBER 1992 AND MAY 1993 TRAFFIC CONDITIONS

by

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Research Report 1940-7F
Research Study No. 2-18D-92/93-1940
Study Title: Highway Planning and Operations for District 18

Prepared for

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District 18, Dallas

Sponsored by

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November 1993

TEXAS TRANSPORTATION INSTITUTE
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IMPLEMENTATION STATEMENT

This report documents the results of the October 1992 and May 1993 traffic data collection efforts during the third year of the US-75 North Central Expressway reconstruction project south of the I-635 LBJ Freeway. Traffic conditions and patterns were monitored before construction (October 1989 and May 1990) and during construction (October 1990, May 1991, October 1991, May 1992, October 1992, and May 1993). The traffic conditions prior to construction and during the first two years of construction were documented in previous reports. The traffic monitoring efforts included traffic data collection and automobile user surveys. The traffic data collection included screen line traffic volume counts, vehicle occupancy and classification counts, and travel time runs. The automobile users' survey results are documented in a separate report.

The monitoring efforts indicate that no major changes in traffic conditions and travel patterns occurred as a result of reconstruction activities during October 1992 and May 1993. The data collected during these studies, combined with data to be collected in subsequent studies, may be used for several potential applications:

- Traffic management planning for future phases of the North Central project and for future projects in the Dallas area,
- The development of optimal signal timing plans for the arterial streets in the corridor,
- Public affairs programs to inform the public about traffic conditions and travel alternatives,
- Dallas Area Rapid Transit (DART) bus route and schedule planning,
- Validation of portions of the North Central Texas Council of Governments (NCTCOG) peak hour traffic model, and
- Development of a traffic simulation model of the US-75 North Central Expressway corridor for evaluating proposed traffic management actions.

DISCLAIMER

The contents of this report reflect the views of the authors who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Texas Department of Transportation. This report does not constitute a standard, specification, or regulation. It is not intended for construction, bidding, or permit purposes. The engineer in charge of the project was Raymond Krammes, P.E. #66413.

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SUMMARY

The results indicate that the US-75 North Central Expressway reconstruction had only minor impacts on traffic conditions and travel patterns throughout the corridor during the third year of the construction project, based upon comparisons of October 1992 versus October 1989 and 1990 data and May 1993 versus May 1990 data. The results of the traffic monitoring efforts are summarized as follows:

- Total daily screen line volumes for north-south routes changed up to 3 percent when compared to before construction traffic volumes. The total daily east-west traffic volumes crossing US-75 screen line decreased by as much as 6 percent. Traffic patterns changed at the Oak Lawn/Lemmon/Peak screen line where DNT traffic volumes increased and US-75 traffic volumes decreased. The higher traffic volumes on DNT could be attributed to traffic diversion from US-75. It is likely that some traffic growth on DNT was due to substantial development west of Plano.

- Daily traffic volumes on US-75 North Central Expressway, when compared to control locations in the Dallas area, decreased as much as an estimated 9 percent at Loop 12 to 12 percent at Lemmon. The N1 and N2 phases of the construction project appear to have only minimally affected traffic volumes. The drop in actual traffic volumes at Lemmon suggests that the Woodall Rodgers/US-75 interchange construction project located south of Lemmon may have affected traffic conditions.

- Peak period, peak direction traffic on US-75 North Central Expressway consists of 94-96 percent passenger vehicles, 3-5 percent commercial trucks, and 1 percent other (bus and motorcycle). The percentage of passenger vehicles carrying only a single occupant was 88 percent in the A.M. peak period and 80 percent in the P.M. peak period. The majority of the automobile users continue to travel alone.

- Peak hour, peak direction average travel times on the US-75 North Central Expressway between the I-635 LBJ Freeway and the Dallas central business district, when compared to before construction traffic conditions, were 2 to 3 minutes shorter in October 1992 and 1 minute longer in May 1993. Travel times on US-75 Frontage Road increased by 7 minutes during the P.M. peak period in October 1992, most likely due to the construction activities underway on the US-75 Frontage Road.

INTRODUCTION

The Texas Transportation Institute (TTI) is continuing to monitor the changes in traffic conditions and travel patterns resulting from the reconstruction of the US-75 North Central Expressway south of the I-635 LBJ Freeway. The long-term construction project began during the Summer of 1990 and is expected to be completed by the end of the decade. This report documents the traffic conditions during the third year of construction (October 1992 and May 1993).

The monitoring effort closely follows the boundaries of the North Central corridor (see Figure 1) that were defined by the North Central Mobility Task Force:

- I-635 LBJ Freeway on the north,
- The Dallas central business district on the south,
- Audelia, White Rock Lake, and Buckner on the east, and
- The Dallas North Tollway (DNT) on the west.

TTI began monitoring the North Central corridor during October 1989 and, since that date, has been collecting data twice per year (in October and May). The monitoring effort has two major elements:

- Collection of traffic data and
- Survey of automobile users.

Traffic conditions in the corridor in October 1989 and May 1990 before construction began were documented in a previous report (*1*). Other reports documented the corridor-wide traffic conditions during the first year of construction in October 1990 and May 1991 (*2*) and during the second year of construction in October 1991 (*3*) and May 1992 (*4*). The results of the May 1990 through May 1993 automobile users surveys were summarized in separate reports (*5-11*).

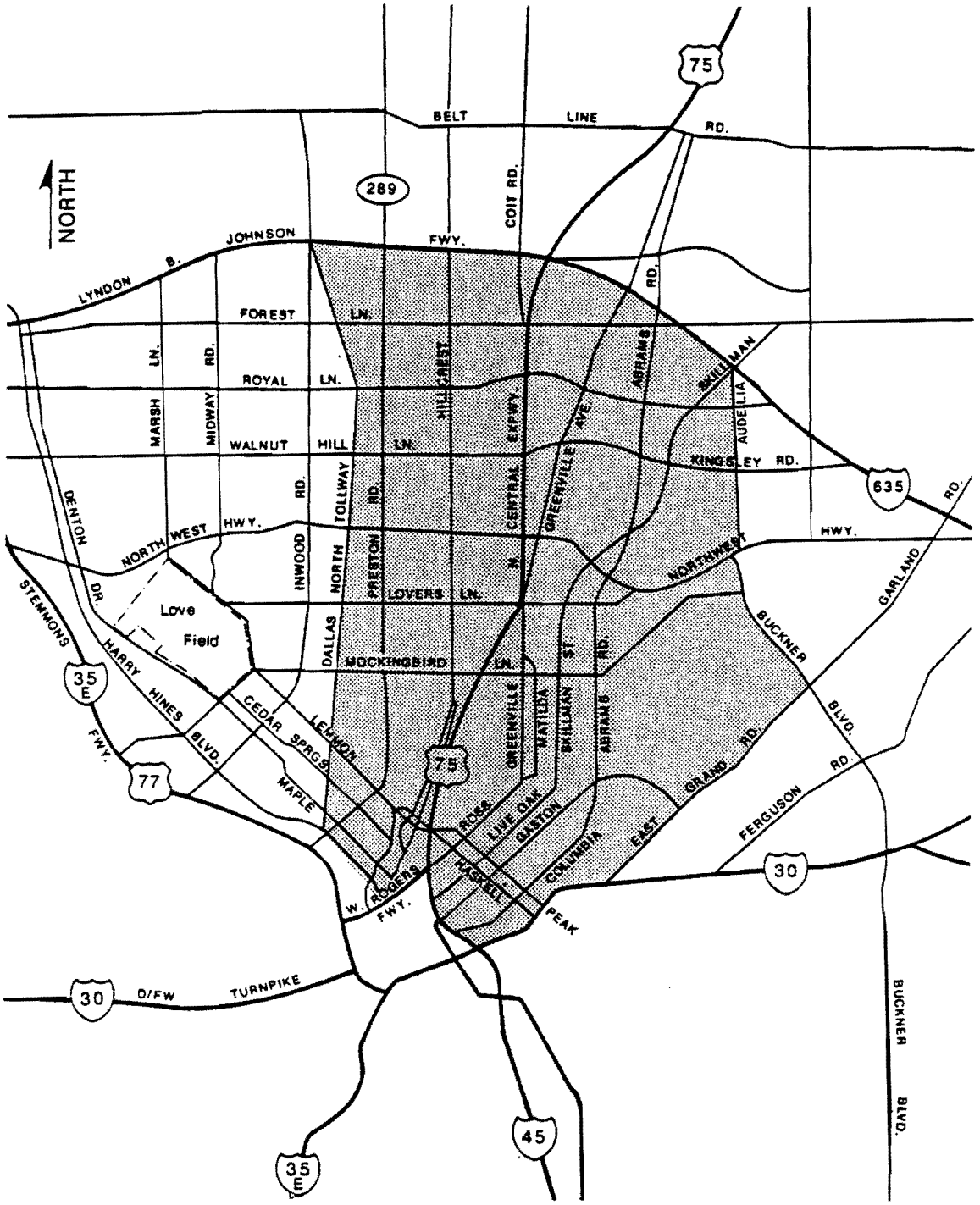


Figure 1. US-75 North Central Expressway Corridor in Dallas

The data documented in this and previous reports, combined with data to be collected in subsequent studies, will provide assistance in evaluating the effects of the construction project on traffic conditions and travel patterns throughout the corridor. The monitoring plan was designed to provide data for several potential uses:

- Traffic management planning for future phases of the North Central project and for future projects in the Dallas area,
- The development of optimal signal timing plans for the arterial streets in the corridor,
- Public affairs programs to inform the public about traffic conditions and travel alternatives,
- Dallas Area Rapid Transit (DART) bus route and schedule planning,
- Validation of portions of the North Central Texas Council of Governments (NCTCOG) peak hour traffic model, and
- Development of a traffic simulation model of the US-75 North Central Expressway corridor for evaluating proposed traffic management actions.

The body of this report is divided into four sections. The first section reviews the traffic monitoring plan used to collect and evaluate traffic conditions in the corridor. The next two sections document the observed traffic conditions during October 1992 and May 1993. The final section summarizes the results.

TRAFFIC MONITORING PLAN

This section describes the plan used to study the corridor traffic conditions and travel patterns during the reconstruction of the US-75 North Central Expressway south of the I-635 LBJ Freeway. The ongoing monitoring effort has two components: (1) traffic data collection and (2) automobile user survey.

Traffic Data Collection

Table 1 summarizes the traffic data collection in the North Central corridor. The traffic data collection consists of three components:

- Screen line traffic volume counts,
- Vehicle occupancy and classification counts, and
- Travel time runs.

Data are collected two times during the year and at the same time of the year (October and May). For comparison purposes, this report documents only data for routes that are located within the North Central corridor as defined by the Task Force. To control for seasonal variations in traffic conditions and patterns, the principal comparisons are among data collected during the same month of the year (e.g., October 1990 versus October 1992). However, traffic volumes on US-75 are seasonally adjusted so that more detailed comparisons can be made.

Screen Line Traffic Volume Counts

Screen line traffic volume counts are used to monitor traffic patterns throughout the corridor. By definition, a screen line is a line drawn through the corridor or may be defined by a river, railroad, or other geographical barrier. Traffic volume counts are taken on each route crossing the screen line to study the trips moving through the corridor. The sum of the traffic volume counts along the screen line is the total screen line traffic volume. Changes in traffic patterns are measured as changes in individual routes' percentage of the total screen line traffic volume.

TABLE 1. US-75 North Central Expressway Corridor Data Inventory

Type of Data		Route	Before Construction		During Construction					
			October 1989	May 1990	October 1990	May 1991	October 1991	May 1992	October 1992	May 1993
Traffic Volumes	Oak Lawn / Lemmon / Peak Screen Line	Harry Hines		X			X	X	X	X
		DNT		X	X	X	X	X	X	X
		Maple		X			X	X	X	X
		Cedar Springs		X	X	X	X	X	X	X
		Lemmon		X	X	X	X	X	X	X
		Oak Lawn		X	X	X	X	X	X	X
		Turtle Creek		X	X	X	X	X	X	X
		Cole/McKinney		X	X	X	X	X	X	X
		US-75		X	X	X	X	X	X	X
		Ross		X	X	X	X	X	X	X
		Live Oak		X	X	X	X	X	X	X
		Gaston		X	X	X	X	X	X	X
		Columbia		X			X	X	X	X
	Mockingbird / Buckner Screen Line	Harry Hines	X				X	X	X	X
		Denton	X				X	X	X	X
		Lemmon	X	X			X	X	X	X
		Inwood	X	X			X	X	X	X
		DNT	X	X	X	X	X	X	X	X
		Preston	X	X	X	X	X	X	X	X
		Hillcrest	X	X	X	X	X	X	X	X
		US-75	X	X	X	X	X	X	X	X
		Greenville	X	X	X	X	X	X	X	X
		Matilda	X	X	X	X	X	X	X	X
		Skillman	X	X	X	X	X	X	X	X
		Abrams	X	X	X	X	X	X	X	X
		Garland	X	X			X	X	X	X
	Loop 12 Screen Line	Midway		X	X	X	X	X	X	X
		Inwood		X	X	X	X	X	X	X
		DNT		X	X	X	X	X	X	X
		Preston		X	X	X	X	X	X	X
		Hillcrest		X	X	X	X	X	X	X
		US-75		X	X	X	X	X	X	X
		Greenville		X	X	X	X	X	X	X
		Skillman		X	X	X	X	X	X	X
		Abrams		X	X	X	X	X	X	X

TABLE 1. US-75 North Central Expressway Corridor Data Inventory (Continued)

Type of Data		Route	Before Construction		During Construction					
			October 1989	May 1990	October 1990	May 1991	October 1991	May 1992	October 1992	May 1993
Traffic Volumes	US-75 Screen Line	Hall		X		X	X	X	X	X
		Lemmon		X		X	X	X	X	X
		Haskell		X		X	X	X	X	X
		Fitzhugh		X		X	X	X	X	X
		Henderson		X		X	X	X	X	X
		Monticello		X		X	X	X	X	X
		McCommas		X		X	X	X	X	X
		Mockingbird		X	X	X	X	X	X	X
		Yale		X	X	X	X	X	X	X
		University		X	X	X	X	X	X	X
		Lovers		X	X	X	X	X	X	X
		Southwestern		X	X	X	X	X	X	X
		Caruth Haven		X	X	X	X	X	X	X
		Loop 12		X	X	X	X	X	X	X
		Park Lane		X	X	X	X	X	X	X
		Walnut		X	X	X	X	X	X	X
		Royal		X	X	X	X	X	X	X
		Forest		X	X	X	X	X	X	X
Vehicle Classification & Occupancy		US-75		X	X	X	X	X	X	X
		Preston		X						
		Skillman		X						
Travel Times	North - South Routes	Midway	X	X						
		Inwood	X	X						
		DNT	X	X	X	X	X	X	X	X
		Preston	X	X	X	X	X	X	X	X
		Hillcrest	X	X	X		X	X	X	X
		US-75 Frontage		X	X	X	X	X	X	X
		US-75	X	X	X	X	X	X	X	X
		Greenville	X	X	X	X	X	X	X	X
		Abrams	X	X		X	X	X	X	X
		Skillman	X	X		X	X	X	X	X
		Garland	X	X			X	X	X	X
	East - West Routes	Lemmon/Peak		X						
		Mockingbird		X						X
		Loop 12		X		X	X	X	X	X
		Royal				X	X	X	X	X

Traffic patterns are being observed at four screen lines, which are designated by the routes which the screen lines follow:

- Oak Lawn/Lemmon/Peak,
- Mockingbird/Buckner,
- Loop 12, and
- US-75 North Central Expressway.

Three screen lines (Oak Lawn/Lemmon/Peak, Mockingbird/Buckner, and Loop 12) are being used to identify changes in traffic patterns on north-south routes. The US-75 screen line, which bisects the Expressway, was established to measure changes in east-west traffic patterns. Figure 2 identifies the October 1992 and May 1993 count locations along the four screen lines.

In October 1989 traffic patterns were monitored only at the screen line south of Mockingbird/Buckner. The May 1990 study, the principal data collection effort before construction, included all four screen lines. The October 1990 study, the first data collection effort during construction, focused on the northern half of the corridor, which would be most affected by the construction activities that were underway at the time on the N1 and N2 phases of the North Central project. Studies since May 1991 closely resemble the May 1990 (before construction) data collection effort. Construction continued on the N1 and N2 phases during October 1992 and May 1993.

Directional 24-hour traffic volumes are collected for at least one mid-week day (i.e., Tuesday, Wednesday, and Thursday) at the screen line count locations during the study period. Volumes are averaged to represent mid-week traffic conditions. The traffic volume data collection is performed using several methods:

- Pneumatic tube counters to collect traffic volumes on arterial streets,
- A video camera and time-lapse video recorder to record traffic on US-75, and
- Toll booth data to estimate traffic volumes on Dallas North Tollway.

To better estimate the volume changes on the US-75 North Central Expressway that are attributable to the construction project, Automatic Traffic Recorder (ATR) stations in the Dallas metropolitan area that are not affected by the project were selected as control locations. The ATR locations are shown in Figure 3. The seasonal patterns on

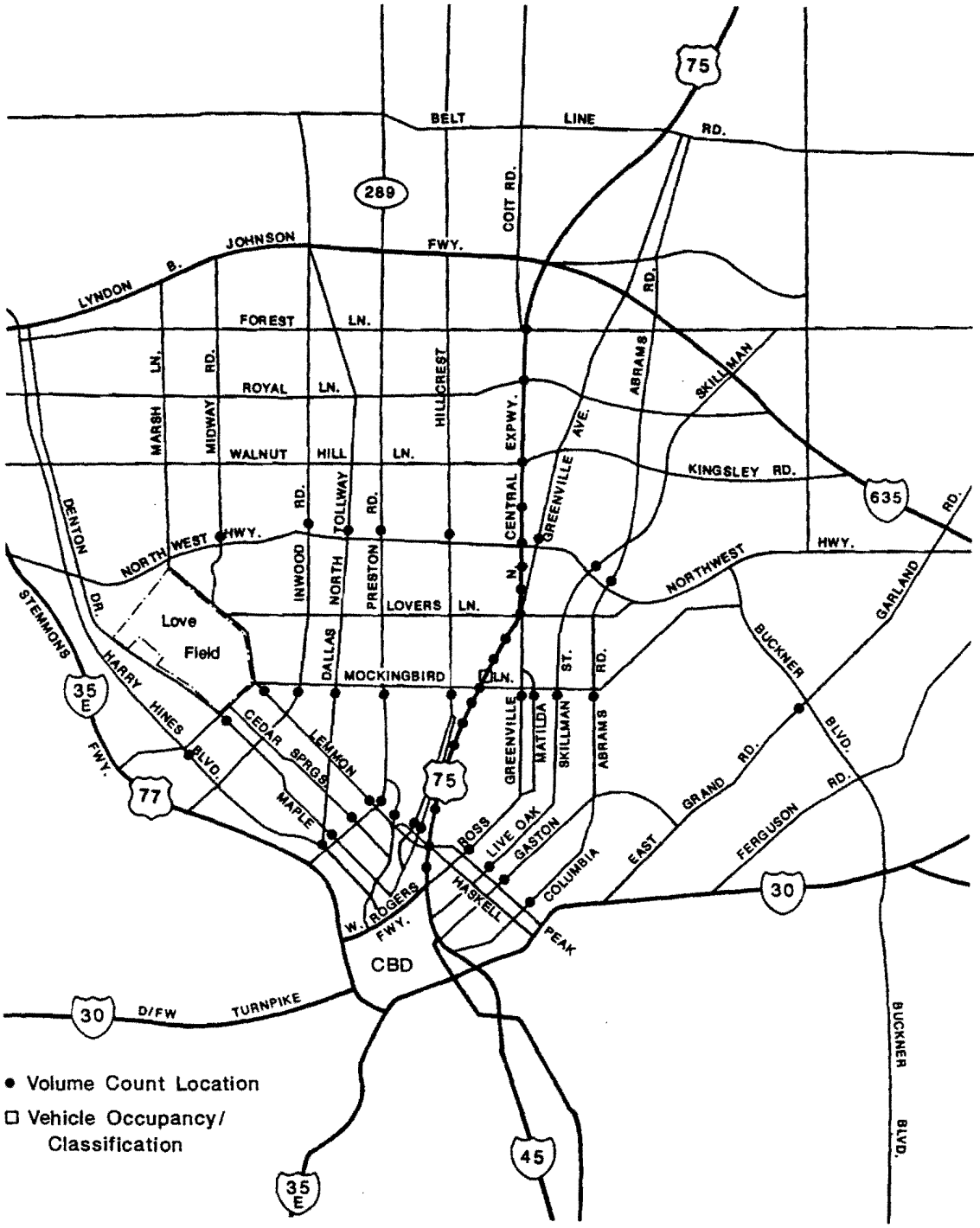


Figure 2. US-75 North Central Expressway Corridor Traffic Volume and Vehicle Occupancy and Classification Count Locations

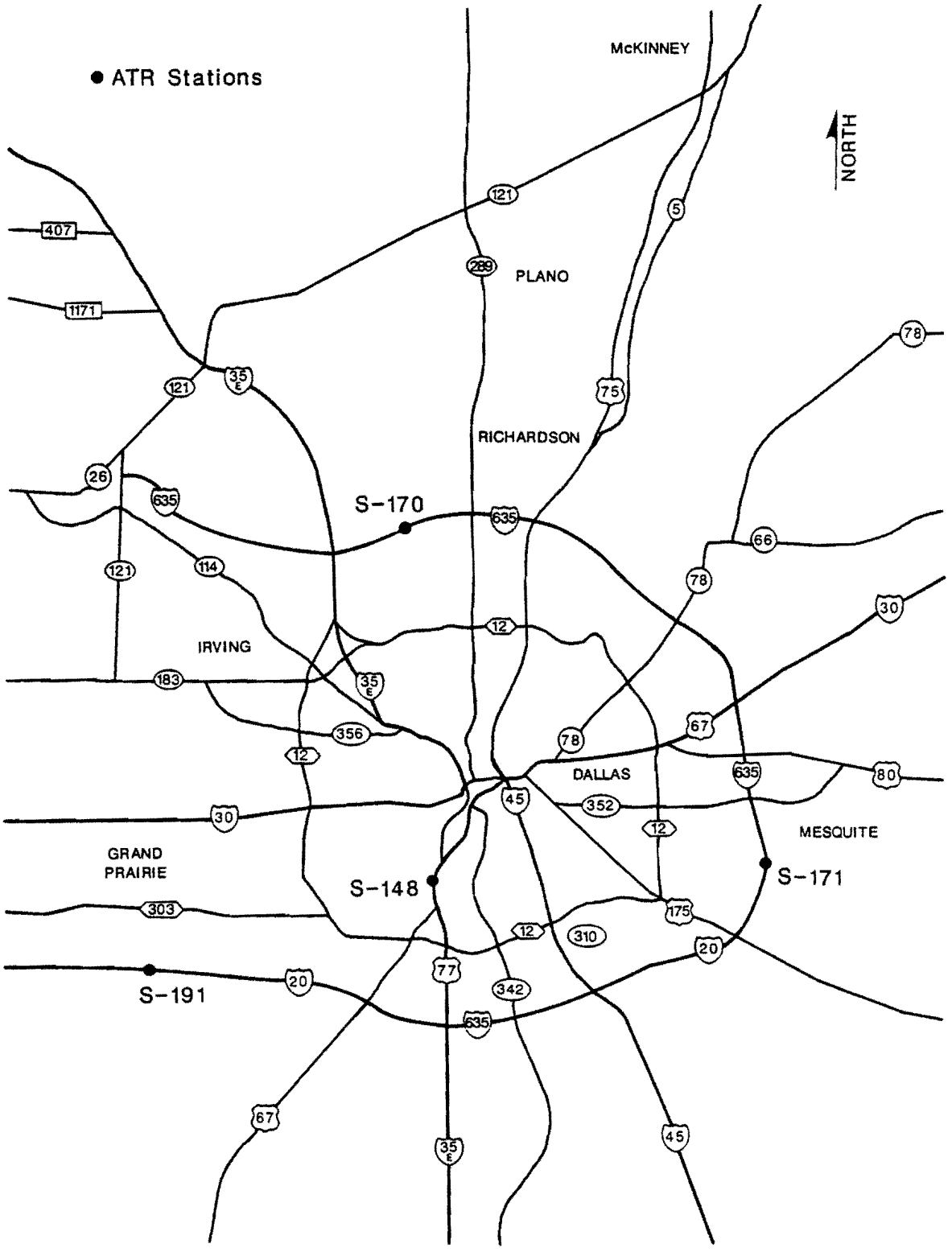


Figure 3. Automatic Traffic Recorder (ATR) Stations Selected for Control Locations in Dallas

US-75 before construction have been shown in past studies to be comparable to those patterns on other freeways in the Dallas area. Daily traffic volumes are obtained from the ATR stations to investigate the traffic volume trends in the Dallas area as compared to those on US-75 during construction. The ATR volume data are used to estimate the traffic volume on US-75 that normally would have been observed in the absence of the construction project. This method allows the impacts of the construction project to be isolated from normal daily and seasonal variations in traffic volumes.

Vehicle Occupancy and Classification Counts

Vehicle occupancy and classification data are collected on the US-75 mainlanes north of the Mockingbird/Buckner screen line during each study. The count location is identified in Figure 2.

Vehicles are grouped into four categories: passenger vehicles, commercial vehicles, buses, and motorcycles. Passenger vehicles include all cars as well as all pickup trucks and vans that have no commercial identification.

Travel Time Runs

Travel times and speeds are monitored on major north-south routes in the corridor and several east-west routes that traverse across the corridor. All north-south routes extend between I-635 LBJ Freeway and the Dallas central business district. East-west routes coincide with the east-west screen lines.

Table 2 provides a summary of the travel time routes and the number of travel time run repetitions on each route during the monitoring studies. The street name appearing in bold-face type represents the major street on each route and is used to designate the route. Figure 4 identifies the routes monitored during October 1992 and May 1993.

Travel time data are collected using the floating car technique where the driver of the test vehicle approximates the median speed of the traffic stream by passing as many vehicles as pass the driver. Data collection vehicles start at each end of the route at half-hour intervals from 6:00 to 9:00 A.M. and 3:00 to 7:00 P.M. Travel times on US-75 are

TABLE 2. Travel Time Routes in the US-75 North Central Expressway Corridor

Route	Number of Travel Time Run Repetitions							
	October 1989	May 1990	October 1990	May 1991	October 1991	May 1992	October 1992	May 1993
US-75 (North Central Expressway)	1	2	3	3	3	3	3	3
US-75 Frontage Rd.	-	1	3	1	1	1	1	1
Dallas North Tollway/Harry Hines/Akard	1	1	1	1	1	1	1	1
Preston/Cedar Springs/Field	1	3	1	1	1	1	1	1
Hillcrest/McKinney/Akard	1	1	1	-	1	1	1	1
Greenville/Ross	1	3	1	1	1	1	1	1
Abrams/Gaston	1	1	-	1	1	1	1	1
Skillman/Live Oak	1	1	-	1	1	1	1	1
Garland/Gaston	1	1	-	-	1	1	1	1
Oak Lawn/**Lemmon**/Peak/Haskell	-	1	-	-	-	-	-	-
Mockingbird	-	1	-	-	-	-	-	1
Loop 12	-	1	-	1	1	1	1	1
Royal	-	-	-	1	1	1	1	1

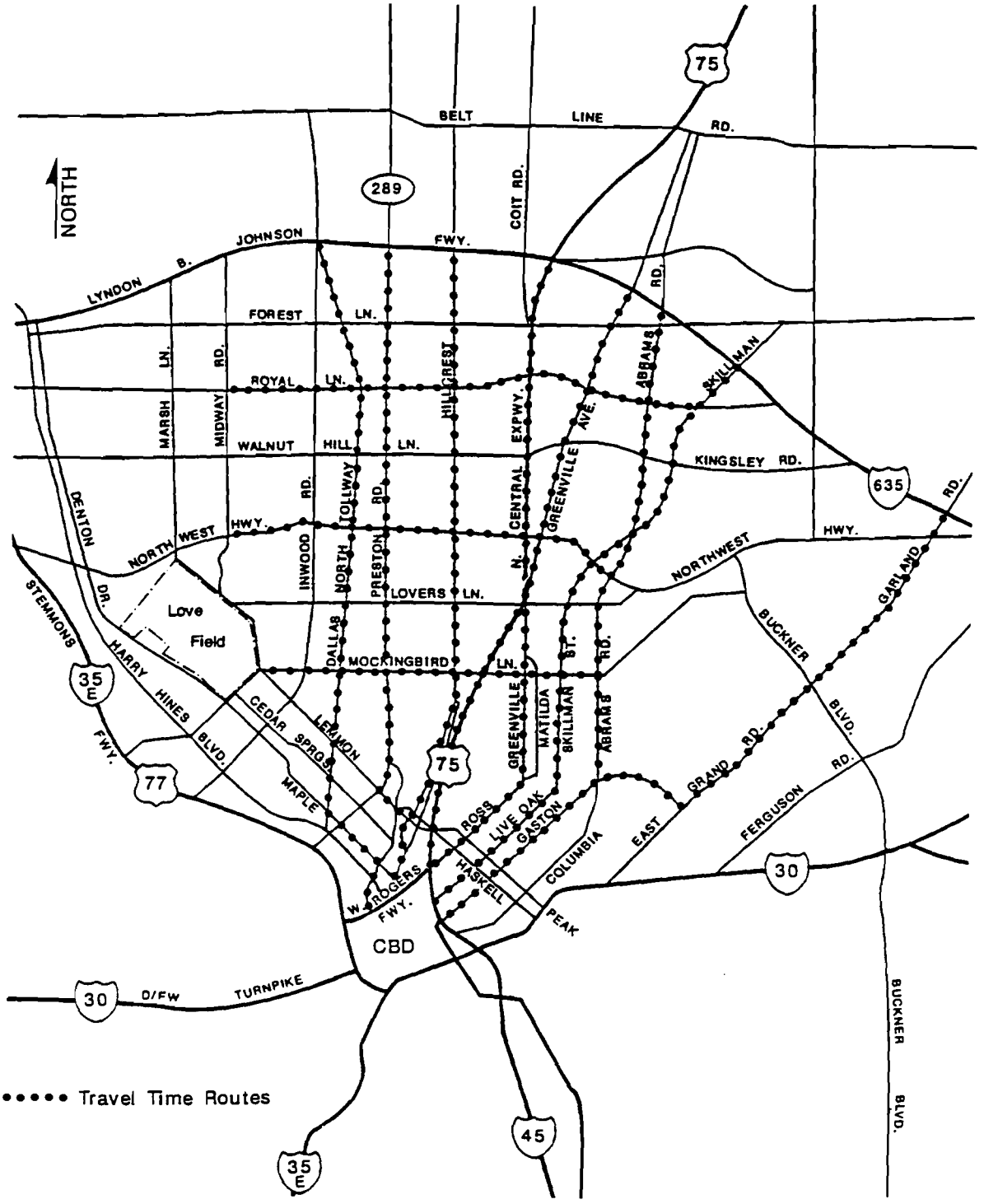


Figure 4. Travel Time Routes

also collected between 9:00 A.M. and 2:00 P.M. Travel times are measured between each pair of signalized cross streets and for the entire route. Stopped delays are also recorded at the signalized intersections. In order to compute average travel speeds, the distance between each signalized intersection was measured using a vehicle-installed distance measuring instrument. Peak hour average travel times and average travel speeds are computed for the A.M. peak using the 7:00, 7:30, and 8:00 A.M. travel time runs and for the P.M. peak using the 5:00, 5:30, and 6:00 P.M. runs.

Automobile User Surveys

Surveys of automobile users in the North Central corridor are conducted as part of the traffic monitoring studies. Original panel members (i.e., automobile users who agreed to be surveyed biannually) were recruited from license plate studies conducted during May 1990 at the Loop 12 screen line. This panel's attrition rate had been increasing during recent studies so that the existing commuter pool of automobile users was diminishing. Consequently, a license plate survey was performed during October 1992 at the Oak Lawn/Lemmon/Peak screen line to recruit a new panel of automobile users in the corridor. This new panel and the original panel were surveyed in October 1992 and May 1993.

Prior to October 1992, transit users in the corridor were also surveyed. The panel of transit users was created through onboard bus surveys conducted during May 1990. This panel had also been diminishing to the point that the sample size was no longer statistically reasonable. Researchers and Department officials decided not to replenish the transit panel survey and to discontinue the transit survey. Instead, transit ridership in the corridor will be evaluated in future studies.

The role of the surveys in the overall monitoring effort is to help explain the observed changes in traffic conditions and patterns. The surveys obtain information on the perceptions and travel behavior of individual automobile users in the corridor. Periodically surveying the same panel members permits changes in individual perceptions and behavior to be tracked. Details of the surveying effort and results were documented in other reports (*5-11*).

OCTOBER 1992 TRAFFIC CONDITIONS

The traffic conditions during October 1992, approximately two years and four months after the US-75 North Central Expressway construction project began, are documented in this section. The changes in traffic patterns, vehicle occupancy and classification, and travel times and average travel speeds are discussed. Summaries of the traffic volume and travel time data collected during October 1992 are presented in Appendices A through E and Appendices K and L.

Screen Line Traffic Volumes

The October 1992 screen line traffic volume counts are summarized in Appendices A, B, and C. Appendix A contains tables summarizing the hourly volume counts on each route at each screen line. Appendix B contains figures that summarize each route's percentage of the total screen line volume; individual figures are presented for each of four screen lines and each of three time periods: A.M. peak (6:00-9:00 A.M.), P.M. peak (3:00-7:00 P.M.), and 24 hours. Appendix C contains similar figures summarizing the actual change in volumes on each route between the October studies.

Screen line traffic volumes were evaluated for three time periods (A.M. peak, P.M. peak, and 24 hours) and were compared only for the October studies. Because October 1989 (before construction) traffic volume data were collected only at the Mockingbird/Buckner screen line, comparisons to October 1989 data can only be made at that screen line. At the Oak Lawn/Lemmon/Peak, Loop 12, and US-75 screen lines, comparisons were made with the October 1990 data. The evaluation of US-75 traffic volumes, however, compares both October and May data to better estimate the traffic impacts of the project.

Table 3 summarizes the total corridor traffic volumes for October 1989, October 1990, and October 1992 at each screen line. At the Oak Lawn/Lemmon/Peak screen line, located at the southern end of the corridor and close to downtown Dallas, daily corridor volumes slightly decreased by 1 percent to 436,634 vehicles in October 1992. Daily traffic volumes at the Mockingbird/Buckner screen line (middle screen line of the three east-west screen lines) rose 2 percent to 368,709 vehicles in October 1992. Total daily corridor traffic volumes crossing the Loop 12 screen line, which is the northernmost

TABLE 3. US-75 North Central Expressway Corridor Traffic Volumes During October 1992

Screen Line	Period	Direction	Traffic Volumes (veh)				
			October 1989	October 1990	October 1992	Change	% Change
Oak Lawn/ Lemmon/ Peak	A.M. Peak	Northbound	N/A	30,762	32,116	1,354	4.40
		Southbound	N/A	53,246	49,109	-4,137	-7.77
		Total	N/A	84,008	81,225	-2,783	-3.31
	P.M. Peak	Northbound	N/A	75,363	72,160	-3,203	-4.25
		Southbound	N/A	57,162	54,513	-2,649	-4.63
		Total	N/A	132,525	126,673	-5,852	-4.42
	24 Hour	Northbound	N/A	219,676	219,340	-336	-0.15
		Southbound	N/A	222,431	217,294	-5,137	-2.31
		Total	N/A	442,107	436,634	-5,473	-1.24
Mockingbird [a]	A.M. Peak	Northbound	25,271	23,891	27,104	1,833	7.25
		Southbound	39,462	40,313	38,607	-855	-2.17
		Total	64,733	64,204	65,711	978	1.51
	P.M. Peak	Northbound	55,640	54,853	56,476	836	1.50
		Southbound	49,196	46,274	48,436	-760	-1.54
		Total	104,836	101,127	104,912	76	0.07
	24 Hour	Northbound	175,957	174,323	184,288	8,331	4.73
		Southbound	185,246	182,629	184,421	-825	-0.45
		Total	361,203	356,952	368,709	7,506	2.08
Loop 12	A.M. Peak	Northbound	N/A	21,611	24,719	3,108	14.38
		Southbound	N/A	35,542	36,529	987	2.78
		Total	N/A	57,153	61,248	4,095	7.16
	P.M. Peak	Northbound	N/A	52,980	57,002	4,022	7.59
		Southbound	N/A	44,929	47,347	2,418	5.38
		Total	N/A	97,909	104,349	6,440	6.58
	24 Hour	Northbound	N/A	164,780	179,146	14,366	8.72
		Southbound	N/A	170,670	181,029	10,359	6.07
		Total	N/A	335,450	360,175	24,725	7.37
US-75	A.M. Peak	Eastbound	N/A	18,458	17,420	-1,038	-5.62
		Westbound	N/A	48,168	48,820	652	1.35
		Total	N/A	66,626	66,240	-386	-0.58
	P.M. Peak	Eastbound	N/A	65,685	62,698	-2,987	-4.55
		Westbound	N/A	52,763	50,450	-2,313	-4.38
		Total	N/A	118,448	113,148	-5,300	-4.47
	24 Hour	Eastbound	N/A	188,240	177,902	-10,338	-5.49
		Westbound	N/A	213,977	207,720	-6,257	-2.92
		Total	N/A	402,217	385,622	-16,595	-4.13

[a]Change represents difference between October 1992 and October 1989 traffic volumes.

screen line and located closest to the construction project on US-75 during October 1992, increased by 7 percent to 360,175 vehicles. East-west traffic volumes decreased by 4 percent to 385,622 vehicles along the US-75 screen line. Peak period traffic volumes followed the daily traffic volume trends at each screen line.

The corridor-wide traffic patterns and traffic volume changes are presented for the north-south and east-west routes separately. An analysis of US-75 traffic volumes including comparisons to control locations in the Dallas area is also provided.

Traffic Patterns on North-South Routes

Oak Lawn/Lemmon/Peak Screen Line

Figures B-1 through B-3 summarize each route's percentage of the total screen line volume at the Oak Lawn/Lemmon/Peak screen line for the A.M. and P.M. peak and 24-hour periods. Figures C-1 through C-3 show the change in traffic volume on individual routes along the screen line for the same periods.

During the A.M. peak period, fluctuations in each route's percentage of total screen line traffic volume were less than 2 percent between October 1990 and October 1992 (see Figure B-1). The volume changes that occurred were primarily in the southbound (peak) direction where traffic volumes generally decreased across the corridor when compared to October 1990 (see Figure C-1). Although US-75 southbound traffic volumes slightly decreased, the expressway continued to carry the highest traffic volume in the corridor.

The traffic patterns in the P.M. peak period show that each route's percentage of the total screen line traffic differed by as much as 4 percent between October 1990 and October 1992 (see Figure B-2). In October 1990 and 1991, US-75 had the highest northbound (peak direction) traffic volume along the screen line (see Figure B-2, a). The October 1992 data, however, indicate that DNT carried a larger portion of the northbound traffic than US-75 (i.e., 24 percent as opposed to 22 percent of the total screen line traffic). This change in traffic patterns was due to a reduction in traffic volumes on US-75, while traffic volumes generally increased on the other routes in the corridor during October 1992 (see Figure C-2, a). The largest increase in P.M. peak period traffic volumes occurred on DNT.

Daily traffic volumes show similar results. The fluctuations in each route's percentage of the total daily screen line traffic were less than 3 percent (see Figure B-3). The observed US-75 24-hour traffic volume substantially decreased while DNT traffic increased (see Figure C-3). Although DNT traffic appears to have grown, US-75 continues to carry the most daily traffic along the screen line.

Mockingbird/Buckner Screen Line

Each route's percentage of the total screen line traffic volume is shown for the Mockingbird/Buckner screen line in Figures B-4 through B-6 for the A.M. and P.M. peak and 24-hour periods. The volume changes are summarized in Figures C-4 through C-6.

No route's percentage of the total screen line traffic changed by more than 2 percent during the A.M. peak period between October 1989 and October 1990 (see Figure B-4). Southbound (peak direction) traffic volumes changed very little along the screen line in October 1992 (see Figure C-4, b).

During the P.M. peak period, traffic volumes fluctuated more than volumes during the A.M. peak period. Fluctuations in each route's percentage of the total screen line traffic volume were as much as 4 percent between October 1989 and October 1992 (see Figure B-5). Northbound (peak direction) traffic volumes on US-75 only slightly increased, while larger increases were observed on other routes (Preston, Greenville, Skillman, and Abrams) in the corridor (see Figure C-5, a). The data indicate that over the three-year period, northbound traffic decreased on Garland and Hillcrest, and southbound traffic decreased on DNT and Preston (see Figure C-5).

The corridor-wide daily traffic patterns show that fluctuations in each route's percentage of the total screen line traffic were less than 3 percent between October 1989 and October 1992 (see Figure B-6). The 24-hour traffic volumes during October 1992 generally increased across the screen line (see Figure C-6). The daily traffic volumes on US-75 increased in both directions when compared to October 1989 before construction. Northbound traffic volumes increased on DNT, Greenville, Skillman, and Abrams, while Garland Road and Hillcrest each had reduced traffic volumes. Traffic volumes in the southbound direction appear to have substantially dropped on DNT and Preston during October 1992.

Loop 12 Screen Line

Figures B-7 through B-9 summarize each route's percentage of the total screen line traffic volume at the Loop 12 screen line for the A.M. and P.M. peak and 24-hour periods. Likewise, Figures C-7 through C-9 show changes in traffic volume on each route.

The A.M. peak period traffic patterns along the Loop 12 screen line show fluctuations as large as 5 percent in each route's percentage of total screen line traffic between October 1990 and October 1992 (see Figure B-7). In October 1990, DNT carried more southbound (peak direction) traffic than US-75 (31 percent compared to 27 percent). DNT's proportion of total screen line traffic increased by 4 percent in October 1992 while the US-75 proportion remained the same. The data indicate that DNT continues to have the highest A.M. peak direction traffic volume along the screen line.

The traffic patterns during the P.M. peak period indicate that each route's percentage of the total screen line traffic volume changed by less than 3 percent between October 1990 and October 1992 (see Figure B-8). DNT carries the highest northbound (peak direction) traffic volume of all the routes in the corridor. Most routes along the screen line experienced higher traffic volumes in October 1992 (see Figure C-8).

At the Loop 12 screen line, each route's percentage of the total daily screen line traffic volume changed by less than 3 percent between October 1990 and October 1992 (see Figure B-9). Northbound traffic volumes increased on US-75, DNT, Hillcrest, and Greenville during October 1992 (see Figure C-9, a). Daily traffic volumes in the southbound direction slightly decreased on US-75 while substantially increasing on DNT (see Figure C-9, b). Although DNT carries the most peak period, peak direction traffic during October along the screen line, US-75 continues to carry the majority of the 24-hour traffic volumes.

Traffic Patterns on East-West Routes

Figures B-10 through B-12 show the traffic distribution along the US-75 screen line for the A.M. and P.M. peak and 24-hour periods. Figures C-10 through C-12 summarize the volume changes on each route crossing US-75 for the peak and 24-hour periods.

Traffic crosses US-75 on eighteen routes between the I-635 LBJ Freeway and the Woodall Rodgers Freeway. During October 1992, ten of the eighteen routes carried at least 5 percent of the total 24-hour east-west traffic. Loop 12 continues to be the major east-west route, carrying approximately 15 percent of the 24-hour screen line volume in October 1992. In the A.M. peak period, westbound traffic is much greater than eastbound traffic. The directional split comes closer together in the P.M. peak period, where eastbound traffic is slightly greater than westbound traffic.

During the A.M. peak period, the cross-street route's percentage of the total screen line volume fluctuated by less than 2 percent between October 1990 and October 1992 (see Figure B-10). Minor changes occurred along the screen line (see Figure C-10).

P.M. peak period traffic fluctuated by less than 2 percent between October 1990 and October 1992 (see Figure B-11). The total screen line volume decreased 5 percent in October 1992 (see Table 3). These reductions occurred on Mockingbird, University, Caruth Haven, Loop 12, Walnut Hill, and Forest (see Figure C-11).

The 24-hour cross-street traffic generally decreased during October 1992. Traffic patterns show only minor fluctuations (less than 2 percent) in each cross-street route's percentage of the total screen line traffic between October 1990 and October 1992 (see Figure B-12). Most of the reduction occurred in the eastbound direction and during off-peak periods. Traffic volumes decreased on Mockingbird, University, Caruth Haven, Walnut Hill, and Forest (see Figure C-12).

Traffic Patterns on US-75 North Central Expressway

Figure 5 shows the daily traffic volume on US-75 at the three screen line count locations from October 1989 to October 1992 and the corresponding average ATR traffic volumes for the Dallas area. The US-75 traffic patterns generally follow the trends at control locations in the Dallas area before construction. Prior to May 1992, other than the normal variation in traffic volumes due to seasonal patterns, the total traffic on US-75 during construction had not changed significantly, with the exception of the substantial decrease in traffic at Loop 12 during October 1991. However, the trend lines for the observed US-75 traffic volumes at Lemmon and Mockingbird deviated from the control locations in May 1992. The traffic volume at Lemmon continues to decrease as was

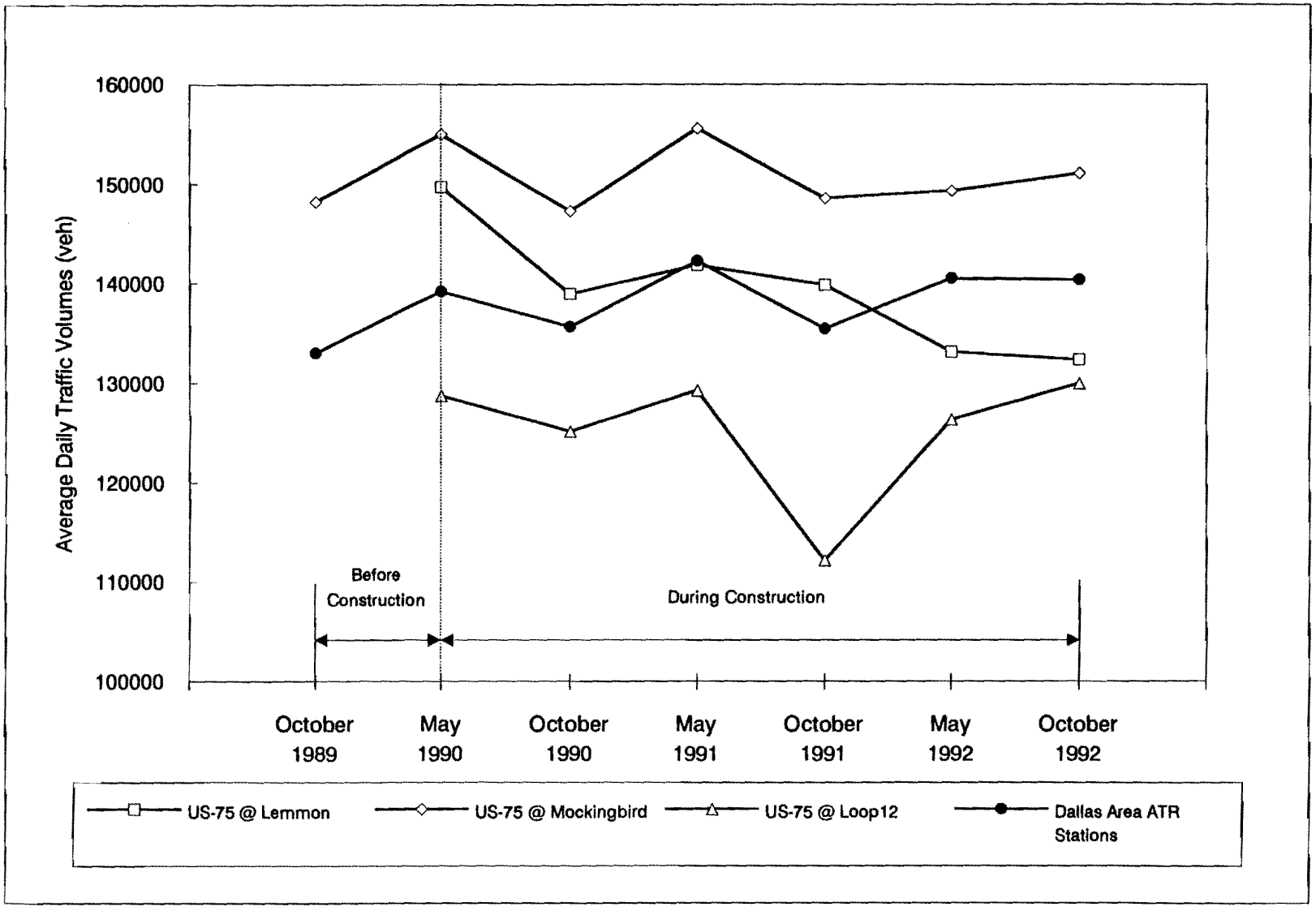


Figure 5. Daily Traffic Volumes on US-75 Compared to ATR Stations in the Dallas Area from October 1989 to October 1992

observed in May 1992. US-75 daily volumes at Mockingbird returned to a more reasonable level in October 1992. The considerably lower volume on US-75 at Loop 12 in October 1991 increased to near normal volumes in May 1992 and October 1992.

Table 4 summarizes US-75 daily traffic volumes at the three screen line count locations in October 1992 compared to estimated volumes. The changes in US-75 traffic volumes range from an estimated reduction of 2 percent at Loop 12 to 9 percent at Lemmon. These results indicate that US-75 daily traffic volumes were lower in October 1992 than volumes that would be expected in the absence of the construction project.

Vehicle Occupancy and Classification

Table 5 summarizes the average occupancy of passenger vehicles on the US-75 North Central Expressway for the October studies. The occupancy data indicate that the average passenger vehicle occupancy is lower in the A.M. peak period than in the P.M. peak period, and the peak period, peak direction traffic has a lower vehicle occupancy than the off-peak direction traffic. During the A.M. peak period, the average passenger vehicle occupancy slightly increased from 1.14 persons per vehicle in October 1991 to 1.15 persons per vehicle in October 1992. The percentage of single-occupant passenger vehicles remained at 88 percent in October 1992. During the P.M. peak period, the percentage of single-occupant passenger vehicles was 82 percent in October 1991 and decreased to 80 percent in October 1992; therefore, the average passenger vehicle occupancy increased from 1.21 to 1.25. Even though the average passenger vehicle occupancy appears to have slightly increased during October 1992, the majority of the automobile users on US-75 continue to drive alone.

Table 6 summarizes the classification of vehicles traveling on US-75 during peak periods. In October 1992, the peak period, peak direction vehicle mix on US-75 averaged 94-95 percent passenger vehicles, 4-5 percent commercial trucks, and 1 percent other (bus and motorcycle). The A.M. peak period, peak direction (southbound) traffic in October 1992 had less passenger vehicles and more trucks than was observed in the earlier October studies. The vehicle mix for the P.M. peak period, peak direction (northbound) traffic was similar to October 1990 classification data. The October 1991 data had shown a decrease in the use of trucks on US-75; however, October 1992 data indicate that the vehicle mix returned to October 1990 levels.

TABLE 4. Changes in Daily Traffic Volumes on US-75 During October 1992

Screen Line Count Location	Direction	Daily Traffic Volumes				
		Before (May 1990)	During Construction (October 1992)			
		Observed	Estimated[a]	Observed	Change	% Change
Lemmon	Northbound	76,060	74,036	65,745	-8,291	-11.20
	Southbound	73,618	71,659	66,597	-5,062	-7.06
	Total	149,678	145,695	132,342	-13,353	-9.17
Mockingbird	Northbound	79,212	81,650	75,549	-6,101	-7.47
	Southbound	75,727	78,058	75,534	-2,524	-3.23
	Total	154,939	159,708	151,083	-8,625	-5.40
Loop 12	Northbound	68,100	70,001	67,705	-2,296	-3.28
	Southbound	60,677	62,371	62,288	-83	-0.13
	Total	128,777	132,372	129,993	-2,379	-1.80

[a] Volumes were estimated by seasonally adjusting May 1990 before volumes.

TABLE 5. Average Passenger Vehicle Occupancy on US-75 (October Studies)

Time Period	Direction	Average Occupancy (persons/vehicle)		
		October 1990	October 1991	October 1992
A.M. Peak	Northbound	1.18	1.19	1.19
	Southbound	1.08	1.09	1.10
	Both	1.12	1.14	1.15
P.M. Peak	Northbound	1.17	1.18	1.22
	Southbound	1.26	1.25	1.26
	Both	1.21	1.21	1.25

Note: Peak period, peak direction data are underlined.

TABLE 6. Vehicle Classification on US-75 (October Studies)

Time Period	Vehicle Type	Percent of Vehicles					
		October 1990		October 1991		October 1992	
		NB	SB	NB	SB	NB	SB
A.M. Peak	Passenger Vehicle	93.30	96.50	94.82	96.84	90.78	95.28
	Commercial Truck	5.70	2.38	4.20	2.36	8.27	3.56
	Bus	0.93	0.99	0.95	0.77	0.80	1.07
	Motorcycle	0.07	0.10	0.03	0.03	0.16	0.09
P.M. Peak	Passenger Vehicle	94.40	94.10	97.53	96.29	94.38	93.80
	Commercial Truck	4.36	4.83	1.59	2.92	4.60	5.26
	Bus	0.97	0.88	0.87	0.77	0.94	0.79
	Motorcycle	0.18	0.10	0.01	0.02	0.09	0.15

Note: Peak period, peak direction data are underlined.

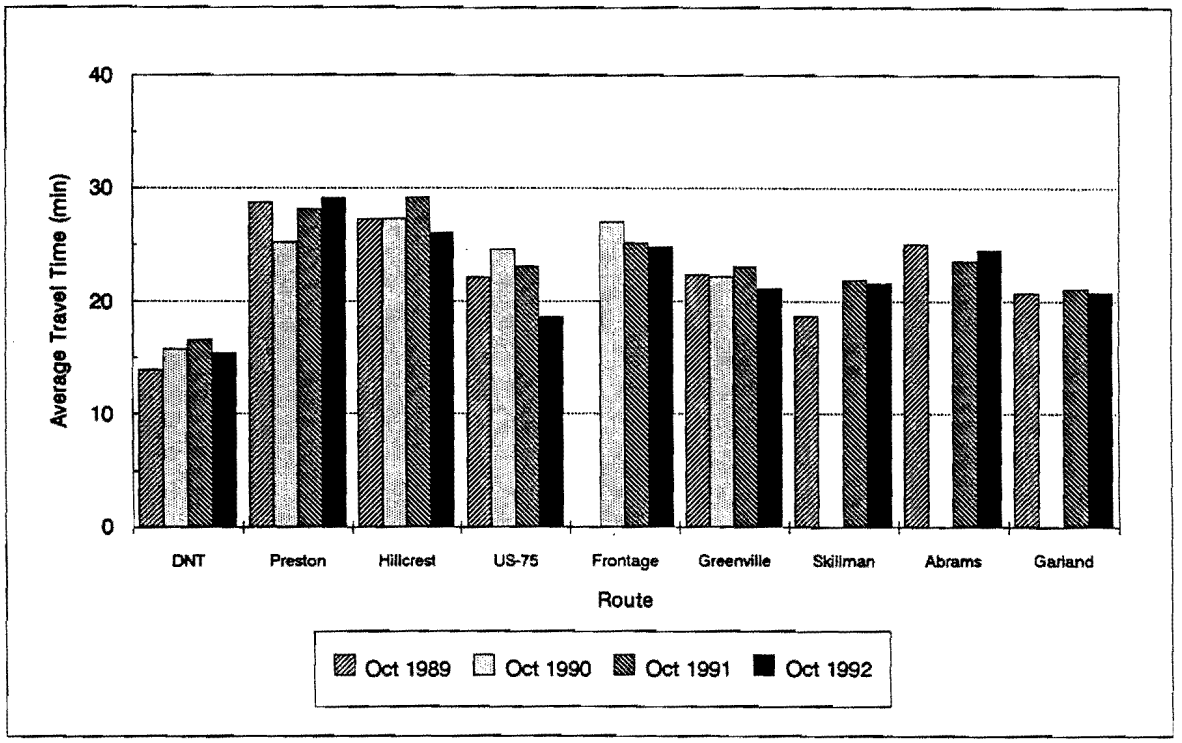
Travel Times and Average Travel Speeds

Appendix D contains tables summarizing the travel times along each route during October 1992. The corresponding average travel speeds are summarized in Appendix E. Appendices K and L provide figures illustrating the travel times and average travel speeds that have been collected during the monitoring studies.

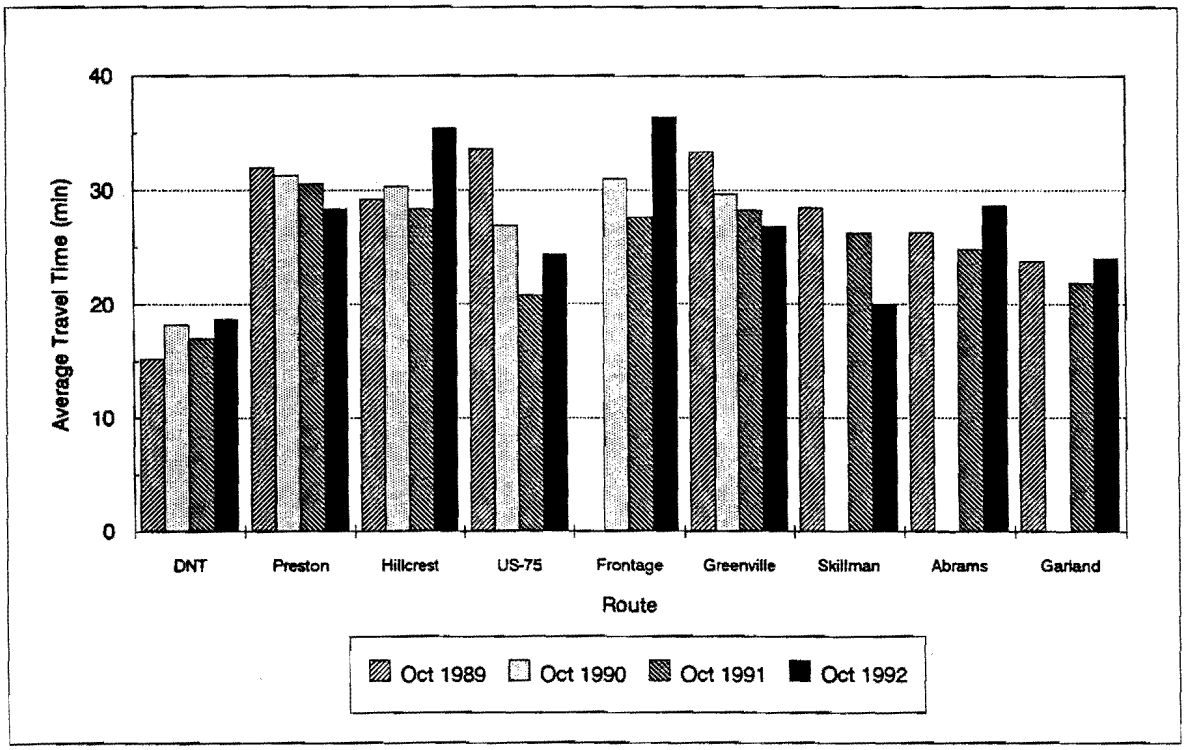
Figures 6 and 7 summarize the average peak hour, peak direction travel times and travel speeds on the north-south routes in the US-75 North Central Expressway corridor. During October 1992, average peak direction travel times in both the A.M. and P.M. peaks range between 15 and 36 minutes. Compared to October 1989 before construction began, A.M. peak hour average travel times increased on Skillman by 3 minutes and DNT by 1 minute. Average travel times decreased on US-75 by 3 rninutes and Hillcrest and Greenville by 1 minute. In the P.M. peak hour, average peak direction travel times increased on Hillcrest by 6 minutes, DNT by 4 minutes, and Abrams by 2 minutes. US-75 Frontage Road average travel time increased by 7 minutes compared to October 1990. This delay was most likely due to the ongoing construction during October 1992 along the frontage road. Average travel times during the P.M. peak hour decreased on US-75 by 9 minutes, Skillman by 8 minutes, Greenville by 6 minutes, and Preston by 4 minutes. The rather large decreases on US-75 and Greenville are probably due to incidents during the October 1989 P.M. peak travel time runs that made the average travel times higher than normal. Excluding the October 1989 data and comparing the travel time to October 1990 data, average travel time on US-75 decreased by 2 minutes in October 1992.

DNT had the lowest travel times of all the routes in the corridor. Also, the average travel speeds are higher on DNT than on the other routes. In the A.M. peak hour, DNT average travel speeds decreased from 45 mph (72 km/h) in October 1989 to 40 mph (64 km/h) in October 1992. P.M. peak hour average travel speeds decreased from 39 mph (63 km/h) in October 1989 to 34 mph (55 km/h) in October 1992. Though DNT average travel speeds have decreased, the speeds remain higher than on other routes in the corridor.

Figures 8 and 9 show the travel times and average travel speeds on US-75 from 6:00 A.M. to 7:00 P.M. The travel times and speeds indicate that the construction underway on the N1 and N2 sections during October 1992 had minimal impact on US-75 peak period travel. During October 1992, A.M. peak period, peak direction (southbound)

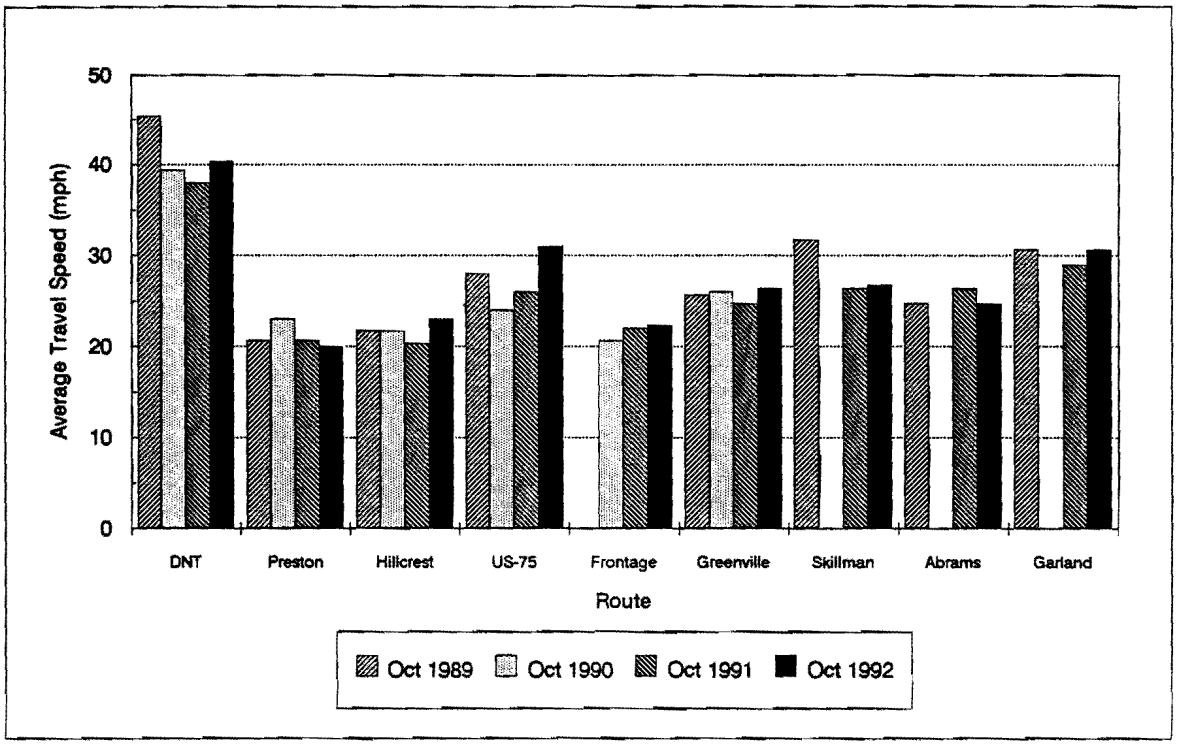


(a) A.M. Peak

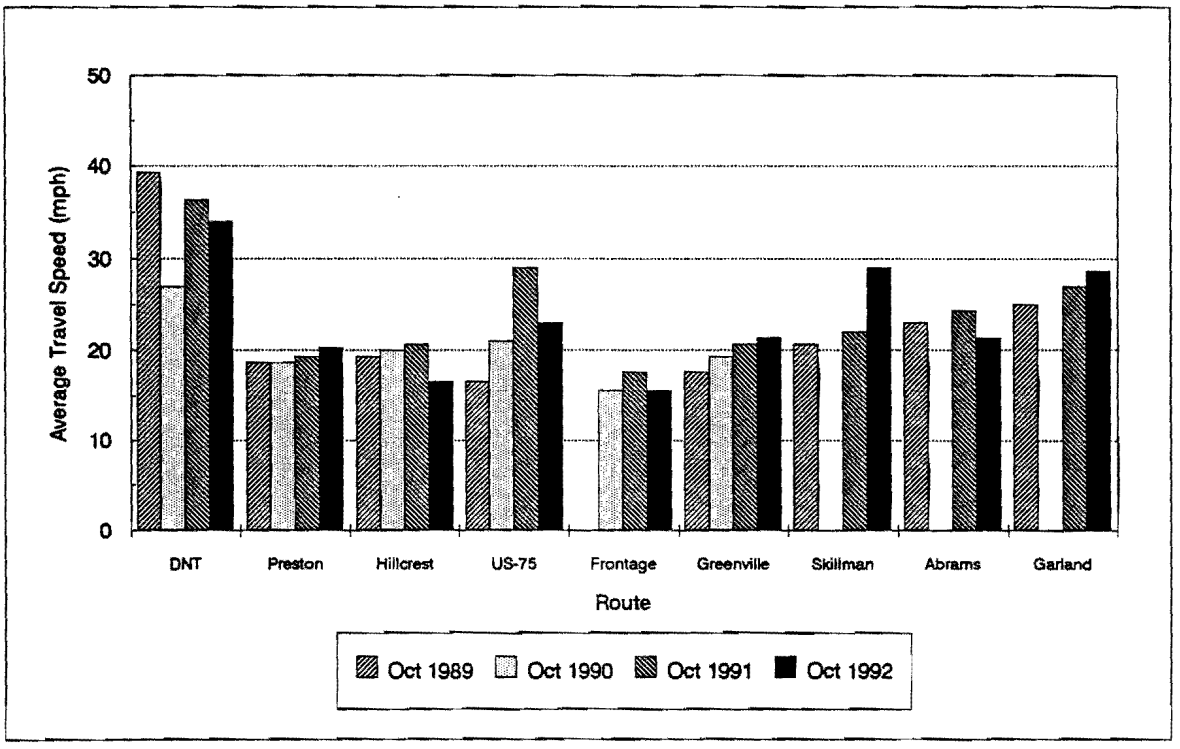


(b) P.M. Peak

Figure 6. Average Peak Hour, Peak Direction Travel Times Between I-635 and Central Business District (October Studies)

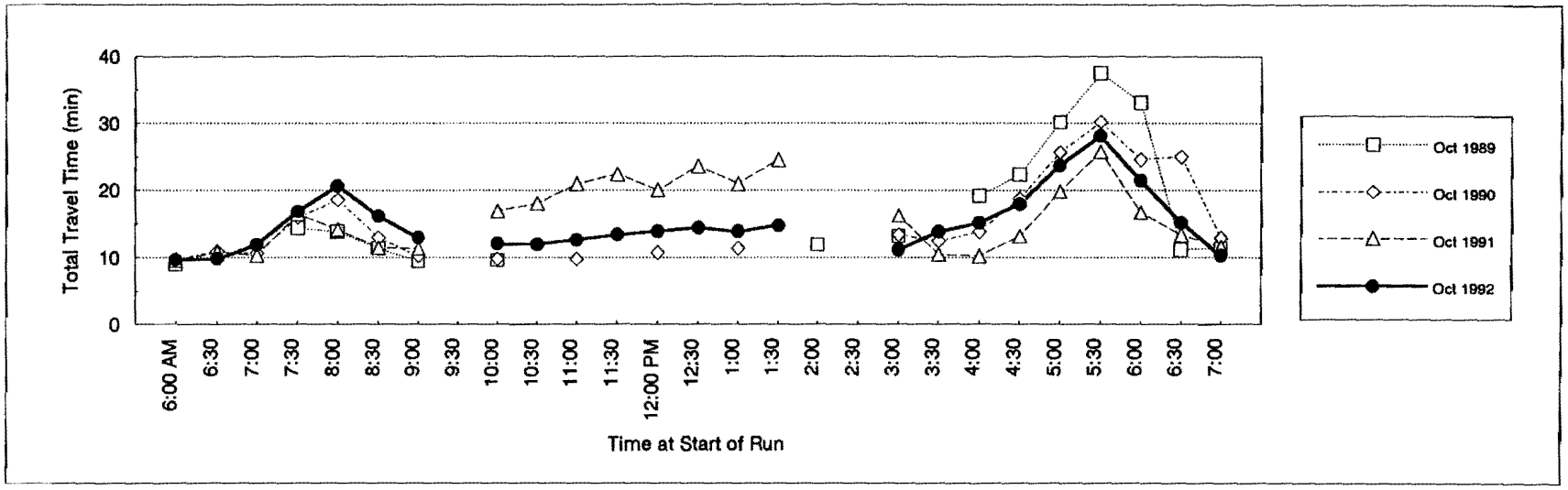


(a) A.M. Peak

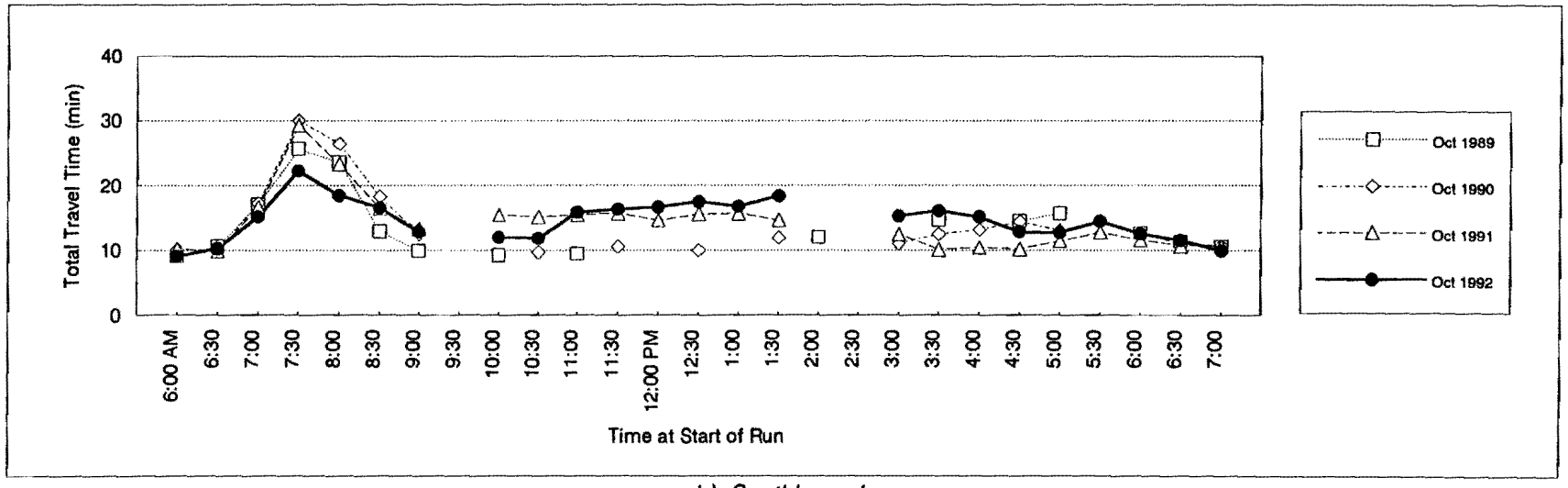


(b) P.M. Peak

Figure 7. Average Peak Hour, Peak Direction Travel Speeds Between I-635 and Central Business District (October Studies)

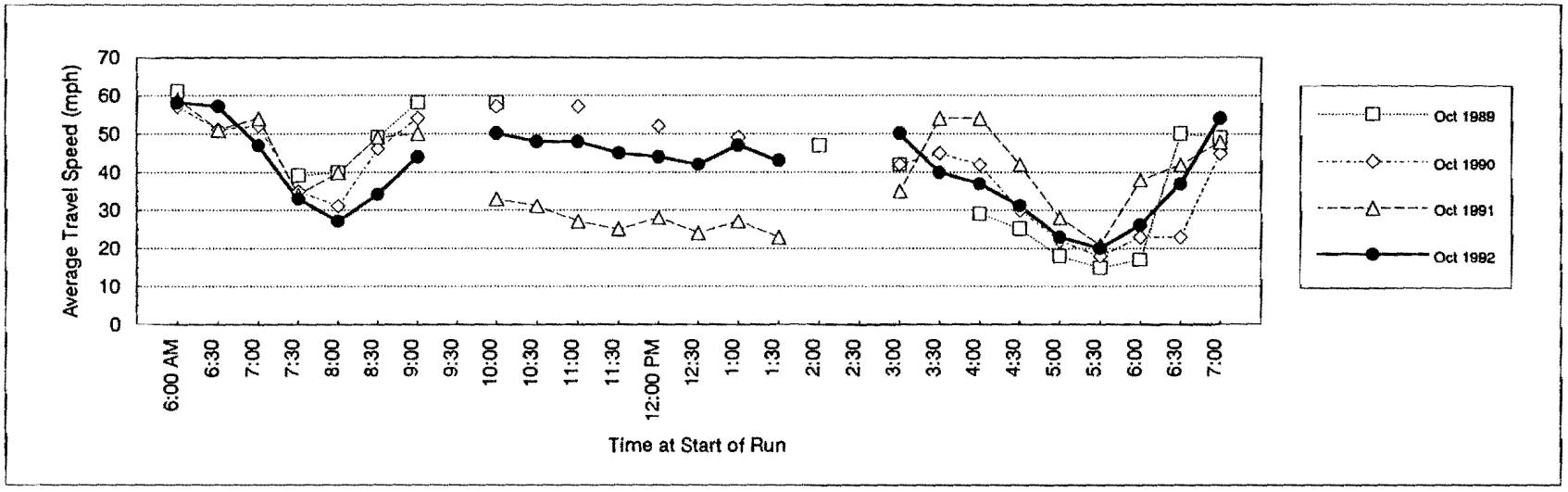


a) Northbound

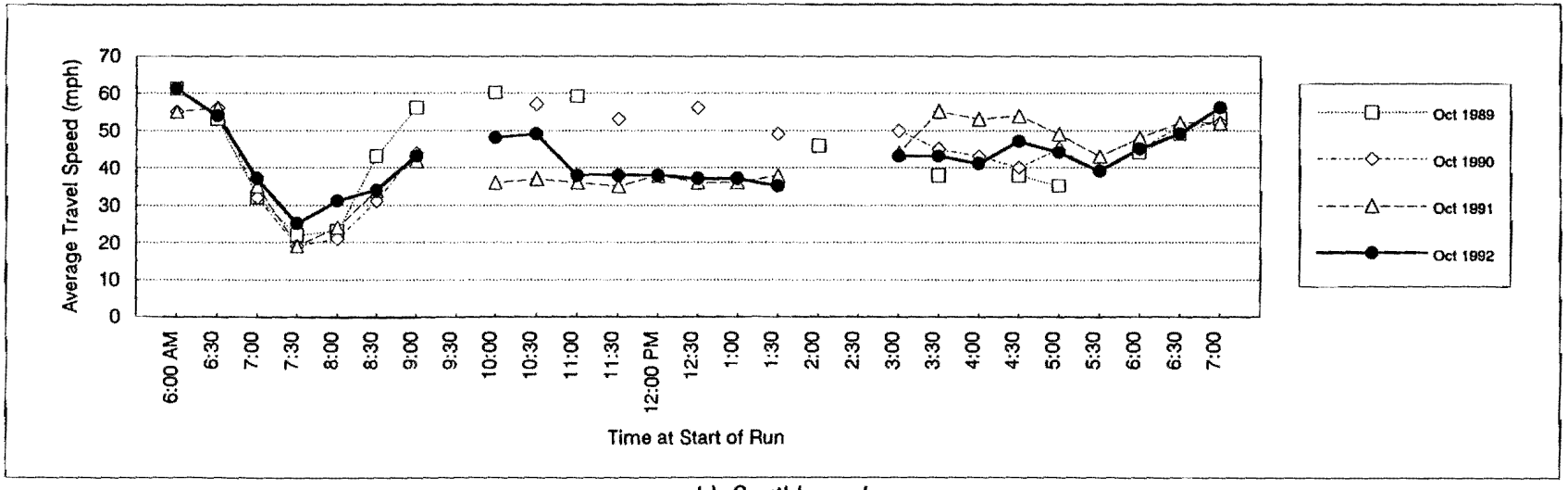


b) Southbound

Figure 8. Total Travel Time on US-75 Between I-635 and Central Business District (October Studies)



a) Northbound



b) Southbound

Figure 9. Average Travel Speed on US-75 Between I-635 and Central Business District (October Studies)

travel times on US-75 were lower than before construction in October 1989. The P.M. peak period, peak direction (northbound) travel times during October 1992 were higher than October 1991 travel times but were lower than October 1990 travel times. Again, the October 1989 P.M. peak runs were affected by incidents. In the off-peak direction, travel times and speeds on US-75 during October 1992 were similar to those collected previously.

Off-peak period travel times in October 1992 increased on US-75 by an average 5 minutes when compared to normal travel times. These increases can be attributed to lane closures on both northbound and southbound mainlanes from Forest Lane to the I-635 LBJ Freeway. Average travel speeds during the off-peak period for the southbound traffic that are normally above 45 mph (72 km/h) fell to below 40 mph (64 km/h) in October 1992. Smaller reductions were observed in the northbound direction where average travel speeds decreased to below 50 mph (80 km/h).

MAY 1993 TRAFFIC CONDITIONS

This section documents the traffic conditions during May 1993, approximately three years into the US-75 North Central Expressway reconstruction project. The results are presented in the same manner as the October 1992 traffic conditions. Summaries of the traffic volume and travel time data collected during May 1993 are given in Appendices F through L.

Screen Line Traffic Volumes

The May 1993 screen line traffic volume counts are summarized in Appendices F, G, and H. Appendix F contains tables summarizing the hourly volume counts on each route at each screen line. Appendix G contains figures that summarize each route's percentage of the total screen line volume; individual figures are presented for each of four screen lines and each of three time periods: A.M. peak (6:00-9:00 A.M.), P.M. peak (3:00-7:00 P.M.), and 24 hours. Appendix H contains similar figures summarizing the actual change in volumes on each route for the May monitoring studies.

Screen line traffic volumes were evaluated for three time periods (A.M. peak, P.M. peak, and 24 hours) and were compared only for the May studies. Comparisons primarily consist of changes between May 1990 (before construction) and May 1993 data. The evaluation of US-75 traffic volumes, however, compares both May and October data. The traffic patterns on the north-south routes and the east-west routes were evaluated separately.

Table 7 summarizes the total corridor traffic volumes at each screen line for May 1993 compared to May 1990. At the Oak Lawn/Lemmon/Peak screen line, daily corridor volumes totaled 443,707 vehicles, approximately 2 percent lower than in May 1990. Volumes at the Mockingbird/Buckner screen line dropped by 1 percent to 373,158 vehicles. Total daily corridor traffic volumes crossing the Loop 12 screen line rose 3 percent to 361,153 vehicles. East-west traffic volumes at the US-75 screen line totaled 395,733 vehicles, which was 6 percent lower than in May 1990.

TABLE 7. US-75 North Central Expressway Corridor Traffic Volumes During May 1993

Screen Line	Period	Direction	Traffic Volumes (veh)			
			May 1990	May 1993	Change	% Change
Oak Lawn/ Lemmon/ Peak	A.M. Peak	Northbound	33,012	33,024	12	0.04
		Southbound	48,710	51,296	2,586	5.31
		Total	81,722	84,320	2,598	3.18
	P.M. Peak	Northbound	74,756	70,874	-3,882	-5.19
		Southbound	57,367	56,808	-559	-0.97
		Total	132,123	127,682	-4,441	-3.36
	24 Hour	Northbound	231,108	222,462	-8,646	-3.74
		Southbound	222,205	223,559	1,354	0.61
		Total	453,313	446,021	-7,292	-1.61
Mockingbird	A.M. Peak	Northbound	26,744	27,371	627	2.34
		Southbound	40,435	39,889	-546	-1.35
		Total	67,179	67,260	81	0.12
	P.M. Peak	Northbound	59,502	57,592	-1,910	-3.21
		Southbound	48,089	47,782	-307	-0.64
		Total	107,591	105,374	-2,217	-2.06
	24 Hour	Northbound	190,678	186,915	-3,763	-1.97
		Southbound	187,818	186,242	-1,576	-0.84
		Total	378,496	373,157	-5,339	-1.41
Loop 12	A.M. Peak	Northbound	25,061	25,501	440	1.76
		Southbound	35,790	37,080	1,290	3.60
		Total	60,851	62,581	1,730	2.84
	P.M. Peak	Northbound	54,174	55,185	1,011	1.87
		Southbound	46,146	48,929	2,783	6.03
		Total	100,320	104,114	3,794	3.78
	24 Hour	Northbound	174,283	178,708	4,425	2.54
		Southbound	175,742	182,445	6,703	3.81
		Total	350,025	361,153	11,128	3.18
US-75	A.M. Peak	Eastbound	18,402	18,411	9	0.05
		Westbound	52,147	48,274	-3,873	-7.43
		Total	70,549	66,685	-3,864	-5.48
	P.M. Peak	Eastbound	66,676	67,284	608	0.91
		Westbound	53,892	48,200	-5,692	-10.56
		Total	120,568	115,484	-5,084	-4.22
	24 Hour	Eastbound	195,077	191,716	-3,361	-1.72
		Westbound	225,302	204,017	-21,285	-9.45
		Total	420,379	395,733	-24,646	-5.86

North-south and east-west traffic patterns and traffic volume changes are presented separately. An analysis of US-75 traffic volumes, including comparisons to control locations in the Dallas area, is also provided.

Traffic Patterns on North-South Routes

Oak Lawn/Lemmon/Peak Screen Line

Figures G-1 through G-3 summarize each route's percentage of the total screen line volume at the Oak Lawn/Lemmon/Peak screen line for the A.M. and P.M. peak and 24-hour periods. Figures H-1 through H-3 show the change in traffic volume on individual routes along the screen line for the same periods.

Fluctuations in each route's percentage of total A.M. peak period screen line traffic volume were as much as 6 percent between May 1990 and May 1993 (see Figure G-1). Traffic increased on DNT and decreased on US-75 (see Figure H-1). Changes occurred on other routes in the corridor, but were much smaller.

Each route's percentage of the total screen line traffic volume during the P.M. peak period differed by as much as 5 percent between May 1990 and May 1993 (see Figure G-2). In May 1993, northbound (peak direction) traffic volume on US-75 substantially decreased while DNT traffic volume increased (see Figure H-2, a). Previous May studies had shown that US-75 carried the most peak direction traffic along the screen line (see Figure G-2, a). In May 1993, however, DNT was the most traveled route in the corridor at the Oak Lawn/Lemmon/Peak screen line.

Daily traffic volumes fluctuated by as much as 4 percent in each route's percentage of total screen line traffic volume (see Figure G-3). The changes in volumes were similar to those during the P.M. peak period. The 24-hour traffic volume on US-75 in May 1993 was much lower than previous studies, while DNT traffic was higher (see Figure H-3). Although traffic decreased on US-75 in both directions, most of the reduction occurred in the northbound direction. The US-75 traffic volumes could have been affected by the ongoing construction project at the Spur 366 Woodall Rodgers/US-75 interchange. Motorists may have avoided the construction project, and therefore, US-75 volumes dropped at the Oak Lawn/Lemmon/Peak screen line.

Mockingbird/Buckner Screen Line

Each route's percentage of the total screen line traffic volume is shown for the Mockingbird/Buckner screen line in Figures G-4 through G-6 for the A.M. and P.M. peak and 24-hour periods. The volume changes are summarized in Figures H-4 through H-6 for peak and 24-hour periods.

No route's percentage of the total screen line traffic changed by more than 2 percent during the A.M. peak period between May 1990 and May 1993 (see Figure G-4). Traffic volumes changed very little along the screen line in May 1993 (see Figure H-4).

The traffic patterns during the P.M. peak period show that fluctuations in each route's percentage of the total screen line traffic volume were less than 3 percent between May 1990 and May 1993 (see Figure G-5). The largest change in traffic volumes occurred on DNT where volumes decreased in both directions (see Figure H-5).

The daily traffic patterns indicate that the volume on each route as a percentage of the total screen line traffic volume changed by less than 2 percent between May 1990 and May 1993 (see Figure G-6). The changes that primarily occurred in May 1993 were in northbound traffic volumes (see Figure H-6).

Loop 12 Screen Line

Figures G-7 through G-9 summarize each route's percentage of the total screen line traffic volume at the Loop 12 screen line for the A.M. and P.M. peak and 24-hour periods. Likewise, Figures H-7 through H-9 show changes in traffic volume on each route for the same periods.

The A.M. peak period traffic patterns along the Loop 12 screen line show fluctuations as large as 4 percent in each route's percentage of total screen line traffic between May 1990 and May 1993 (see Figure G-7). Traffic volumes on DNT, which carries the most southbound (peak direction) traffic along the screen line, increased during May 1993 (see Figure H-7).

The traffic patterns during the P.M. peak period indicate that each route's percentage of the total screen line traffic volume changed by less than 2 percent between May 1990 and May 1993 (see Figure G-8). Like the A.M. peak period traffic patterns, DNT northbound (peak direction) traffic increased during May 1993 (see Figure H-8, a). Minor changes occurred on the other routes in the corridor.

At the Loop 12 screen line, each route's percentage of the total daily screen line traffic volume changed by less than 2 percent between May 1990 and May 1993 (see Figure B-9). Daily traffic volumes decreased on US-75 southbound mainlanes and increased on US-75 northbound mainlanes during May 1993 (see Figure H-9). Traffic volumes increased on DNT in both directions.

Traffic Patterns on East-West Routes

Figures G-10 through G-12 show the traffic distribution along the US-75 screen line for the A.M. and P.M. peak and 24-hour periods. Figures H-10 through H-12 summarize the volume changes on each route crossing US-75 for the peak and 24-hour periods.

The traffic patterns at the US-75 screen line were previously described in the October 1992 traffic conditions section. Similar daily traffic patterns were observed in May 1993. In the A.M. peak period, traffic is greater in the westbound direction. Conversely, the peak traffic in the P.M. peak period is in the eastbound direction. The 24-hour volumes are slightly higher in the westbound direction during the May studies.

The cross-street route's percentage of the total screen line volume during the A.M. peak period fluctuated by as much as 4 percent between May 1990 and May 1993 (see Figure G-10). This fluctuation occurred in the eastbound traffic patterns and was due to an increase in volume on Walnut Hill, which carries the largest eastbound volume along the screen line during the A.M. peak period (see Figure G-10, a). The westbound traffic patterns fluctuated by less than 2 percent (see Figure G-10, b). Although the traffic patterns did not change significantly, westbound traffic decreased 7 percent across the corridor (see Table 7). Ten of the eighteen routes crossing US-75 had lower westbound traffic in May 1993 than in May 1990 (see Figure H-10, b).

P.M. peak period traffic on each route as a percentage of the total screen line traffic fluctuated by less than 3 percent between May 1990 and May 1993 (see Figure G-11). The eastbound traffic patterns showed that the largest increase in traffic occurred on Haskell, Fitzhugh, and Forest while the largest decrease was found on Mockingbird (see Figure H-11, a). The total screen line westbound volume crossing US-75 decreased by approximately 11 percent in May 1993 (see Table 7). The volume changes reveal that thirteen of the eighteen routes experienced lower westbound traffic volumes during May 1993 as opposed to May 1990 (see Figure H-11, b).

The daily cross-street traffic fluctuated by less than 2 percent in each cross-street route's percentage of the total screen line traffic between May 1990 and May 1993 (see Figure G-12). Eastbound traffic volume changes were similar to those found in the P.M. peak period (see Figure H-12, a). Total traffic volumes decreased along the screen line and most of the reduction took place in the westbound direction (see Figure H-12, b). Prior to May 1993, daily traffic volumes on Forest had been much lower than May 1990 volumes. Although the volumes on Forest remained lower than before construction volumes, it appears that May 1993 volumes were closer to May 1990 volumes.

Traffic Patterns on US-75 North Central Expressway

Figure 10 illustrates the daily traffic volume on US-75 at the three screen line count locations from October 1989 to May 1993 and the corresponding average ATR traffic volumes for the Dallas area. The patterns on US-75 prior to May 1993 were discussed earlier in the October 1992 traffic conditions section. In May 1993, the daily volume at Lemmon remained much lower than before construction traffic volume. The traffic volume at Mockingbird was slightly higher in May 1993 than in October 1992, but the trend line differs from the ATR station trend. At Loop 12, US-75 daily traffic volume decreased from October 1992 to May 1993.

Table 8 summarizes US-75 daily traffic volumes in May 1993 at the three screen line count locations. The volumes are compared to estimated volumes that would have been expected in the absence of the construction project. The changes in US-75 traffic volumes range from an estimated reduction of 9 percent at Loop 12 to 12 percent at Lemmon. When comparing only observed volumes, the evaluation indicates that traffic volumes slightly decreased at Loop 12 and Mockingbird, but substantially decreased at

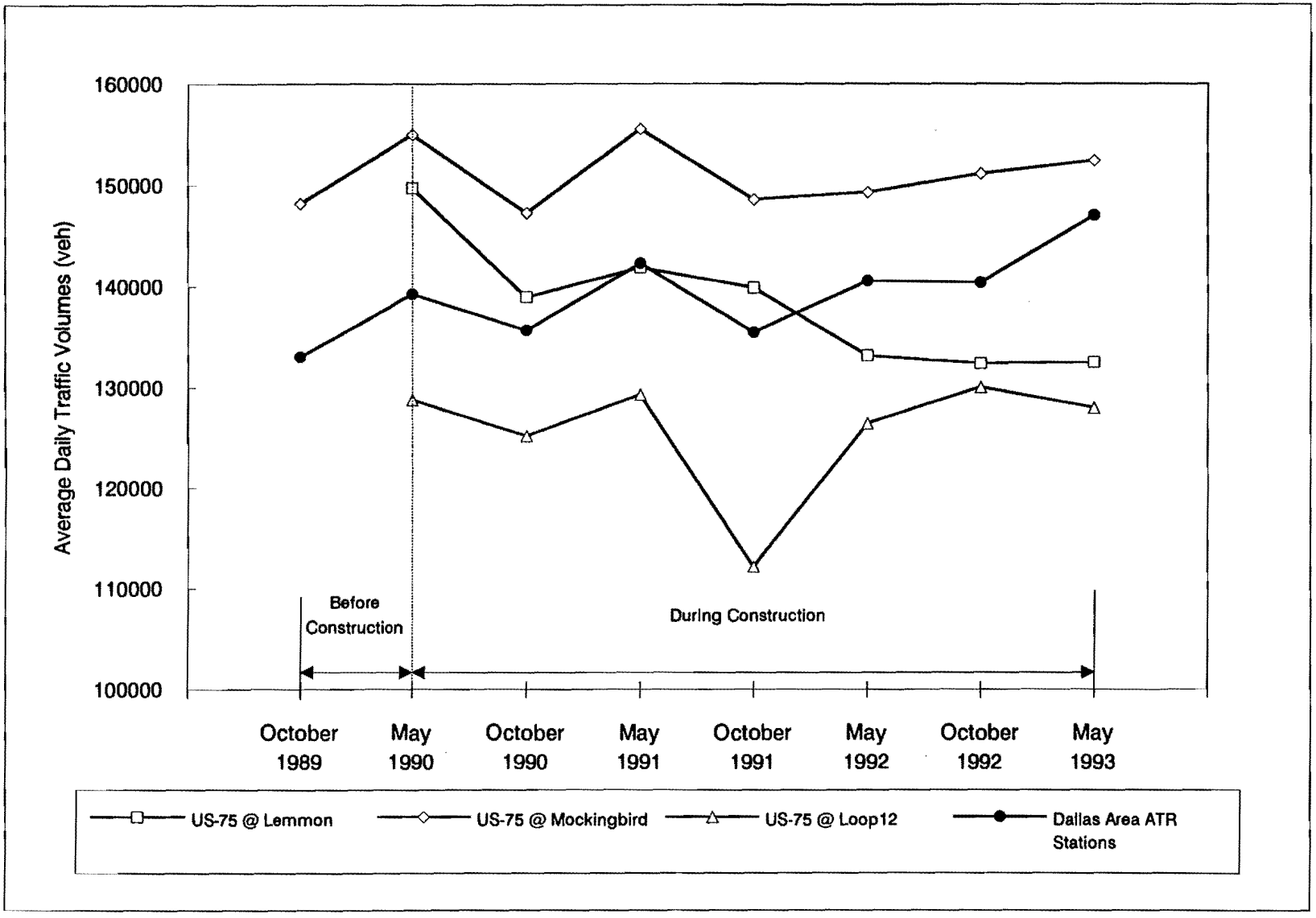


Figure 10. Daily Traffic Volumes on US-75 Compared to ATR Stations in the Dallas Area from October 1989 to May 1993

TABLE 8. Changes in Daily Traffic Volumes on US-75 During May 1993

Screen Line Count Location	Direction	Daily Traffic Volumes				
		Before (May 1990)	During Construction (May 1993)			
		Observed	Estimated[a]	Observed	Change	% Change
Lemmon	Northbound	76,060	76,482	64,663	-11,819	-15.45
	Southbound	73,618	74,026	67,783	-6,243	-8.43
	Total	149,678	150,508	132,446	-18,062	-12.00
Mockingbird	Northbound	79,212	85,465	76,184	-9,281	-10.86
	Southbound	75,727	81,705	76,227	-5,478	-6.70
	Total	154,939	167,170	152,411	-14,759	-8.83
Loop 12	Northbound	68,100	74,298	66,243	-8,055	-10.84
	Southbound	60,677	66,199	61,701	-4,498	-6.79
	Total	128,777	140,497	127,944	-12,553	-8.93

[a] Volumes were estimated by seasonally adjusting May 1990 before volumes.

Lemmon. The N1 and N2 phases of the construction project on US-75 during May 1993 appear to have only minimally affected observed traffic volumes. The large decrease in traffic volumes at Lemmon may have been a result of the Woodall Rodgers/US-75 interchange construction project located south of Lemmon. The real impact of the US-75 construction project on traffic volumes is probably found between the actual change in observed volumes and the change in estimated and observed volumes.

Vehicle Occupancy and Classification

Table 9 summarizes the average occupancy of passenger vehicles on the US-75 North Central Expressway for the May studies. The average passenger vehicle occupancies on US-75 during May are similar to those observed in October. Vehicles traveling US-75 have lower occupancy rates in the A.M. peak period than in the P.M. peak period. In addition, the peak direction has a lower vehicle occupancy than the off-peak direction.

The average passenger vehicle occupancy in May 1993 was relatively unchanged from May 1992. During the A.M. peak period, the percentage of single-occupant passenger vehicles remained at 87 percent in May 1993; therefore, the average passenger vehicle occupancy remained at 1.16 persons per vehicle. During the P.M. peak period, the percentage of single-occupant passenger vehicles increased from 79 percent in May 1992 to 80 percent in May 1993. The average passenger vehicle occupancy increased from 1.25 to 1.26. The peak direction occupancies in May 1993 were the same as or slightly lower than May 1992 data. When compared to May 1990 before construction occupancy data, the average passenger vehicle occupancy in May 1993 was lower in the A.M. peak period; however, in the P.M. peak period, the occupancy was slightly higher. Although some changes have occurred, the majority of the automobile users on US-75 continue to drive alone.

Table 10 summarizes the vehicle classification data collected during the May studies. The peak period, peak direction vehicle mix on US-75 in May 1993 averaged 94-96 percent passenger vehicles, 3-5 percent commercial trucks, and 1 percent other (bus and motorcycle). In May 1992, the peak direction vehicle mix had more trucks and fewer passenger vehicles than previous May studies. The peak direction vehicle classification in May 1993 was similar to May 1990 and May 1991 data.

TABLE 9. Average Passenger Vehicle Occupancy on US-75 (May Studies)

Time Period	Direction	Average Occupancy (persons/vehicle)			
		May 1990	May 1991	May 1992	May 1993
A.M. Peak	Northbound	1.23	1.14	1.23	1.22
	Southbound	1.19	1.08	1.11	1.11
	Both	1.20	1.11	1.16	1.16
P.M. Peak	Northbound	1.19	1.16	1.22	1.21
	Southbound	1.28	1.18	1.29	1.30
	Both	1.22	1.17	1.25	1.26

Note: Peak period, peak direction data are underlined.

TABLE 10. Vehicle Classification on US-75 (May Studies)

Time Period	Vehicle Type	Percent of Vehicles							
		May 1990		May 1991		May 1992		May 1993	
		NB	SB	NB	SB	NB	SB	NB	SB
A.M. Peak	Passenger Vehicle	89.56	95.00	92.80	96.03	92.93	97.12	92.58	95.91
	Commercial Truck	9.39	3.98	6.13	3.06	6.09	1.92	6.44	3.20
	Bus	0.98	0.83	0.89	0.83	0.92	0.90	0.90	0.71
	Motorcycle	0.07	0.17	0.10	0.08	0.06	0.06	0.08	0.18
P.M. Peak	Passenger Vehicle	94.40	94.30	95.60	95.40	96.47	96.02	94.47	96.41
	Commercial Truck	3.78	4.40	3.08	3.83	2.54	3.23	4.54	2.87
	Bus	1.04	1.10	1.03	0.67	0.84	0.62	0.90	0.61
	Motorcycle	0.28	0.10	0.24	0.10	0.15	0.13	0.10	0.12

Note: Peak period, peak direction data are underlined.

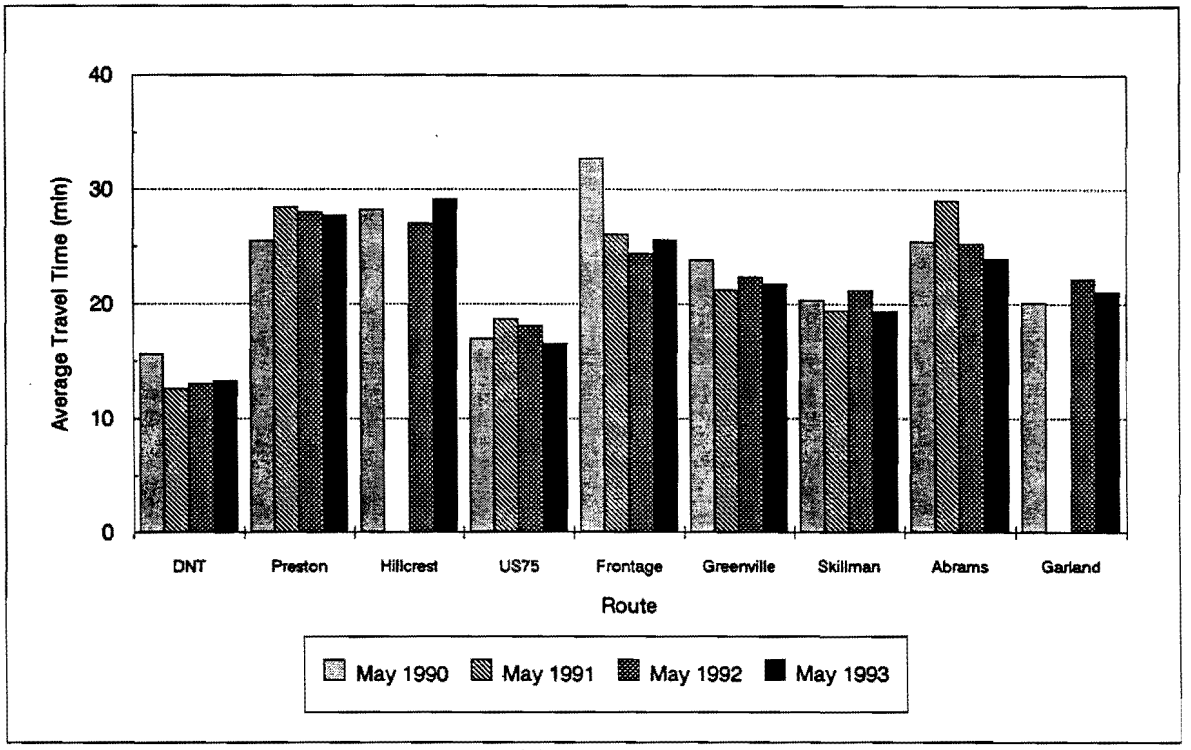
Travel Times and Average Travel Speeds

Appendix I contains tables summarizing the total travel times on each route during May 1993. The corresponding average travel speeds are given in Appendix K. Appendices K and L provide figures illustrating the travel times and average travel speeds that have been collected during the monitoring studies.

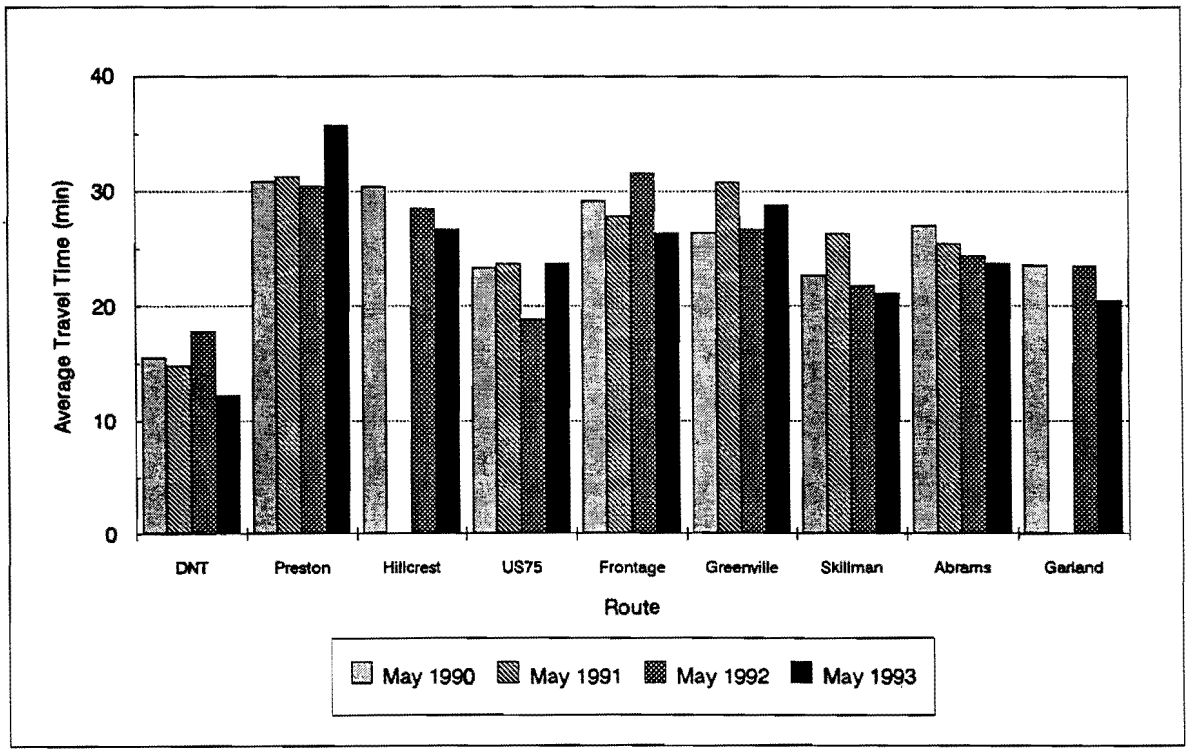
Figure 11 and 12 summarize the average peak hour, peak direction travel times and travel speeds collected during the May studies. The average peak hour, peak direction travel times in both the A.M. and P.M. peaks during May 1993 range between 12 and 36 minutes. A.M. peak hour average travel times compared to May 1990 before construction began increased on Preston by 3 minutes and Hillcrest and Garland by 1 minute. Average travel times decreased on DNT by 3 minutes, Greenville by 2 minutes, and Skillman and Abrams by 1 minute. The large 7 minute reduction in travel times on the US-75 Frontage Road is probably due to higher than normal May 1990 travel times that resulted from incidents. In the P.M. peak hour, average peak direction travel times increased on Preston by 5 minutes, Greenville by 3 minutes, and US-75 by 1 minute. Average travel times during the P.M. peak hour decreased on DNT by 4 minutes, Hillcrest, US-75 Frontage Road, Abrams, and Garland by 3 minutes, and Skillman by 2 minutes.

The travel time data indicate that DNT had the lowest travel times of all the routes in the corridor. Also, the average travel speeds are higher on DNT than on the other routes. DNT average travel speeds during the A.M. peak hour increased from 41 mph (66 km/h) in May 1990 to 47 mph (76 km/h) in May 1993. P.M. peak hour average travel speeds on DNT increased from 39 mph (63 km/h) in May 1990 to 49 mph (77 km/h) in May 1993.

The travel times and average travel speeds on US-75 from 6:00 A.M. to 7:00 P.M. are shown in Figure 13 and 14. The data indicate that the construction underway on the N1 and N2 sections during May 1993 had minimal impact on US-75 travel conditions. Travel times and average travel speeds during the off-peak period in May 1993 were similar to previous May data.

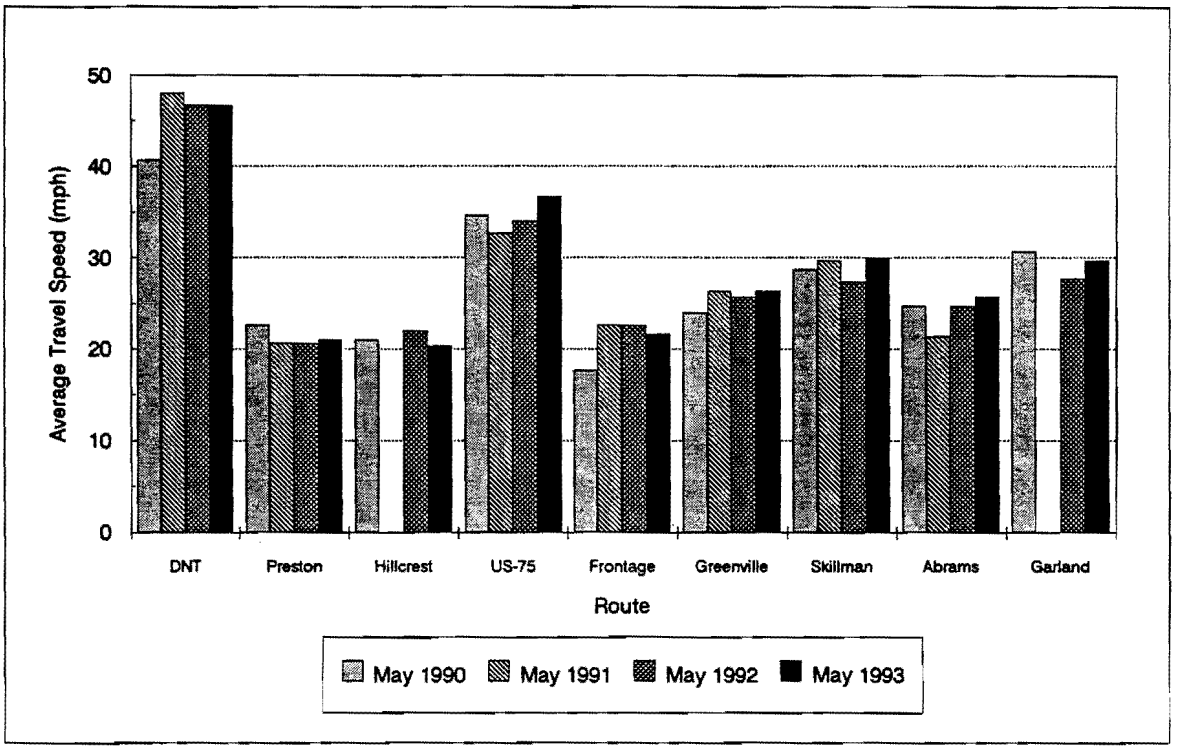


(a) A.M. Peak

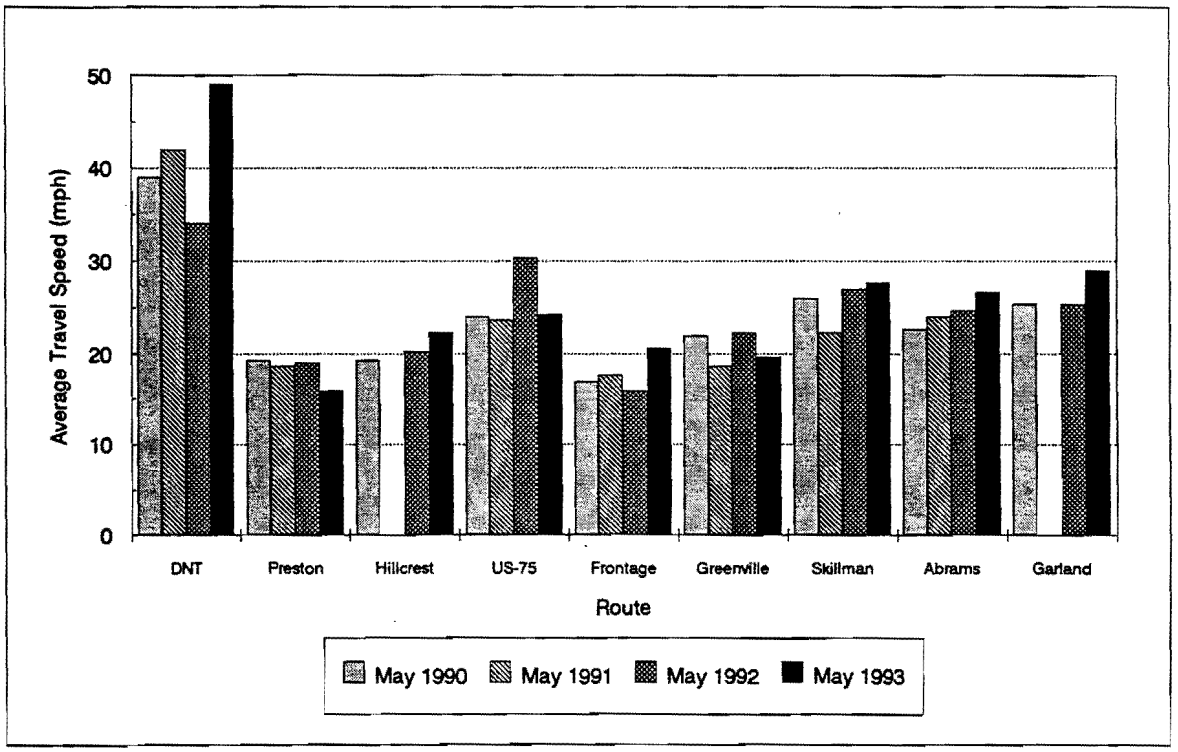


(b) P.M. Peak

Figure 11. Average Peak Hour, Peak Direction Travel Times Between I-635 and Central Business District (May Studies)



(a) A.M. Peak



(b) P.M. Peak

Figure 12. Average Peak Hour, Peak Direction Travel Speeds Between I-635 and Central Business District (May Studies)

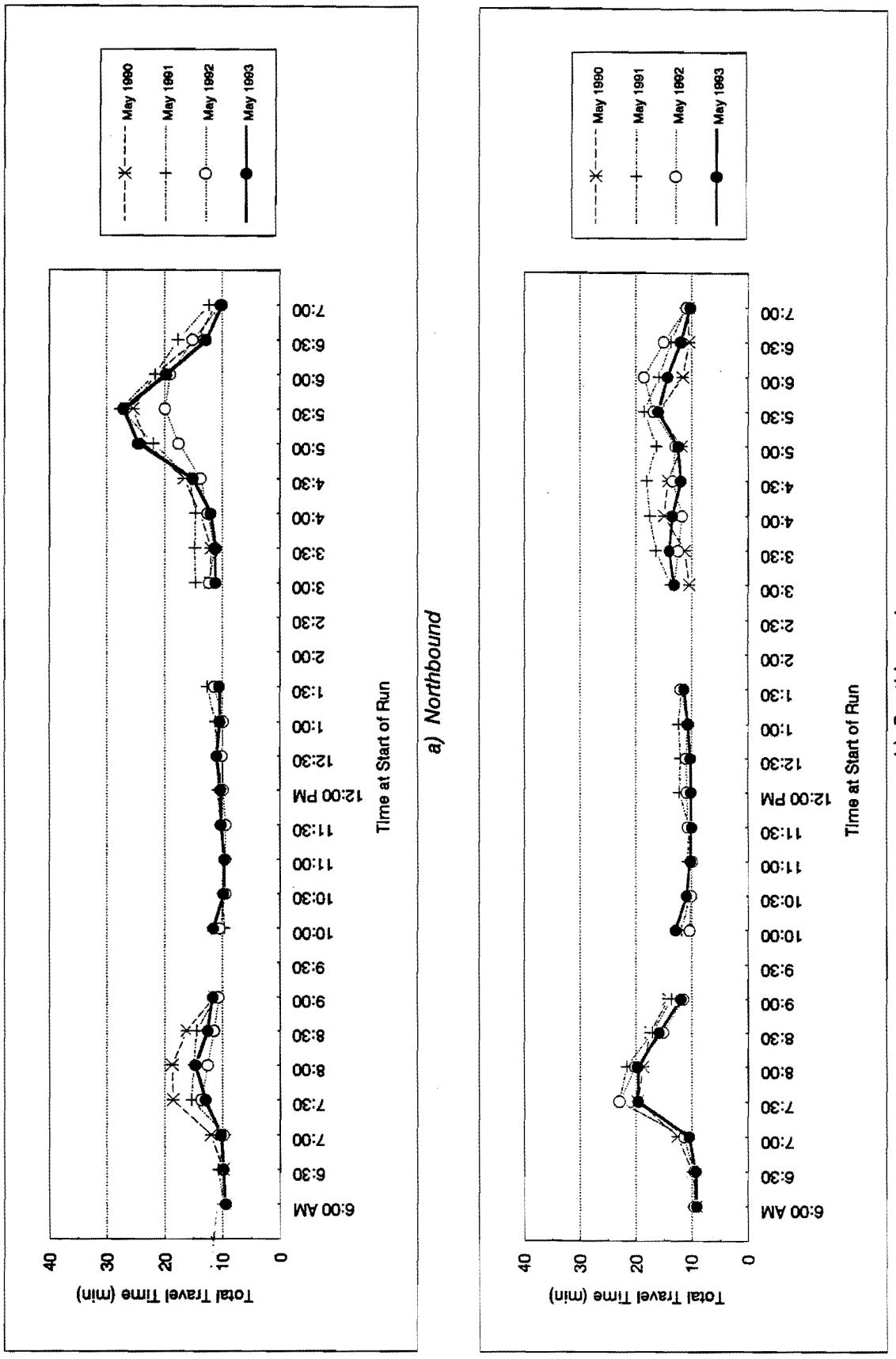
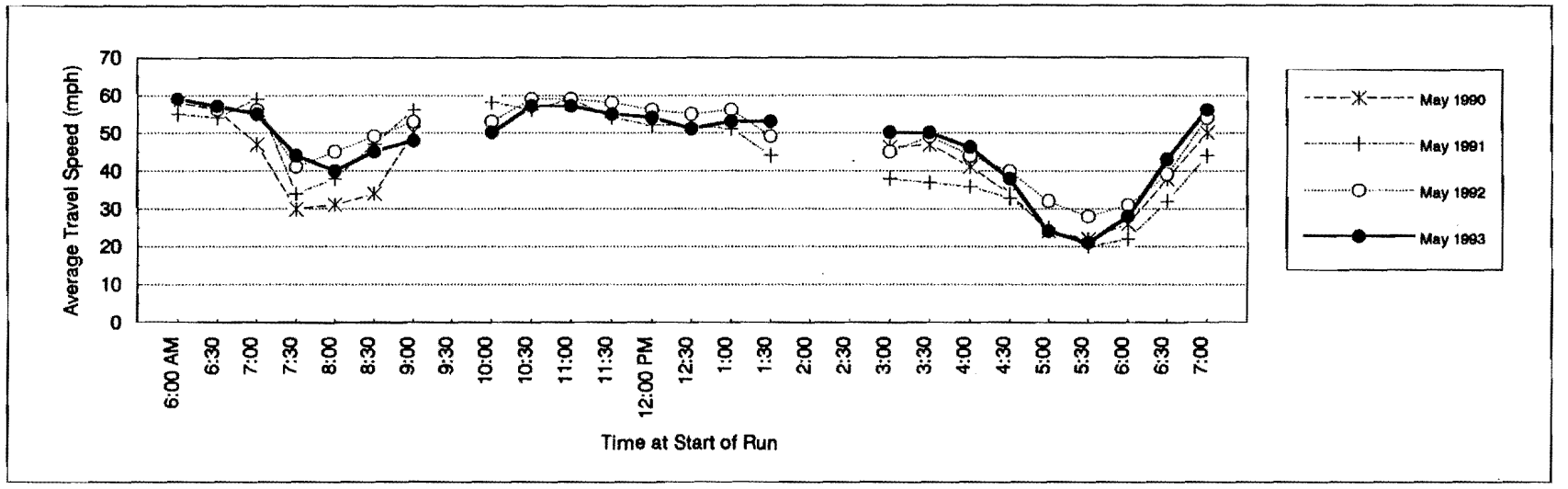
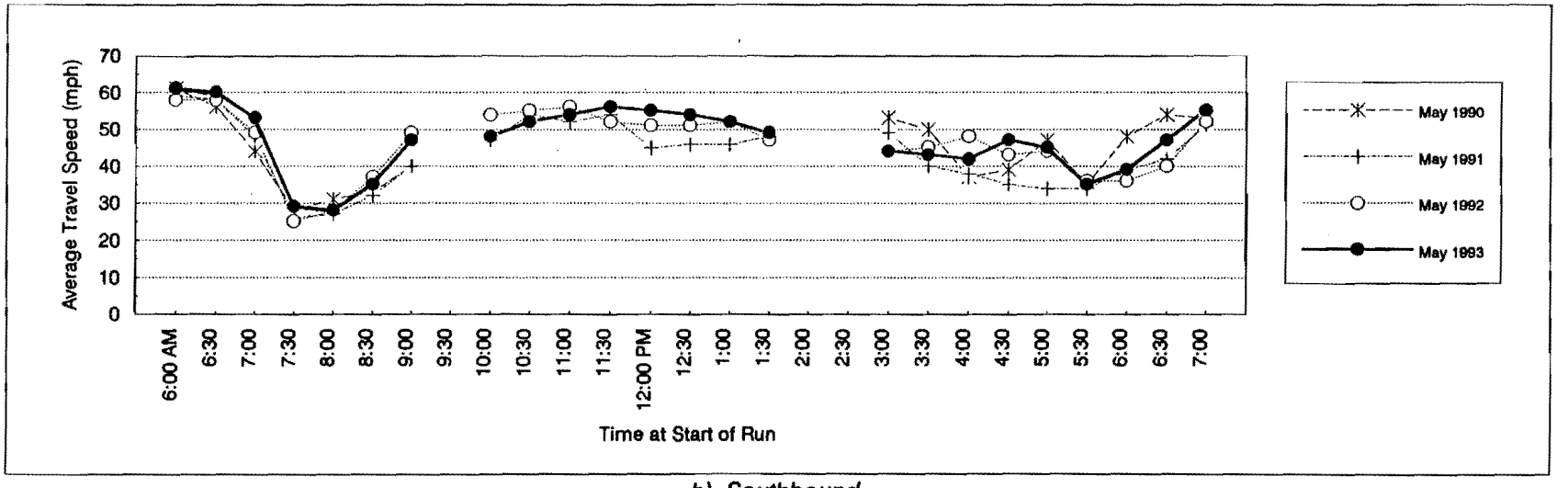


Figure 13. Total Travel Time on US-75 Between I-635 and Central Business District (May Studies)



a) Northbound



b) Southbound

Figure 14. Average Travel Speed on US-75 Between I-635 and Central Business District (May Studies)

SUMMARY

The results indicate that the US-75 North Central Expressway reconstruction had only minor impacts on traffic conditions and travel patterns throughout the corridor during the third year of the construction project, based upon comparisons of October 1992 versus October 1989 and 1990 data and May 1993 versus May 1990 data.

The results of the October 1992 traffic monitoring efforts are summarized as follows:

- Total daily screen line volumes at the Mockingbird/Buckner screen line increased 2 percent when compared to October 1989 before construction volumes. The total daily east-west traffic volumes measured at the US-75 screen line decreased 4 percent. Traffic patterns were similar to previous October data.

- Daily traffic volumes on US-75 North Central Expressway, when compared to control locations in the Dallas area, decreased from an estimated 2 percent at Loop 12 to 9 percent at Lemmon.

- Peak period, peak direction traffic on US-75 North Central Expressway consists of 94-95 percent passenger vehicles, 4-5 percent commercial trucks, and 1 percent other (bus and motorcycle). The percentage of passenger vehicles in the peak periods carrying only a single occupant was 80 to 88 percent (average passenger vehicle occupancy ranged from 1.14 to 1.25). The vehicle occupancy slightly rose in October 1992; however, the majority of the automobile users on US-75 continue to travel alone.

- Peak hour, peak direction average travel times on the US-75 North Central Expressway between the I-635 LBJ Freeway and the Dallas central business district were 2 to 3 minutes lower. DNT traffic experienced travel times that were 1 to 4 minutes higher. Travel times on US-75 Frontage Road increased by 7 minutes during the P.M. peak period, most likely due to the construction activities underway on the US-75 Frontage Road during October 1992. Off-peak period (midday) travel times on US-75 North Central Expressway increased by an average 5 minutes. These increases may be attributed to lane closures on the mainlanes from Forest Lane to I-635 LBJ Freeway.

The results of the May 1993 traffic monitoring efforts are summarized as follows:

- Total daily screen line volumes decreased at the Oak Lawn/Lemmon/Peak screen line by 2 percent and at the Mockingbird/Buckner screen line by 1 percent when compared to May 1990 before construction volumes. At the Loop 12 screen line, total daily traffic volumes increased 3 percent. The total daily east-west traffic volumes crossing the US-75 screen line decreased 6 percent. Traffic patterns changed at the Oak Lawn/Lemmon/Peak screen line where DNT traffic volumes increased while US-75 volumes decreased. The higher traffic volumes on DNT are probably due to the growth west of Plano.

- Daily traffic volumes on US-75 North Central Expressway, when compared to control locations in the Dallas area, decreased from an estimated 9 percent at Loop 12 to 12 percent at Lemmon. The observed data show that volumes slightly decreased at Loop 12 and Mockingbird, but substantially decreased at Lemmon. The N1 and N2 phases of the construction project appear to have only minimally affected observed traffic volumes. The large drop in traffic volumes at Lemmon may have been due to the Woodall Rodgers/US-75 interchange construction project located south of Lemmon.

- Peak period, peak direction traffic on US-75 North Central Expressway consists of 94-96 percent passenger vehicles, 3-5 percent commercial trucks, and 1 percent other (bus and motorcycle). The percentage of passenger vehicles in the peak period carrying only a single occupant was 80 to 87 percent (average passenger vehicle occupancy ranged from 1.16 to 1.26). Compared to before construction occupancies, the vehicle occupancy was lower in the A.M. peak period and higher in the P.M. peak period. The majority of the automobile users on US-75 continue to travel alone.

- Peak hour, peak direction average travel times on the US-75 North Central Expressway between the I-635 LBJ Freeway and the Dallas central business district were 1 minute longer than before construction travel times. Average travel times on DNT were 3 to 4 minutes lower. Off-peak period (midday) travel times on US-75 North Central Expressway were similar to those observed during previous May studies.

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APPENDIX A

OCTOBER 1992 SCREEN LINE TRAFFIC VOLUMES

TABLE A-1. Oak Lawn/Lemmon/Peak Screen Line Average Traffic Volumes (October 1992): Northbound

Hour Ending	Route													Total
	Harry Hines	DNT	Maple	Cedar Springs	Lemmon	Oak Lawn	Turtle Creek	McKinney	US-75	Ross	Live Oak	Gaston	Columbia	
1	59	298	88	138	175	95	45	91	893	101	70	90	93	2237
2	39	151	48	78	110	64	20	46	522	82	33	44	63	1299
3	30	108	37	61	84	49	17	32	383	39	18	37	42	936
4	21	78	18	30	61	27	7	16	246	24	14	17	25	583
5	22	131	17	34	103	25	5	12	366	19	11	17	31	793
6	118	365	36	53	188	32	12	12	884	32	24	34	94	1884
7	668	1459	113	144	679	128	34	61	3230	116	67	93	126	6917
8	1270	2788	251	317	1175	430	160	191	4907	305	181	210	223	12409
9	1008	2931	329	307	1094	633	260	288	4752	441	268	225	256	12790
10	490	2048	279	295	815	556	271	273	3360	464	317	250	290	9708
11	449	1804	332	344	785	628	324	307	3244	526	358	346	340	9788
12	531	2339	452	475	1163	786	522	491	3711	662	637	489	451	12709
13	651	2326	499	553	1414	924	637	615	3510	742	771	538	473	13651
14	621	2500	421	523	1164	850	546	586	3812	606	653	456	398	13137
15	549	2639	397	490	1153	786	491	496	3880	622	552	482	437	12973
16	547	3195	432	512	1048	750	504	547	4061	730	645	649	633	14254
17	640	4678	496	815	1264	897	782	804	4504	1250	1188	953	994	19066
18	802	5272	530	743	1450	1103	1442	1262	4003	1509	2138	1218	1478	22950
19	389	3940	372	617	1201	908	905	815	3395	1024	1007	666	655	15896
20	209	1992	248	469	935	602	463	486	3276	532	482	411	334	10439
21	177	1285	201	418	754	434	273	326	2686	339	309	287	231	7721
22	171	1135	210	426	646	404	254	296	2425	291	257	240	212	6967
23	154	1122	172	374	536	289	238	261	2075	280	157	169	181	6009
24	87	662	150	250	335	183	125	186	1620	199	109	159	160	4225
24 Hr. Total	9701	45245	6129	8267	18333	11588	8339	8500	65745	10936	10263	8078	8218	219341

TABLE A-2. Oak Lawn/Lemmon/Peak Screen Line Average Traffic Volumes (October 1992): Southbound

Hour Ending	Route													Total
	Harry Hines	DNT	Maple	Cedar Springs	Lemmon	Oak Lawn	Turtle Creek	Cole	US-75	Ross	Live Oak	Gaston	Columbia	
1	54	167	105	168	180	88	18	55	782	75	24	57	38	1810
2	42	74	85	109	103	55	10	28	463	48	16	30	22	1080
3	25	66	74	102	85	47	8	31	368	34	14	24	17	895
4	21	50	36	47	66	24	4	17	262	36	19	24	16	623
5	23	70	22	41	50	22	5	18	367	37	63	24	25	787
6	61	290	42	59	104	40	28	53	982	76	272	97	48	2152
7	201	1710	153	191	362	167	128	183	3372	331	1086	426	288	8598
8	495	4967	424	473	976	660	637	633	5671	1026	1641	1114	898	19813
9	655	5384	484	575	1271	863	1087	1012	5256	1166	781	1225	937	20695
10	522	4387	389	453	920	652	601	520	4098	636	412	568	326	14485
11	494	2605	349	481	815	585	420	410	3763	526	410	435	241	11534
12	631	2567	390	490	929	676	521	479	3870	525	575	437	233	12325
13	680	2588	523	628	1220	732	645	513	3987	689	592	574	303	13672
14	676	2751	515	636	1253	784	740	512	3757	700	471	572	338	13706
15	626	2606	435	600	1146	765	491	425	3776	589	370	495	266	12590
16	947	2808	430	580	1287	680	452	393	4272	544	389	402	259	13443
17	1322	3134	459	688	1357	628	436	519	4530	635	380	388	238	14714
18	1377	3472	478	712	1350	637	487	449	4037	559	325	361	218	14481
19	586	3078	385	700	1173	620	401	385	3362	402	266	357	181	11894
20	301	1909	240	538	914	534	315	325	2679	329	187	288	164	8720
21	210	974	209	451	705	451	193	242	2071	248	149	205	118	6225
22	154	851	154	414	581	406	146	210	2033	234	123	144	87	5538
23	122	662	137	368	453	301	92	171	1640	202	74	138	82	4442
24	116	363	115	273	380	179	63	110	1199	128	41	88	58	3115
24 Hr. Total	10342	47530	6627	9776	17680	10587	7928	7691	66597	9774	8879	8471	5402	217297

TABLE A-3. Mockingbird/Buckner Screen Line Average Traffic Volumes (October 1992): Northbound

Hour Ending	Route									Total
	DNT	Preston	Hillcrest	US-75	Greenville	Matilda	Skillman	Abrams	Garland	
1	241	33	10	1017	129	40	71	82	150	1773
2	138	25	6	701	66	23	36	51	90	1136
3	100	16	7	487	42	16	27	33	64	792
4	76	9	1	312	21	8	15	19	47	509
5	122	12	2	396	19	9	17	19	84	660
6	322	34	5	1141	29	30	49	83	192	1884
7	1330	94	29	3366	120	104	173	303	551	6071
8	2637	375	77	4276	255	336	560	778	891	10185
9	2821	622	89	4332	292	353	622	906	832	10849
10	1961	618	182	3649	234	249	439	720	786	9039
11	1730	659	193	3763	281	229	395	677	879	8807
12	2104	800	246	4449	376	251	460	802	979	10466
13	2134	867	241	4564	496	298	552	915	1026	11093
14	2125	826	279	4206	461	288	517	874	997	10576
15	2250	809	268	4469	412	289	563	834	1097	10989
16	2686	776	288	4592	421	349	728	986	1225	12054
17	3935	853	328	4716	470	450	953	1163	1419	14289
18	4838	1028	456	4418	557	854	1210	1471	1359	15991
19	3906	817	353	4822	529	474	886	1151	1205	14142
20	2034	526	234	4532	470	306	493	800	958	10351
21	1260	370	161	3651	396	214	359	526	704	7641
22	1106	317	128	3146	416	167	271	397	557	6509
23	871	212	88	2566	326	124	189	291	422	5091
24	526	99	39	1772	267	81	135	182	289	3391
24 Hr. Total	41255	10799	3691	75549	7084	5344	9720	14064	16782	184288

TABLE A-4. Mockingbird/Buckner Screen Line Average Traffic Volumes (October 1992): Southbound

Hour Ending	Route									Total
	DNT	Preston	Hillcrest	US-75	Greenville	Matilda	Skillman	Abrams	Garland	
1	141	31	10	805	126	18	39	79	123	1371
2	72	16	4	476	56	6	29	44	58	760
3	65	13	2	366	38	8	14	38	46	589
4	43	10	2	277	24	3	14	24	39	437
5	73	9	1	344	24	1	36	26	63	578
6	260	33	5	962	35	3	202	55	215	1769
7	1515	125	56	3652	155	17	950	209	866	7544
8	4598	529	378	5934	562	55	1445	746	1859	16106
9	4958	867	703	4558	699	63	609	813	1686	14956
10	2848	686	322	4290	444	52	385	580	1097	10705
11	1883	599	261	3615	445	58	382	534	977	8755
12	1967	724	321	4391	610	94	481	642	1045	10277
13	2059	830	392	4509	708	104	499	714	1136	10952
14	2311	825	362	4470	650	95	489	696	1148	11044
15	2198	776	386	4520	659	100	510	759	1148	11056
16	2402	732	421	4719	643	112	546	783	1237	11594
17	2780	719	481	5213	670	130	644	822	1198	12657
18	2999	717	480	4880	780	156	672	1011	1239	12933
19	2424	640	365	4119	733	158	557	1038	1216	11250
20	1499	494	253	3761	691	131	400	853	983	9066
21	909	343	142	3026	553	113	362	604	726	6778
22	814	263	133	2887	488	90	285	522	598	6060
23	574	161	71	2207	393	73	138	363	408	4387
24	330	74	30	1553	279	36	79	180	236	2797
24 Hr. Total	39721	10214	5581	75534	10466	1675	9746	12136	19348	184421

TABLE A-5. Loop 12 (Northwest Highway) Screen Line Average Traffic Volumes (October 1992): Northbound

Hour Ending	Route							Total
	DNT	Preston	Hillcrest	US-75	Greenville	Skillman	Abrams	
1	317	35	26	1022	244	208	120	1972
2	158	20	14	611	158	110	65	1135
3	113	12	13	458	142	90	53	882
4	73	7	10	278	49	48	32	496
5	123	14	3	339	30	31	34	574
6	311	30	21	836	47	84	69	1397
7	1371	126	107	2813	213	234	205	5069
8	2954	406	382	3707	753	548	571	9320
9	3109	506	603	3748	1064	606	693	10328
10	2001	538	483	3389	846	468	559	8063
11	1704	626	480	3288	716	455	574	7843
12	2051	699	519	4237	968	585	625	9683
13	2084	818	582	4097	1285	712	717	10296
14	2312	824	592	3588	1288	703	728	10013
15	2599	771	615	3949	1143	773	718	10567
16	3133	746	636	4260	1219	987	767	11748
17	4481	790	825	4172	1488	1473	877	14107
18	5711	905	1043	3534	2126	2343	1015	16677
19	4515	812	831	3872	1676	1774	991	14470
20	2222	483	468	3843	1017	1028	765	9826
21	1444	357	314	3278	725	766	562	7448
22	1273	316	338	3234	768	655	449	7033
23	1198	184	191	2898	604	502	329	5906
24	770	93	93	2296	413	384	242	4291
24 Hr. Total	46028	10118	9189	67705	18782	15568	11756	179145

TABLE A-6. Loop 12 (Northwest Highway) Screen Line Average Traffic Volumes (October 1992): Southbound

Hour Ending	Route							Total
	DNT	Preston	Hillcrest	US-75	Greenville	Skillman	Abrams	
1	154	30	30	810	205	129	89	1448
2	95	15	17	447	121	70	55	820
3	65	10	10	347	76	63	40	810
4	48	6	9	249	31	53	27	423
5	72	10	10	330	32	54	29	536
6	380	33	32	911	82	163	65	1656
7	2076	174	167	3222	355	737	228	6959
8	5323	626	840	3432	1724	2111	631	14687
9	5253	882	1201	3173	1688	1979	727	14883
10	3801	786	789	3752	1015	949	638	11710
11	2519	765	658	3876	909	715	652	10094
12	2552	796	769	3782	1114	784	774	10551
13	2471	791	799	3915	1407	851	831	11065
14	2618	782	753	3624	1266	778	800	10622
15	2506	773	711	3656	1038	781	833	10278
16	2754	680	744	3739	1073	788	861	10639
17	3264	681	906	3868	1197	637	1015	11767
18	3737	636	1157	3802	1457	1017	1313	13119
19	3120	619	967	3661	1257	1031	1166	11821
20	1903	486	572	3086	1033	855	766	8702
21	1030	283	311	2653	706	626	539	6147
22	869	231	283	2670	738	517	422	5729
23	654	137	168	1880	535	368	295	4037
24	353	74	76	1403	364	258	198	2726
24 Hr. Total	47628	10265	11979	62288	19402	16475	12992	181029

TABLE A-7. US-75 Screen Line Average Traffic Volumes (October 1992): Eastbound

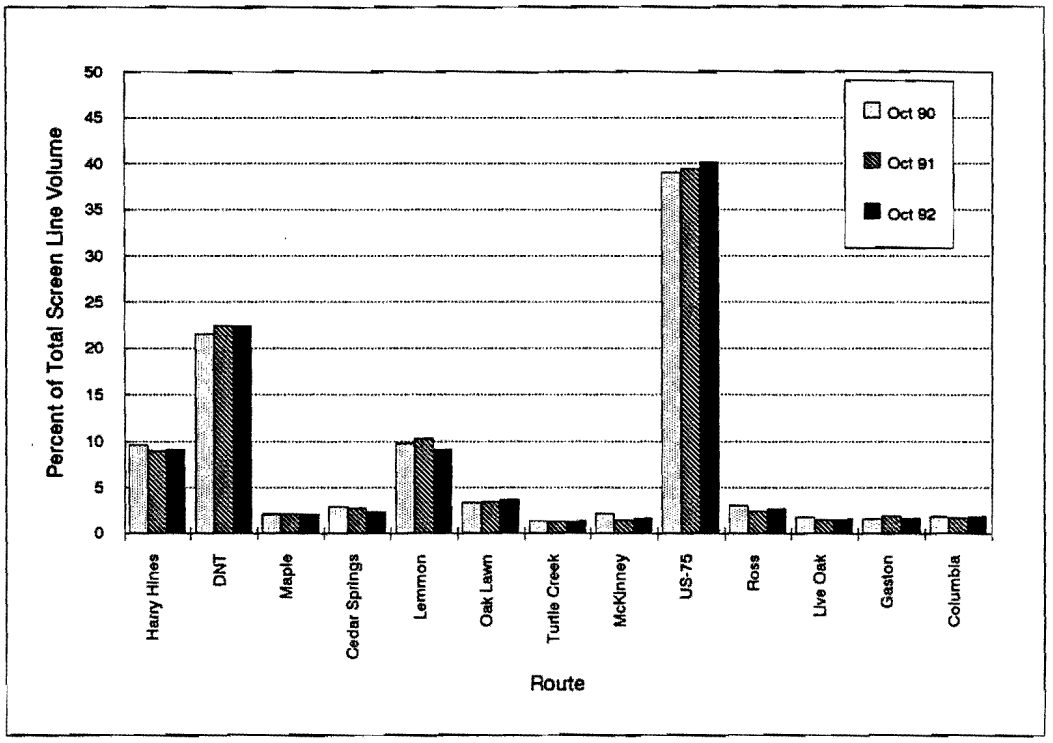
Hour Ending	Route																		Total
	Hall	Lemmon	Haskell	Fitzhugh	Henderson	Monticello	McCommas	Mockingbird	Yale	University	Lovers	South western	Caruth Haven	Loop 12	Park Lane	Walnut	Royal	Forest	
1	28	107	28	243	150	12	22	135	54	56	135	14	40	282	107	106	65	26	1614
2	15	64	21	158	77	3	16	60	29	38	69	8	17	137	56	50	30	19	867
3	8	56	18	145	55	5	11	49	15	12	51	3	11	112	46	55	21	15	680
4	7	24	13	75	31	1	4	27	5	4	37	3	7	59	33	45	14	20	407
5	8	22	14	49	25	0	3	26	3	3	17	5	5	47	24	28	11	24	314
6	11	43	35	82	27	6	4	54	10	11	29	7	15	99	87	87	39	137	763
7	28	182	127	209	96	14	19	154	41	46	74	35	80	303	130	464	151	359	2512
8	97	387	475	389	213	50	39	299	67	79	277	131	290	779	499	1058	517	585	6230
9	108	477	604	596	328	84	70	428	184	181	348	183	369	958	764	1841	835	539	8675
10	133	435	288	549	356	81	115	568	177	173	336	200	203	883	593	1413	555	675	7833
11	151	454	208	579	429	97	114	639	179	178	304	201	181	1076	625	1219	498	835	7947
12	188	475	345	726	577	154	184	859	241	269	390	230	204	1352	796	1254	578	1054	9877
13	218	540	423	938	729	158	236	981	304	332	444	285	267	1574	1091	1253	642	928	11342
14	211	588	330	879	713	129	200	885	265	282	497	275	279	1596	1106	1128	641	856	10880
15	200	605	347	972	705	140	189	968	304	279	535	253	219	1870	1003	1251	659	1017	11516
16	226	651	469	1068	718	146	231	998	362	281	643	251	187	1992	1023	1240	814	1476	12775
17	260	802	571	1340	891	234	356	1238	321	310	716	353	245	2532	1019	1342	1254	2066	15850
18	383	911	584	1538	1142	418	656	1528	358	447	978	595	317	2916	1310	1498	1922	1679	19177
19	210	673	319	1296	986	247	440	1308	246	320	932	454	280	2546	1200	1376	1233	830	14898
20	167	487	175	975	798	143	279	1040	239	228	729	225	232	1791	986	976	500	436	10388
21	117	347	138	669	642	102	210	828	180	183	598	171	191	1448	696	645	340	385	7888
22	96	300	131	583	548	87	176	801	199	248	612	141	196	1302	615	512	298	276	7121
23	82	277	108	580	410	48	117	482	156	151	428	85	119	832	317	379	227	176	4955
24	68	217	87	449	290	28	57	301	117	90	299	42	75	577	229	251	137	91	3404
24 Hr. Total	3019	9124	5858	15088	10937	2390	3747	14654	4058	4180	9474	4130	4011	27163	14315	19268	11983	14503	177901

TABLE A-8. US-75 Screen Line Average Traffic Volume (October 1992): Westbound

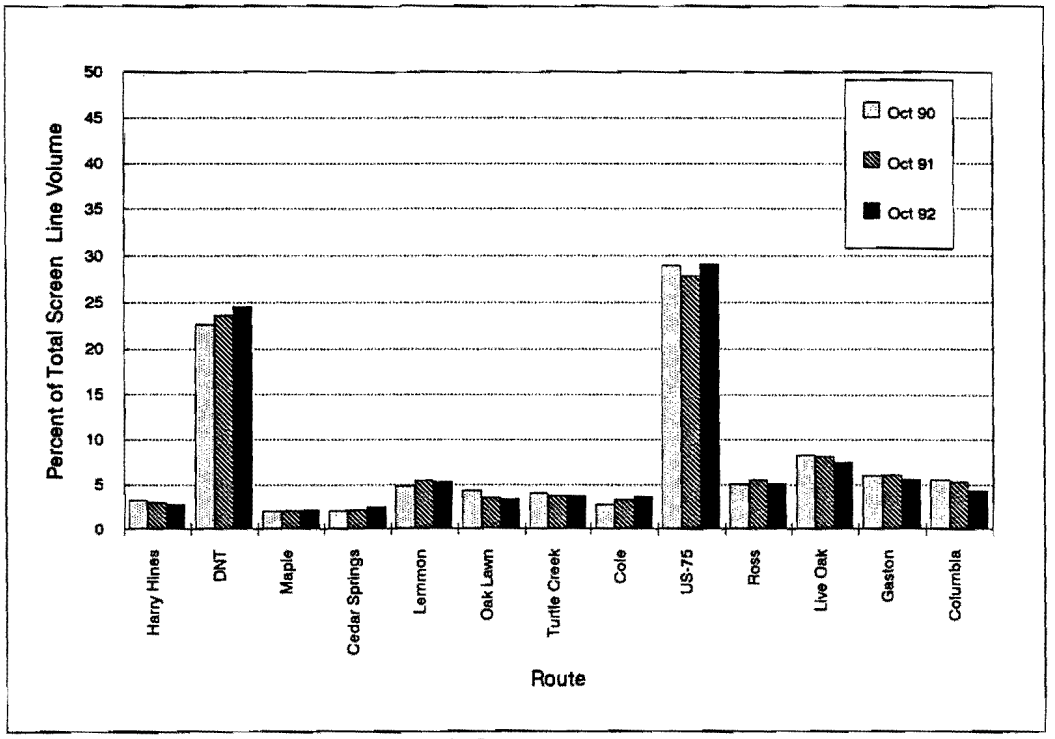
Hour Ending	Route																		Total
	Hall	Lemmon	Haskell	Fitzhugh	Henderson	Monticello	McCommas	Mockingbird	Yale	University	Lovers	South western	Caruth Haven	Loop 12	Park Lane	Walnut	Royal	Forest	
1	38	90	63	177	83	16	9	121	60	42	84	45	18	157	159	128	64	169	1523
2	25	53	48	138	60	10	8	60	41	24	59	26	9	123	119	52	29	87	972
3	18	47	25	128	51	5	5	66	39	17	58	18	13	85	89	45	33	69	809
4	11	37	19	87	35	7	5	48	5	7	24	12	4	88	42	34	19	54	516
5	16	91	47	86	35	4	2	67	7	3	25	12	8	138	41	23	28	62	691
6	67	240	178	179	82	19	13	210	26	32	85	37	24	411	123	81	83	174	2075
7	216	759	544	563	325	107	52	811	163	134	362	197	98	1568	401	454	417	935	8107
8	420	1253	893	976	808	474	247	2104	777	535	1169	749	302	3126	917	1203	1536	2878	20167
9	590	1226	505	1103	992	566	332	2148	807	602	1275	783	297	2852	966	1113	1322	3068	20546
10	313	656	419	679	601	226	143	1296	436	425	712	414	223	1936	700	1002	668	1742	12591
11	253	560	461	633	516	155	97	1058	299	332	533	293	193	1634	739	1029	516	1438	10741
12	254	613	626	694	585	149	99	1111	309	301	549	310	230	1761	892	1263	570	1576	11892
13	266	654	683	795	672	193	124	1332	366	354	655	402	214	1856	994	1323	585	1771	13239
14	269	621	555	779	648	195	144	1386	354	350	650	418	246	1985	982	1208	579	1800	13168
15	262	646	585	799	594	160	108	1199	303	314	608	337	186	1766	890	1184	539	1613	12092
16	250	676	669	837	553	178	108	1127	388	396	581	314	185	1750	878	1291	578	1639	12395
17	308	783	852	891	571	167	101	1104	476	346	593	333	247	1871	858	1408	560	1584	12851
18	287	806	622	897	578	189	99	1095	510	330	691	403	321	1918	1026	1578	686	1483	13520
19	226	577	452	735	566	201	105	1148	362	321	677	424	189	1916	805	1113	536	1329	11683
20	195	443	298	586	506	120	72	760	193	240	504	333	132	1457	680	886	419	1048	8872
21	148	377	226	486	370	95	55	544	133	168	362	200	85	907	429	604	281	837	6107
22	128	352	238	426	310	79	58	503	134	158	327	175	99	725	417	609	243	541	5520
23	134	319	203	416	270	53	41	398	117	118	291	144	84	518	318	484	178	421	4519
24	84	237	119	322	185	29	31	226	109	71	185	89	40	402	250	353	114	284	3129
24 Hr. Total	4796	12113	9110	13413	10009	3383	2057	19922	6412	5623	11059	6465	3456	30730	13715	18467	10583	26397	207720

APPENDIX B

SCREEN LINE TRAFFIC VOLUMES (OCTOBER STUDIES): PERCENTAGE OF TOTAL SCREEN LINE VOLUME BY ROUTE

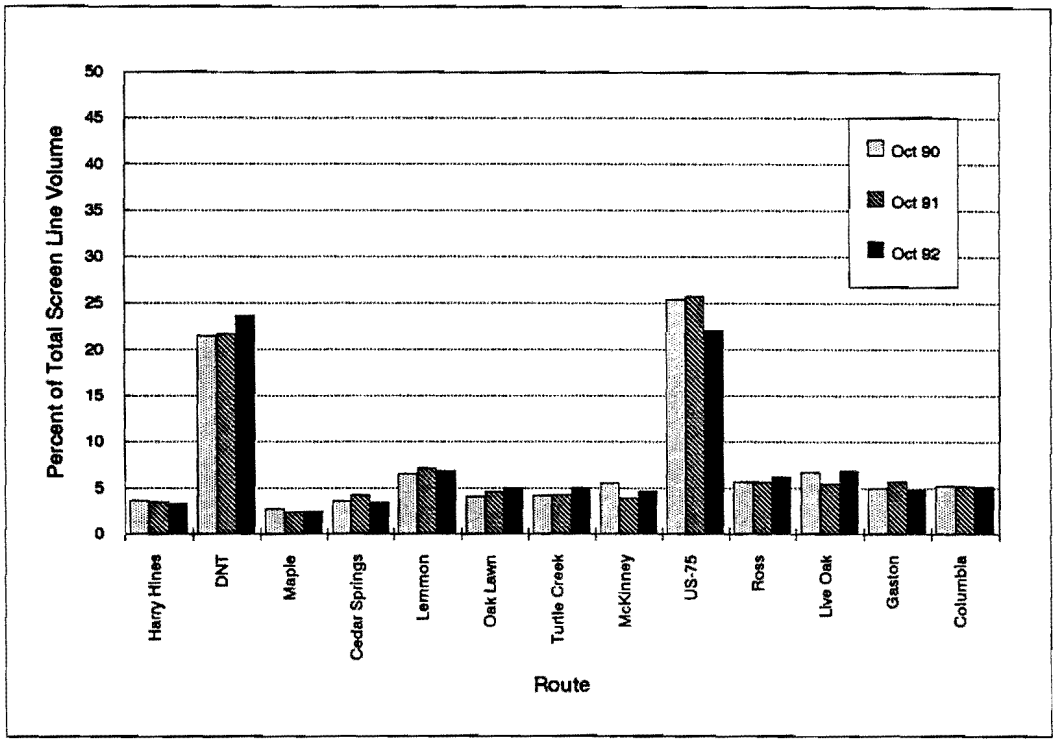


a) Northbound

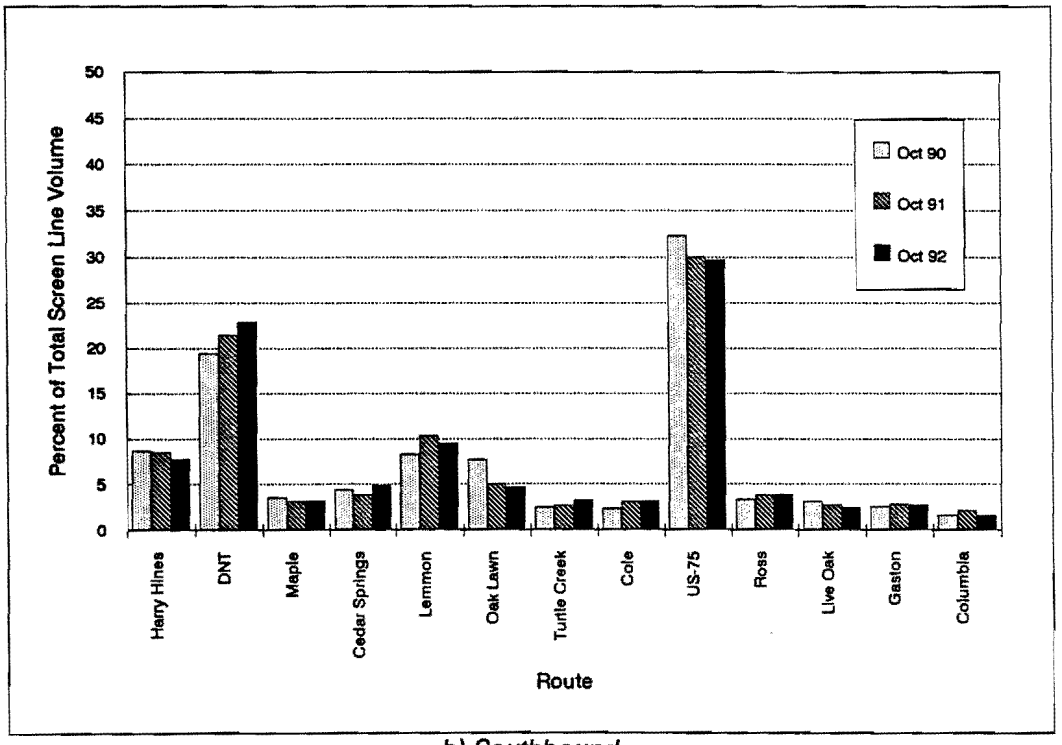


b) Southbound

Figure B-1. Percent of Total Screen Line Volume by Route:
Oak Lawn/Lemmon/Peak - A.M. Peak Period (October Studies)

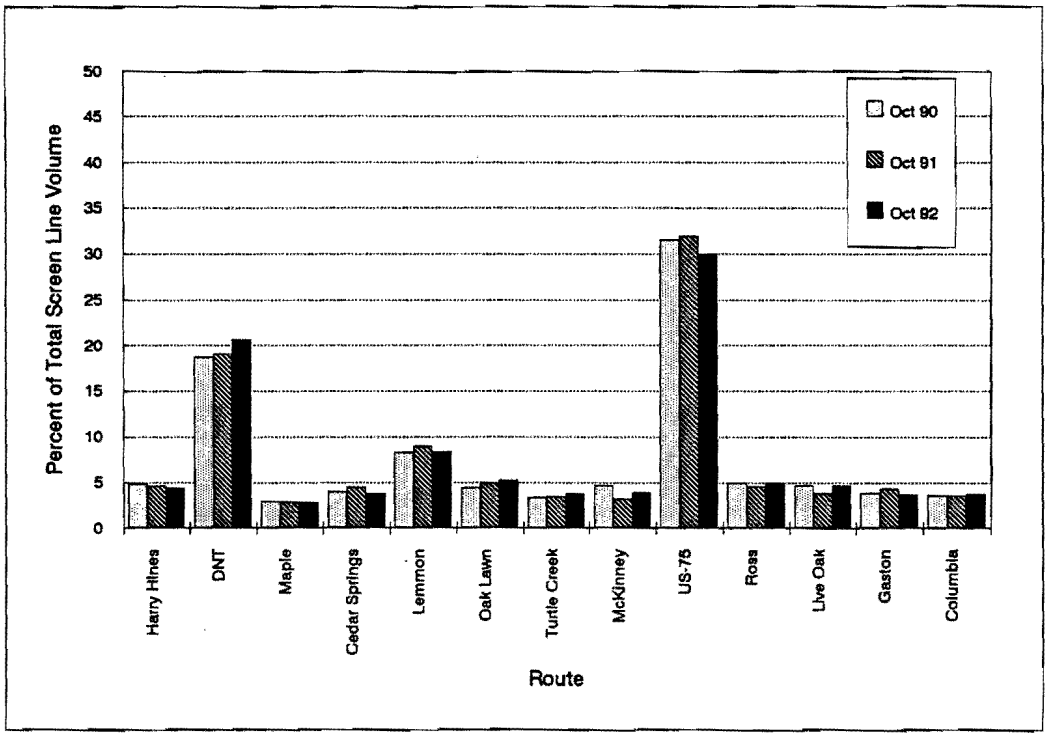


a) Northbound

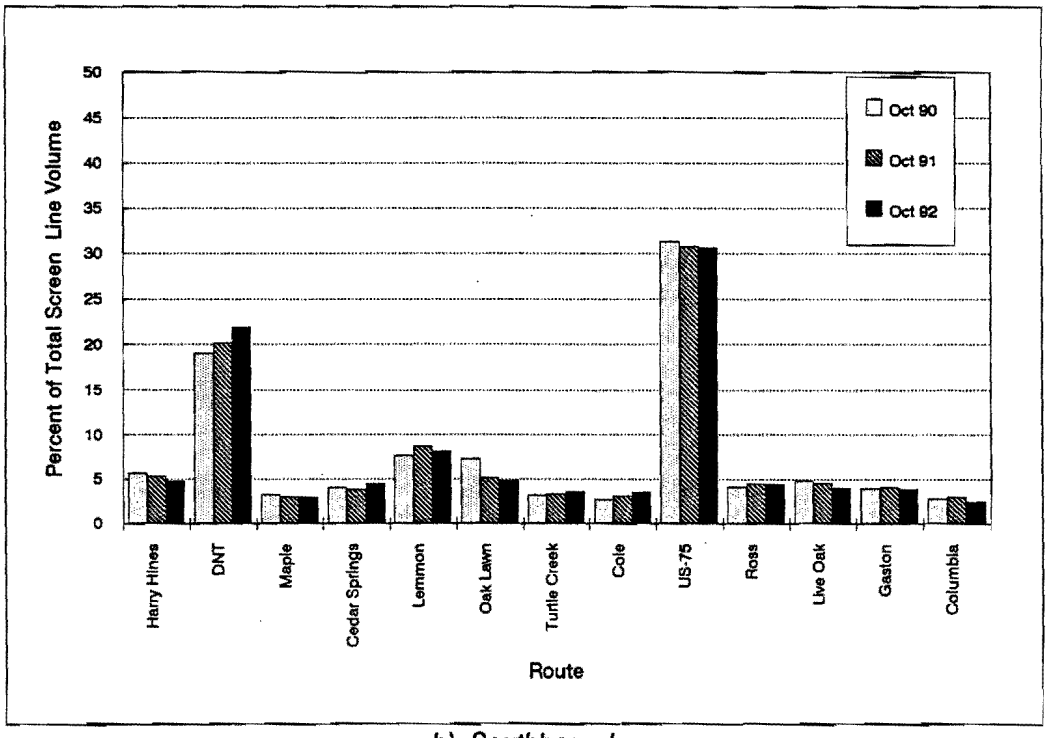


b) Southbound

Figure B-2. Percent of Total Screen Line Volume by Route:
Oak Lawn/Lemmon/Peak - P.M. Peak Period (October Studies)

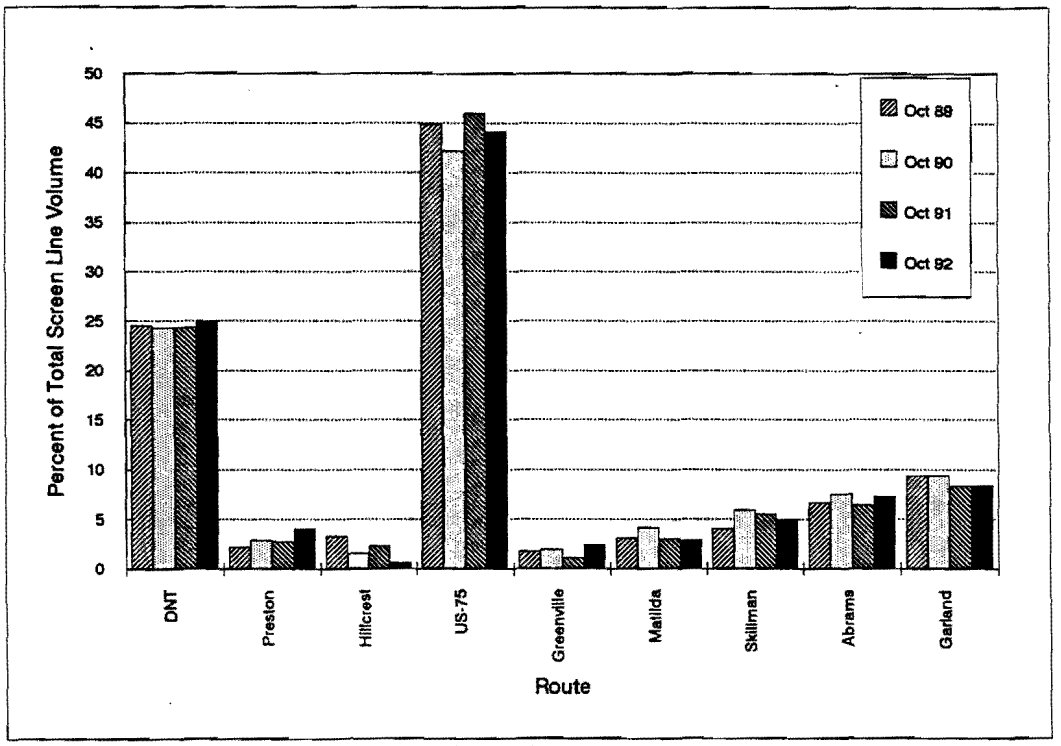


a) Northbound

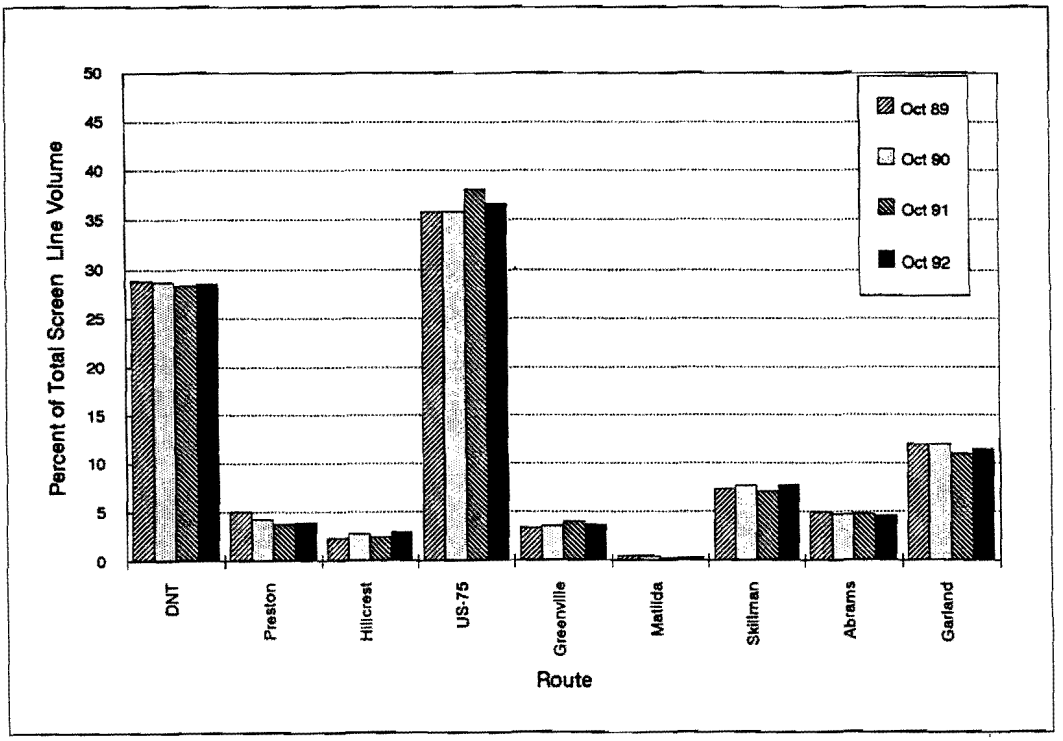


b) Southbound

Figure B-3. Percent of Total Screen Line Volume by Route: Oak Lawn/Lemmon/Peak - 24 Hour Period (October Studies)

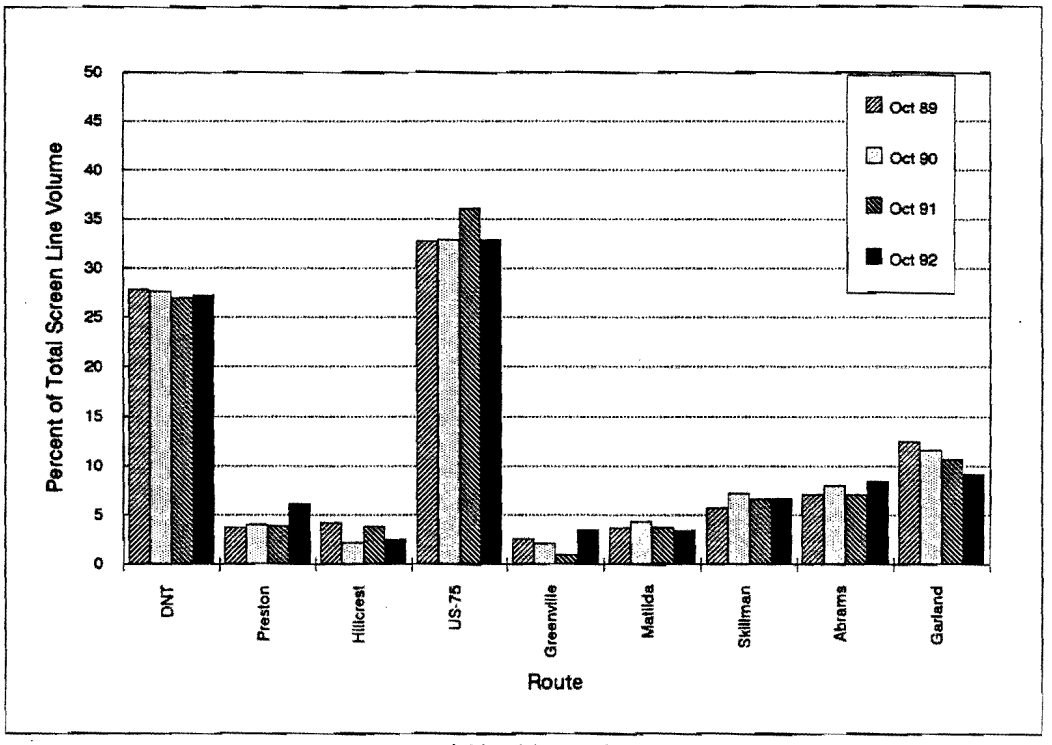


a) Northbound

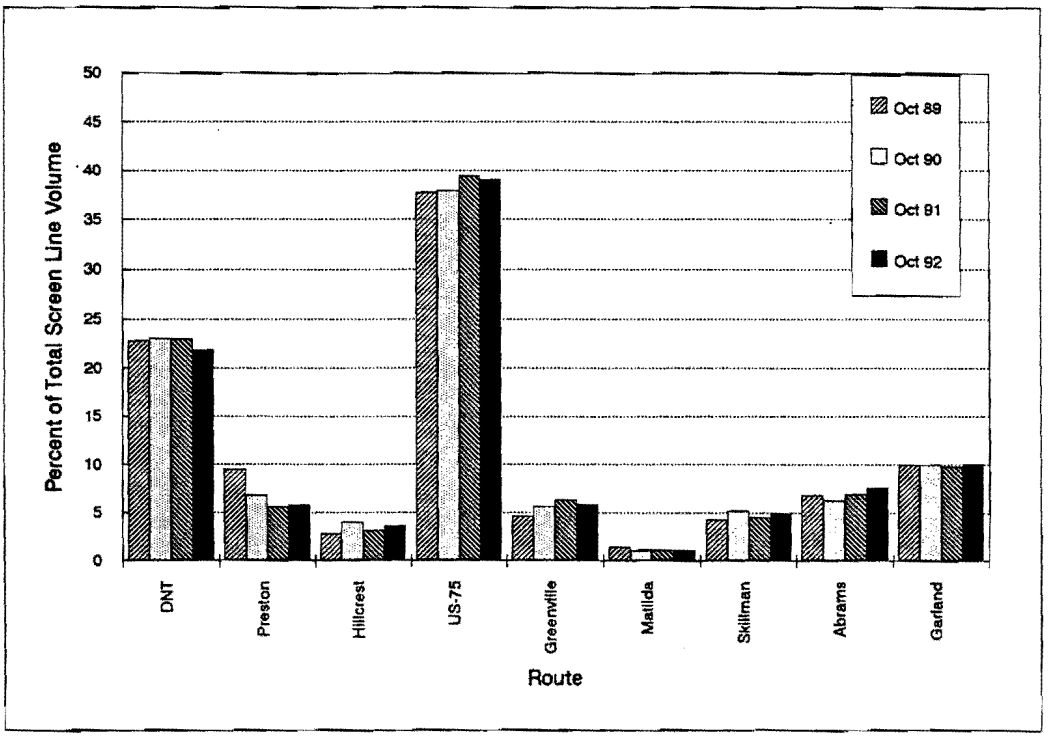


b) Southbound

Figure B-4. Percent of Total Screen Line Volume by Route: Mockingbird/Buckner - A.M. Peak Period (October Studies)

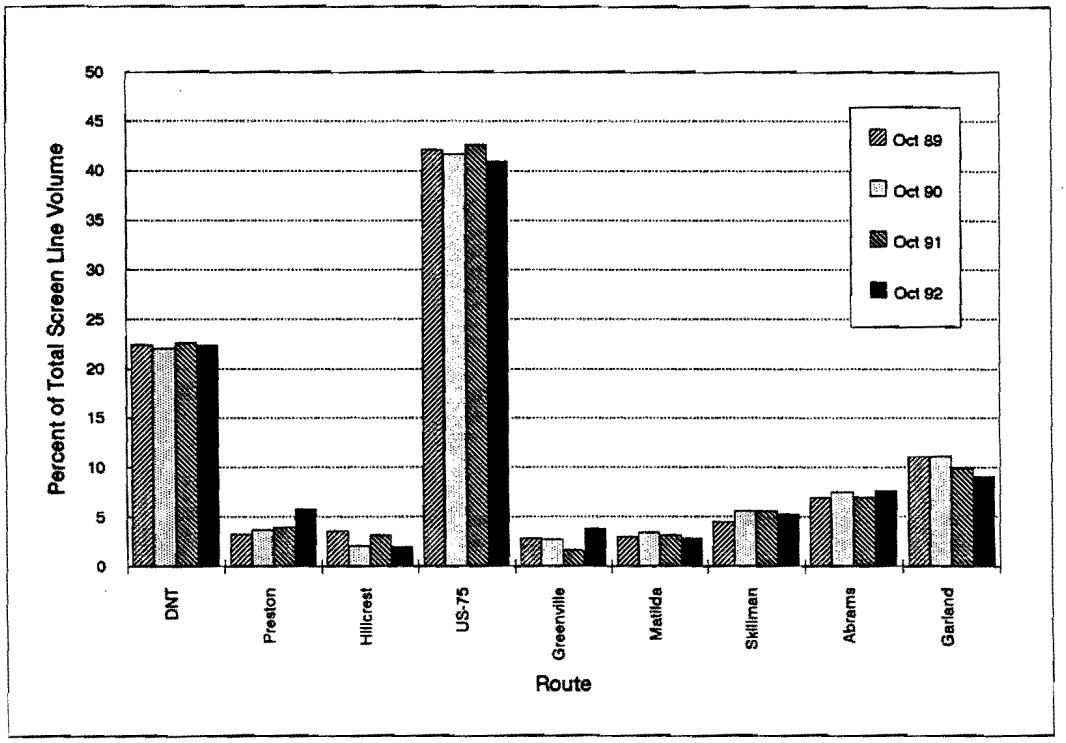


a) Northbound

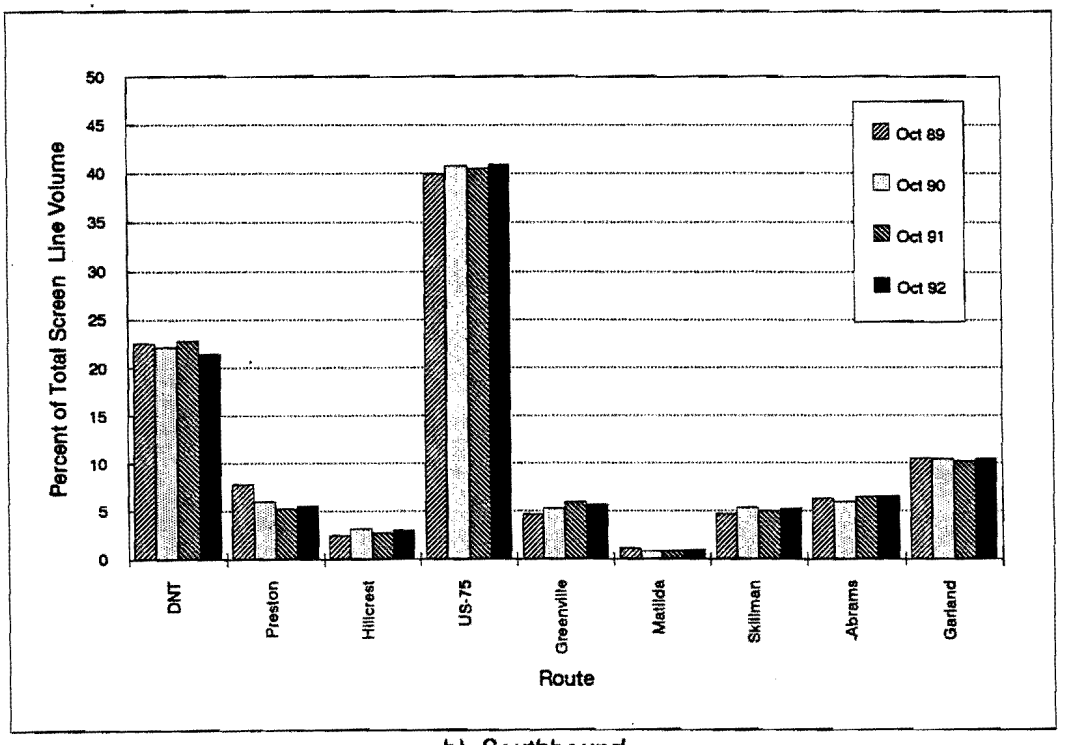


b) Southbound

Figure B-5. Percent of Total Screen Line Volume by Route: Mockingbird/Buckner - P.M. Peak Period (October Studies)

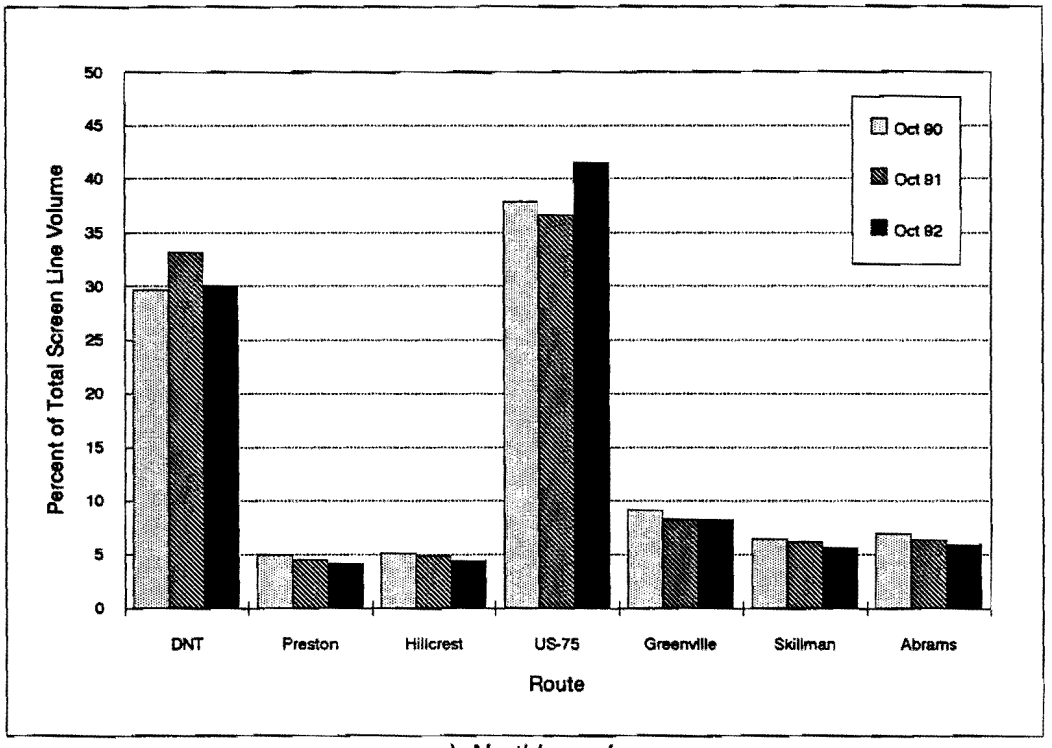


a) Northbound

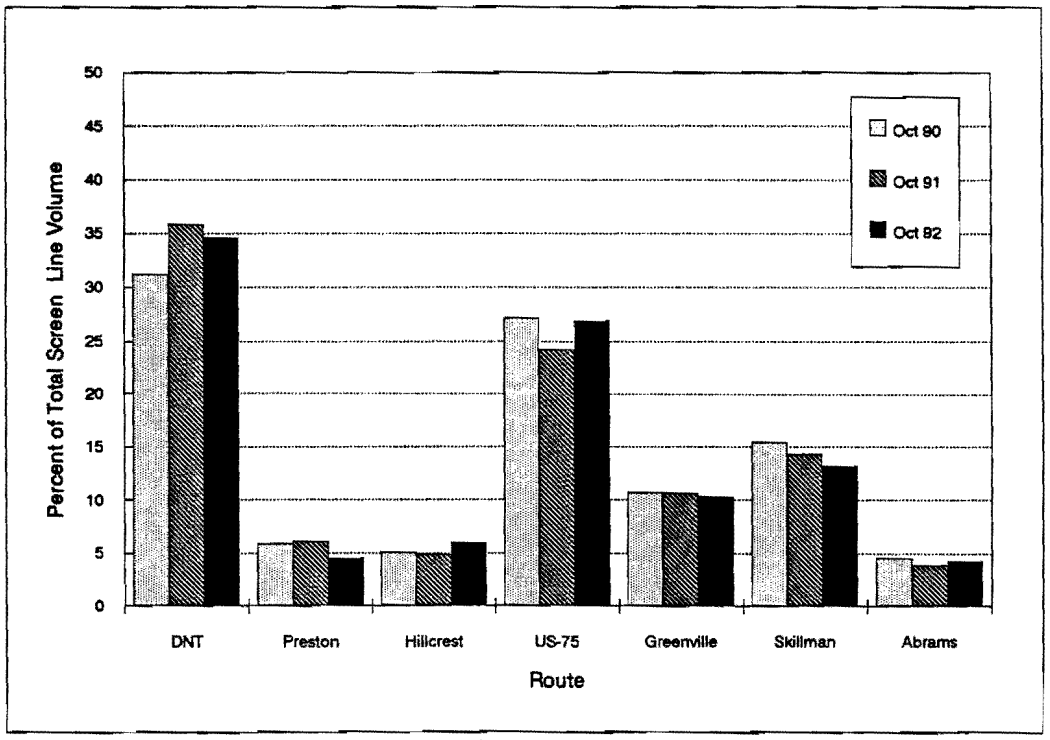


b) Southbound

Figure B-6. Percent of Total Screen Line Volume by Route: Mockingbird/Buckner - 24 Hour Period (October Studies)

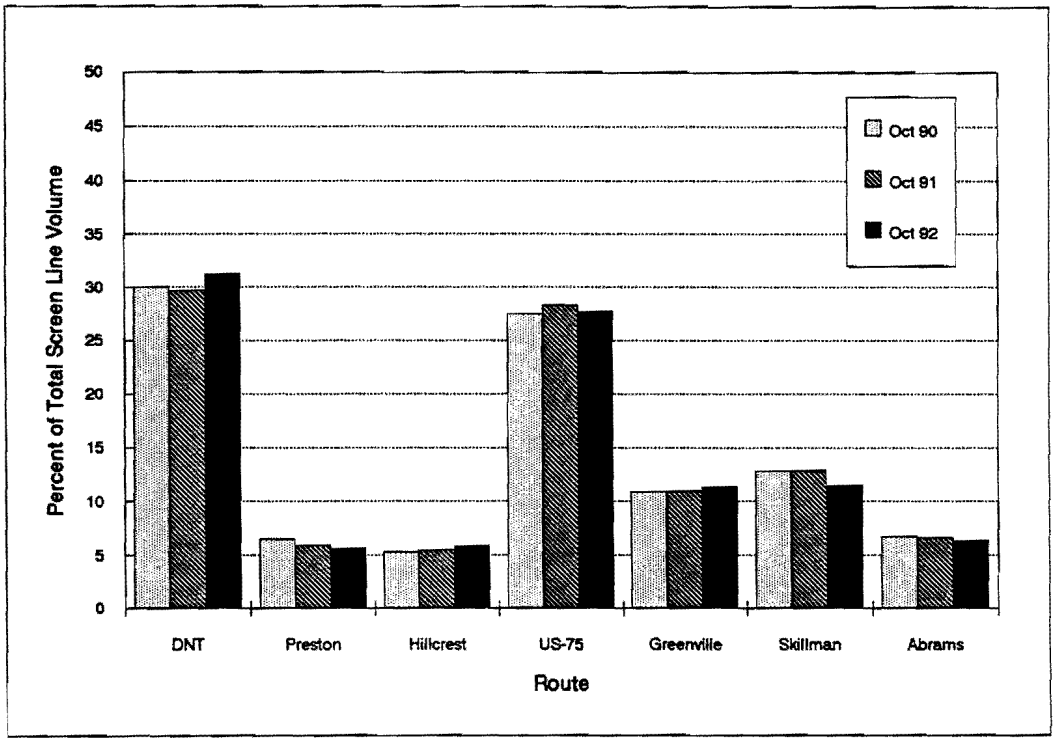


a) Northbound

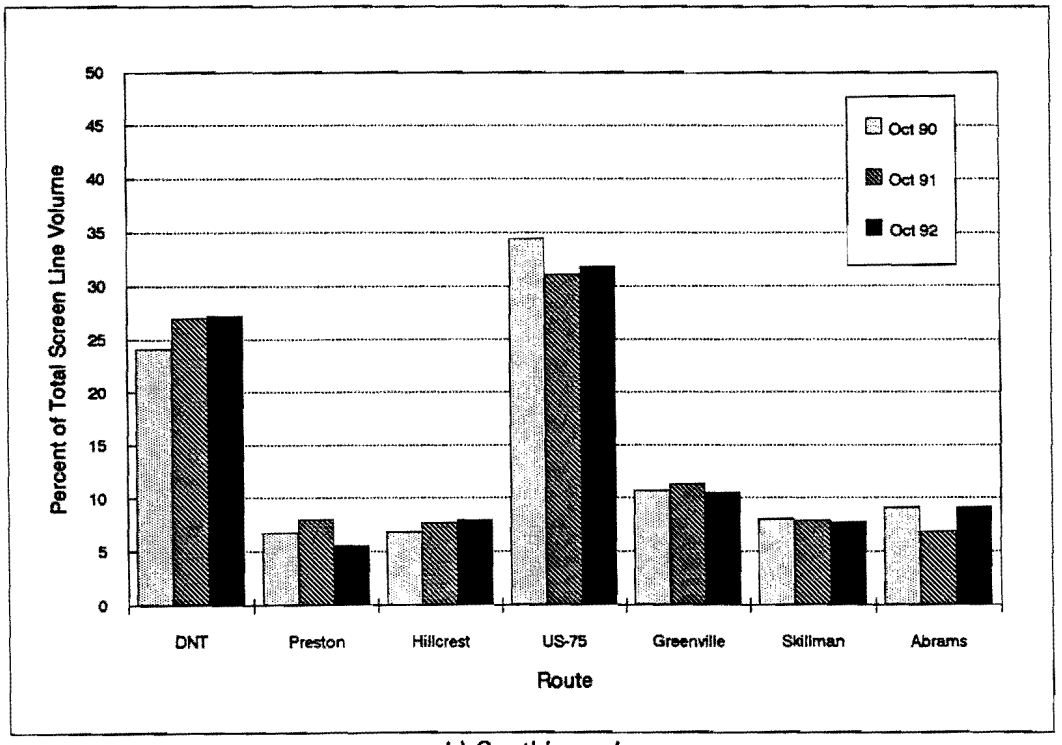


b) Southbound

Figure B-7. Percent of Total Screen Line Volume by Route:
Loop 12 - A.M. Peak Period (October Studies)

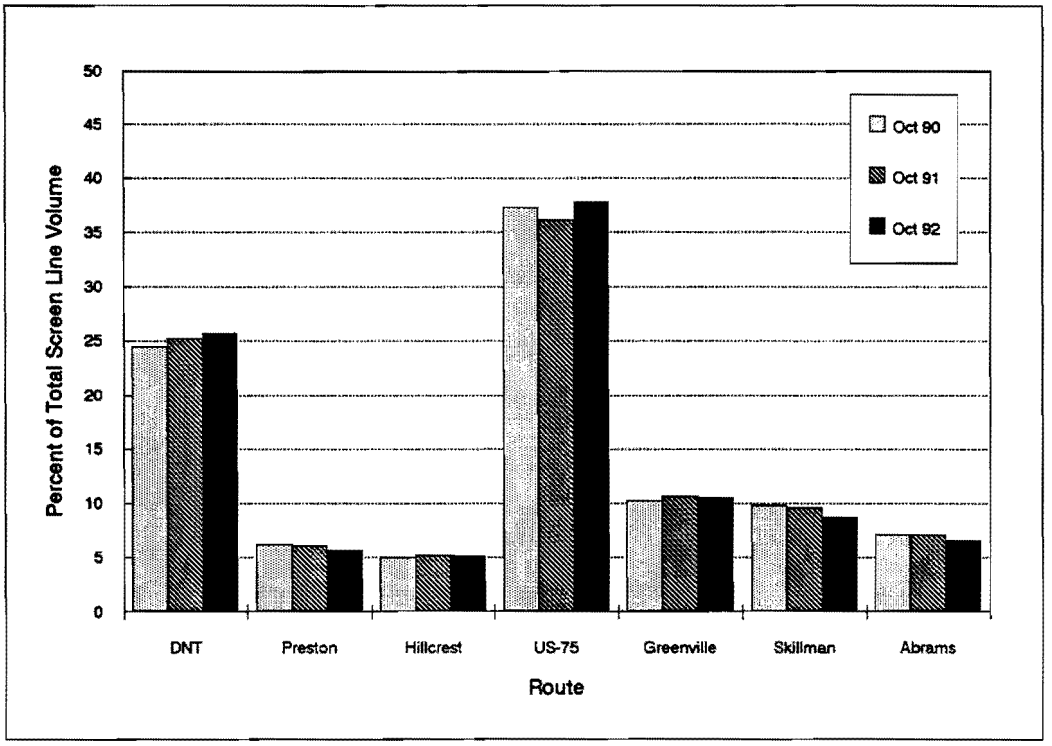


a) Northbound

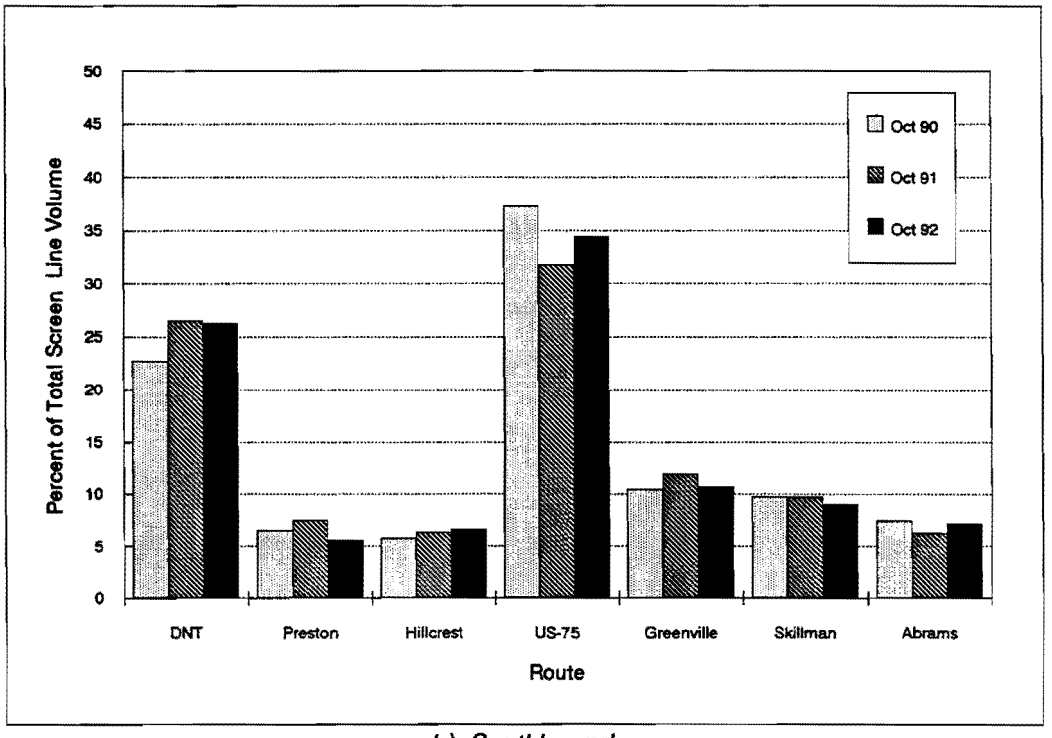


b) Southbound

Figure B-8. Percent of Total Screen Line Volume by Route:
Loop 12 - P.M. Peak Period (October Studies)

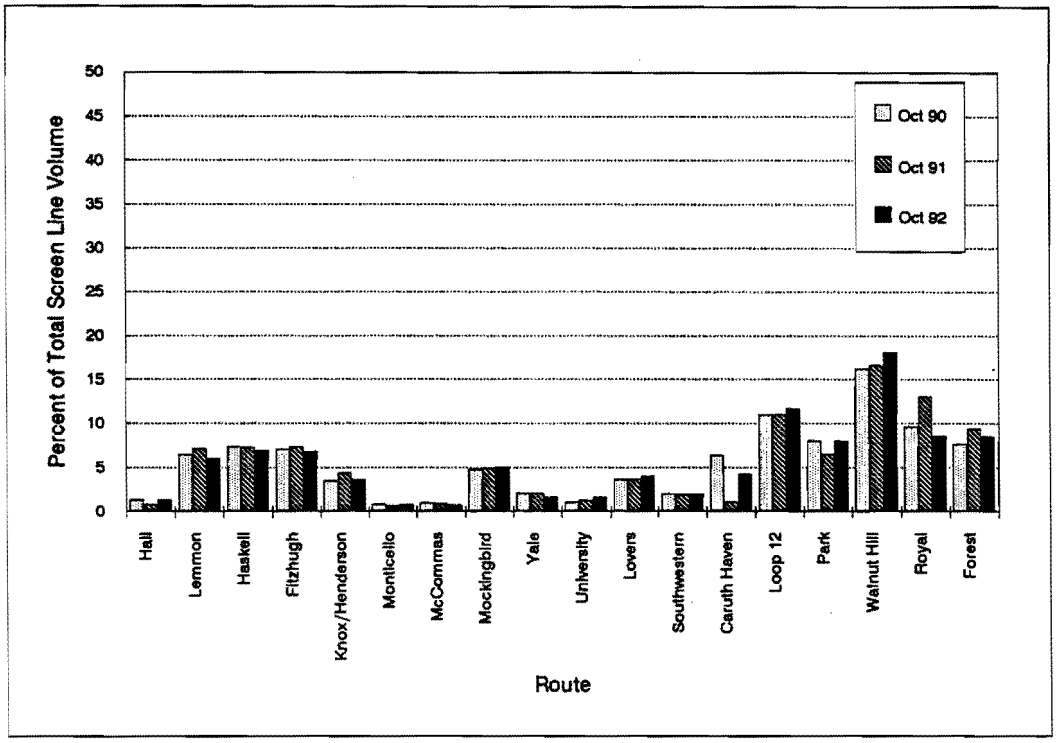


a) Northbound

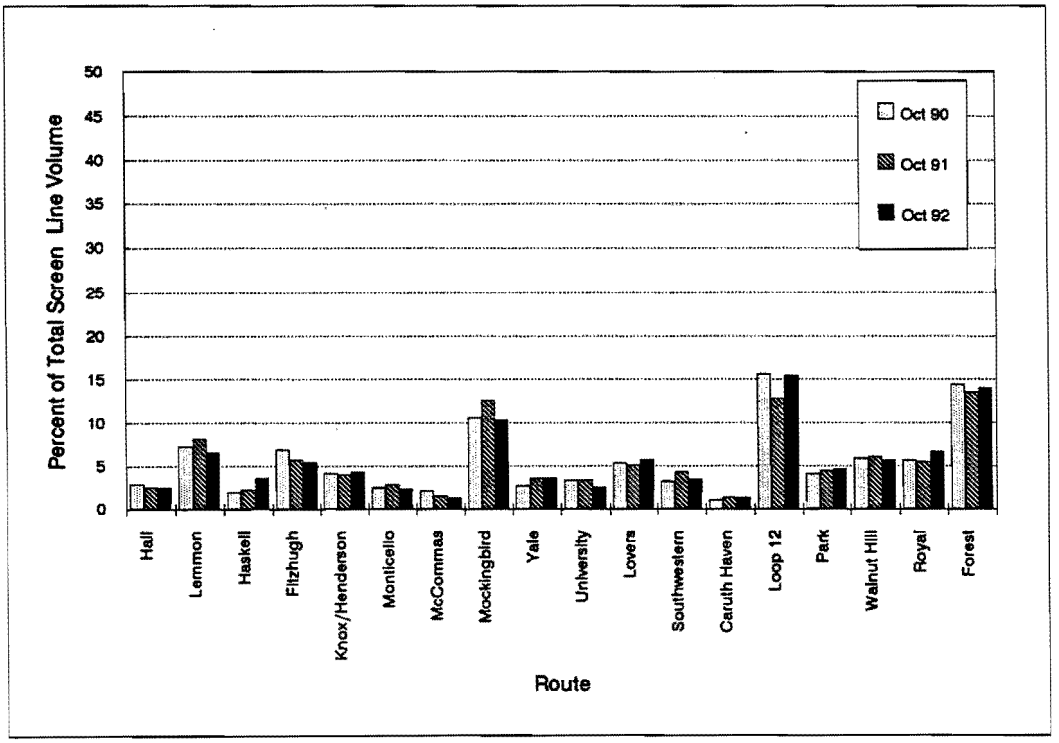


b) Southbound

Figure B-9. Percent of Total Screen Line Volume by Route:
Loop 12 - 24 Hour Period (October Studies)

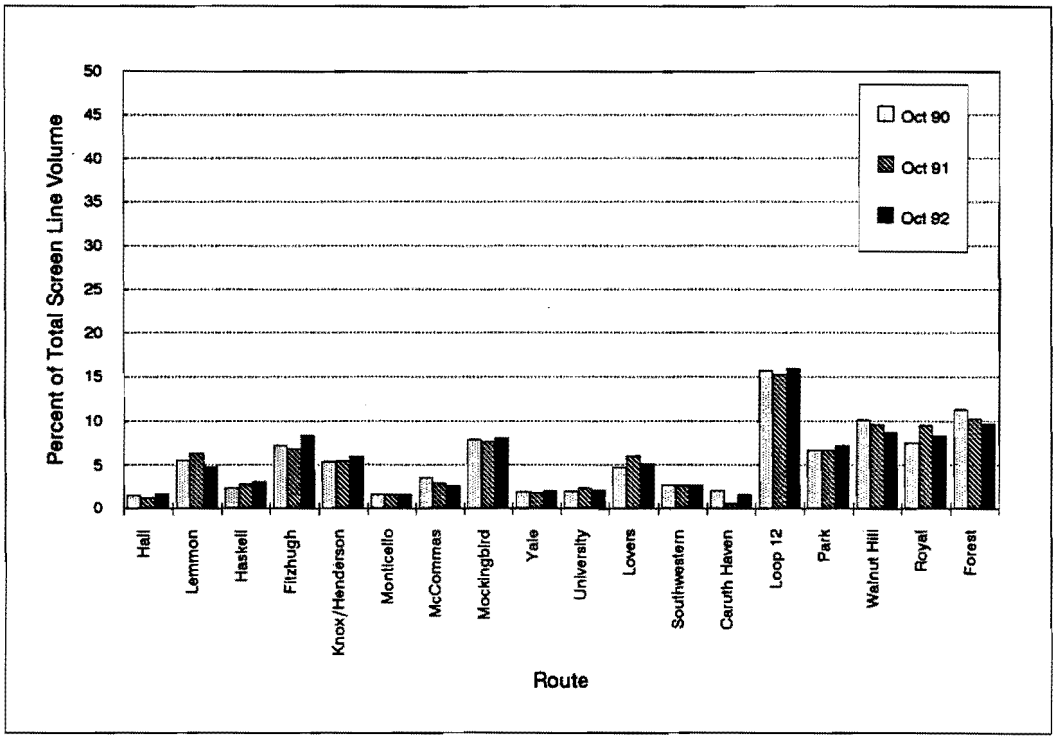


a) Eastbound

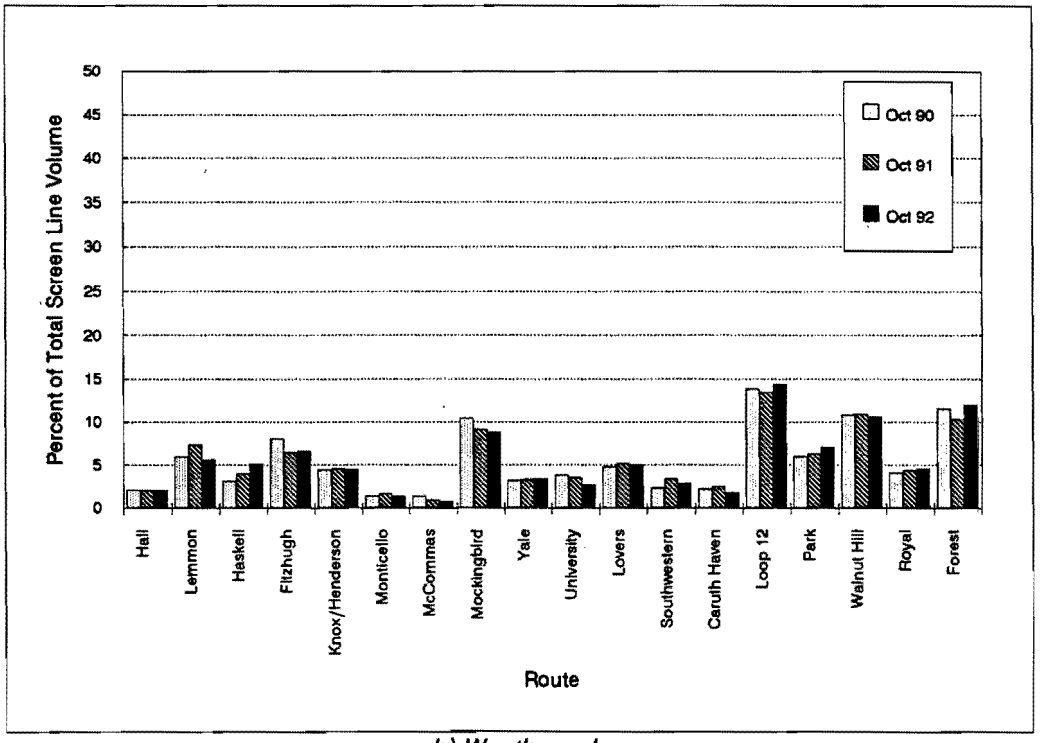


b) Westbound

Figure B-10. Percent of Total Screen Line Volume by Route:
US-75 - A.M. Peak Period (October Studies)

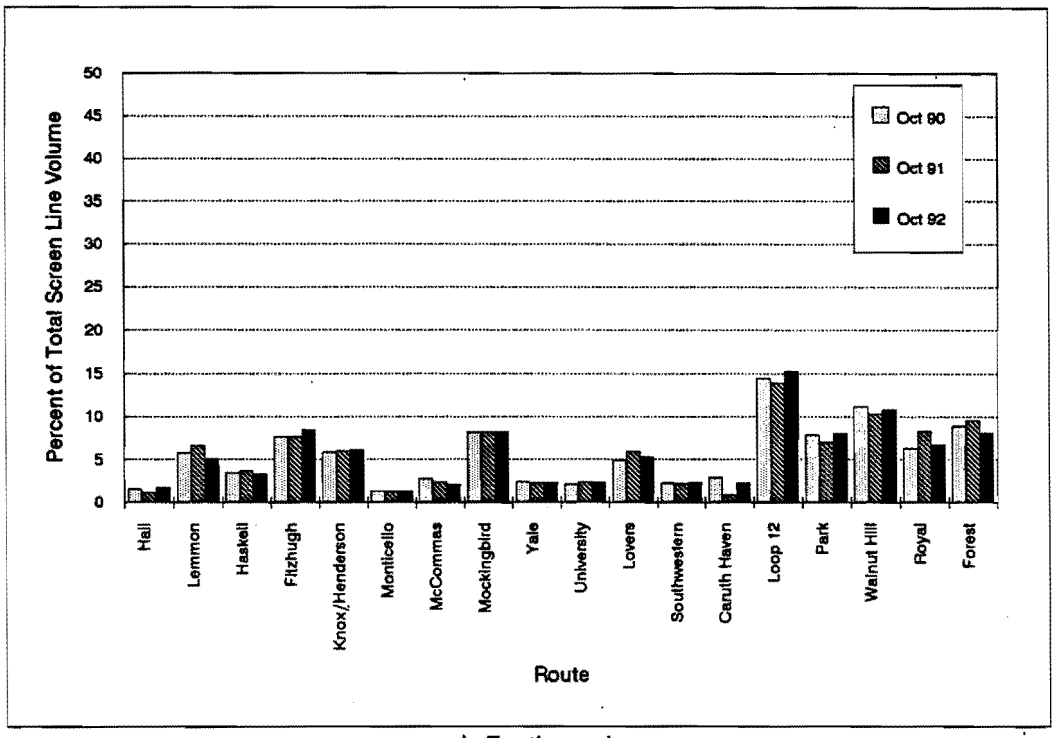


a) Eastbound

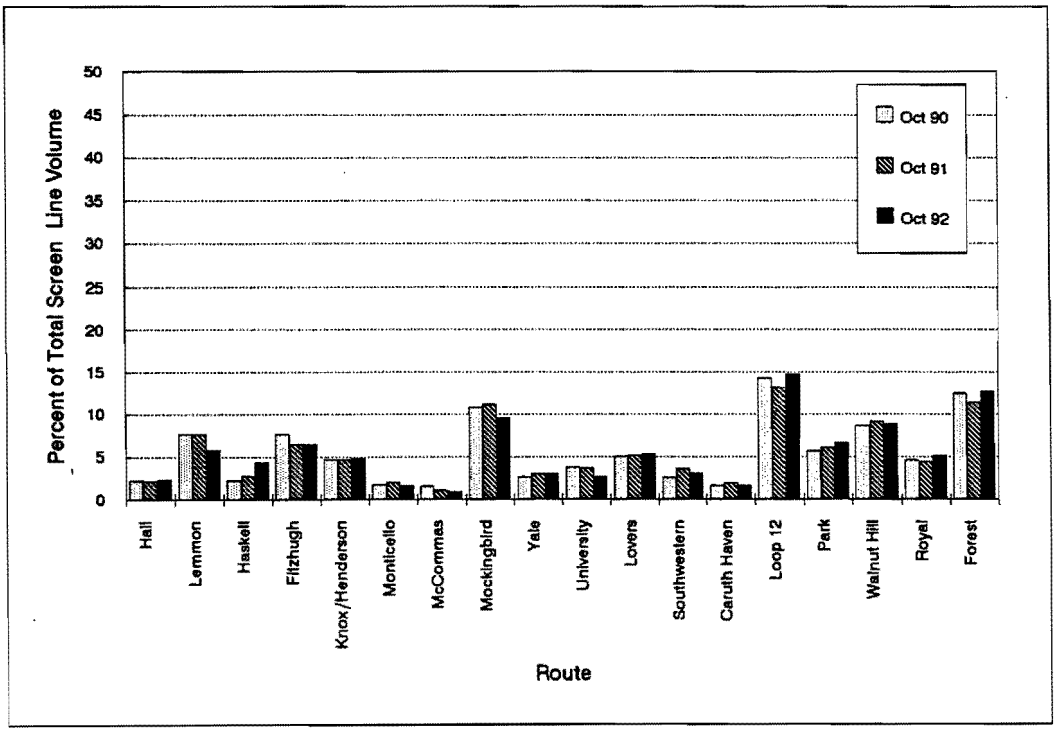


b) Westbound

Figure B-11. Percent of Total Screen Line Volume by Route:
US-75 - P.M. Peak Period (October Studies)



a) Eastbound

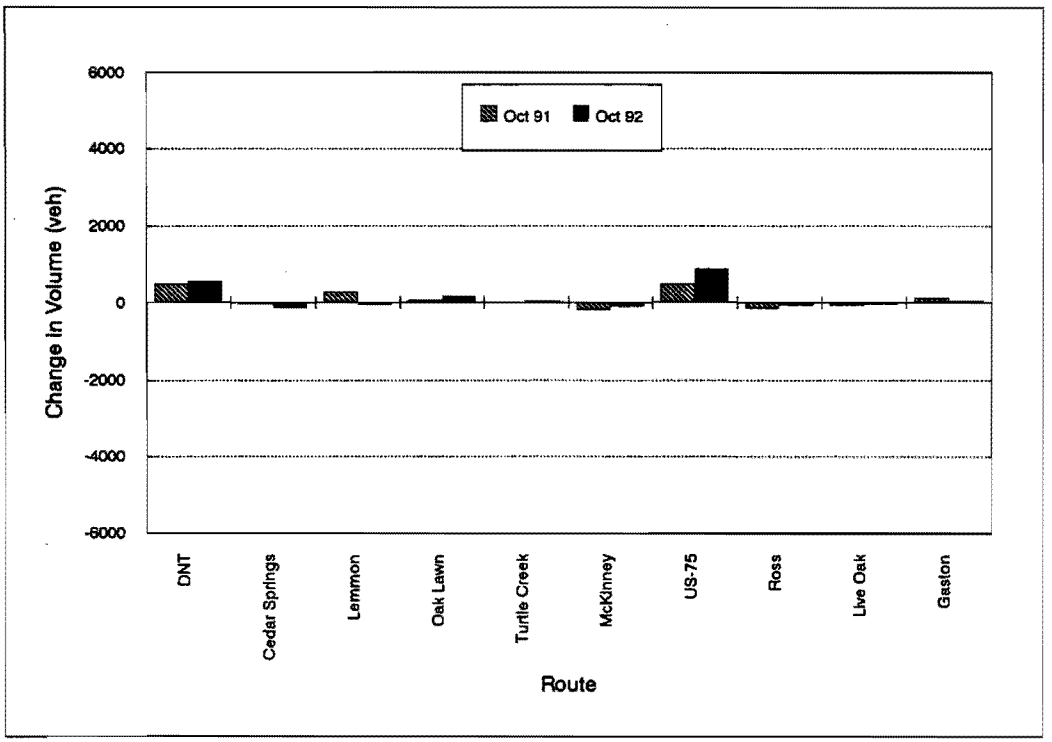


b) Westbound

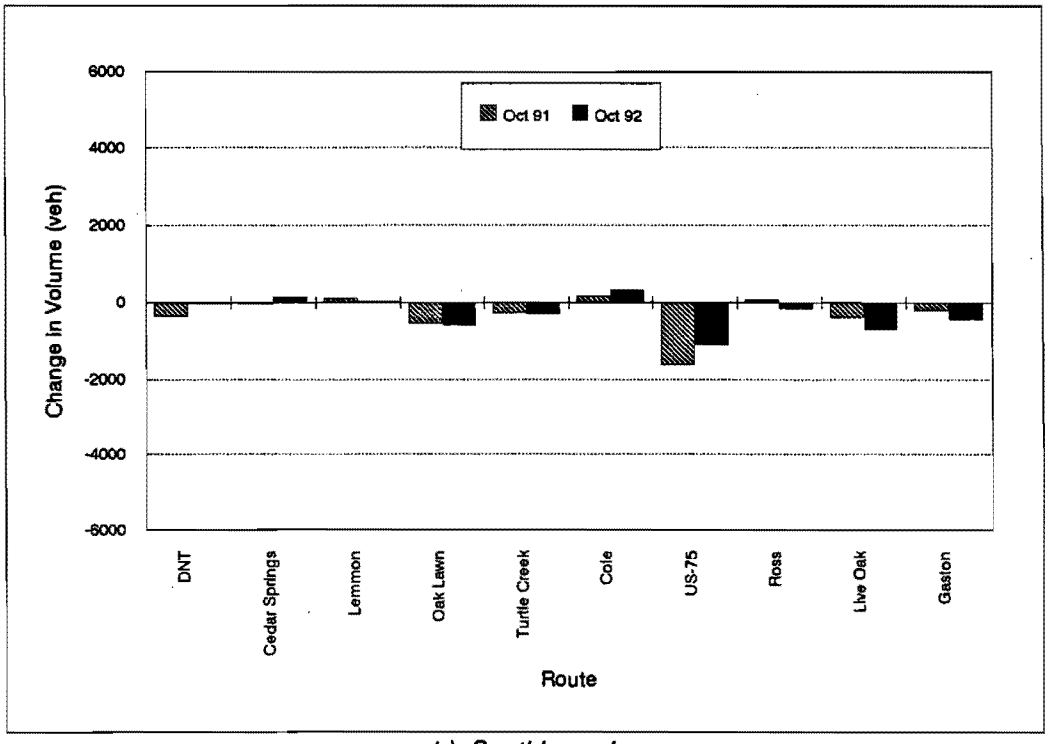
Figure B-12. Percent of Total Screen Line Volume by Route:
US-75 - 24 Hour Period (October Studies)

APPENDIX C

TRAFFIC VOLUME CHANGES (OCTOBER STUDIES)

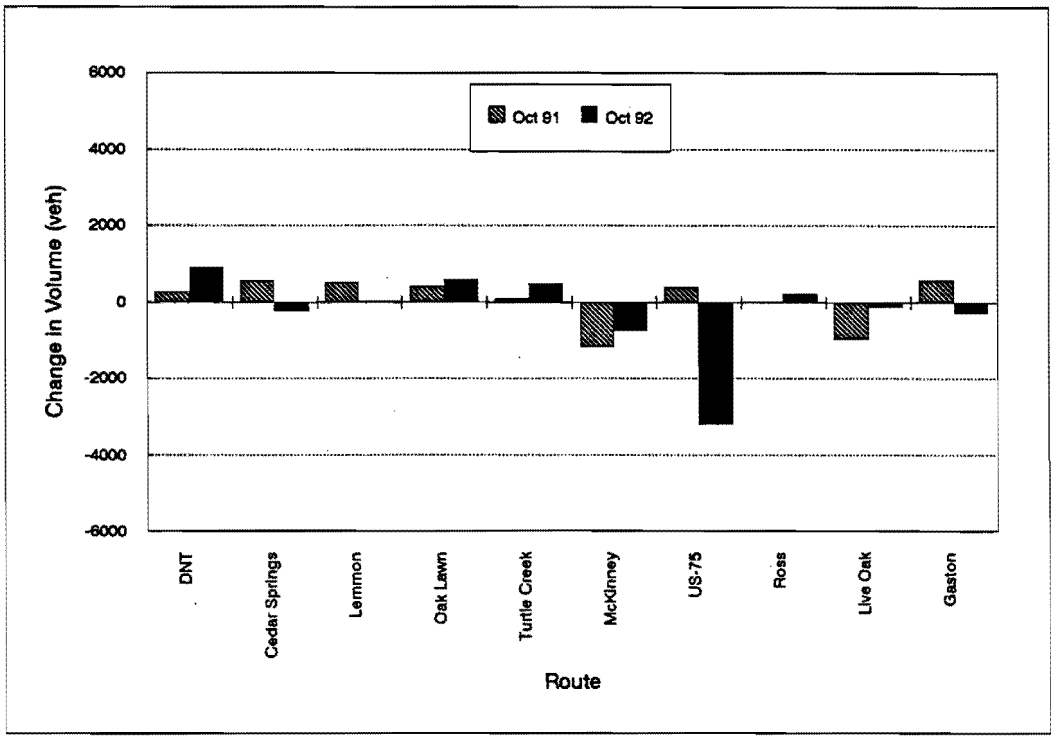


a) Northbound

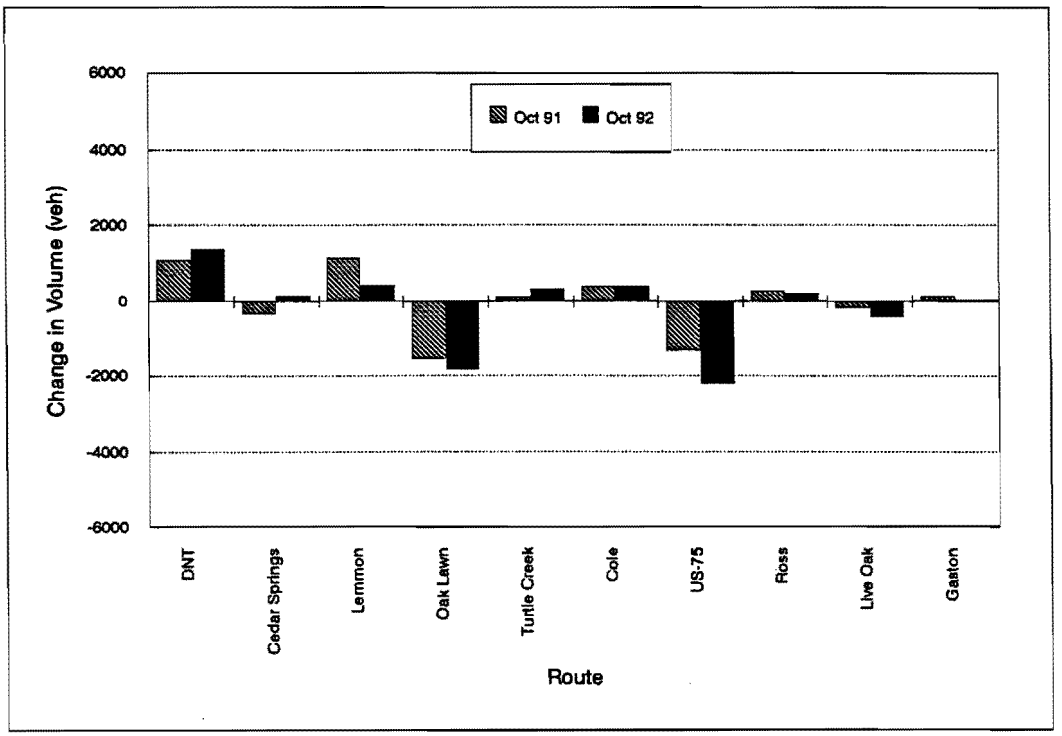


b) Southbound

Figure C-1. Change in Volume by Route as Compared to October 1990: Oak Lawn/Lemmon/Peak Screen Line - A.M. Peak Period

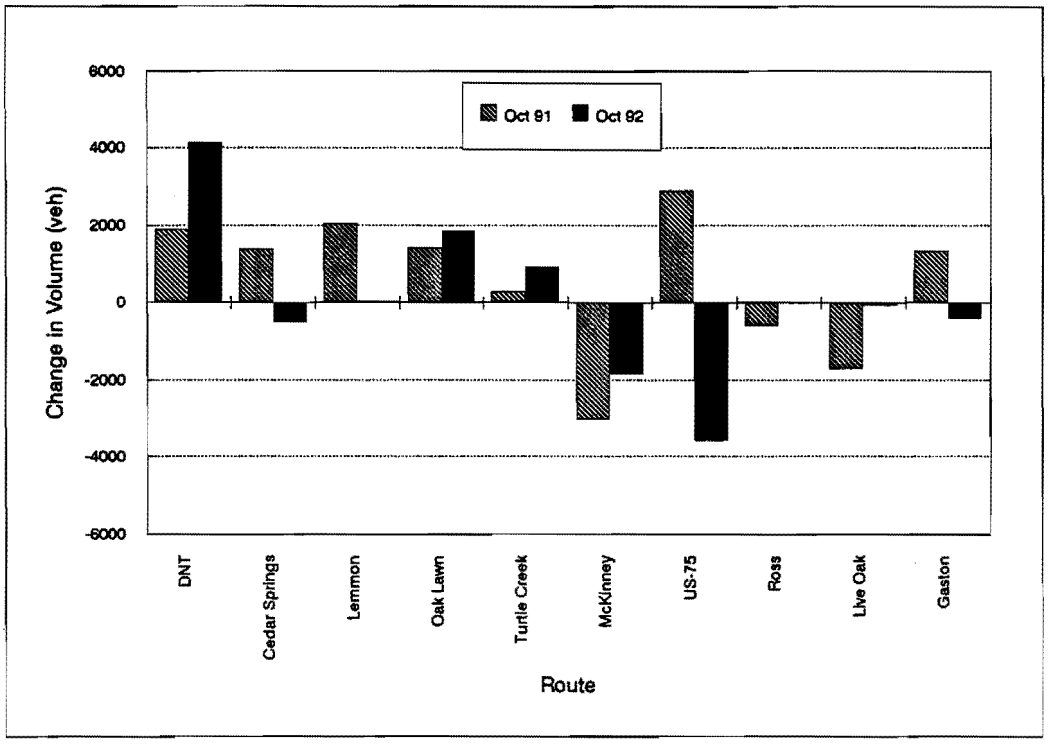


a) Northbound

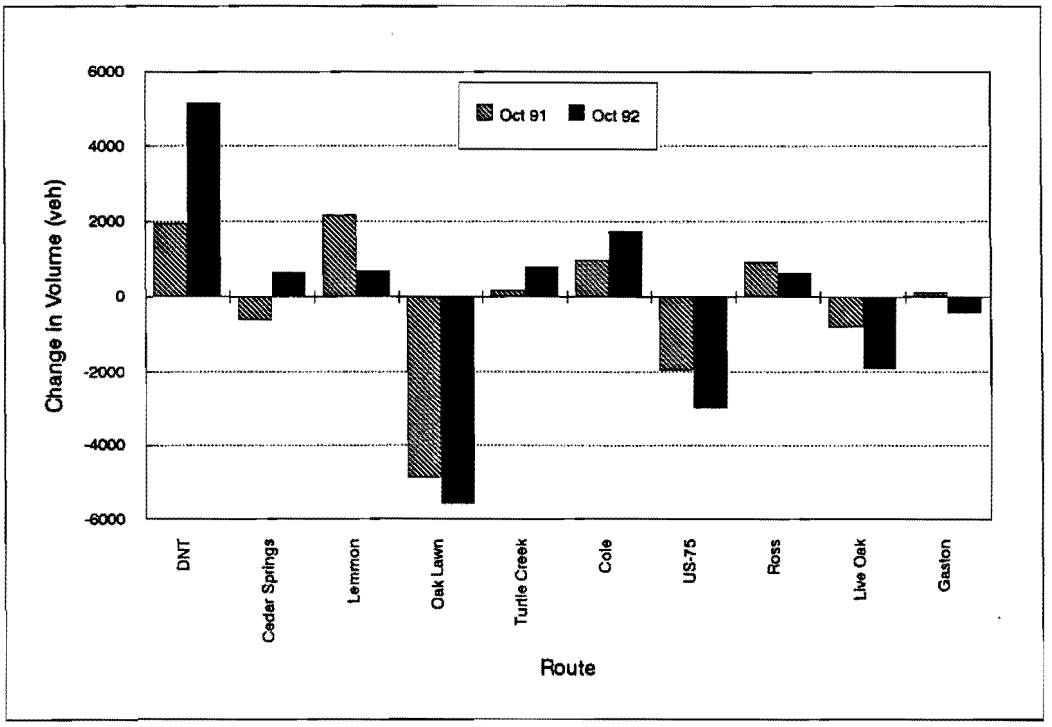


b) Southbound

Figure C-2. Change in Volume by Route as Compared to October 1990: Oak Lawn/Lemmon/Peak Screen Line - P.M. Peak Period

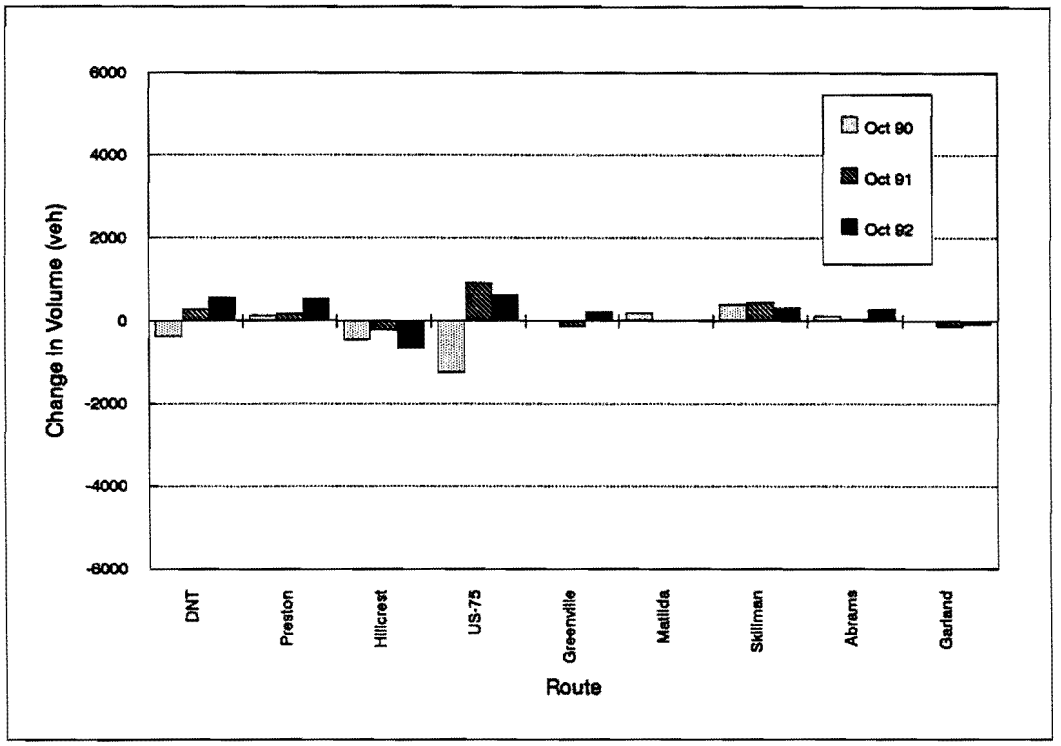


a) Northbound

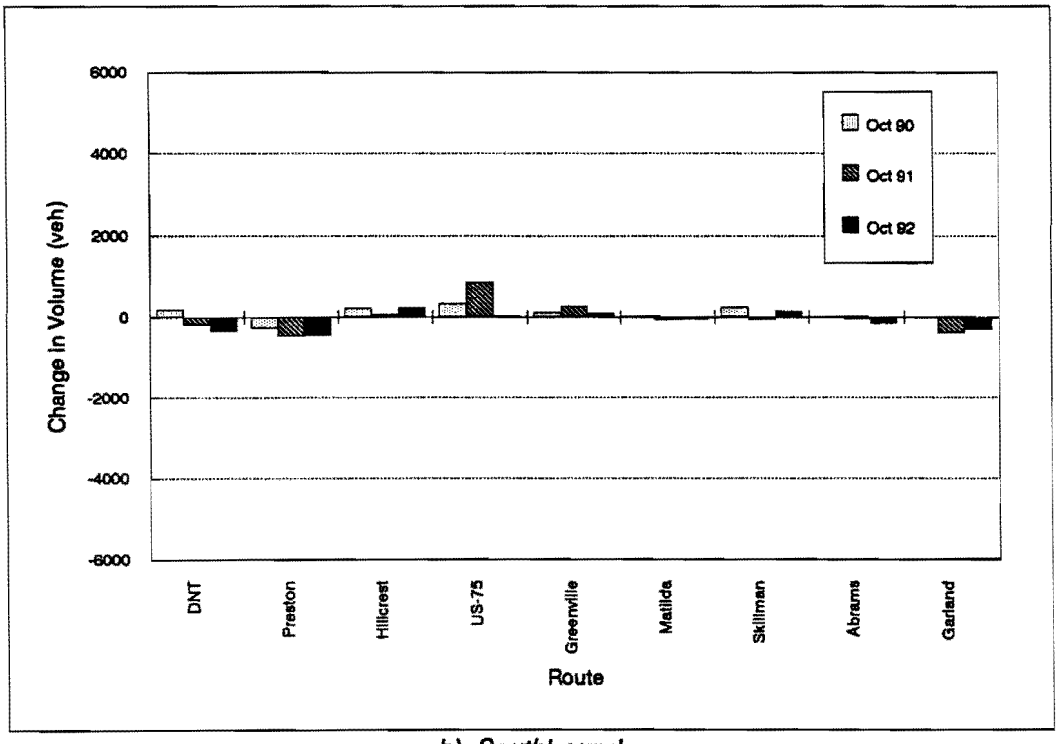


b) Southbound

Figure C-3. Change in Volume by Route as Compared to October 1990: Oak Lawn/Lemmon/Peak Screen Line - 24 Hour Period

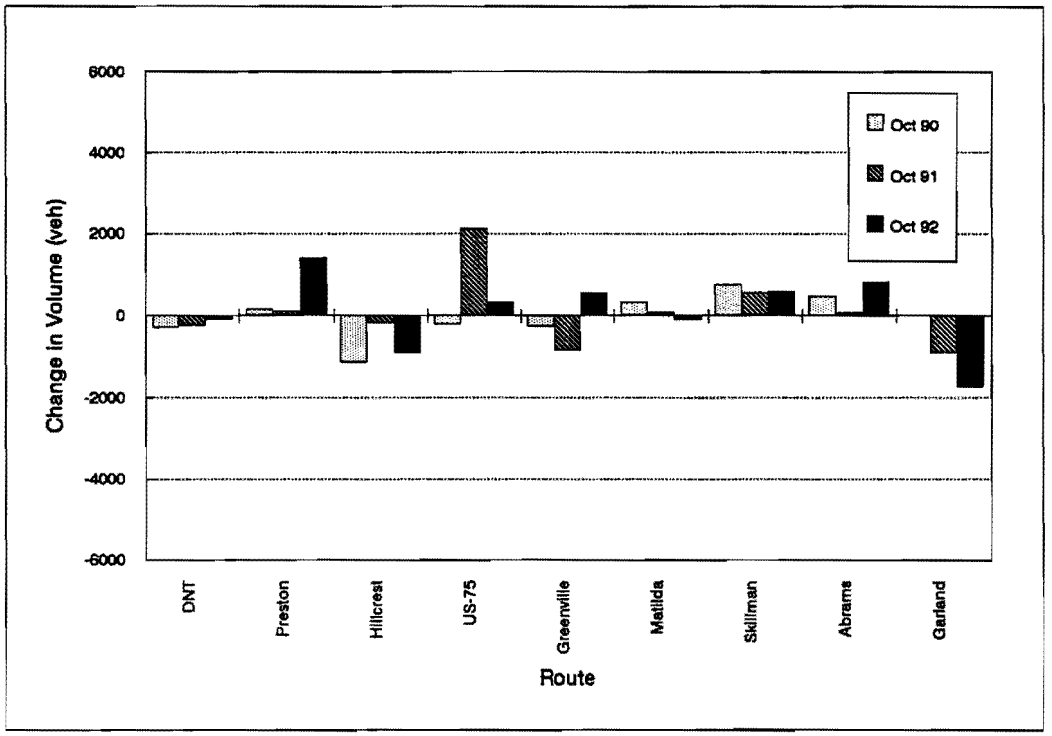


a) Northbound

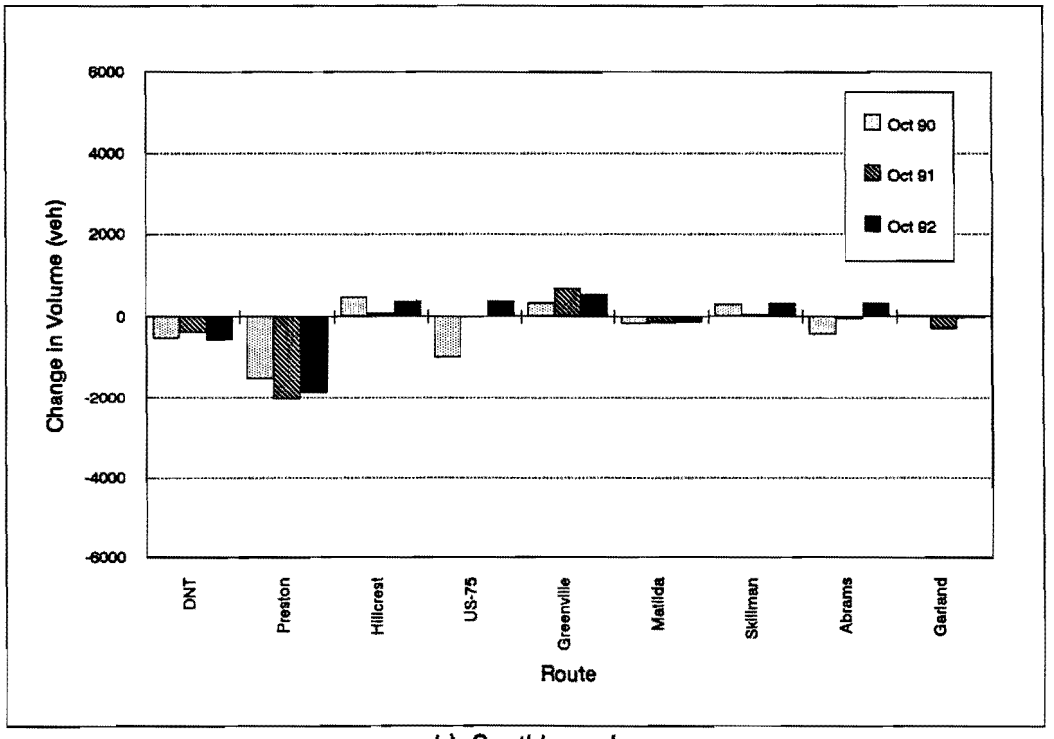


b) Southbound

Figure C-4. Change in Volume by Route as Compared to October 1989: Mockingbird/Buckner Screen Line - A.M. Peak Period

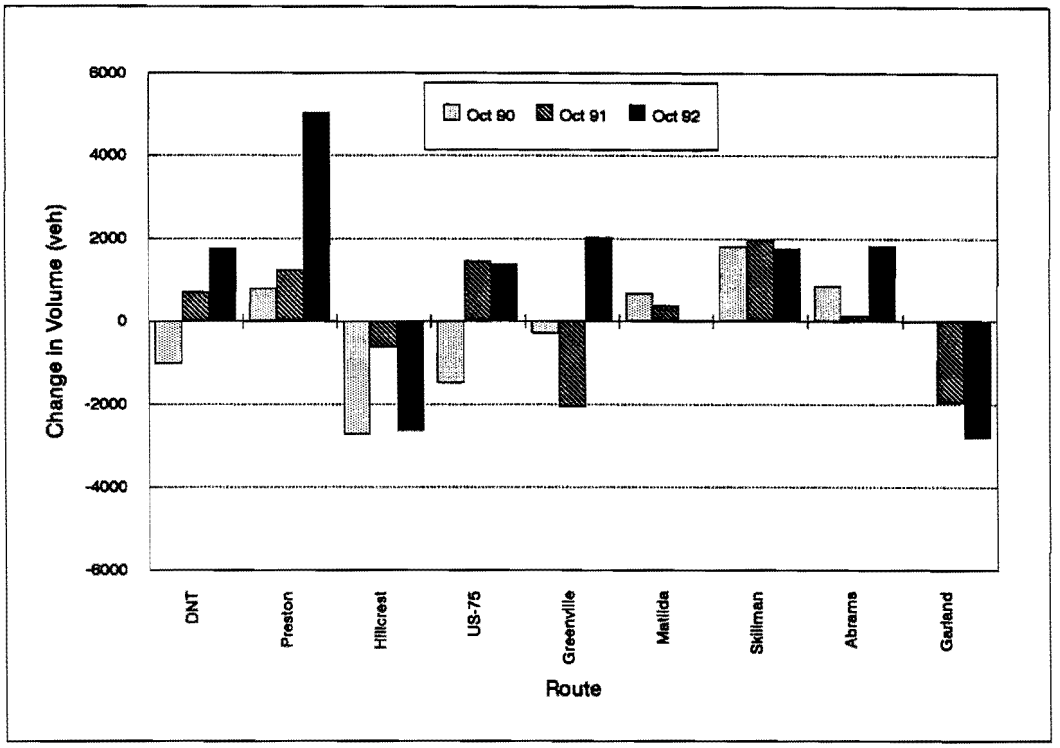


a) Northbound

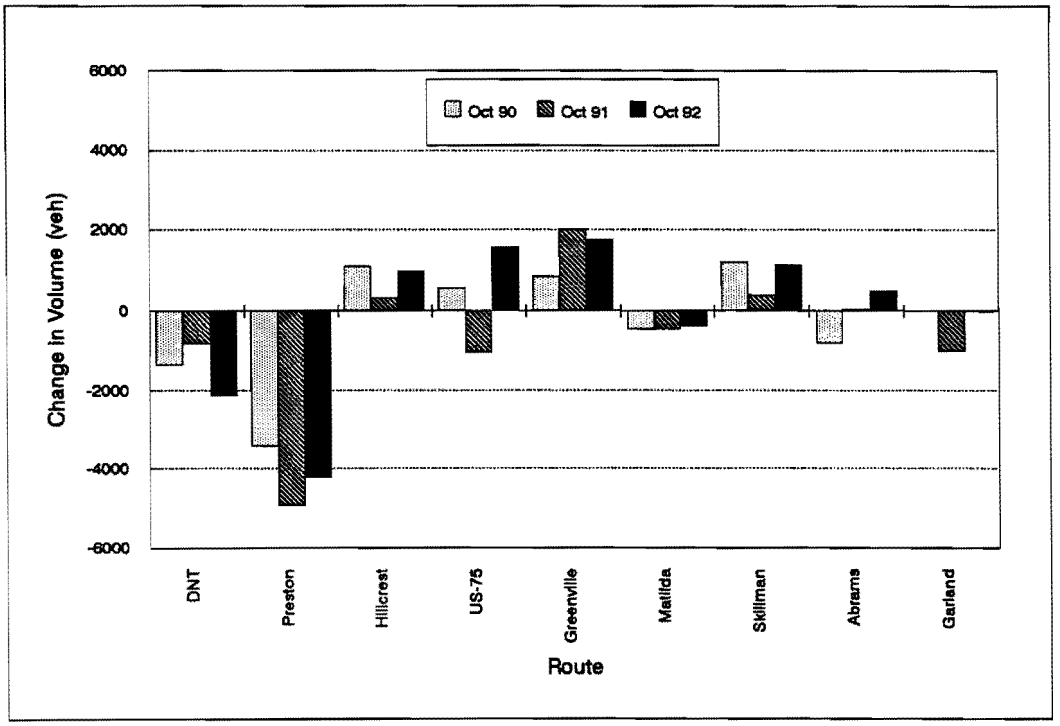


b) Southbound

Figure C-5. Change in Volume by Route as Compared to October 1989: Mockingbird/Buckner Screen Line - P.M. Peak Period

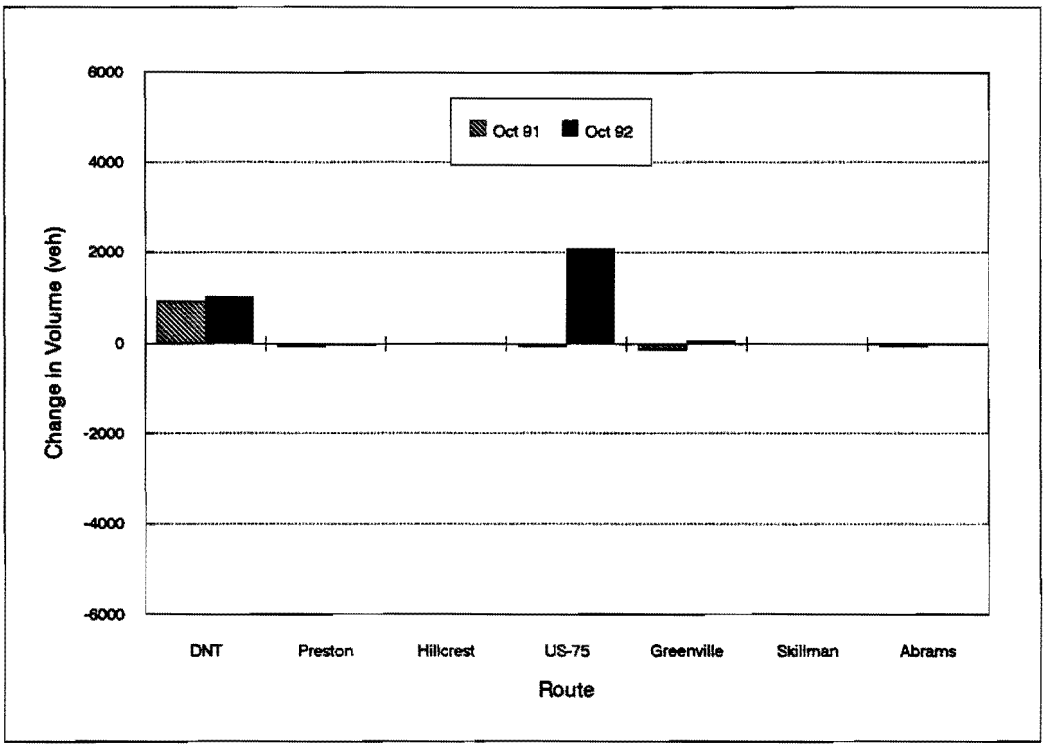


a) Northbound

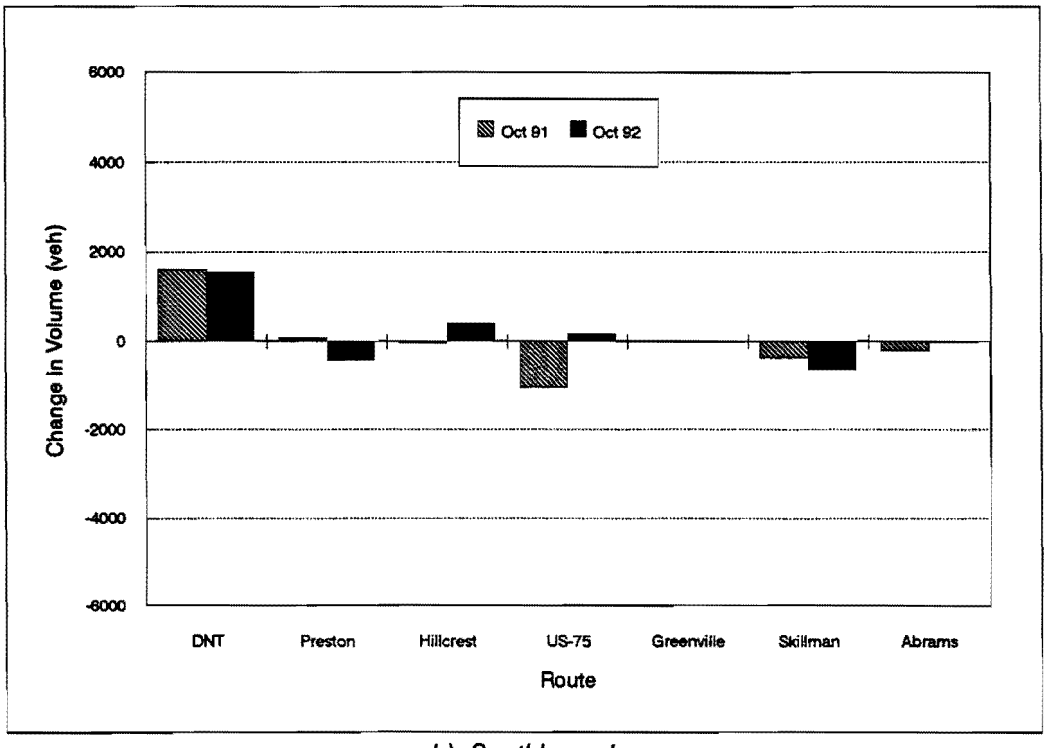


b) Southbound

Figure C-6. Change in Volume by Route as Compared to October 1989: Mockingbird/Buckner Screen Line - 24 Hour Period

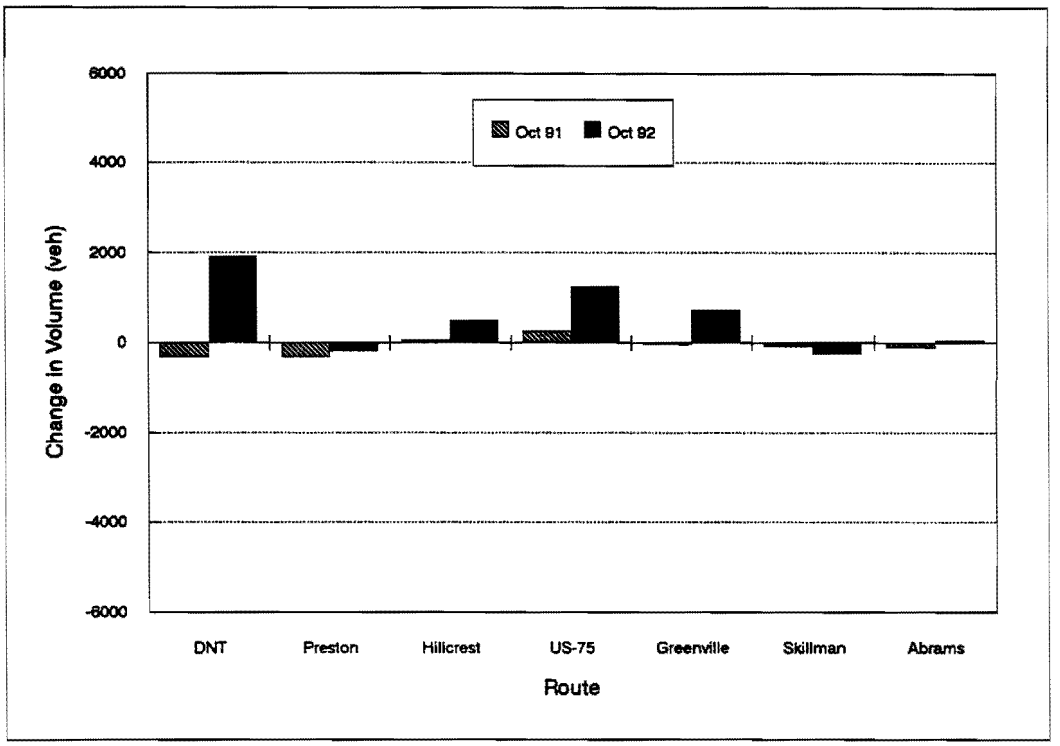


a) Northbound

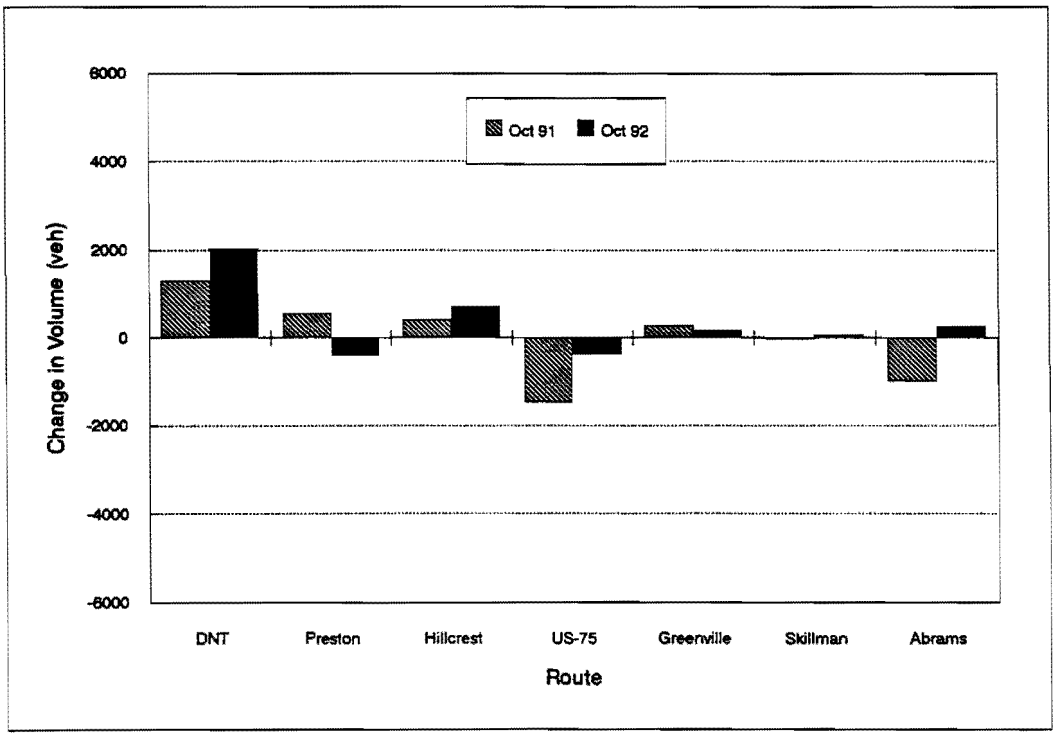


b) Southbound

Figure C-7. Change in Volume by Route as Compared to October 1990: Loop 12 Screen Line - A.M. Peak Period

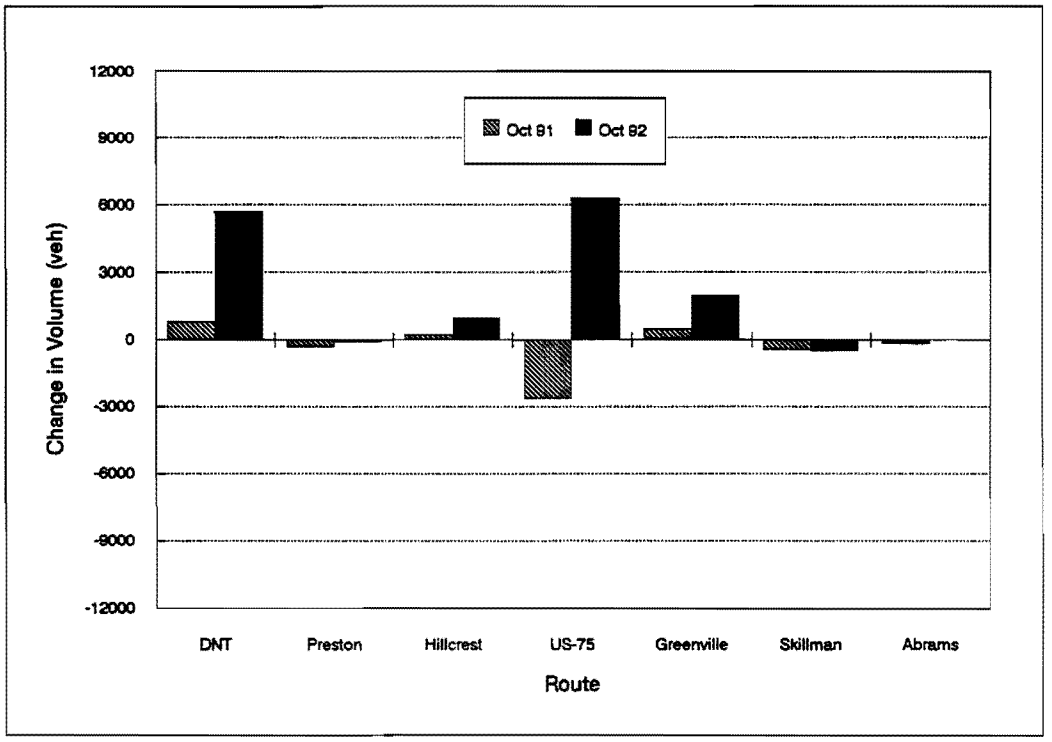


a) Northbound

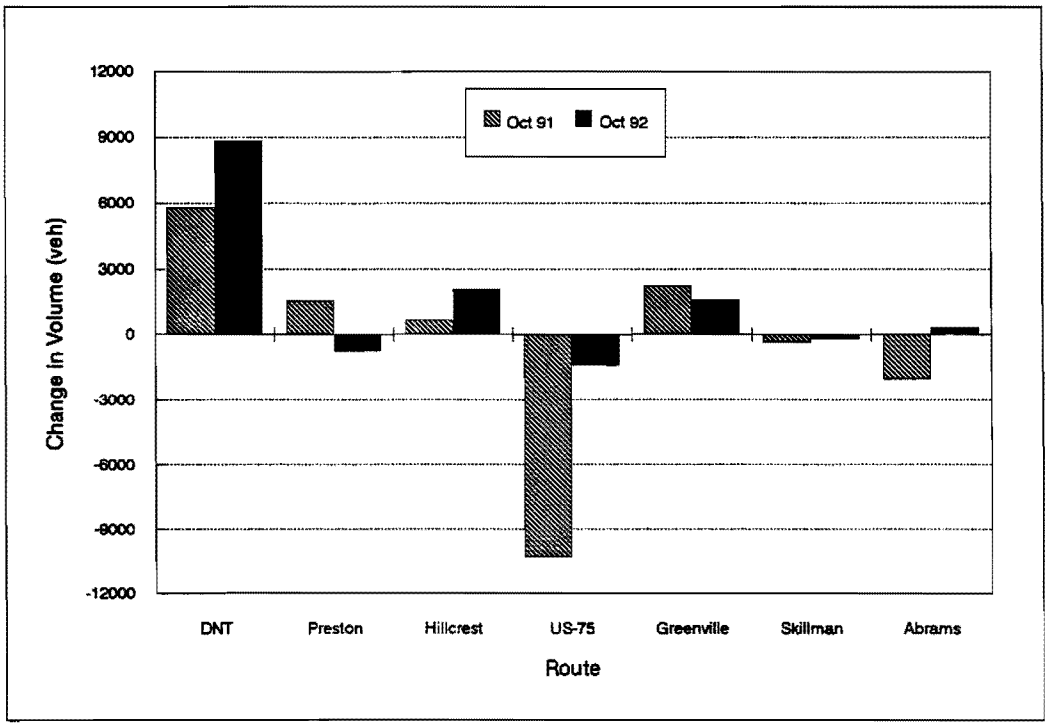


b) Southbound

Figure C-8. Change in Volume by Route as Compared to October 1990: Loop 12 Screen Line - P.M. Peak Period

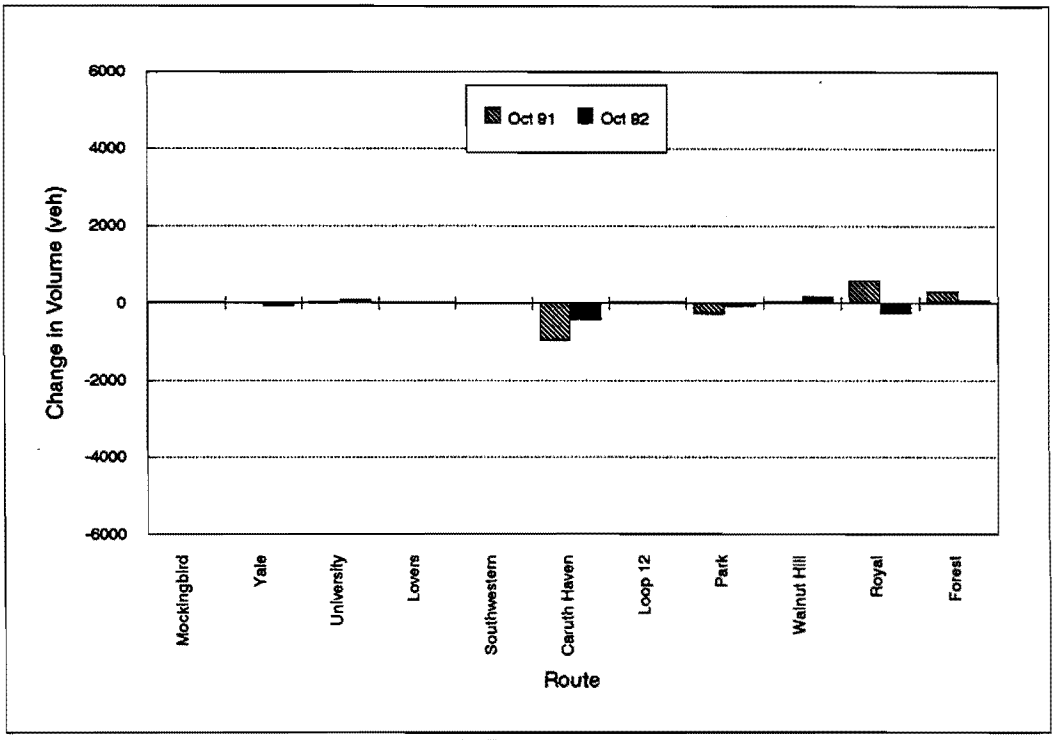


a) Northbound

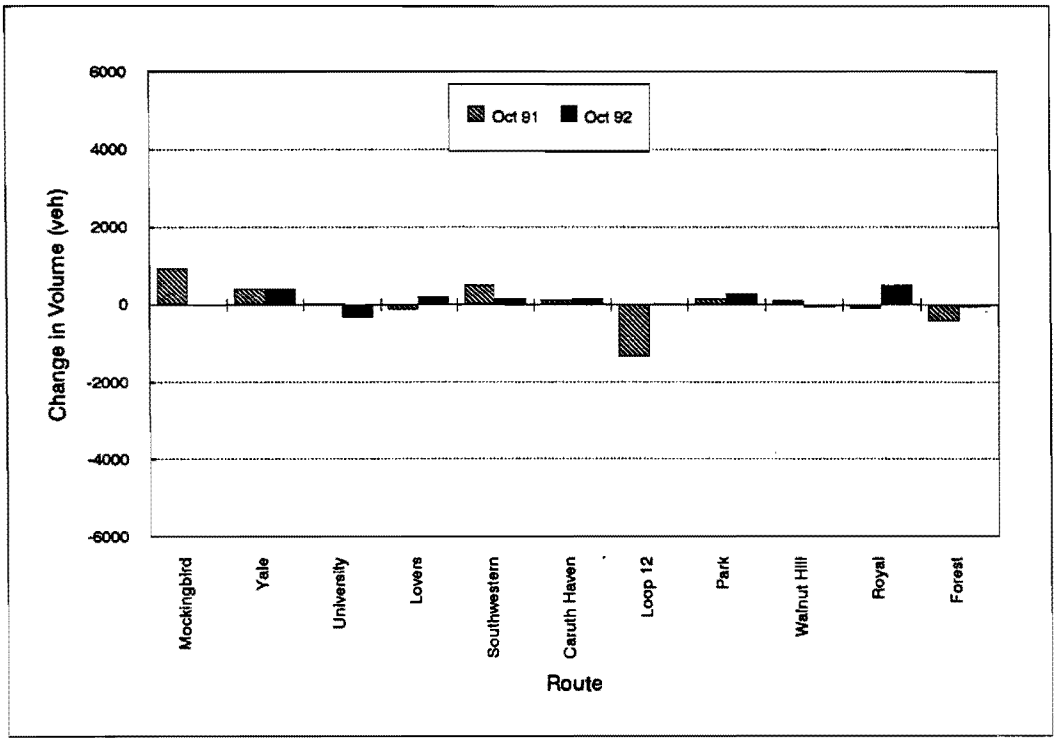


b) Southbound

Figure C-9. Change in Volume by Route as Compared to October 1990: Loop 12 Screen Line - 24 Hour Period

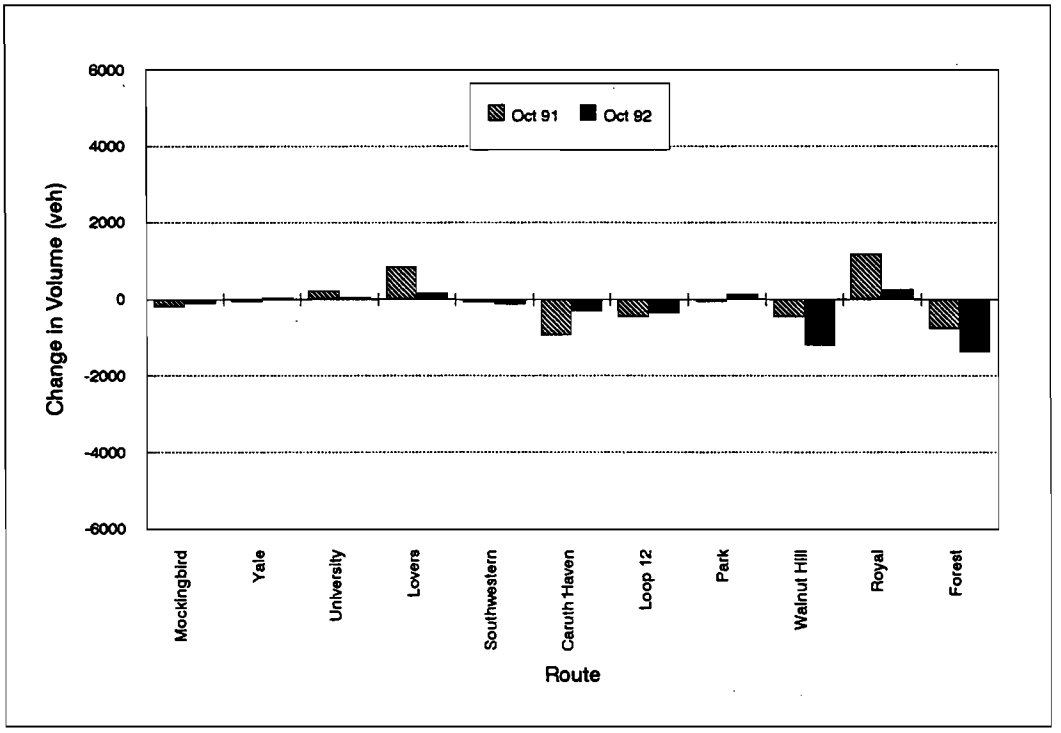


a) Eastbound

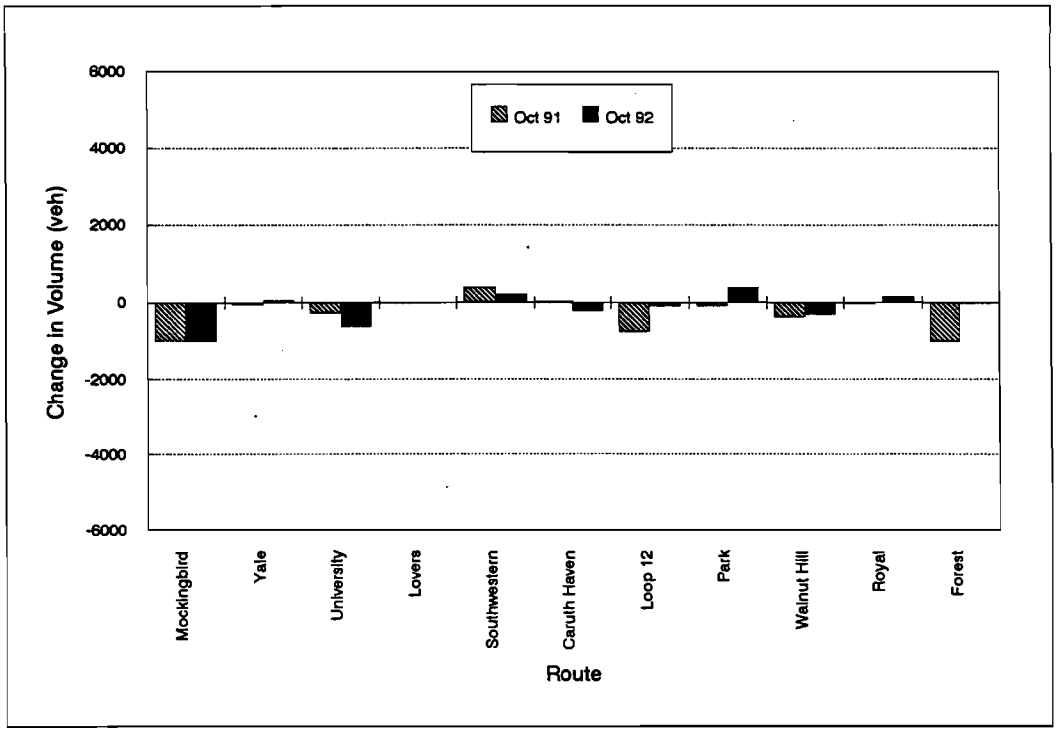


b) Westbound

Figure C-10. Change in Volume by Route as Compared to October 1990: US-75 Screen Line - A.M. Peak Period

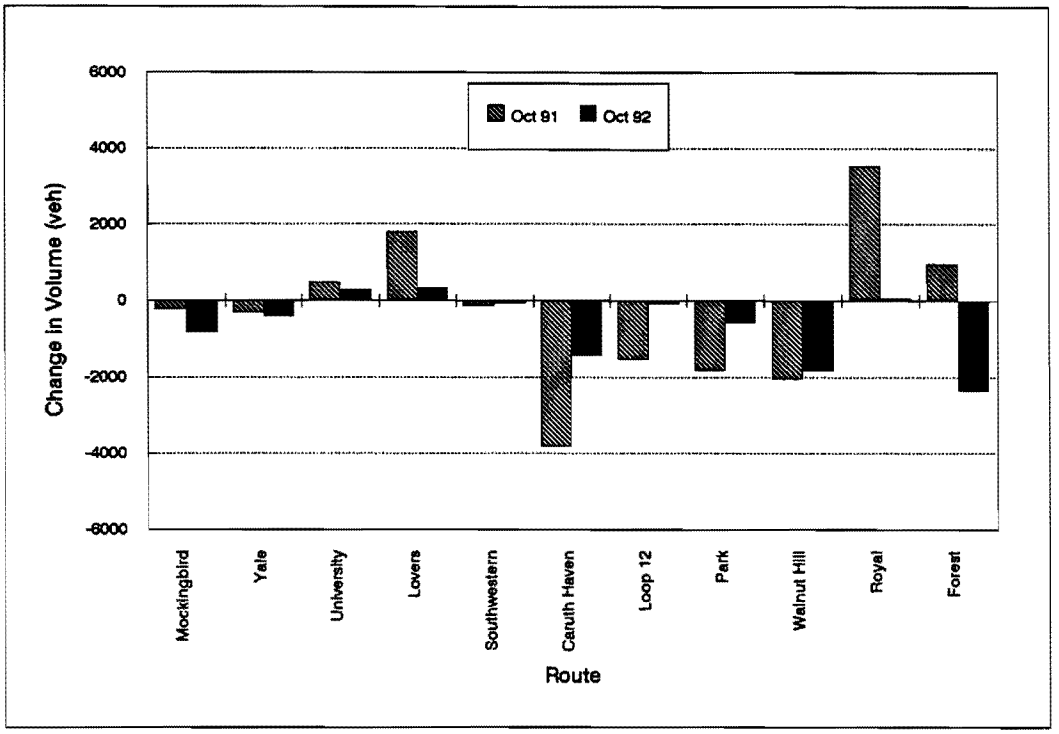


a) Eastbound

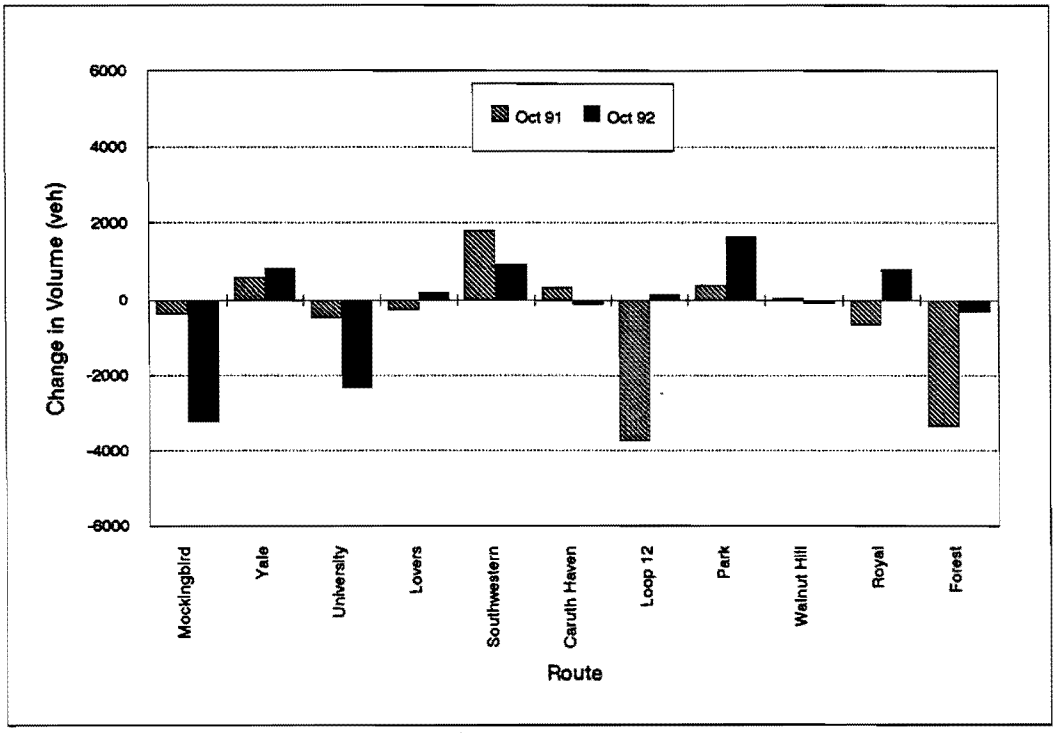


b) Westbound

Figure C-11. Change in Volume by Route as Compared to October 1990: US-75 Screen Line - P.M. Peak Period



a) Eastbound



b) Westbound

Figure C-12. Change in Volume by Route as Compared to October 1990: US-75 Screen Line - 24 Hour Period

APPENDIX D

OCTOBER 1992 AVERAGE TRAVEL TIMES

TABLE D-1. Peak Period, Peak Direction Total Travel Time on North-South Routes (October 1992)

Run Beginning		Travel Time (min)								
		DNT	Preston	Hillcrest	US-75	US-75 Fr. Rd.	Greenville	Skillman	Abrams	Garland
A.M. Peak Period South-bound	6:00	10.82	19.37	21.57	9.09	20.07	19.17	18.08	22.30	18.23
	6:30	10.77	22.10	22.32	10.28	18.40	19.95	18.13	19.22	18.73
	7:00	11.05	26.50	23.10	15.22	23.03	19.83	22.78	20.87	16.18
	7:30	16.33	31.03	26.55	22.26	26.53	21.28	20.97	26.97	25.67
	8:00	18.88	29.87	28.53	18.46	24.85	22.33	21.08	25.87	20.53
	8:30	16.18	28.43	31.48	16.56	27.03	27.77	18.33	24.63	20.78
	9:00	11.17	28.75	23.30	12.85	22.48	23.25	20.90	18.87	21.00
P.M. Peak Period North-bound	3:00	13.10	26.63	26.22	11.09	24.47	20.65	19.63	20.85	19.25
	3:30	13.97	26.33	28.28	13.82	19.57	20.68	20.70	22.75	21.93
	4:00	12.60	28.60	31.08	15.16	26.68	24.28	19.25	22.73	21.00
	4:30	12.22	29.47	25.83	17.99	20.37	23.30	18.27	22.43	22.68
	5:00	12.58	28.87	36.70	23.72	45.05	27.93	21.23	30.42	23.65
	5:30	21.55	29.52	39.25	28.06	35.03	29.02	21.97	27.65	26.72
	6:00	22.05	27.12	30.48	21.47	29.17	23.40	16.95	27.82	22.00
	6:30	16.43	23.92	26.13	15.22	27.15	21.72	19.43	19.20	20.75
	7:00	12.53	24.10	23.55	10.22	22.97	21.77	25.10	22.62	20.77

TABLE D-2. Peak Period, Off-Peak Direction Total Travel Time on North-South Routes (October 1992)

Run Beginning		Travel Time (min)								
		DNT	Preston	Hillcrest	US-75	US-75 Fr. Rd.	Greenville	Skillman	Abrams	Garland
A.M. Peak Period North-bound	6:00	12.05	22.80	23.32	9.64	17.53	18.48	20.18	20.75	17.08
	6:30	10.13	22.58	23.67	9.76	24.03	19.38	20.83	21.45	21.50
	7:00	11.73	23.80	25.63	11.95	24.77	21.25	20.10	23.55	19.48
	7:30	15.23	27.00	27.07	16.83	23.37	19.47	22.30	27.60	22.82
	8:00	13.58	29.75	28.70	20.62	29.53	22.33	21.72	28.12	20.83
	8:30	13.23	27.57	29.23	16.16	26.50	21.77	21.30	25.93	22.95
	9:00	12.07	22.95	21.80	12.92	18.43	18.53	18.37	18.82	18.57
P.M. Peak Period South-Bound	3:00	12.13	32.65	26.25	15.26	20.62	20.12	16.97	23.93	21.00
	3:30	11.33	26.35	25.48	16.11	21.67	19.23	18.90	25.48	20.30
	4:00	12.22	28.47	26.40	15.10	26.55	25.20	20.35	25.98	23.18
	4:30	12.57	29.43	26.33	12.82	29.23	24.78	22.72	21.00	23.37
	5:00	14.32	29.25	28.60	12.75	26.88	24.80	23.95	26.72	26.75
	5:30	13.83	27.28	29.15	14.47	32.13	24.20	23.65	22.33	22.63
	6:00	15.85	25.10	23.88	12.54	26.90	24.50	22.90	22.15	23.03
	6:30	15.58	20.72	26.50	11.54	26.18	23.25	19.63	20.60	21.07
	7:00	15.15	26.58	20.67	9.89	20.43	21.40	17.32	21.77	21.42

TABLE D-3. Peak Period Total Travel Time on East-West Routes (October 1992)

Run Beginning		Travel Time (min)			
		Eastbound		Westbound	
		Loop 12	Royal	Loop 12	Royal
A.M. Peak Period	6:00	8.87	No Data	8.32	12.78
	6:30	9.00	15.30	8.47	13.18
	7:00	10.52	11.40	8.97	13.93
	7:30	12.47	14.50	15.27	14.83
	8:00	11.88	17.83	14.83	15.13
	8:30	13.10	15.92	14.50	14.42
	9:00	11.60	13.25	11.63	14.45
P.M. Peak Period	3:00	9.25	15.63	11.97	13.58
	3:30	11.32	14.97	11.58	16.47
	4:00	12.30	16.02	10.72	14.72
	4:30	13.57	14.63	11.83	13.37
	5:00	16.23	15.90	12.83	11.78
	5:30	18.27	19.88	14.45	13.68
	6:00	17.55	15.82	13.37	13.85
	6:30	12.80	14.28	11.45	13.30
	7:00	8.18	13.28	9.33	14.88

TABLE D-4. Off-Peak Period Total Travel Time on US-75 (October 1992)

Run Beginning	Travel Time (min)	
	Northbound	Southbound
10:00 A.M.	11.98	11.98
10:30	11.89	11.86
11:00	12.59	15.83
11:30	13.31	16.28
12:00 P.M.	13.85	16.69
12:30	14.43	17.48
1:00	13.82	16.73
1:30	14.78	18.39

APPENDIX E

OCTOBER 1992 AVERAGE TRAVEL SPEEDS

TABLE E-1. Peak Period, Peak Direction Average Travel Speed on North-South Routes (October 1992)

Run Beginning		Travel Speed (mph)								
		DNT	Preston	Hillcrest	US-75	US-75 Fr. Rd.	Greenville	Skillman	Abrams	Garland
A.M. Peak Period Southbound	6:00	55	30	27	61	28	29	32	27	34
	6:30	55	26	26	54	30	28	32	31	33
	7:00	54	22	26	37	24	28	25	29	38
	7:30	36	19	22	25	21	26	28	22	24
	8:00	31	19	21	31	22	25	27	23	30
	8:30	37	20	19	34	20	20	32	24	29
	9:00	53	20	25	43	25	24	28	32	29
P.M. Peak Period Northbound	3:00	46	22	22	50	23	28	30	30	31
	3:30	43	22	21	40	28	28	28	27	27
	4:00	47	20	19	37	21	23	30	27	28
	4:30	49	20	23	31	27	24	32	28	26
	5:00	47	20	16	23	12	20	27	20	25
	5:30	28	20	15	20	16	20	26	22	22
	6:00	27	21	19	26	19	24	34	22	27
	6:30	36	24	22	37	20	26	30	32	29
	7:00	48	24	25	54	24	26	23	27	29

TABLE E-2. Peak Period, Off-Peak Direction Average Travel Speed on North-South Routes (October 1992)

Run Beginning		Travel Speed (mph)								
		DNT	Preston	Hillcrest	US-75	US-75 Fr. Rd.	Greenville	Skillman	Abrams	Garland
A.M. Peak Period North-bound	6:00	50	25	25	58	32	31	29	30	35
	6:30	59	26	25	57	23	29	28	29	28
	7:00	51	24	23	47	22	27	29	26	31
	7:30	39	21	22	33	24	29	26	22	26
	8:00	44	19	20	27	19	26	27	22	29
	8:30	45	21	20	34	21	26	27	24	26
	9:00	49	25	27	44	30	31	32	33	32
P.M. Peak Period South-Bound	3:00	49	18	22	43	27	28	34	25	29
	3:30	52	22	23	43	25	29	31	24	30
	4:00	49	20	22	41	21	22	28	23	26
	4:30	47	20	22	47	19	23	25	29	26
	5:00	42	20	21	44	21	23	24	22	23
	5:30	43	21	20	39	17	23	24	27	27
	6:00	38	23	25	45	21	23	25	27	27
	6:30	38	28	22	49	21	24	29	29	29
	7:00	39	22	29	56	27	26	33	28	29

TABLE E-3. Peak Period Average Travel Speed on East-West Routes (October 1992)

Run Beginning		Travel Speed (mph)			
		Eastbound		Westbound	
		Loop 12	Royal	Loop 12	Royal
A.M. Peak Period	6:00	36	No Data	39	32
	6:30	36	27	38	31
	7:00	30	36	36	29
	7:30	26	28	21	28
	8:00	27	23	22	27
	8:30	24	26	22	29
	9:00	28	31	28	28
P.M. Peak Period	3:00	35	26	27	30
	3:30	28	27	28	25
	4:00	26	26	30	28
	4:30	24	28	27	31
	5:00	20	26	25	35
	5:30	18	21	22	30
	6:00	18	26	24	30
	6:30	25	29	28	31
	7:00	39	31	34	28

TABLE E-4. Off-Peak Period Average Travel Speed on US-75 (October 1992)

Run Beginning	Travel Speed (mph)	
	Northbound	Southbound
10:00 A.M.	50	48
10:30	48	49
11:00	48	38
11:30	45	38
12:00 P.M.	44	38
12:30	42	37
1:00	47	37
1:30	43	35

APPENDIX F

MAY 1993 SCREEN LINE TRAFFIC VOLUMES

TABLE F-1. Oak Lawn/Lemmon/Peak Screen Line Average Traffic Volumes (May 1993): Northbound

Hour Ending	Route													Total
	Harry Hines	DNT	Maple	Cedar Springs	Lemmon	Oak Lawn	Turtle Creek	McKinney	US-75	Ross	Live Oak	Gaston	Columbia	
1	52	249	95	146	168	115	45	95	978	84	63	101	87	2278
2	47	152	54	94	115	94	33	71	547	62	33	53	33	1388
3	32	116	38	74	93	67	15	38	456	55	27	39	36	1087
4	16	80	22	39	49	32	11	20	258	18	20	25	20	610
5	21	100	18	32	114	26	4	16	432	16	15	25	27	847
6	118	305	39	53	285	42	10	22	1059	43	29	38	92	2134
7	658	1378	117	154	950	154	41	76	3419	108	75	128	120	7378
8	1201	2911	256	328	1273	483	152	223	4903	265	179	357	198	12730
9	960	2938	302	319	1002	696	253	305	4859	471	233	324	255	12916
10	455	2092	298	297	808	685	296	286	3374	473	264	355	301	9985
11	429	1895	333	365	889	681	332	335	3056	517	347	464	437	10079
12	513	2174	443	494	1406	944	554	478	3611	719	609	659	591	13195
13	603	2327	521	564	1375	1105	683	603	3665	791	680	684	651	14271
14	569	2485	446	523	1163	966	572	530	3489	680	521	591	589	13123
15	559	2539	404	520	1124	918	516	490	3485	709	506	667	658	13075
16	555	3098	407	507	1100	855	520	538	3407	795	584	796	670	13830
17	657	4434	497	602	1338	1043	754	823	2928	1218	1081	1069	966	17411
18	852	5328	606	764	1484	1282	1402	1327	4276	1533	1534	1404	1323	23115
19	395	3924	355	631	1106	1026	908	914	4216	944	746	785	566	16515
20	210	2050	276	505	801	696	445	497	3337	476	337	441	266	10457
21	186	1281	220	464	807	503	327	404	2816	379	248	350	248	8033
22	163	1137	239	488	668	459	287	353	2460	328	213	287	185	7266
23	174	1026	216	411	537	360	254	340	2229	286	151	210	184	6358
24	95	638	161	299	329	238	141	235	1623	180	113	193	135	4381
24 Hr. Total	9522	44857	6364	8693	19083	13469	8555	9019	64663	11150	8608	10045	8636	222462

TABLE F-2. Oak Lawn/Lemmon/Peak Screen Line Average Traffic Volumes (May 1993): Southbound

Hour Ending	Route													Total
	Harry Hines	DNT	Maple	Cedar Springs	Lemmon	Oak Lawn	Turtle Creek	Cole	US-75	Ross	Live Oak	Gaston	Columbia	
1	54	183	95	160	155	125	25	75	757	76	39	63	37	1846
2	45	102	76	123	107	84	14	40	499	39	25	33	26	1213
3	29	75	73	130	77	71	12	38	420	35	21	27	17	1025
4	26	56	34	62	47	41	4	14	246	21	21	23	18	610
5	23	67	19	31	52	34	8	19	360	27	30	28	27	725
6	47	250	32	63	131	53	24	48	1039	66	86	106	64	2008
7	207	1629	162	174	500	202	152	196	3298	427	431	485	323	8186
8	540	5189	403	460	1216	771	664	724	5887	1195	1638	1230	925	20842
9	624	5755	484	624	1275	985	1018	1014	5380	1272	1829	1192	816	22269
10	530	3474	390	477	902	709	584	550	4485	590	649	567	332	14219
11	497	2299	357	437	862	692	405	438	3442	480	442	447	245	11045
12	611	2338	423	484	1112	781	495	542	3621	523	537	446	250	12162
13	686	2189	542	625	1432	944	642	632	3739	666	752	575	355	13779
14	705	2622	540	648	1389	968	670	653	4119	683	706	568	326	14597
15	683	2516	444	554	1246	887	484	495	3603	570	520	496	284	12763
16	932	2645	485	567	1514	811	410	452	4070	557	479	430	274	13629
17	1316	3175	484	638	1550	801	389	562	4327	613	480	404	275	15014
18	1431	3539	508	636	1639	790	433	484	4456	529	467	374	226	15492
19	629	3039	381	559	1190	763	408	399	3928	421	393	386	200	12676
20	345	1732	246	460	851	630	335	341	2782	345	305	286	154	8811
21	218	1027	194	386	731	523	201	284	2258	254	258	239	125	6698
22	182	957	174	344	595	464	153	254	2060	230	170	182	95	5840
23	130	719	161	304	485	358	101	197	1668	201	129	159	100	4722
24	122	388	120	249	371	222	52	135	1359	132	76	95	67	3388
24 Hr. Total	10588	45964	6827	9199	19438	12690	7683	8567	67783	9951	10482	8824	5562	223559

TABLE F-3. Mockingbird/Buckner Screen Line Average Traffic Volumes (May 1993): Northbound

Hour Ending	Route									Total
	DNT	Preston	Hillcrest	US-75	Greenville	Matilda	Skillman	Abrams	Garland	
1	240	43	17	1201	146	42	76	88	179	2030
2	140	24	10	676	94	27	40	59	114	1184
3	98	15	7	548	76	24	28	45	69	910
4	80	13	2	279	31	13	19	30	60	526
5	99	12	2	404	14	9	13	31	75	658
6	315	31	11	1040	31	27	43	80	220	1798
7	1298	89	31	3315	137	123	209	317	676	6195
8	2416	342	186	4078	238	424	614	805	1071	10175
9	2490	498	325	4536	270	456	619	850	958	11002
10	1808	482	256	3901	262	257	461	782	904	9122
11	1590	543	261	3703	317	238	425	699	966	8743
12	1999	622	339	4189	352	271	509	791	1149	10222
13	1952	665	353	4281	409	324	588	850	1268	10690
14	1969	680	383	4281	427	345	543	883	1267	10778
15	2076	674	358	4442	401	306	559	821	1333	10969
16	2428	685	415	4527	384	394	722	973	1607	12115
17	3401	728	518	4945	394	543	973	1124	1955	14578
18	4451	843	634	4889	472	863	1219	1384	2255	17010
19	3051	695	469	4923	481	554	914	1086	1715	13888
20	1739	488	275	4174	405	322	526	749	1156	9835
21	1092	349	199	3384	400	261	421	624	971	7701
22	888	337	152	3297	416	211	319	518	796	6935
23	764	215	100	2758	330	141	224	376	620	5528
24	609	126	55	2413	286	95	139	210	393	4325
24 Hr. Total	36994	9175	5359	76184	6774	6269	10203	14183	21775	186915

TABLE F-4. Mockingbird/Buckner Screen Line Average Traffic Volumes (May 1993): Southbound

Hour Ending	Route									Total
	DNT	Preston	Hillcrest	US-75	Greenville	Matilda	Skillman	Abrams	Garland	
1	169	37	12	819	160	23	65	82	159	1525
2	81	18	6	491	82	10	33	64	74	860
3	68	13	4	418	54	9	28	40	51	685
4	42	16	4	244	24	3	15	29	51	428
5	66	16	0	341	19	2	23	21	70	559
6	260	25	8	1027	42	4	52	56	202	1676
7	1705	126	34	3504	166	20	315	211	893	6974
8	4892	558	250	6159	628	87	1189	740	1956	16459
9	4835	833	432	5770	734	107	1220	781	1744	16456
10	2814	622	271	4832	463	74	476	622	1213	11388
11	1968	628	258	3983	466	65	370	605	1056	9397
12	2078	676	292	4054	567	94	424	819	1115	9916
13	2048	746	316	4103	629	111	451	705	1184	10293
14	2295	809	335	4186	597	93	475	889	1268	10747
15	2038	734	327	4424	812	110	454	765	1237	10702
16	2095	699	321	4599	637	161	521	752	1359	11144
17	2481	725	398	4379	785	140	585	794	1271	11557
18	2823	752	377	5148	856	157	685	984	1354	13137
19	2264	688	317	4602	813	179	726	970	1385	11944
20	1382	497	247	3760	701	121	501	827	1174	9189
21	920	403	185	2811	625	116	400	581	995	7036
22	887	305	140	2733	553	113	359	545	757	6391
23	598	186	88	2267	420	83	270	348	500	4760
24	343	94	40	1573	291	49	148	191	289	3019
24 Hr. Total	39128	10208	4660	76227	10925	1932	9784	12021	21357	186242

TABLE F-5. Loop 12 (Northwest Highway) Screen Line Average Traffic Volumes (May 1993): Northbound

Hour Ending	Route							Total
	DNT	Preston	Hillcrest	US-75	Greenville	Skillman	Abrams	
1	298	41	38	1060	273	241	165	2116
2	157	22	19	636	196	133	77	1239
3	122	15	19	584	186	113	59	1077
4	82	9	13	288	52	56	38	538
5	107	17	8	335	36	46	33	581
6	300	33	25	801	54	67	54	1333
7	1460	120	132	2571	237	266	182	4968
8	3226	425	447	3954	729	587	501	9869
9	3154	545	609	3905	1035	661	755	10663
10	1997	560	531	3285	704	462	609	8127
11	1669	626	557	3329	715	494	623	8014
12	2164	764	620	3750	994	638	652	9582
13	2141	821	630	3941	1240	730	771	10276
14	2349	826	672	4198	1197	739	798	10779
15	2434	850	664	4141	1055	835	773	10752
16	3075	783	692	4155	1121	1018	836	11681
17	4362	827	827	4262	1303	1432	687	13901
18	5434	953	1068	3942	2003	2196	988	16584
19	3817	829	804	3976	1456	1715	1054	13651
20	2193	534	467	3484	922	1044	849	9472
21	1399	414	358	2726	778	862	722	7259
22	1181	313	299	2549	687	718	630	6378
23	1056	199	201	2336	658	614	451	5515
24	826	102	108	2095	478	438	306	4354
24 Hr. Total	45003	10828	9807	86243	18109	16105	12813	178708

TABLE F-6. Loop 12 (Northwest Highway) Screen Line Average Traffic Volumes (May 1993): Southbound

Hour Ending	Route							Total
	DNT	Preston	Hillcrest	US-75	Greenville	Skillman	Abrams	
1	196	28	36	814	235	203	131	1642
2	95	18	17	454	117	100	59	860
3	89	15	11	339	72	75	43	643
4	46	11	11	249	36	52	31	435
5	74	11	13	352	23	65	30	567
6	405	40	35	959	73	168	45	1725
7	2199	200	176	3068	348	815	182	6987
8	5655	775	753	3742	1466	2271	515	15178
9	5233	1051	993	3407	1494	1997	740	14915
10	3108	804	702	3100	806	955	635	10111
11	2213	783	640	3337	791	767	661	9191
12	2276	890	801	3592	989	748	706	10002
13	1703	887	911	3699	1387	809	807	10204
14	2378	868	809	3844	1213	837	778	10727
15	2520	887	884	3390	1093	824	831	10429
16	2901	814	824	3593	1195	846	850	11023
17	3305	819	963	3971	1263	915	943	12178
18	3844	843	1181	3809	1543	1105	1240	13565
19	3143	726	1001	3814	1221	1073	1184	12162
20	1863	525	628	3350	966	1022	908	9261
21	1162	322	384	2661	798	776	673	6777
22	969	253	285	2580	719	666	532	6004
23	748	170	211	2031	596	559	368	4684
24	416	84	89	1546	452	343	244	3175
24 Hr. Total	46542	11824	12359	61701	18894	17991	13134	182445

TABLE F-7. US-75 Screen Line Average Traffic Volumes (May 1993): Eastbound

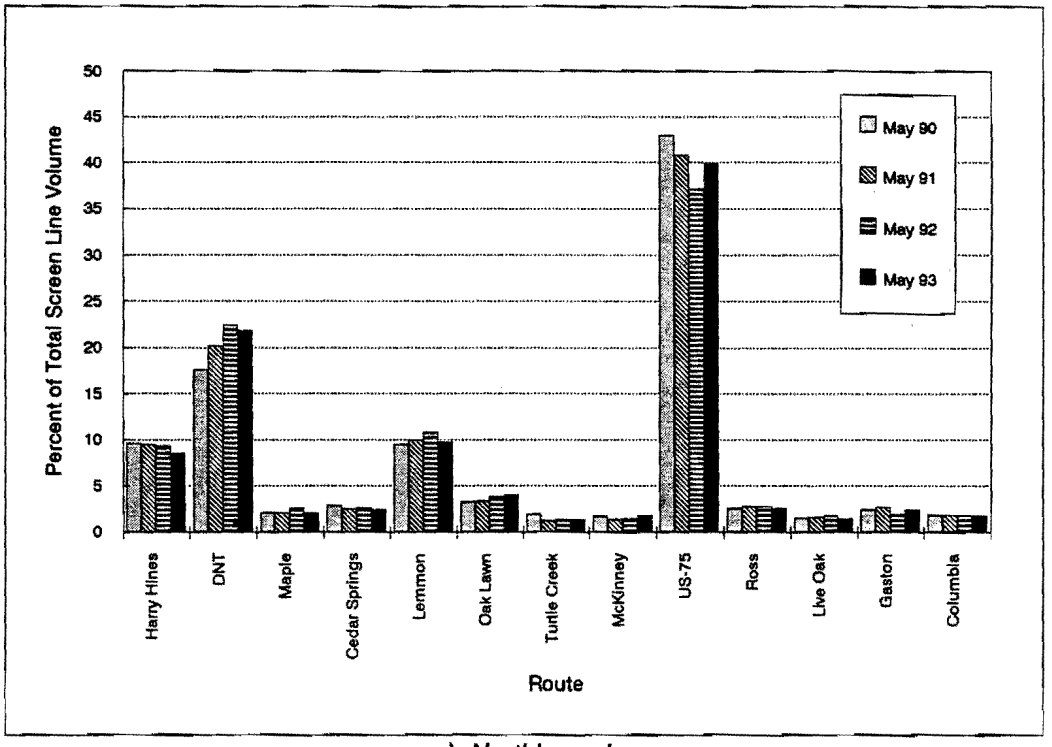
Hour Ending	Route																		Total
	Hall	Lemmon	Haskell	Fitzhugh	Henderson	Monticello	McCommas	Mockingbird	Yale	University	Lovers	South western	Caruth Haven	Loop 12	Park Lane	Walnut	Royal	Forest	
1	35	114	93	301	178	22	26	127	28	32	137	14	44	278	117	119	69	78	1810
2	20	66	63	214	95	9	18	60	18	17	73	8	20	124	58	60	34	42	999
3	13	57	49	188	54	11	14	49	9	9	55	8	14	124	42	56	30	28	813
4	13	26	31	91	46	4	6	32	6	8	27	4	10	76	30	35	16	25	486
5	8	22	22	68	29	2	4	24	8	5	17	4	8	52	26	30	17	20	365
6	9	47	62	101	34	7	8	49	14	10	20	4	20	89	53	78	43	49	695
7	35	182	310	276	113	18	21	128	51	34	99	37	78	315	153	505	165	174	2692
8	97	388	625	481	238	46	51	203	153	73	263	153	296	898	473	1239	535	511	6723
9	102	523	667	868	338	82	95	258	276	129	416	205	371	1026	654	1778	717	689	8993
10	128	532	505	714	457	95	149	417	237	161	406	208	205	1016	492	1463	519	563	8267
11	145	534	548	805	593	124	177	477	234	136	451	202	179	1089	613	1274	458	662	8702
12	195	619	690	974	700	177	249	559	308	186	585	240	214	1393	803	1284	528	875	10577
13	219	675	823	1074	799	171	277	583	359	235	697	295	268	1503	1070	1352	600	1107	12107
14	213	680	743	1022	849	155	241	549	318	238	657	280	281	1563	1039	1591	636	1012	12068
15	230	690	655	1093	862	158	251	564	321	215	628	277	204	1787	1033	1515	654	1157	12292
16	224	782	605	1196	798	169	253	627	295	199	698	302	203	2148	962	1514	796	1363	13135
17	270	812	699	1421	919	242	378	710	281	260	786	448	252	2742	1086	1614	1175	2243	16316
18	395	1022	992	1735	1148	429	642	914	334	442	880	940	449	2931	1347	1957	1731	2870	21156
19	219	670	600	1398	961	286	428	932	217	270	881	715	356	2711	1318	1762	1182	1792	16678
20	167	505	449	960	804	164	281	655	209	193	637	295	267	1808	1013	1071	506	827	10810
21	156	365	327	802	693	123	269	620	178	166	562	184	211	1511	739	743	363	551	8563
22	123	365	333	804	657	111	234	585	229	195	567	129	184	1402	729	619	304	436	8007
23	81	284	296	656	517	67	115	450	117	105	409	84	157	886	417	491	237	269	5639
24	71	236	216	483	368	44	81	291	69	63	309	49	90	632	273	269	127	174	3824
24 Hr. Total	3168	10194	10404	17525	12242	2715	4244	9863	4270	3383	10222	5088	4382	28104	14535	22422	11441	17515	191716

TABLE F-8. US-75 Screen Line Average Traffic Volume (May 1993): Westbound

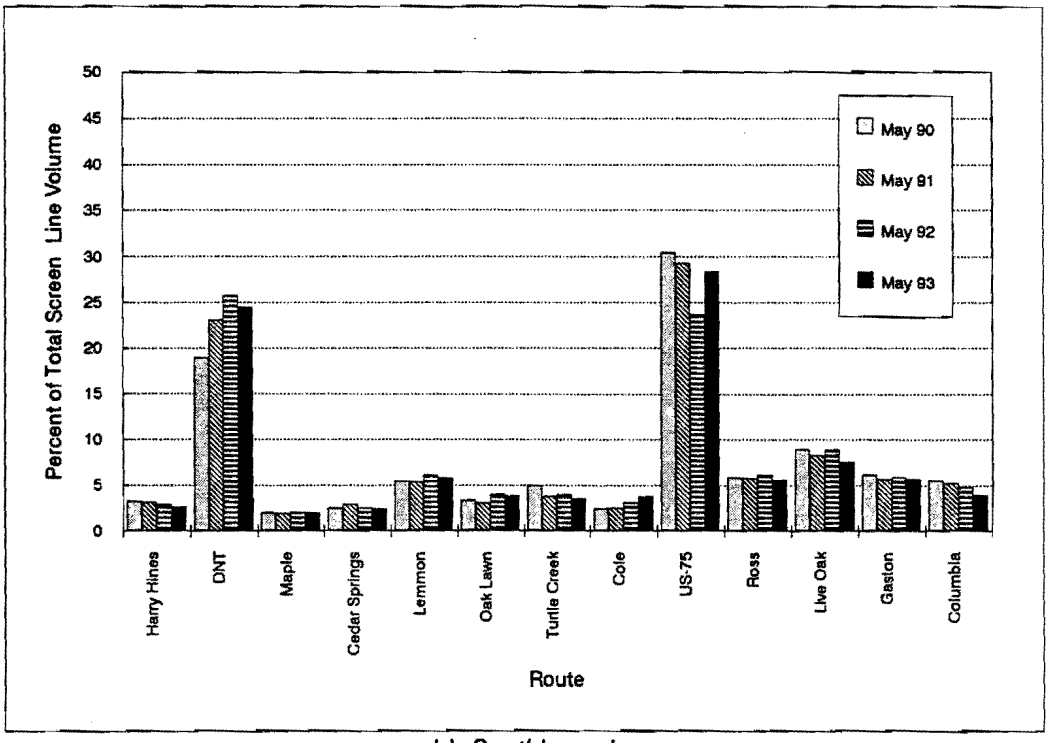
Hour Ending	Route																		Total
	Hall	Lemmon	Haskell	Fitzhugh	Henderson	Monticello	McCommas	Mockingbird	Yale	University	Lovers	South western	Caruth Haven	Loop 12	Park Lane	Walnut	Royal	Forest	
1	46	104	37	209	103	30	18	144	50	54	103	42	24	214	156	155	91	147	1727
2	21	65	19	134	74	12	8	82	43	29	70	24	14	93	77	92	51	87	995
3	22	53	20	119	55	11	6	73	41	29	59	15	17	100	68	58	48	63	856
4	14	35	11	78	40	4	4	64	11	14	24	9	5	69	33	43	22	50	530
5	17	118	9	71	45	8	1	73	11	14	23	8	4	131	41	33	24	71	699
6	49	243	33	199	102	18	6	206	33	40	93	24	20	378	105	86	89	195	1919
7	198	895	187	867	381	108	39	822	215	166	436	148	98	1805	334	477	462	941	8375
8	408	1361	547	1090	875	458	266	1957	853	660	1258	648	321	3257	826	1233	1548	2656	20219
9	519	1269	601	1133	982	562	334	1856	877	702	1270	678	287	3046	849	1160	1232	2318	19676
10	212	775	306	730	607	247	119	1265	399	331	877	357	175	1918	634	936	642	1355	11685
11	191	706	274	662	534	190	88	1057	315	282	587	302	164	1637	691	1038	510	1336	10543
12	211	772	415	733	640	196	86	1073	351	299	630	353	256	1793	857	1254	607	1483	11998
13	227	806	393	754	677	238	136	1246	436	341	695	431	231	1919	939	1342	677	1325	12812
14	214	774	329	767	648	242	135	1237	432	349	688	440	253	1745	911	1220	632	1392	12408
15	199	818	272	779	595	209	100	1089	414	304	636	382	223	1743	820	1190	593	1365	11712
16	195	851	339	824	547	194	97	1010	430	380	605	383	261	1708	795	1292	608	1279	11778
17	225	842	482	807	573	165	101	899	505	384	615	358	317	1791	789	1436	642	1318	12228
18	204	746	549	891	587	195	106	956	503	365	883	436	416	1907	950	1737	738	1343	13333
19	195	647	225	672	514	168	97	989	378	313	650	405	207	1702	762	1189	623	1147	10865
20	156	486	152	592	483	153	83	951	248	254	554	320	121	1315	659	882	469	876	8756
21	144	440	121	535	420	104	68	683	136	185	420	220	102	1028	501	676	359	757	6899
22	111	463	136	519	390	81	72	648	126	163	388	177	109	869	411	619	308	253	5645
23	100	373	99	425	336	66	50	469	108	134	317	150	81	618	368	455	263	434	4849
24	68	244	78	359	218	43	28	293	93	110	202	94	39	432	259	303	161	293	3316
24 Hr. Total	3947	13888	5636	13749	10421	3702	2058	19137	7008	5901	11664	6358	3745	31218	12836	18888	11398	22464	204017

APPENDIX G

SCREEN LINE TRAFFIC VOLUMES (MAY STUDIES): PERCENTAGE OF TOTAL SCREEN LINE VOLUME BY ROUTE

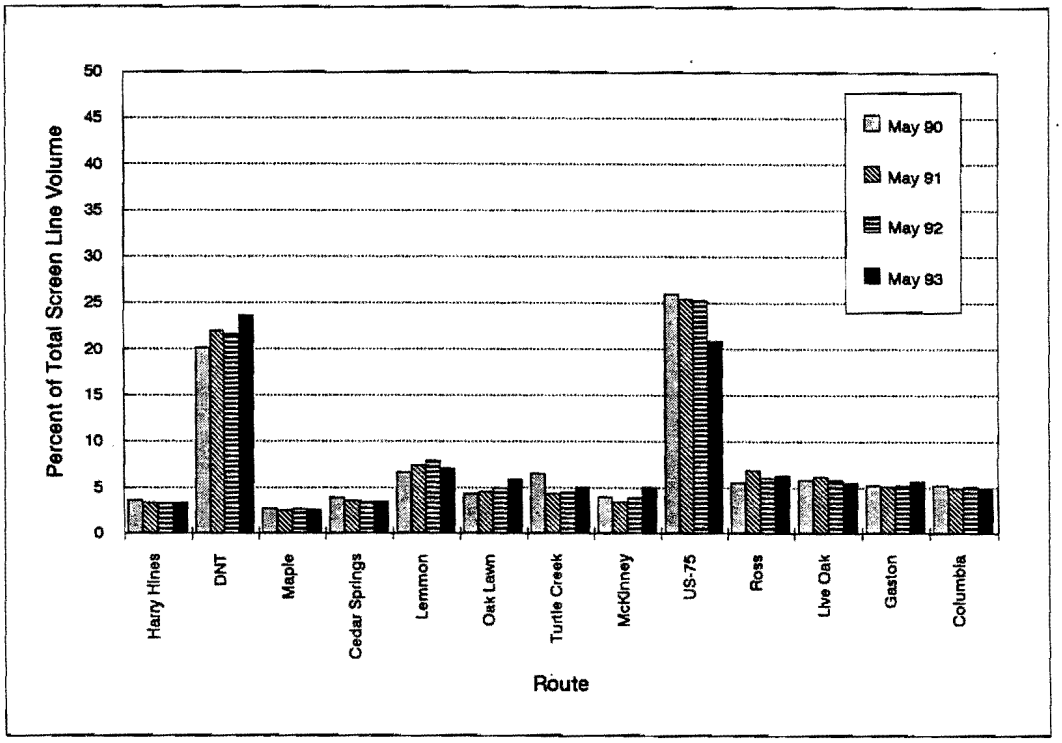


a) Northbound

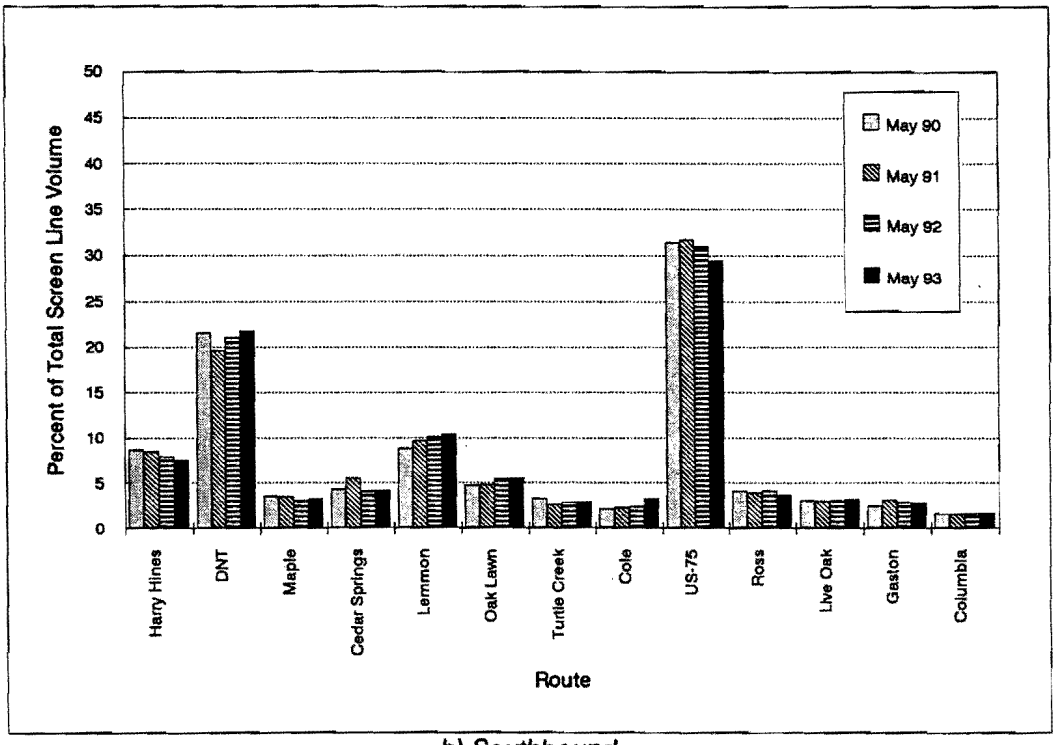


b) Southbound

Figure G-1. Percent of Total Screen Line Volume by Route: Oak Lawn/Lemmon/Peak - A.M. Peak Period (May Studies)

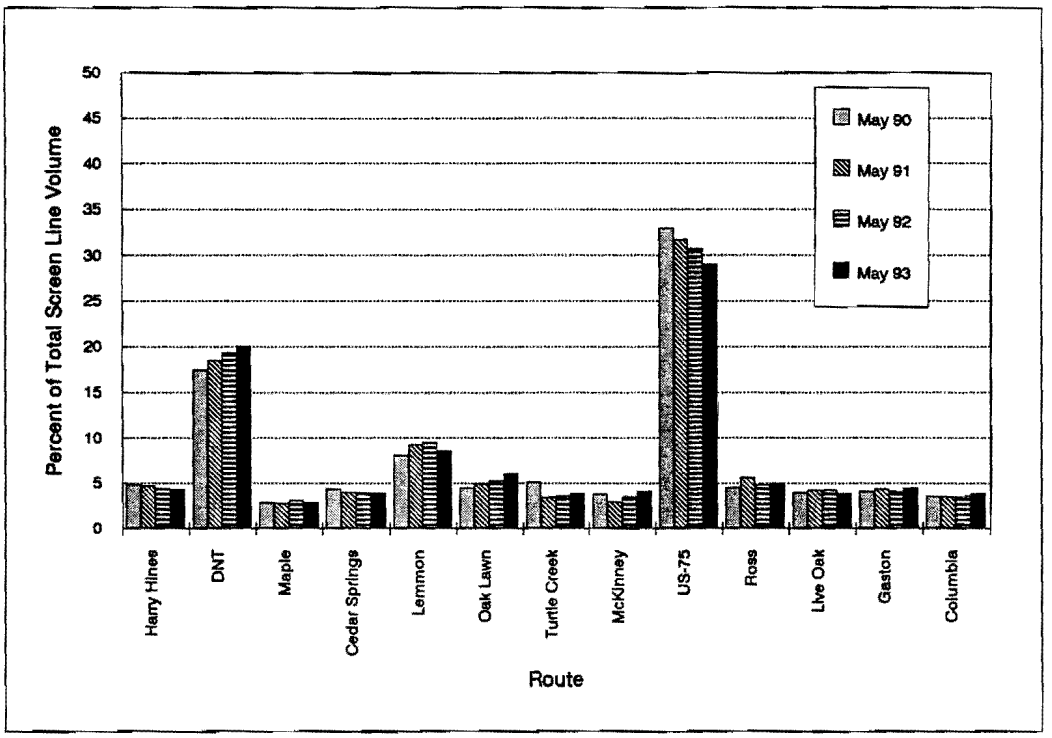


a) Northbound

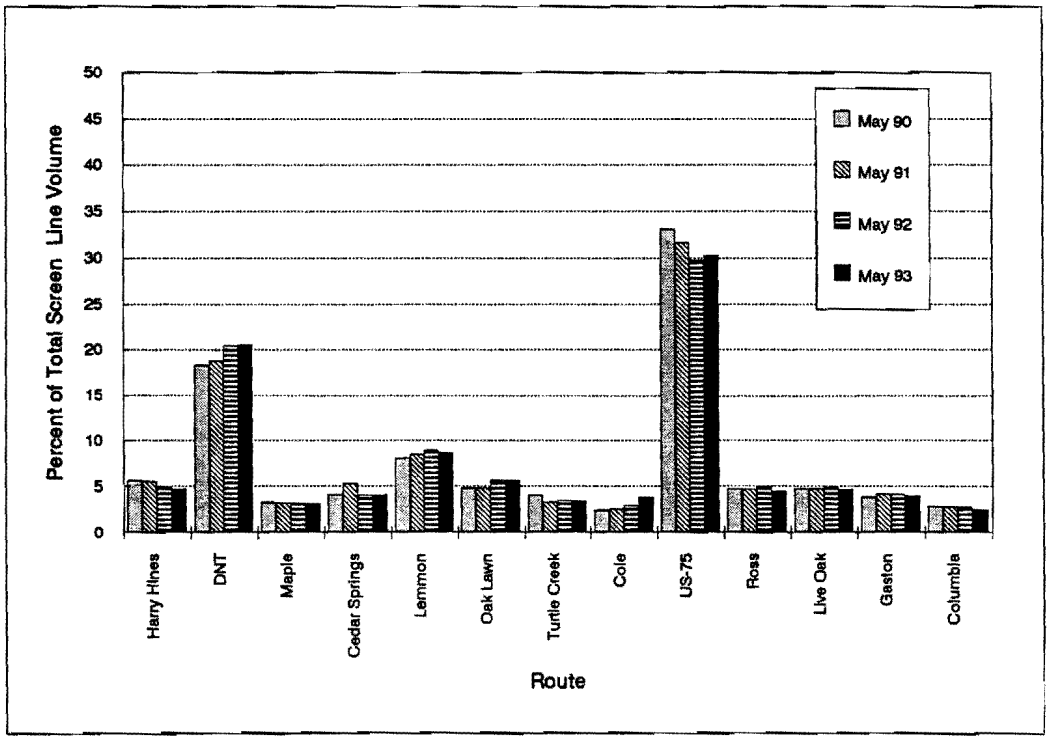


b) Southbound

Figure G-2. Percent of Total Screen Line Volume by Route:
Oak Lawn/Lemmon/Peak - P.M. Peak Period (May Studies)

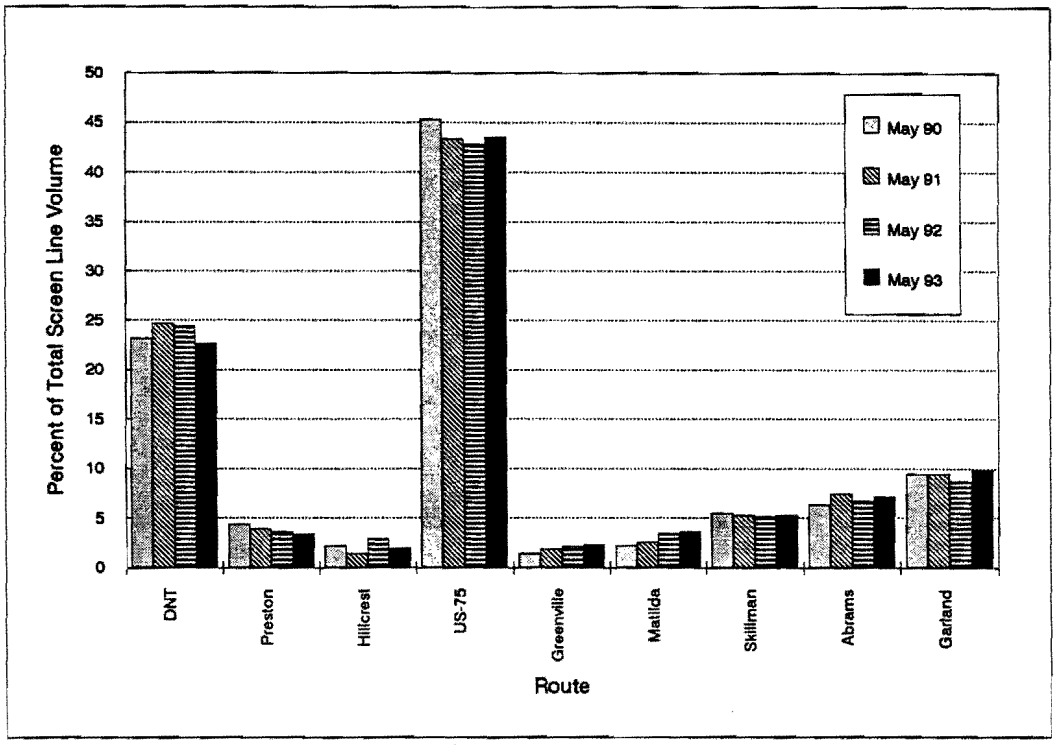


a) Northbound

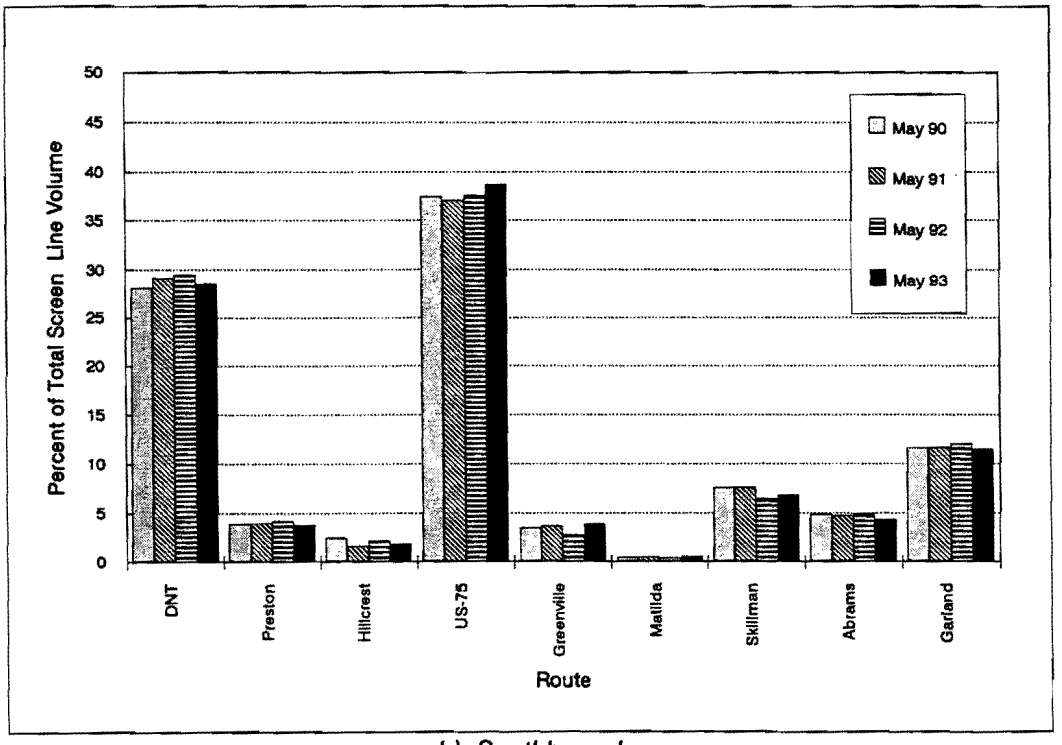


b) Southbound

Figure G-3. Percent of Total Screen Line Volume by Route:
Oak Lawn/Lemmon/Peak - 24 Hour Period (May Studies)

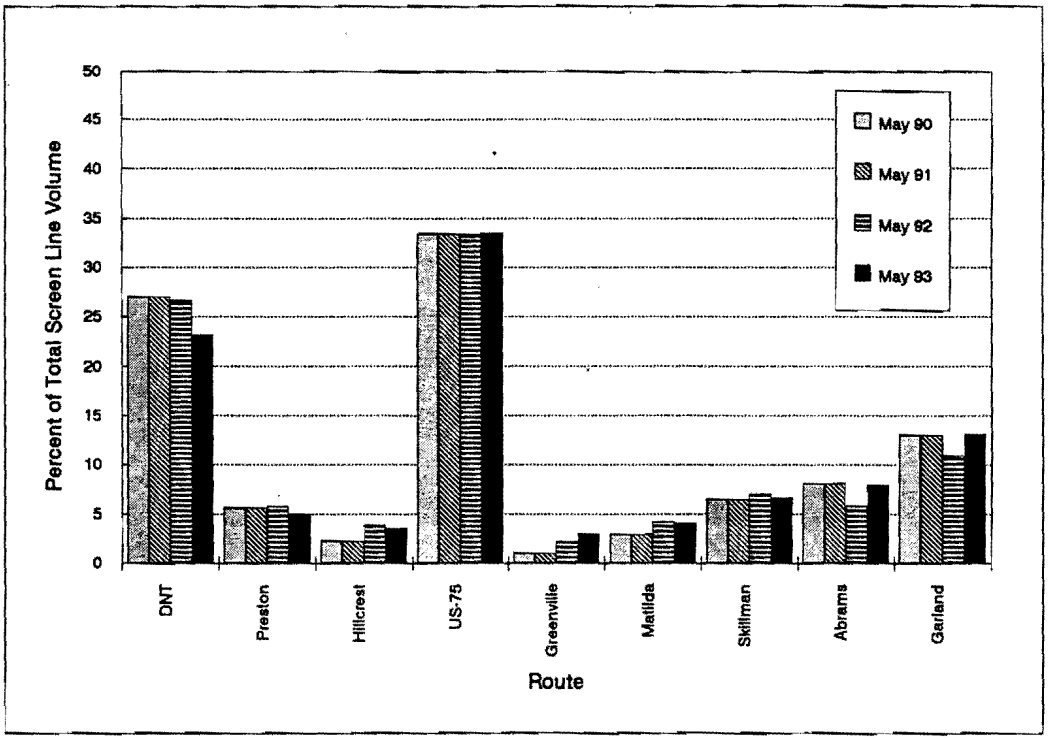


a) Northbound

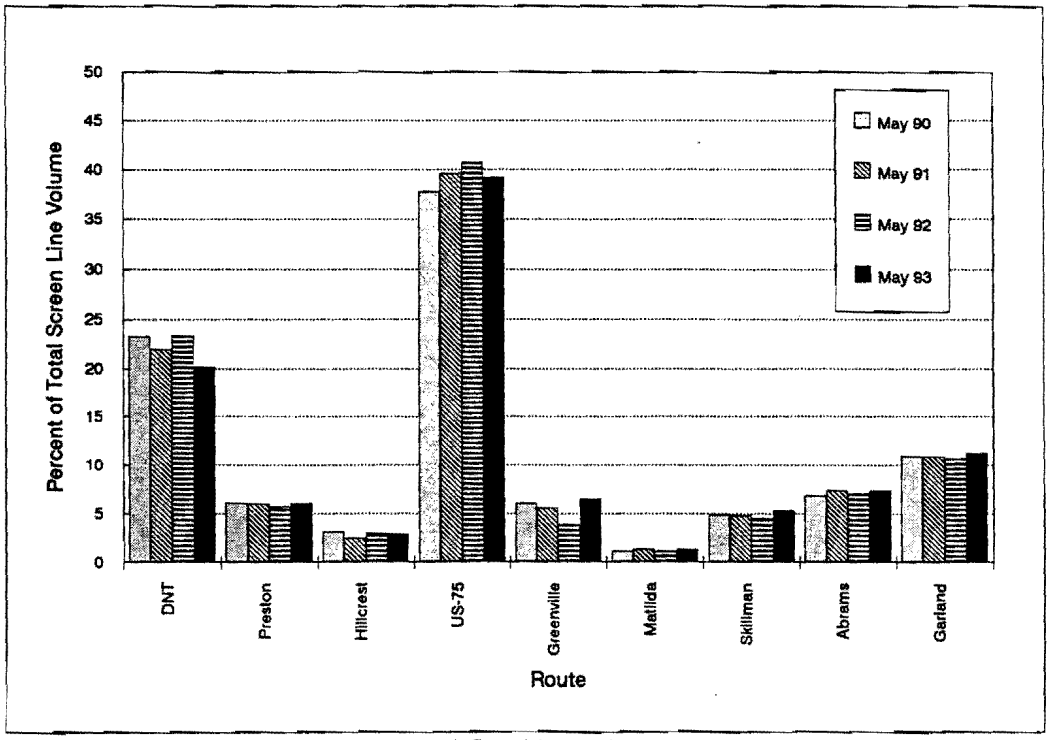


b) Southbound

Figure G-4. Percent of Total Screen Line Volume by Route: Mockingbird/Buckner - A.M. Peak Period (May Studies)

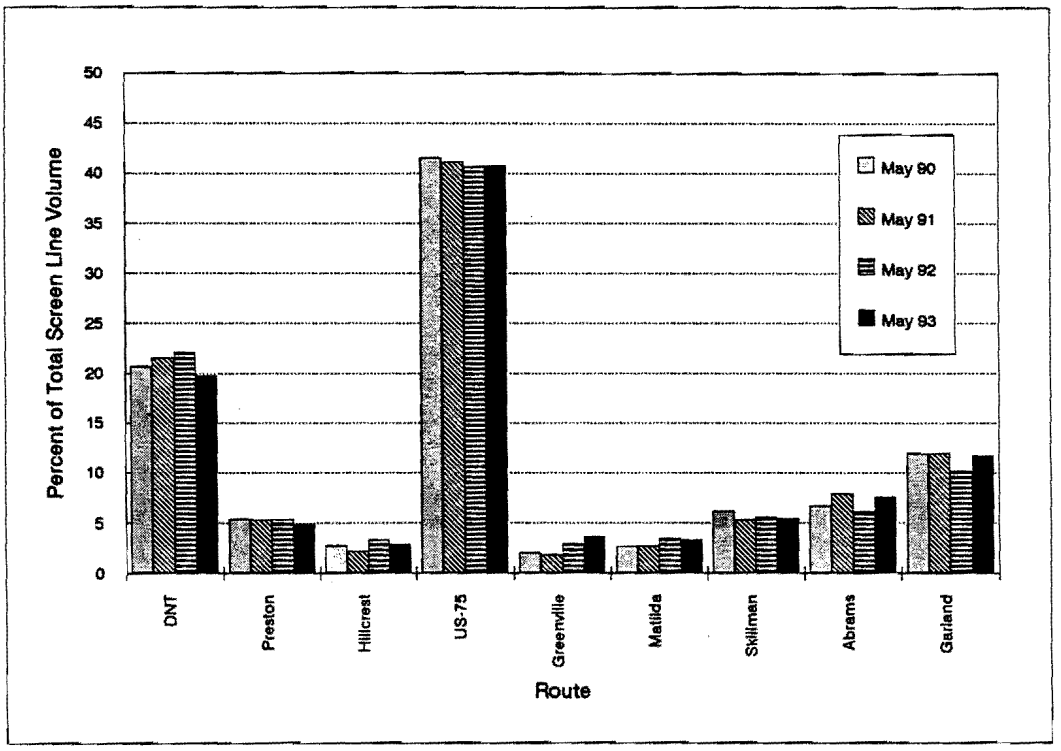


a) Northbound

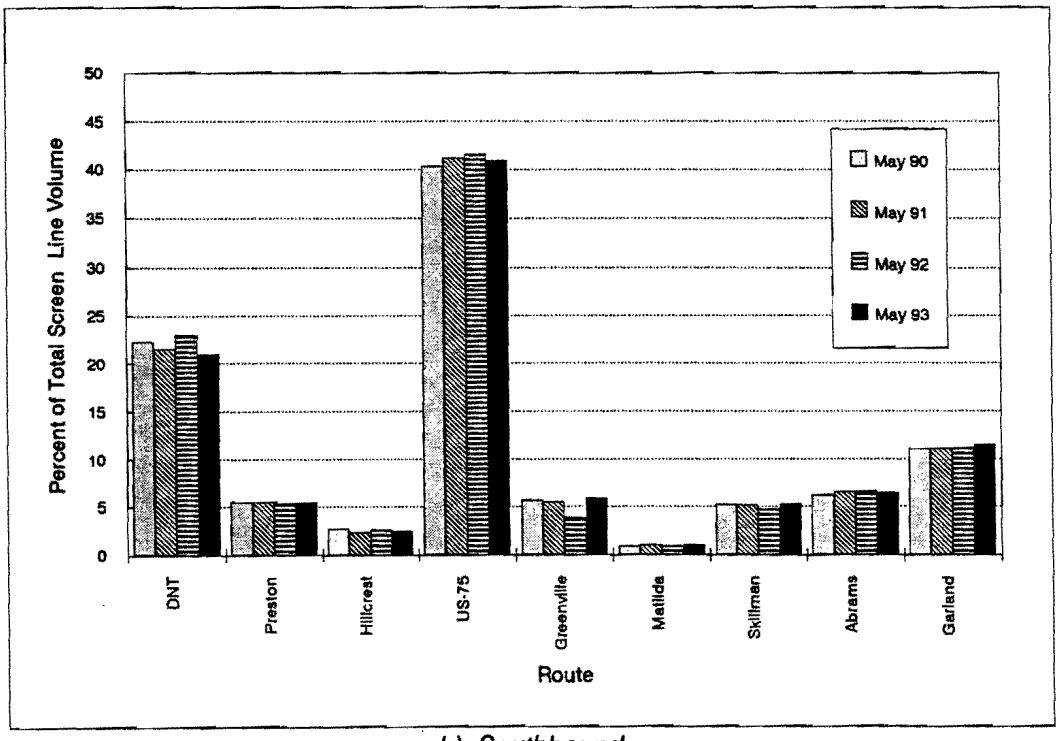


b) Southbound

Figure G-5. Percent of Total Screen Line Volume by Route: Mockingbird/Buckner - P.M. Peak Period (May Studies)

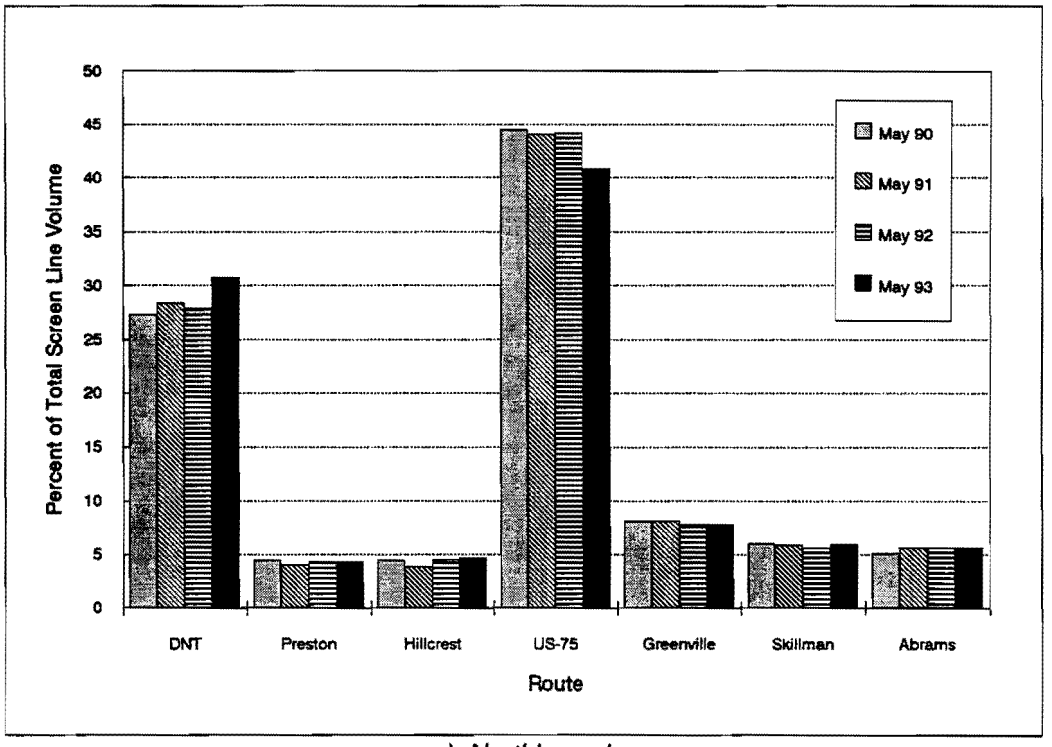


a) Northbound

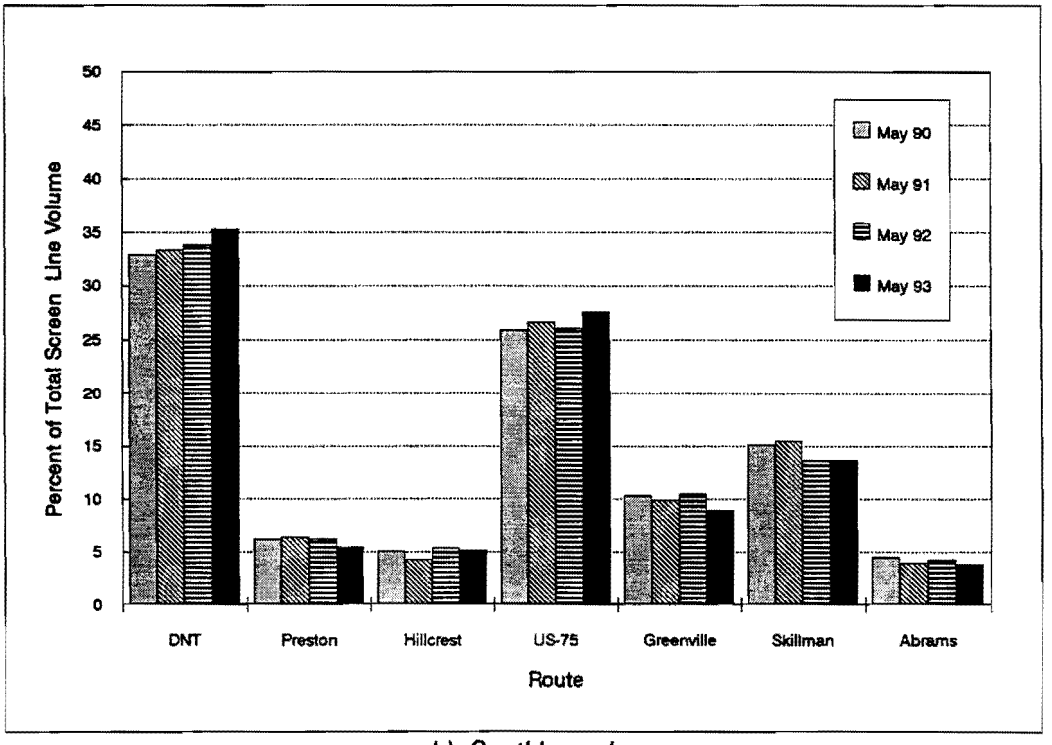


b) Southbound

Figure G-6. Percent of Total Screen Line Volume by Route: Mockingbird/Buckner - 24 Hour Period (May Studies)

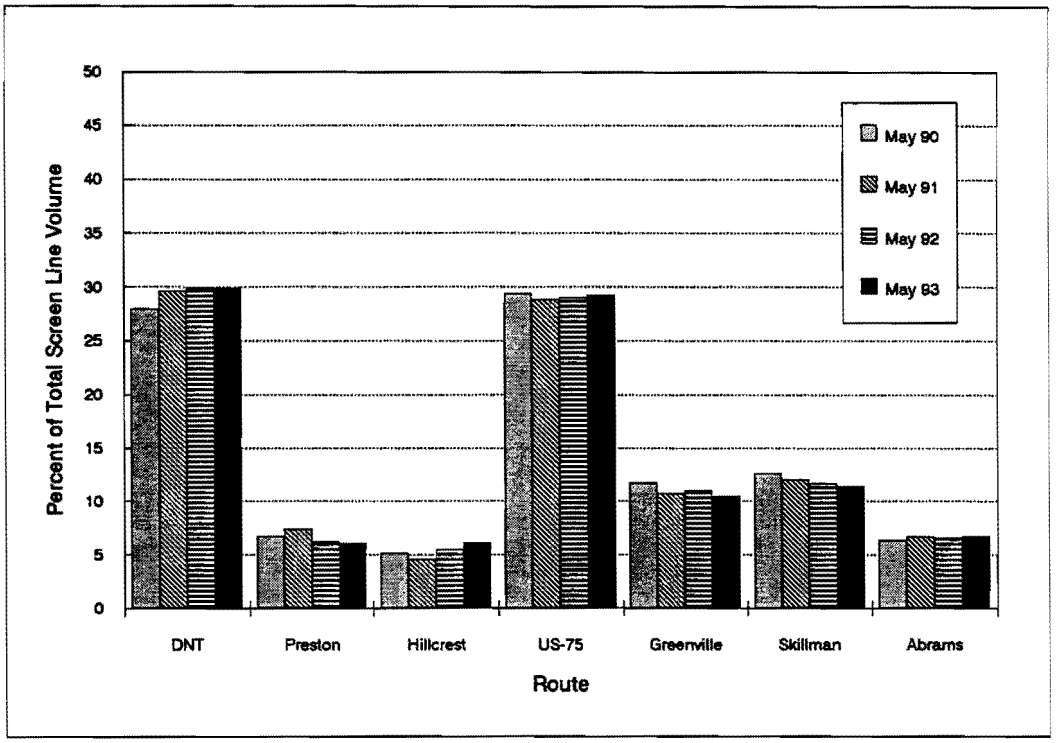


a) Northbound

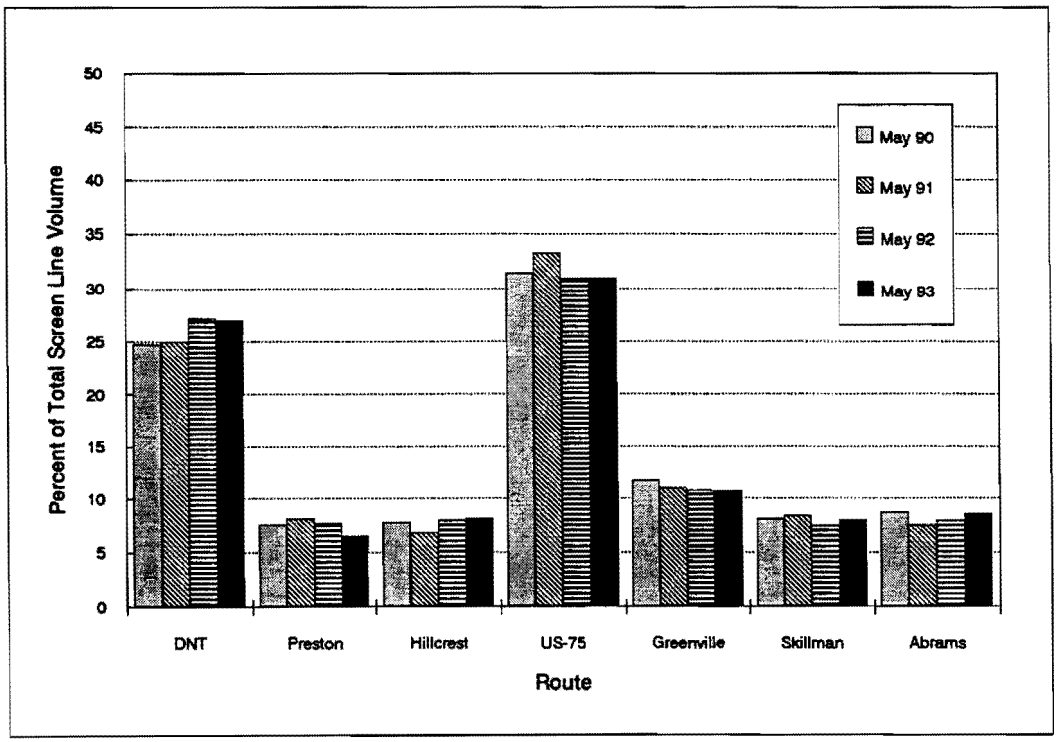


b) Southbound

Figure G-7. Percent of Total Screen Line Volume by Route:
Loop 12 - A.M. Peak Period (May Studies)

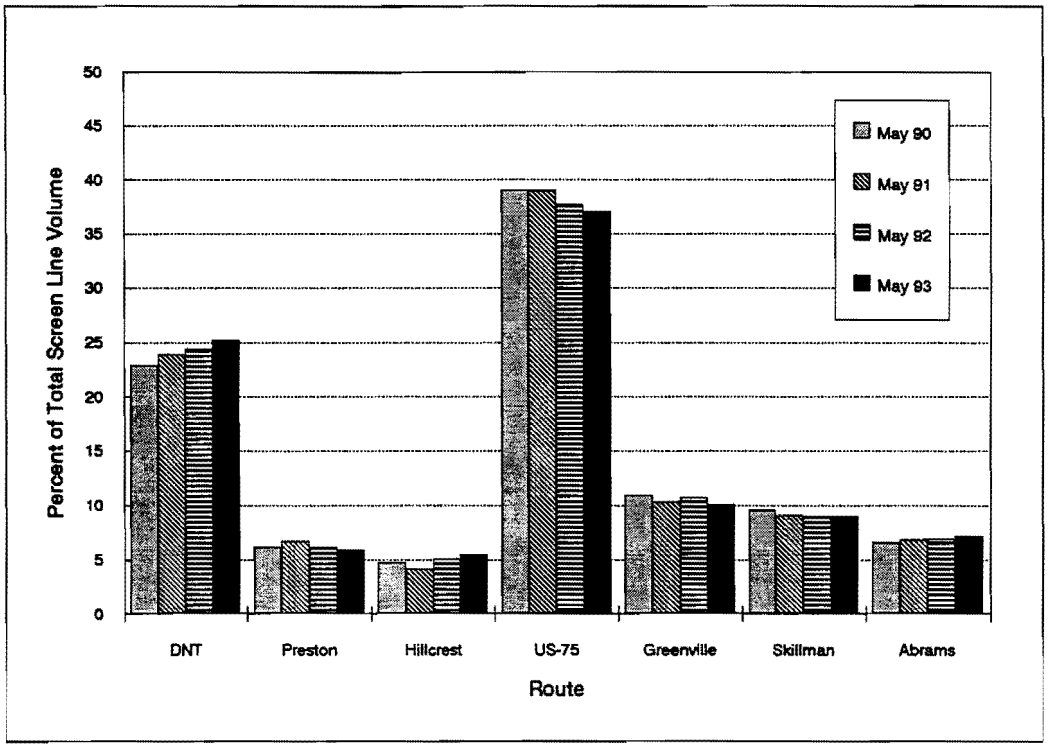


a) Northbound

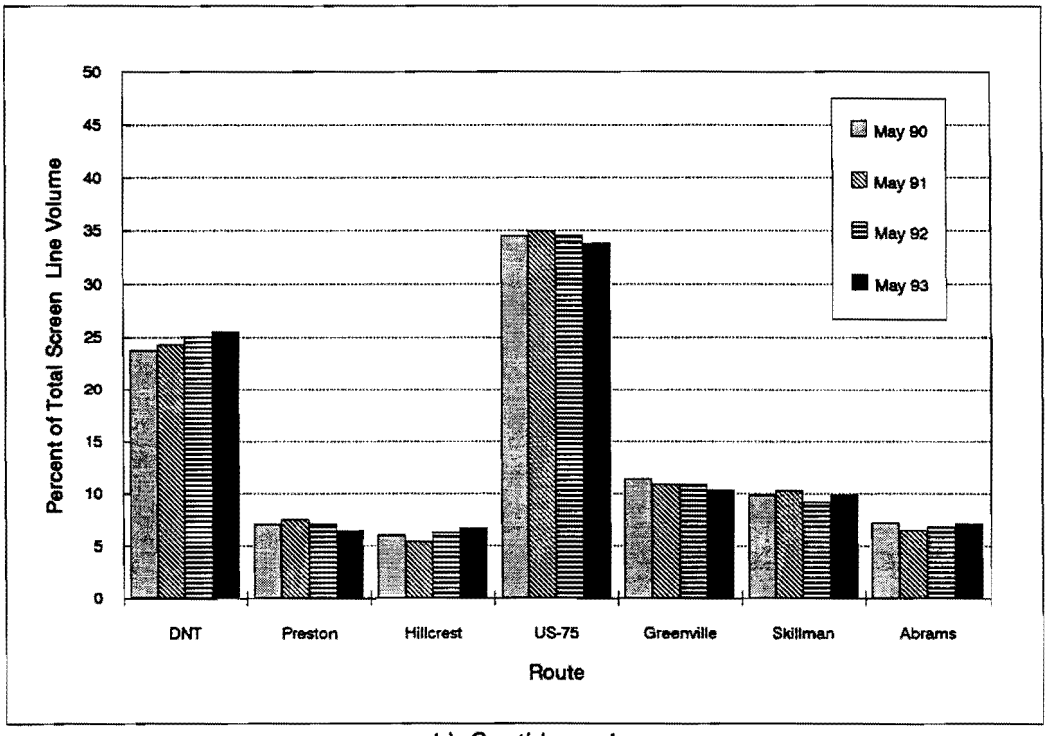


b) Southbound

Figure G-8. Percent of Total Screen Line Volume by Route:
Loop 12 - P.M. Peak Period (May Studies)

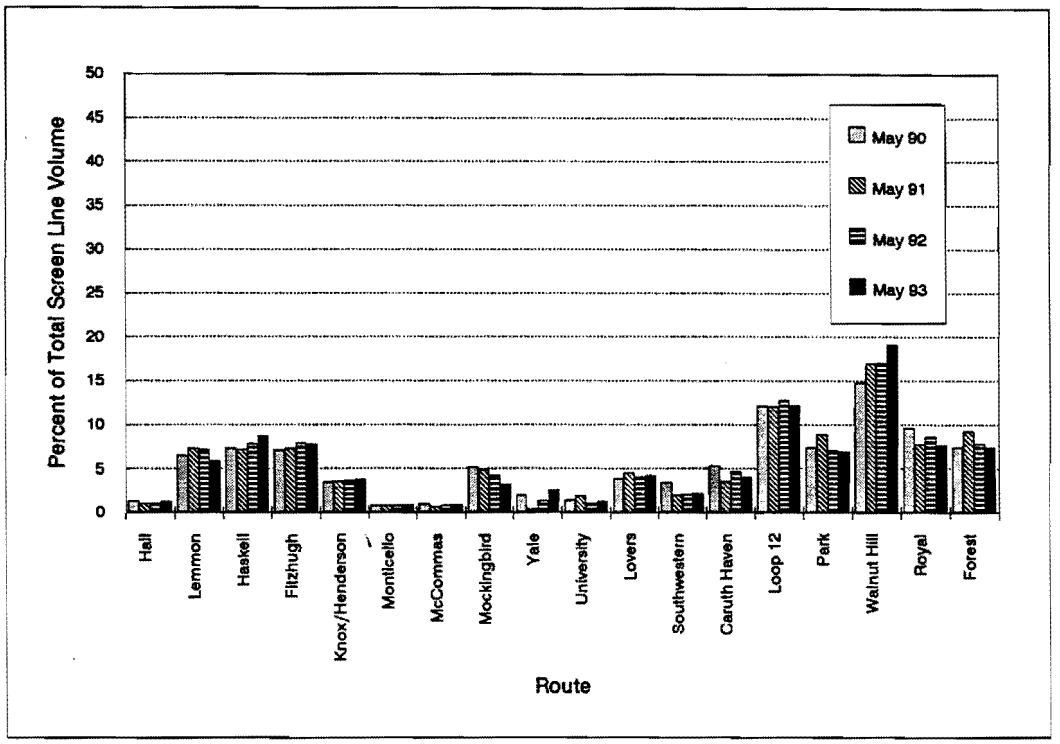


a) Northbound

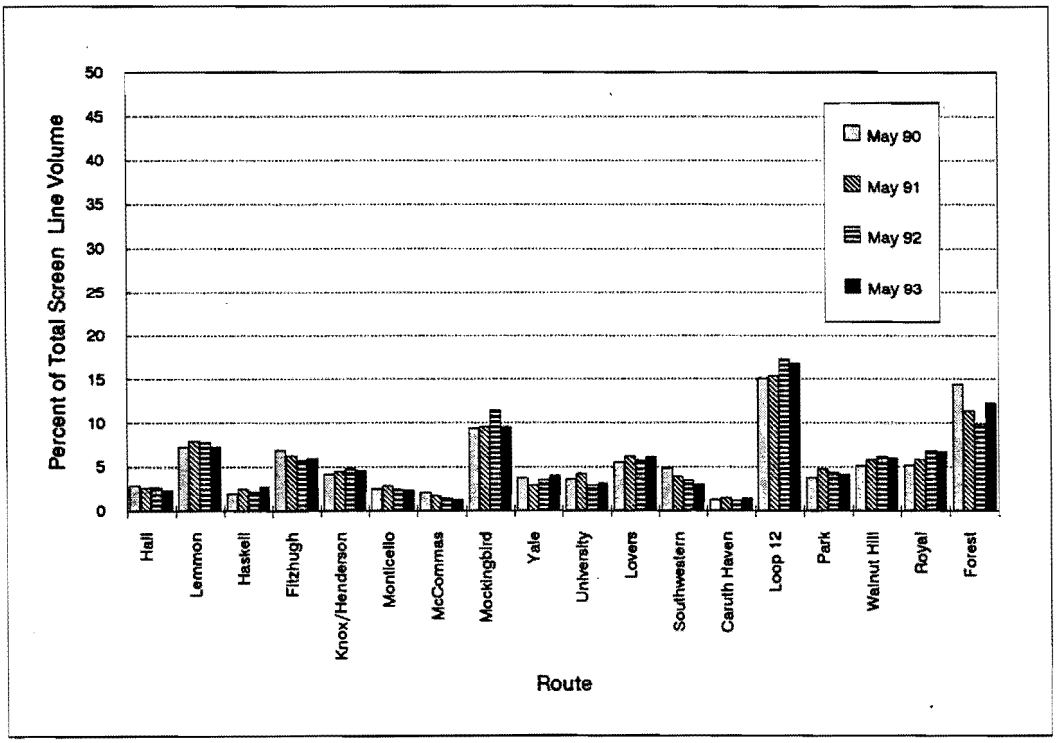


b) Southbound

Figure G-9. Percent of Total Screen Line Volume by Route:
Loop 12 - 24 Hour Period (May Studies)

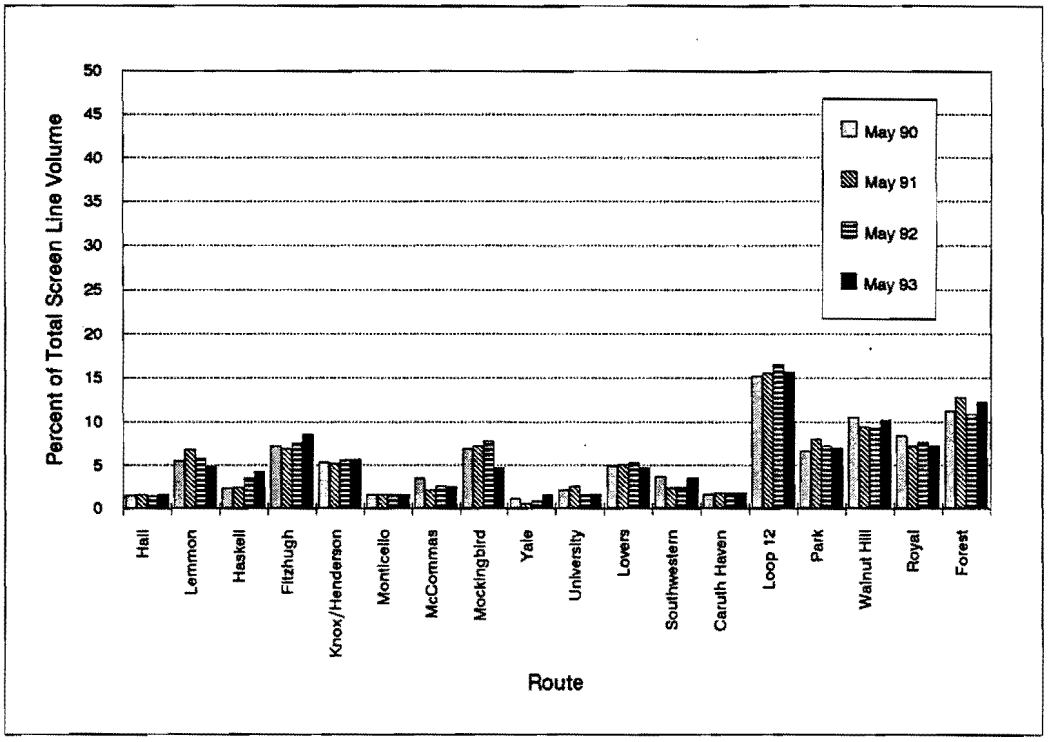


a) Eastbound

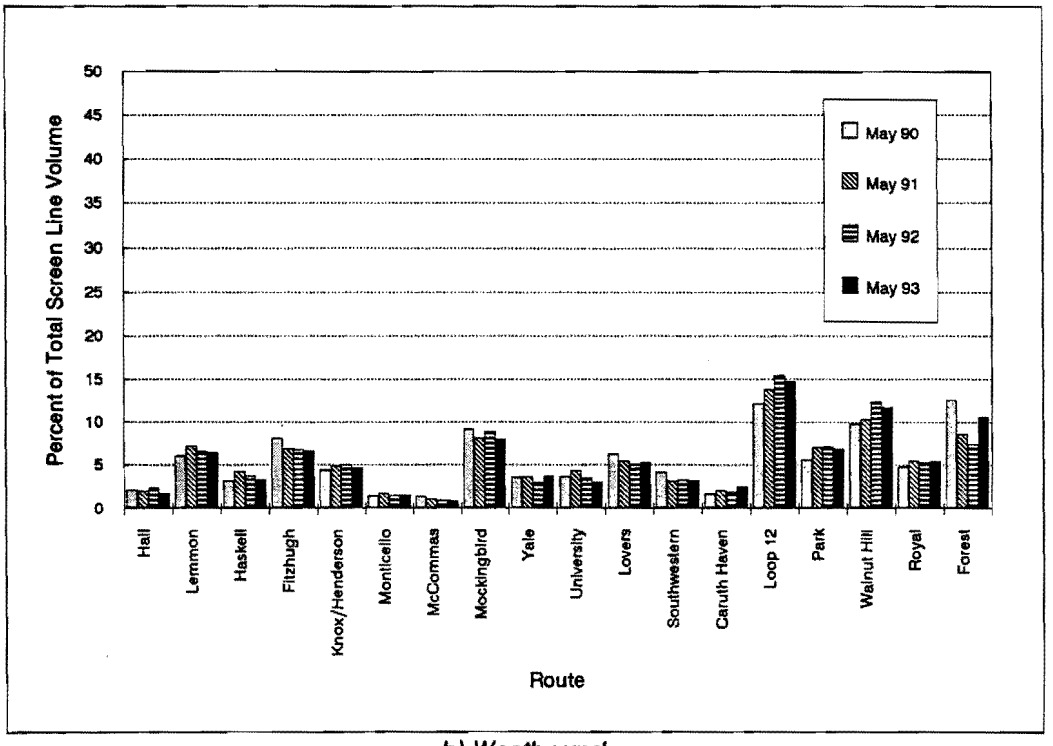


b) Westbound

Figure G-10. Percent of Total Screen Line Volume by Route:
US-75 - A.M. Peak Period (May Studies)

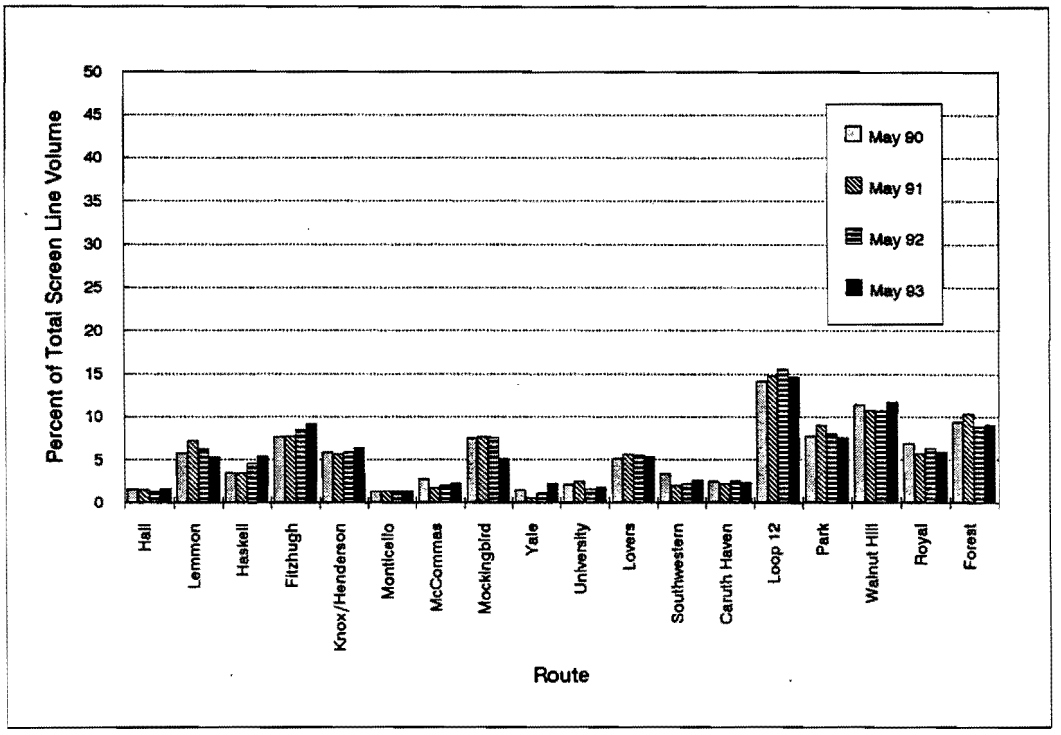


a) Eastbound

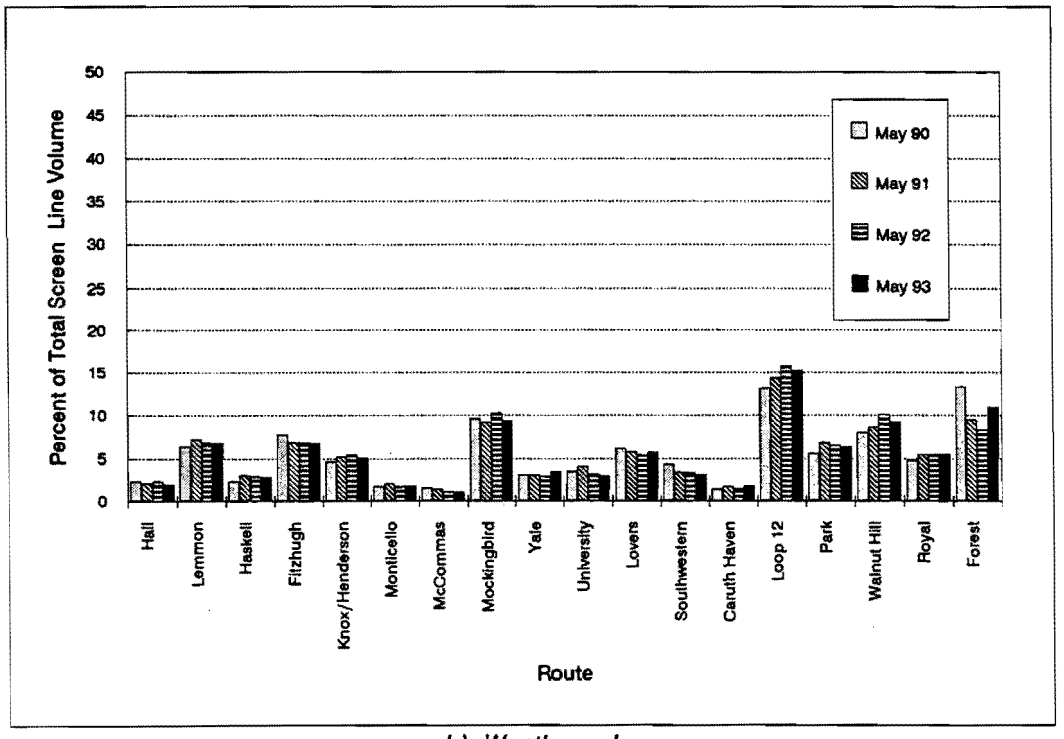


b) Westbound

Figure G-11. Percent of Total Screen Line Volume by Route:
US-75 - P.M. Peak Period (May Studies)



a) Eastbound

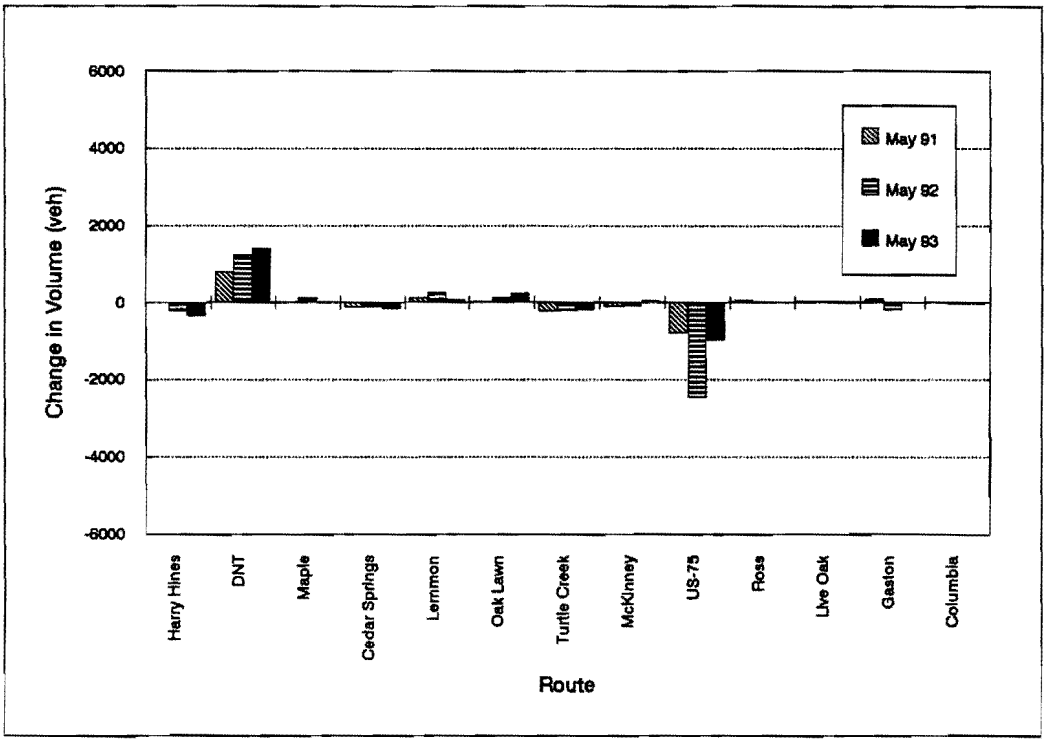


b) Westbound

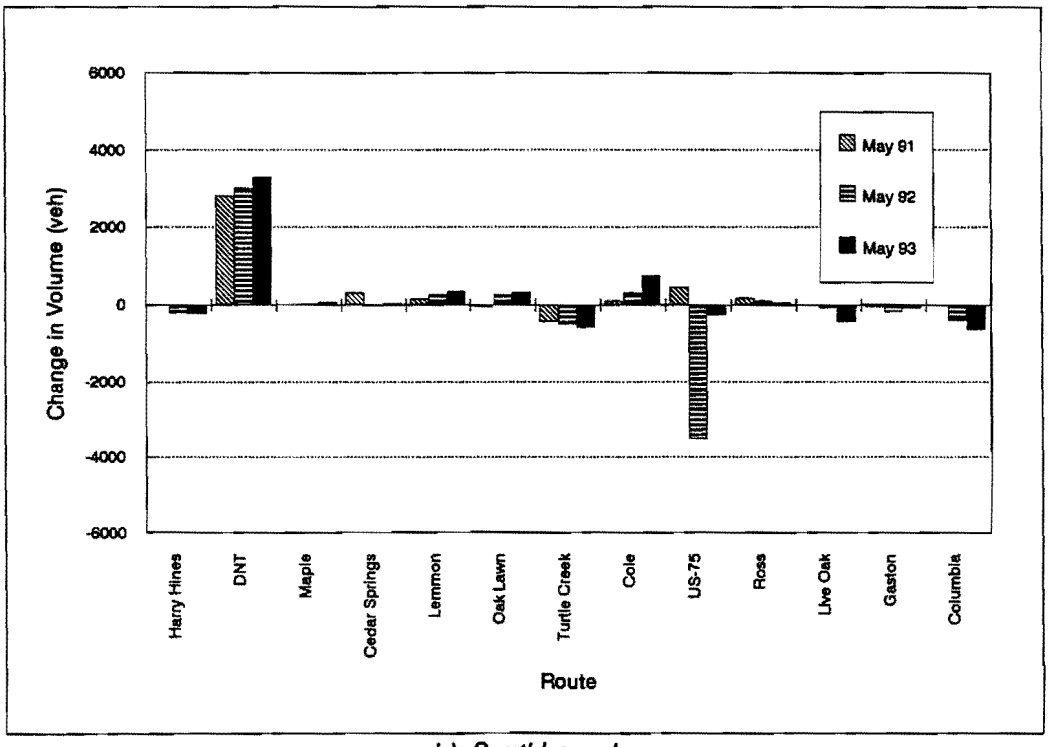
Figure G-12. Percent of Total Screen Line Volume by Route:
US-75 - 24 Hour Period (May Studies)

APPENDIX H

TRAFFIC VOLUME CHANGES (MAY STUDIES)

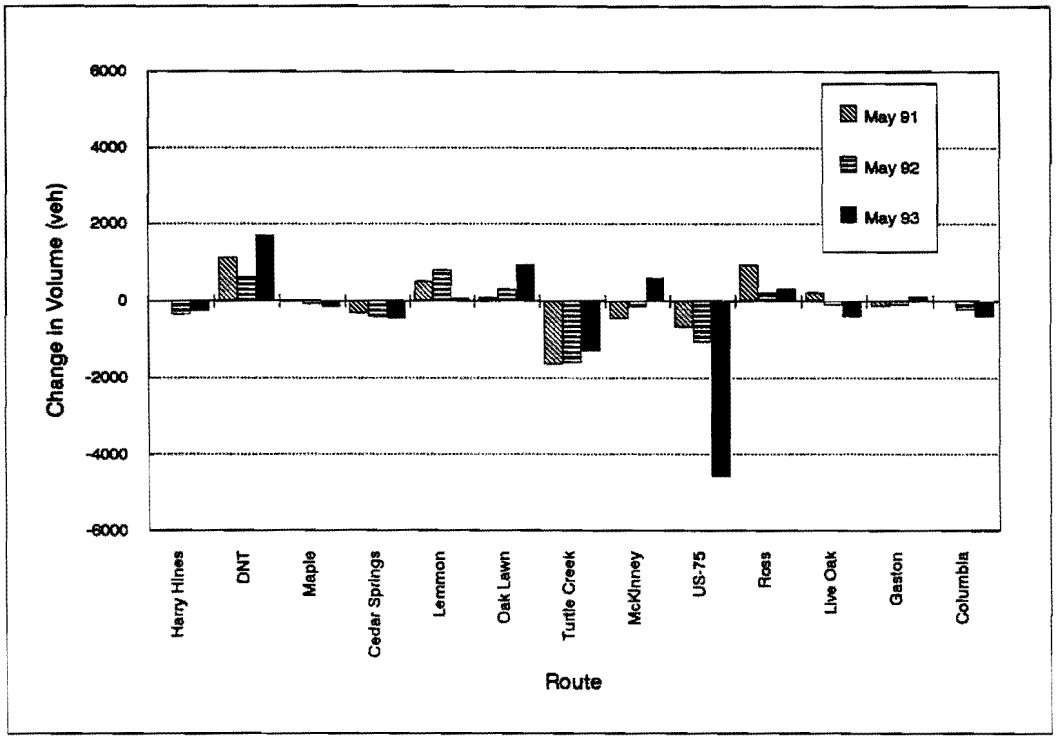


a) Northbound

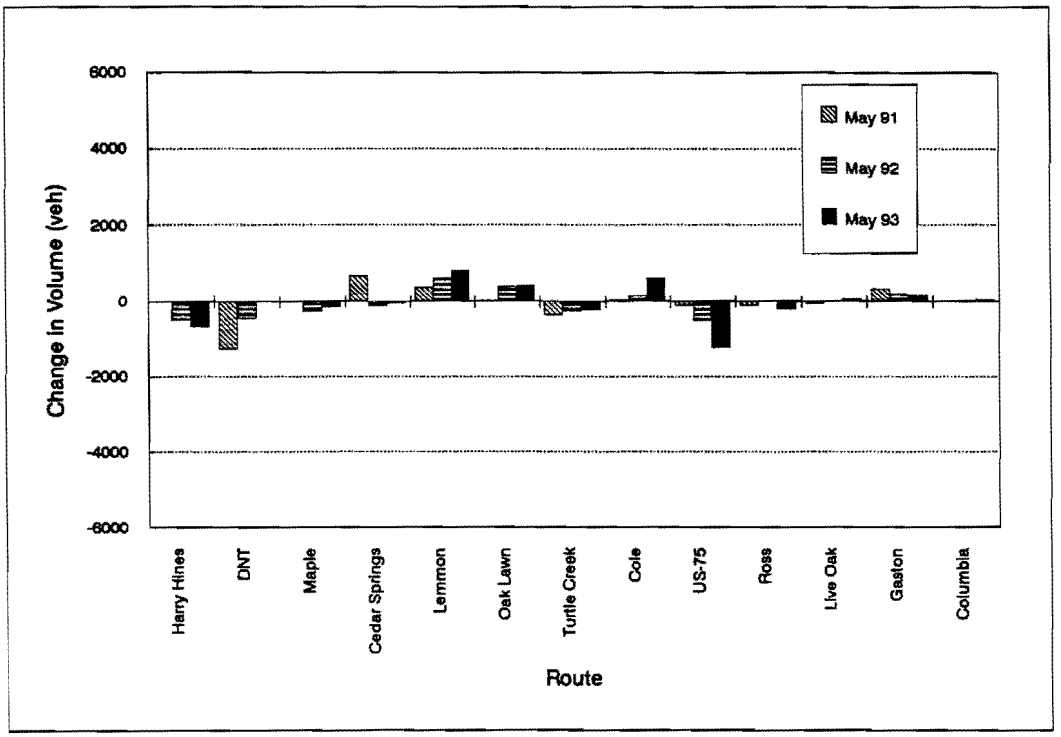


b) Southbound

Figure H-1. Change in Volume by Route as Compared to May 1990: Oak Lawn/Lemmon/Peak Screen Line - A.M. Peak Period

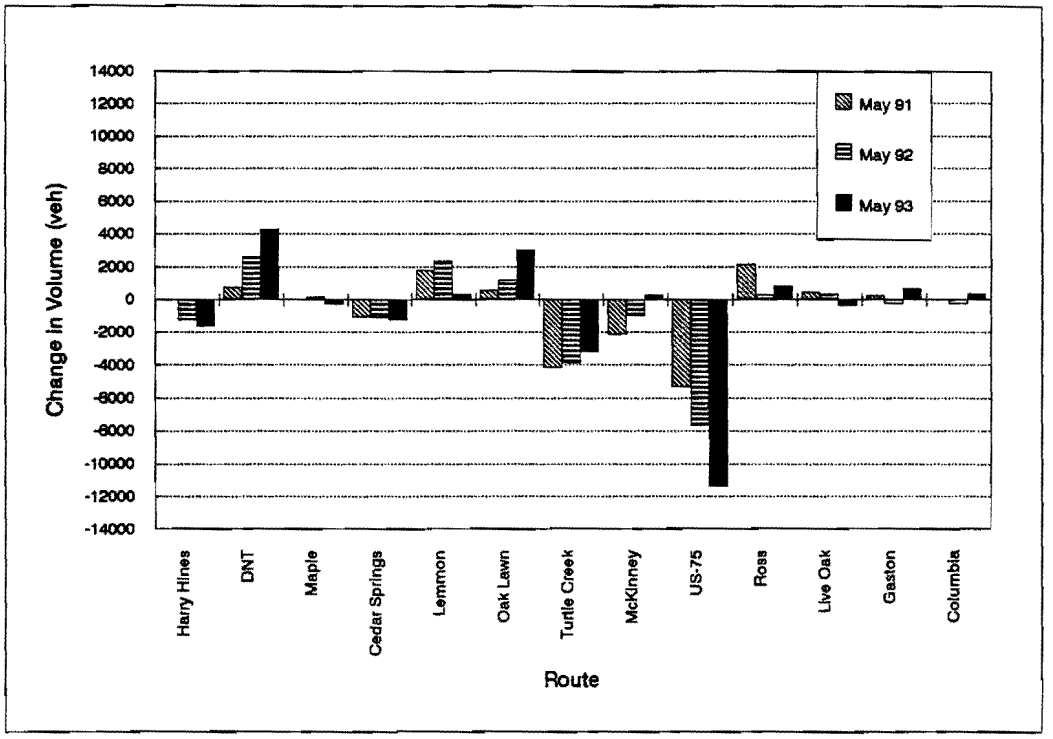


a) Northbound

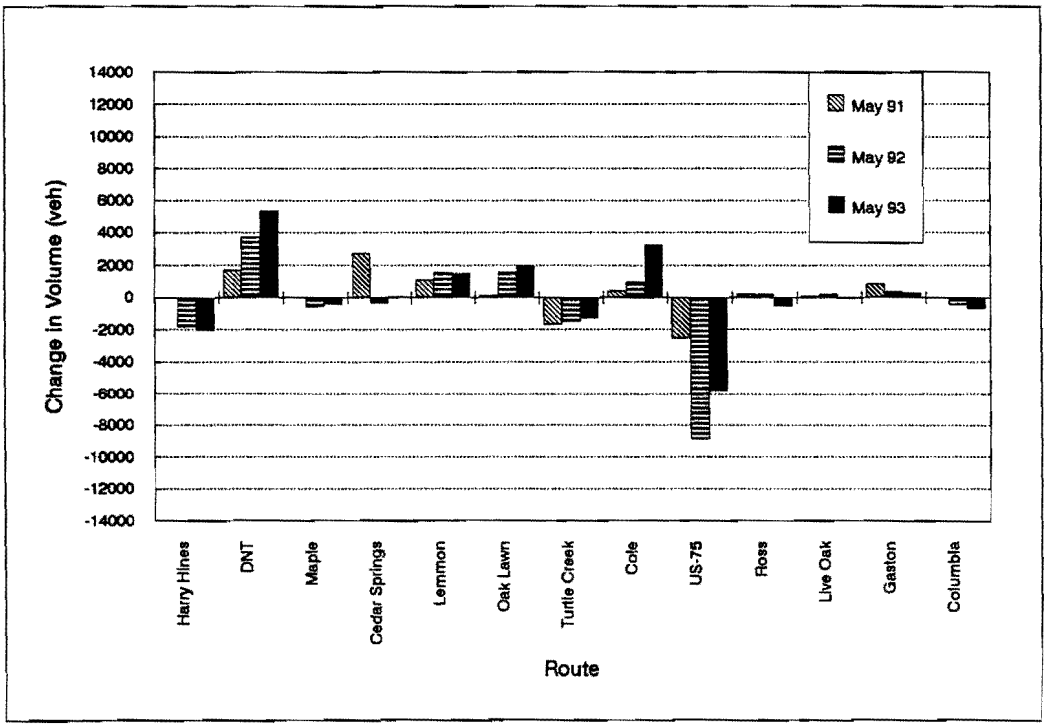


b) Southbound

Figure H-2. Change in Volume by Route as Compared to May 1990: Oak Lawn/Lemmon/Peak Screen Line - P.M. Peak Period

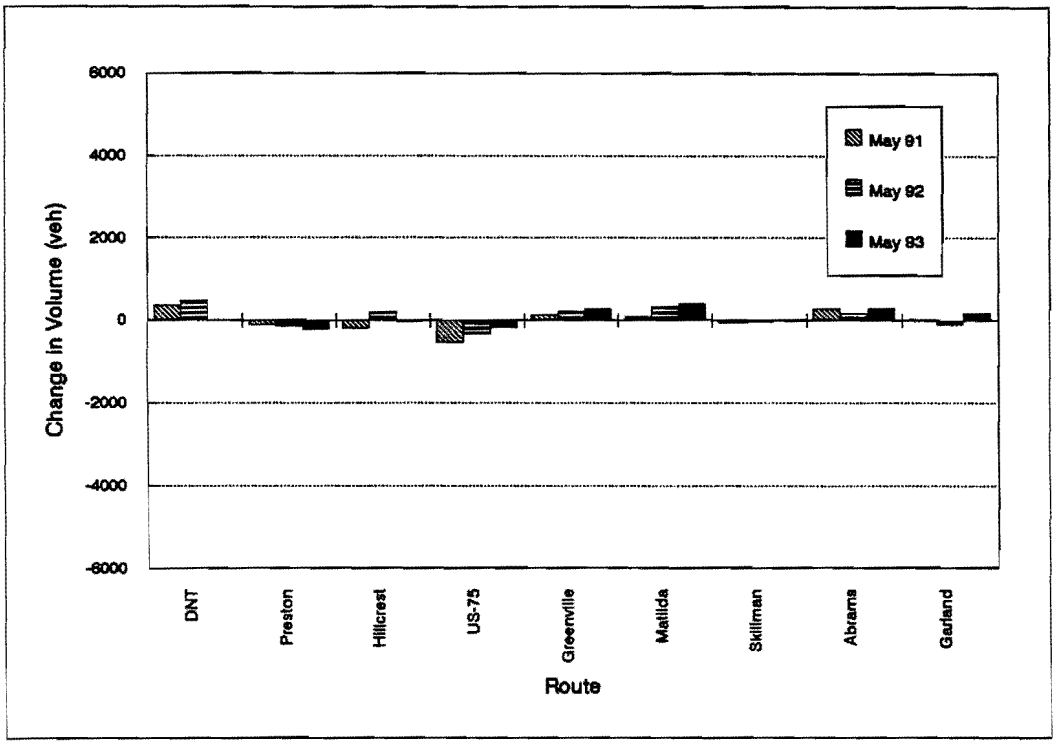


a) Northbound

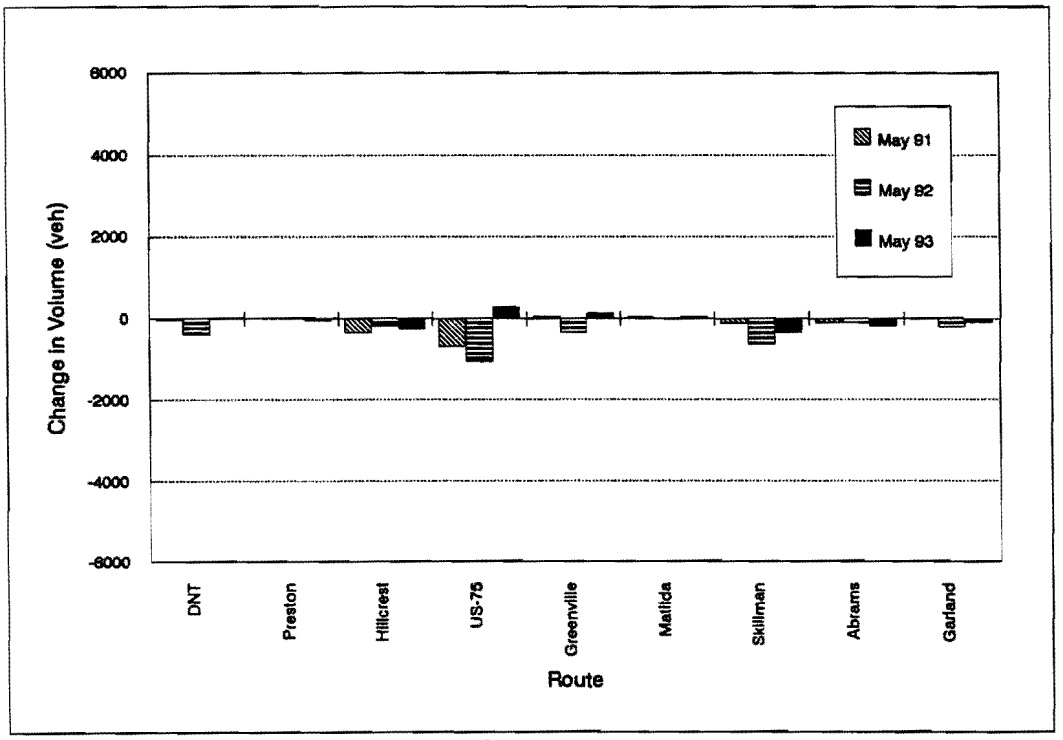


b) Southbound

Figure H-3. Change in Volume by Route as Compared to May 1990: Oak Lawn/Lemmon/Peak Screen Line - 24 Hour Period

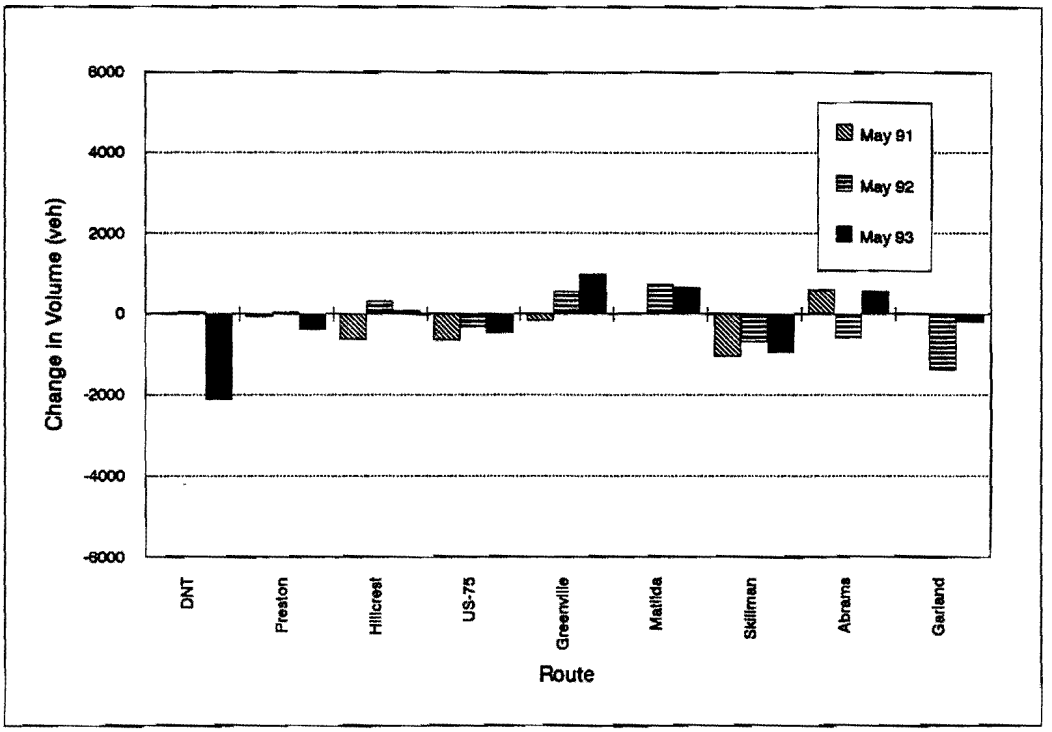


a) Northbound

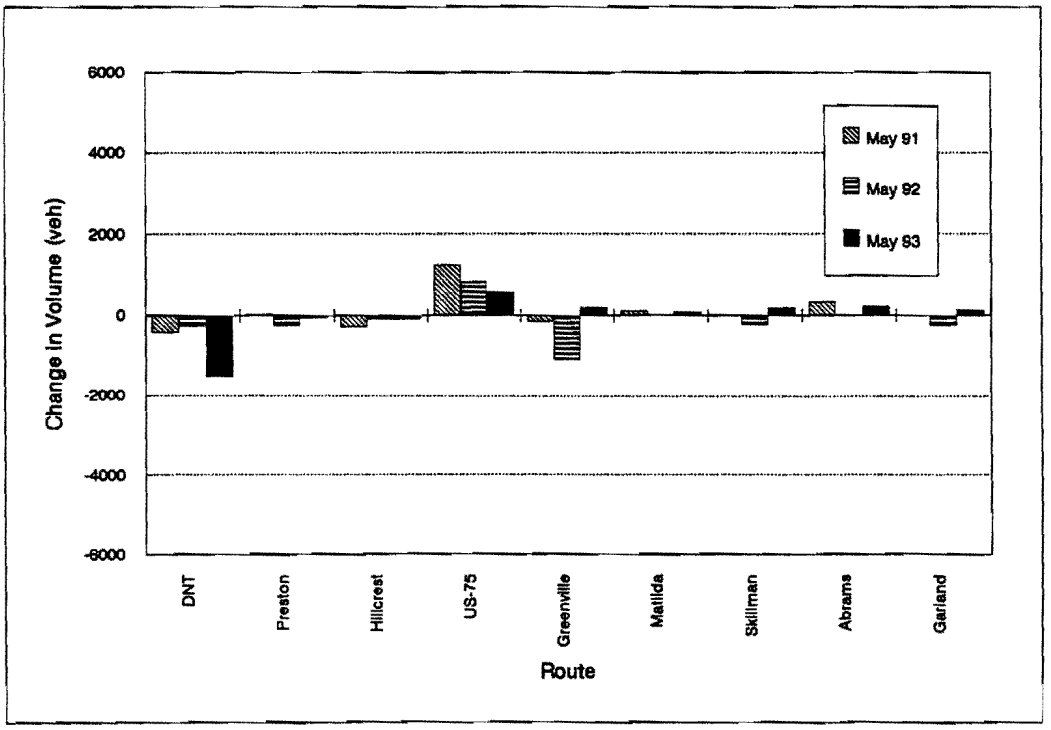


b) Southbound

Figure H-4. Change in Volume by Route as Compared to May 1990: Mockingbird/Buckner Screen Line - A.M. Peak Period

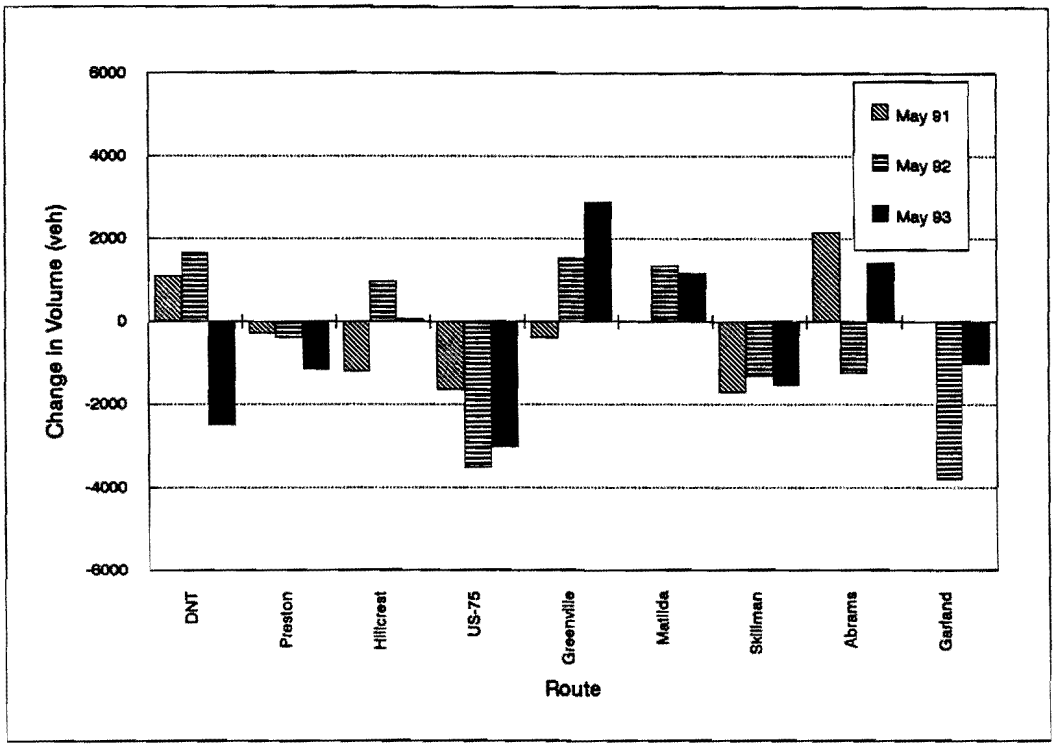


a) Northbound

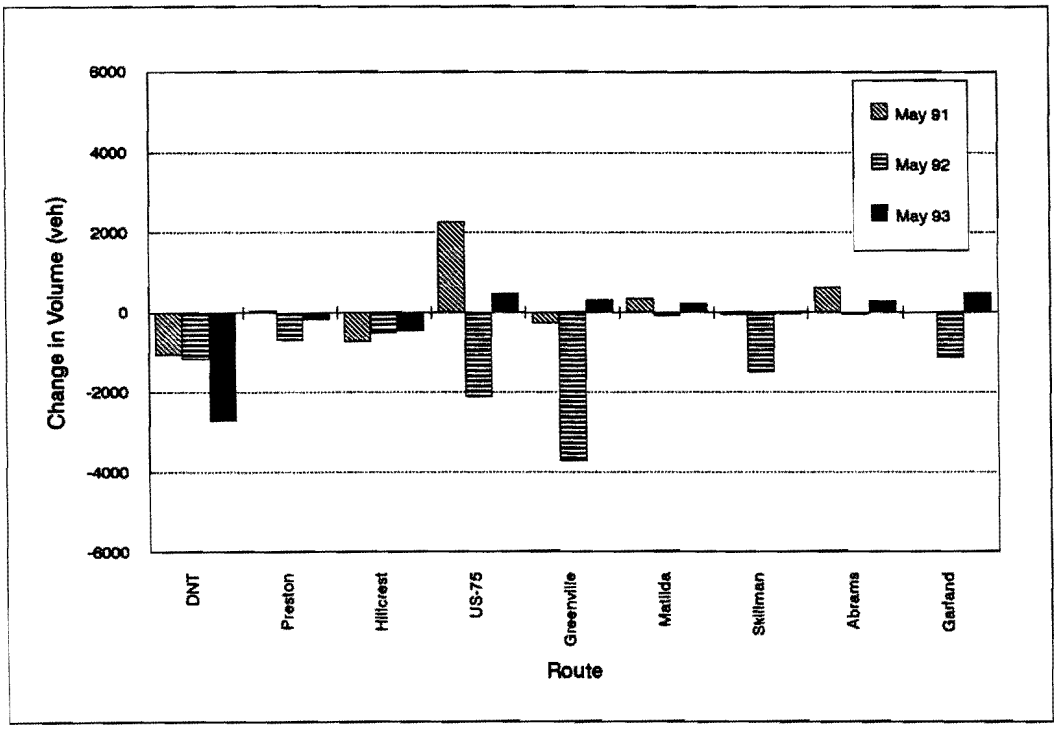


b) Southbound

Figure H-5. Change in Volume by Route as Compared to May 1990: Mockingbird/Buckner Screen Line - P.M. Peak Period

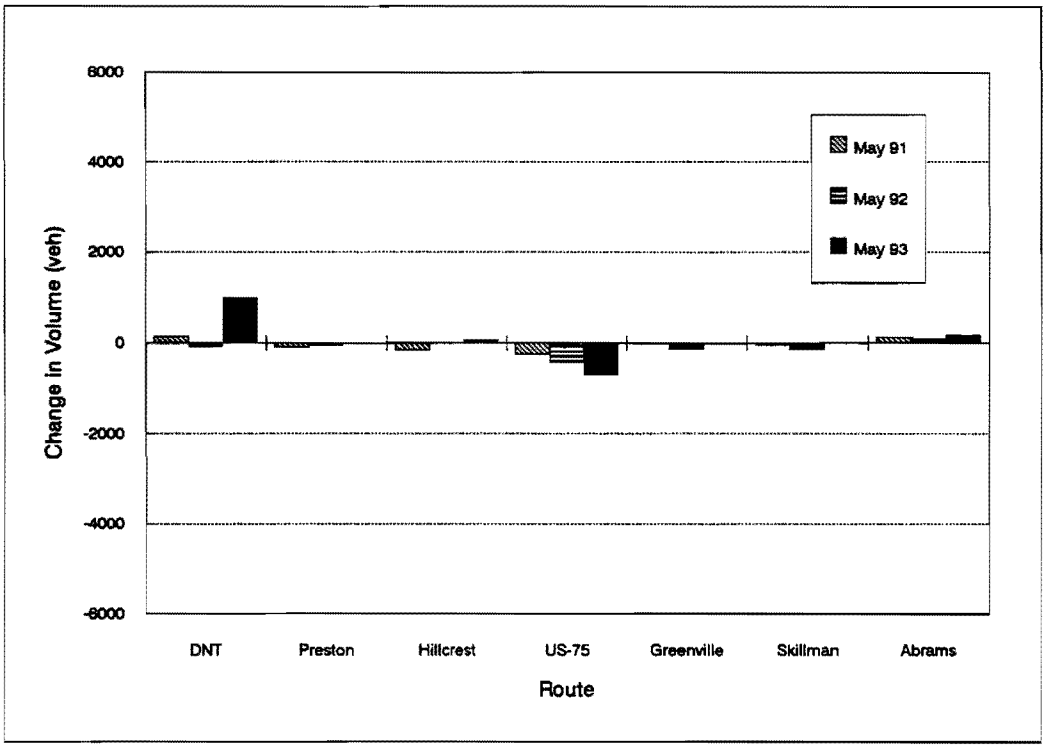


a) Northbound

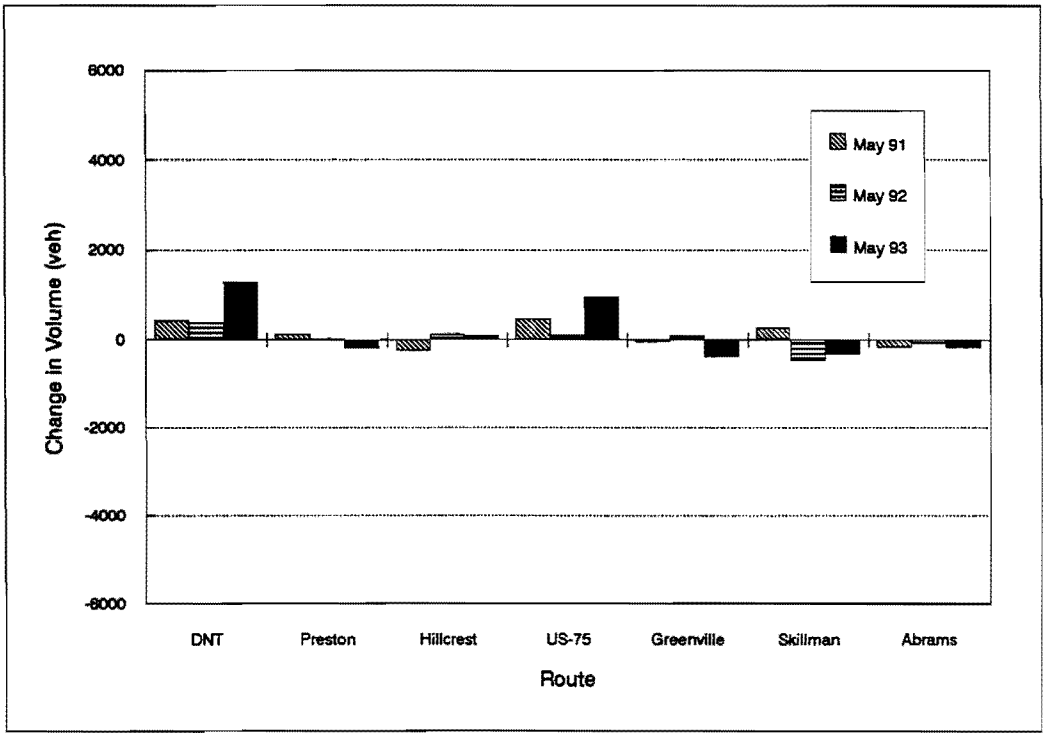


b) Southbound

Figure H-6. Change in Volume by Route as Compared to May 1990: Mockingbird/Buckner Screen Line - 24 Hour Period

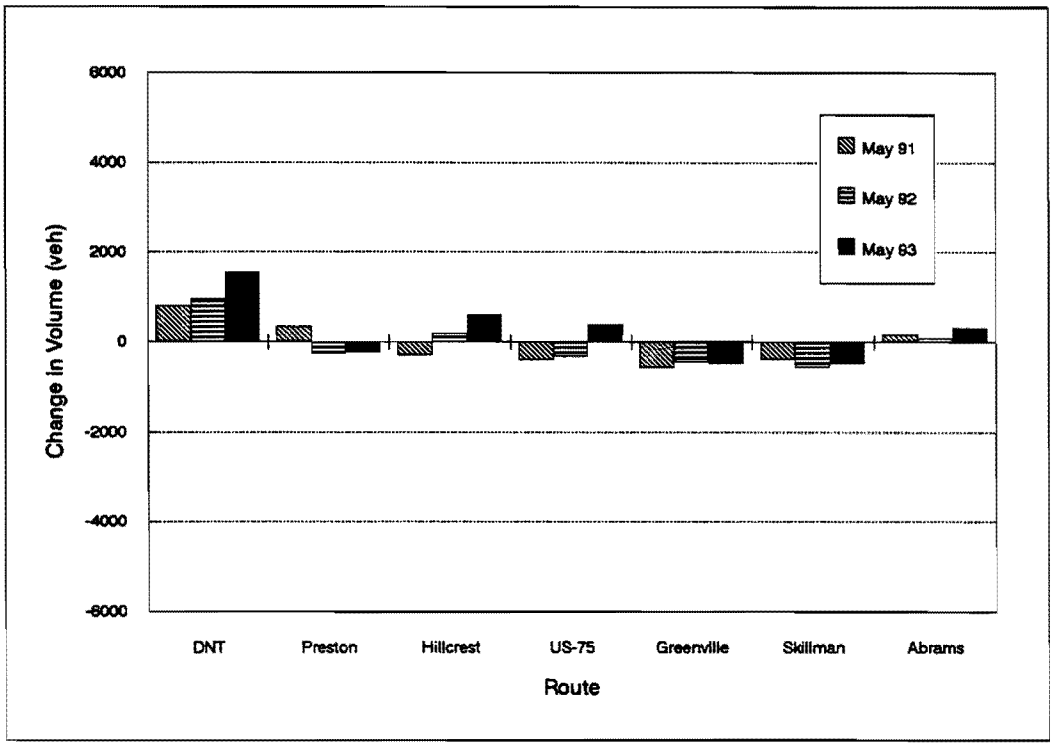


a) Northbound

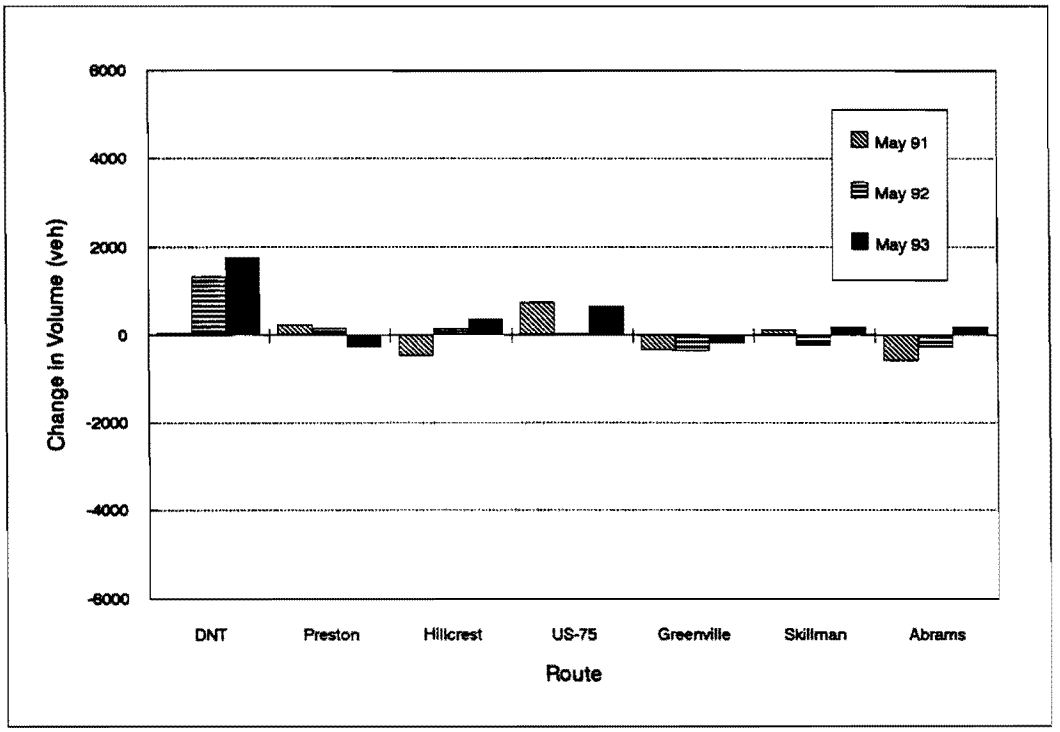


b) Southbound

Figure H-7. Change in Volume by Route as Compared to May 1990: Loop 12 Screen Line - A.M. Peak Period

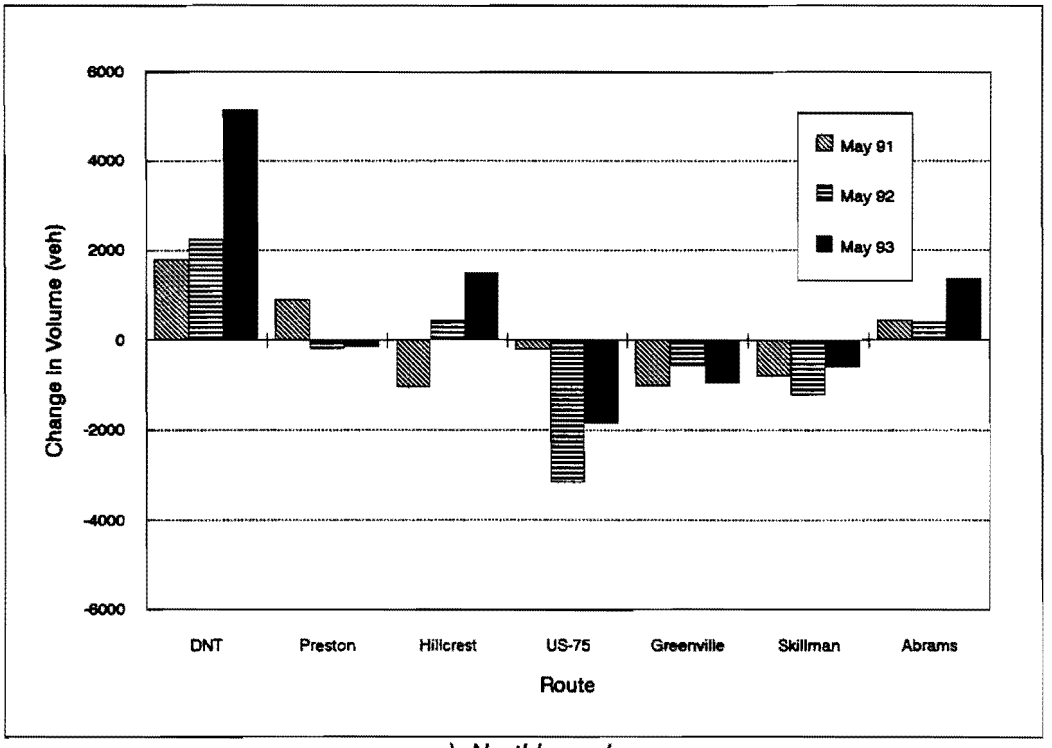


a) Northbound

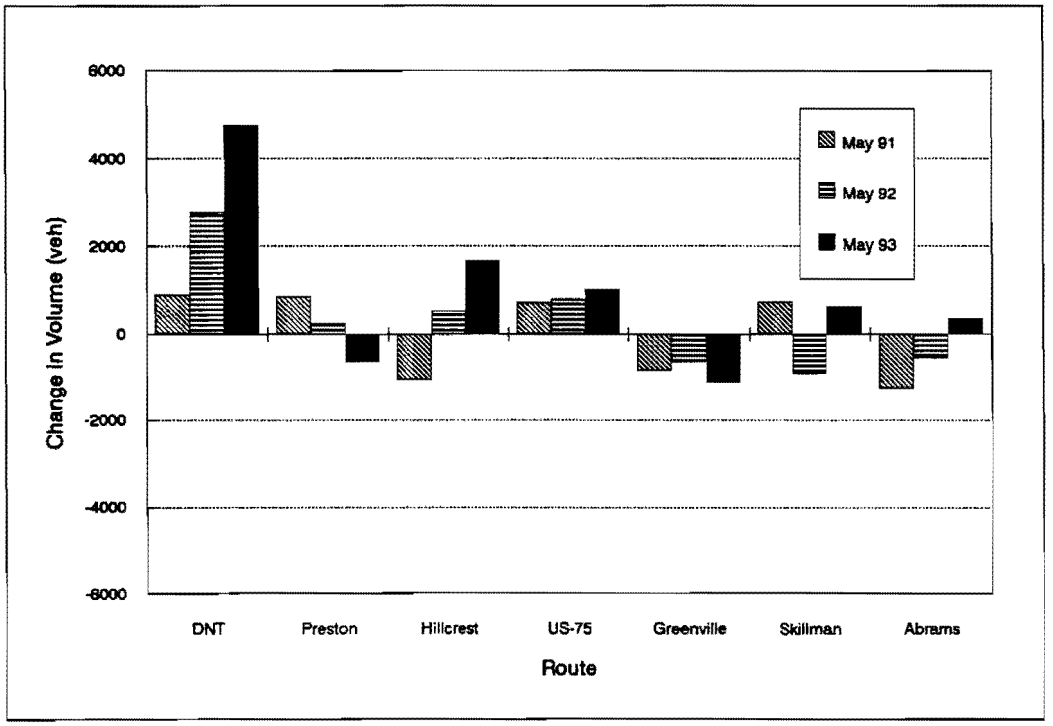


b) Southbound

Figure H-8. Change in Volume by Route as Compared to May 1990: Loop 12 Screen Line - P.M. Peak Period

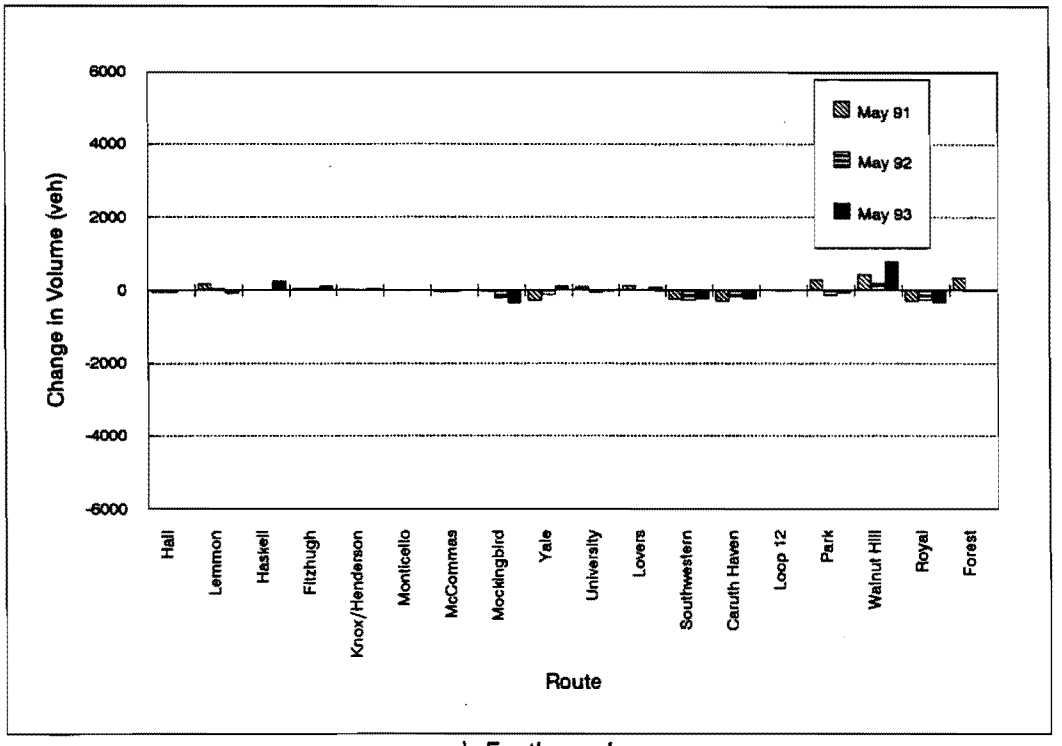


a) Northbound

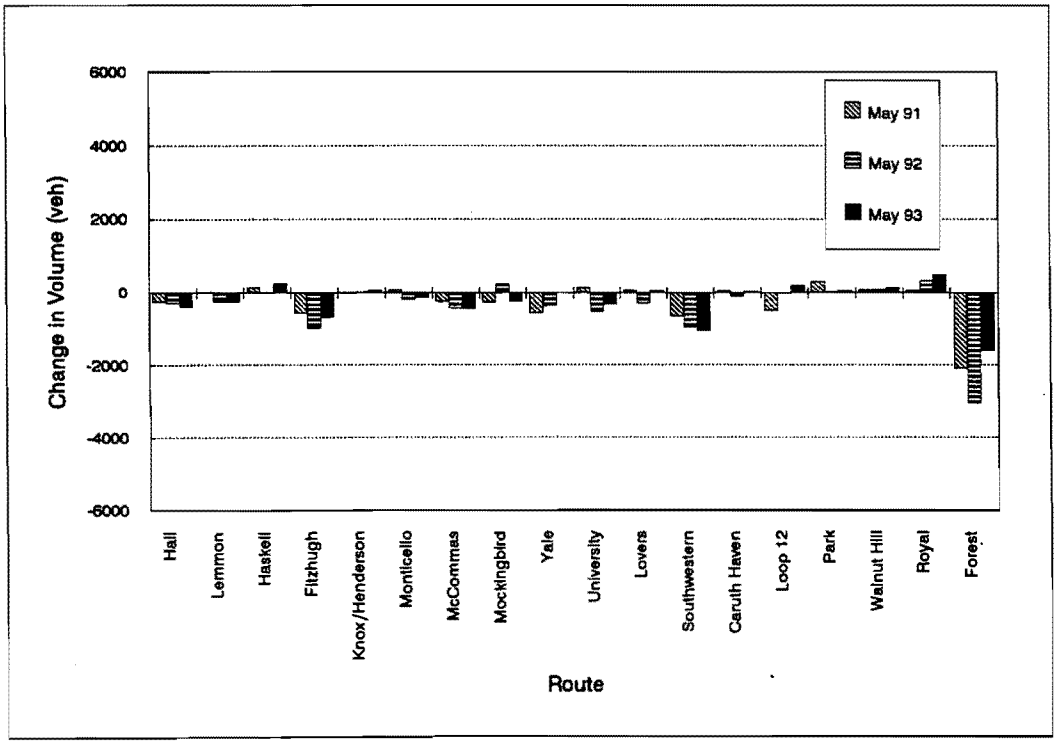


b) Southbound

Figure H-9. Change in Volume by Route as Compared to May 1990: Loop 12 Screen Line - 24 Hour Period

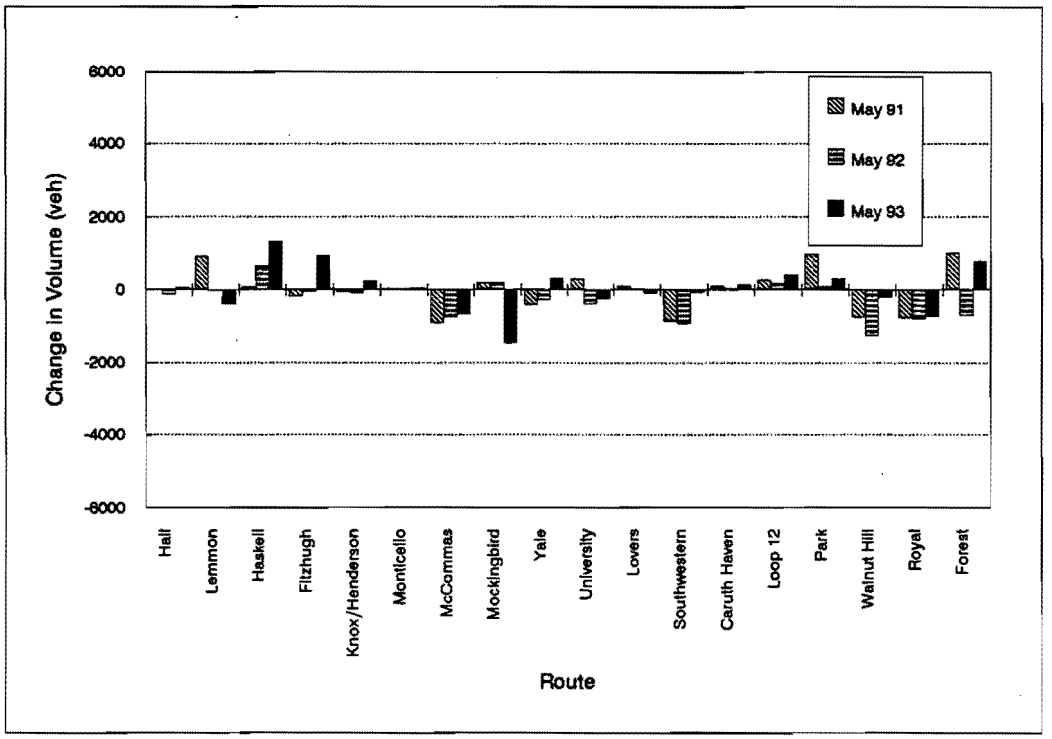


a) Eastbound

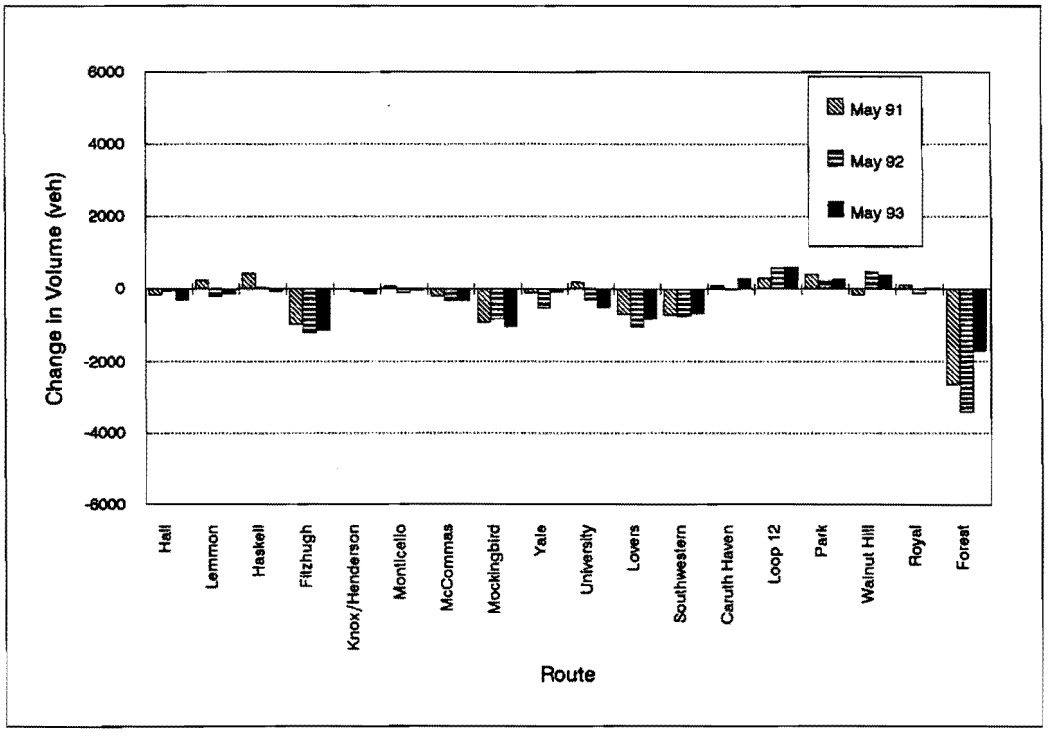


b) Westbound

Figure H-10. Change in Volume by Route as Compared to May 1990: US-75 Screen Line - A.M. Peak Period

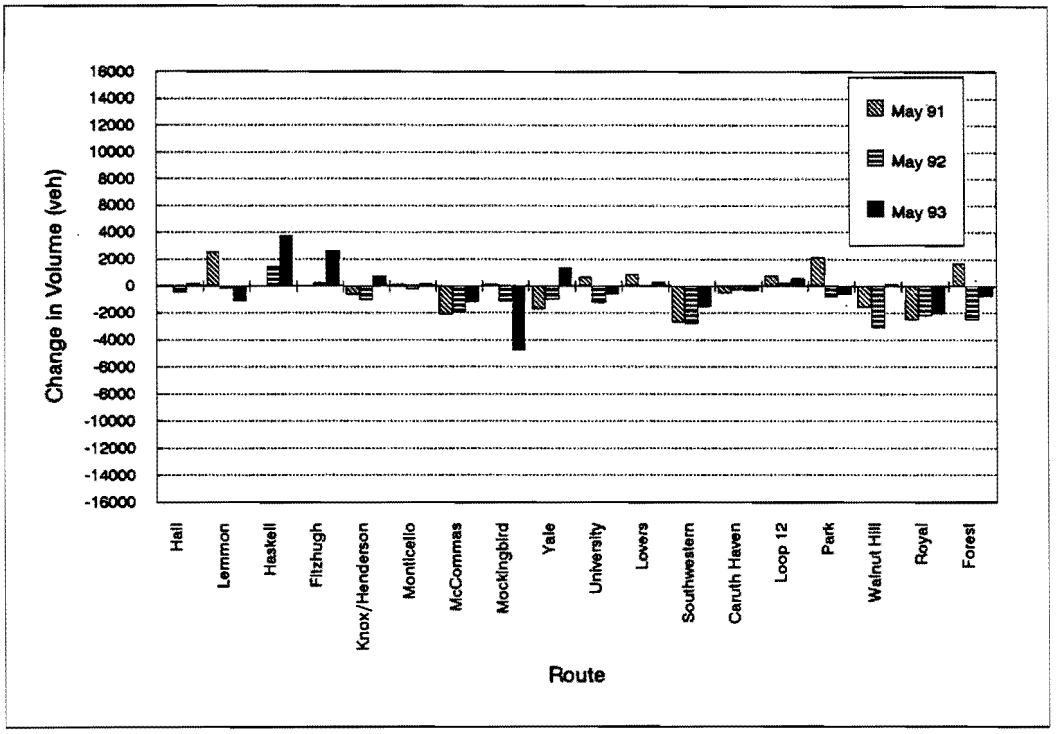


a) Eastbound

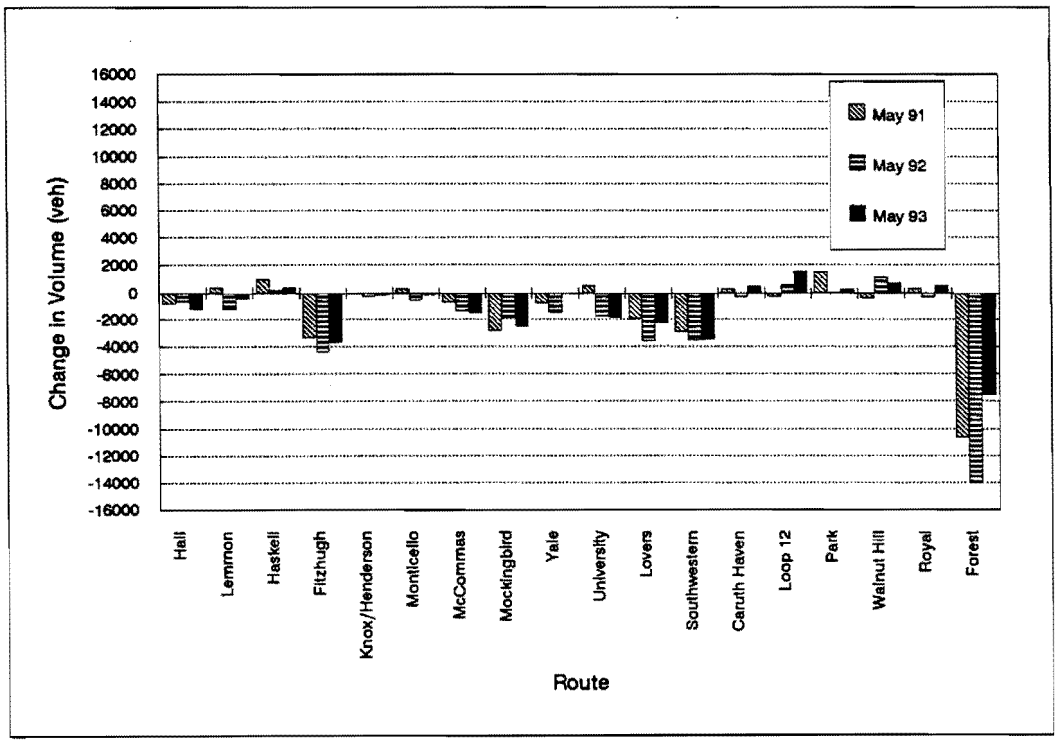


b) Westbound

Figure H-11. Change in Volume by Route as Compared to May 1990: US-75 Screen Line - P.M. Peak Period



a) Eastbound



b) Westbound

Figure H-12. Change in Volume by Route as Compared to May 1990:
US-75 Screen Line - 24 Hour Period

APPENDIX I

MAY 1993 AVERAGE TRAVEL TIMES

TABLE I-1. Peak Period, Peak Direction Total Travel Time on North-South Routes (May 1993)

Run Beginning		Travel Time (min)								
		DNT	Preston	Hillcrest	US-75	US-75 Fr. Rd.	Greenville	Skillman	Abrams	Garland
A.M. Peak Period Southbound	6:00	11.38	22.73	23.02	9.12	20.48	17.77	19.65	19.62	18.87
	6:30	10.63	21.42	23.73	9.27	20.92	19.33	19.13	21.17	21.18
	7:00	10.45	25.07	26.13	10.43	22.30	17.37	17.33	20.88	17.38
	7:30	12.78	27.05	31.12	19.56	26.98	23.07	19.97	26.68	24.93
	8:00	16.72	31.03	30.35	19.66	27.63	24.90	20.73	24.27	20.97
	8:30	15.87	27.37	28.60	15.88	24.00	22.82	16.13	22.88	18.67
	9:00	11.40	24.07	26.88	11.89	21.00	18.55	20.10	20.39	18.47
P.M. Peak Period Northbound	3:00	12.35	27.98	27.40	11.26	20.13	20.72	23.17	23.65	20.03
	3:30	12.63	30.13	27.48	11.14	18.98	22.18	21.78	24.67	18.65
	4:00	11.90	34.03	32.03	12.05	23.78	23.73	19.72	24.50	20.42
	4:30	11.92	30.18	29.20	15.16	21.93	24.17	19.48	21.98	19.05
	5:00	11.28	37.47	27.00	24.47	25.82	29.55	21.90	26.07	20..9
	5:30	13.85	38.05	29.57	27.07	28.63	27.25	23.17	24.97	21.35
	6:00	11.78	31.87	23.38	19.73	24.68	29.65	18.37	20.32	19.37
	6:30	12.55	26.25	23.50	12.81	25.00	20.35	19.98	19.10	19.73
	7:00	11.53	24.88	23.05	10.02	24.80	21.82	22.32	20.68	18.35

TABLE I-2. Peak Period, Off-Peak Direction Total Travel Time on North-South Routes (May 1993)

Run Beginning		Travel Time (min)								
		DNT	Preston	Hillcrest	US-75	US-75 Fr. Rd.	Greenville	Skillman	Abrams	Garland
A.M. Peak Period Northbound	6:00	12.03	17.28	24.70	9.50	20.93	17.75	16.23	16.95	18.10
	6:30	12.05	20.38	26.35	9.79	20.48	17.45	21.10	21.60	18.15
	7:00	13.12	24.15	25.58	10.18	26.95	20.05	21.40	23.97	21.77
	7:30	12.53	26.58	30.57	12.99	23.78	21.13	22.67	26.23	22.23
	8:00	13.98	31.45	28.23	14.65	26.57	22.58	22.53	25.32	19.07
	8:30	11.42	28.27	27.77	12.64	28.67	22.18	21.32	26.33	21.15
	9:00	13.15	27.72	22.42	11.75	18.48	21.68	19.33	20.38	21.38
P.M. Peak Period Southbound	3:00	12.02	27.15	26.32	13.19	23.80	22.60	-	20.28	17.63
	3:30	11.65	27.03	25.18	13.98	20.60	24.88	19.62	23.83	21.30
	4:00	12.92	27.77	29.83	13.47	24.13	22.05	21.60	23.50	21.20
	4:30	11.52	27.20	25.70	11.91	32.87	23.65	22.73	22.88	23.08
	5:00	12.95	32.22	26.02	12.49	35.10	24.40	20.20	21.37	22.63
	5:30	13.08	33.07	25.08	16.00	34.87	24.65	22.67	23.22	23.77
	6:00	11.60	29.67	23.55	14.36	29.32	23.78	21.38	23.17	19.25
	6:30	11.37	23.20	20.75	11.87	24.93	22.23	18.88	21.98	20.48
	7:00	11.20	23.92	22.58	10.21	20.68	22.73	17.47	21.62	18.82

TABLE I-3. Peak Period Total Travel Time on East-West Routes (May 1993)

Run Beginning		Travel Time (min)					
		Eastbound			Westbound		
		Loop 12	Mockingbird	Royal	Loop 12	Mockingbird	Royal
A.M. Peak Period	6:00	8.53	13.28	15.68	7.48	10.90	13.13
	6:30	9.08	11.18	11.98	8.42	10.17	15.48
	7:00	9.83	11.78	18.02	9.28	11.30	13.00
	7:30	10.77	13.60	16.05	16.93	15.05	16.85
	8:00	11.08	14.72	16.20	13.83	17.35	14.72
	8:30	15.18	13.65	13.13	12.83	13.43	14.53
	9:00	10.12	12.65	14.18	10.43	14.48	11.37
P.M. Peak Period	3:00	12.45	13.98	14.78	8.02	12.17	12.22
	3:30	12.95	14.48	14.42	12.40	15.25	12.03
	4:00	13.47	16.70	15.87	12.40	16.63	14.98
	4:30	15.58	15.67	15.80	12.97	14.62	14.25
	5:00	15.80	17.45	18.78	13.80	14.75	14.02
	5:30	23.75	17.47	22.07	11.80	17.32	14.35
	6:00	19.90	23.77	18.07	11.68	13.62	12.17
	6:30	14.73	19.35	14.25	10.00	12.08	13.43
	7:00	11.13	15.65	14.00	8.62	14.02	12.93

TABLE I-4. Off-Peak Period Total Travel Time on US-75 (May 1993)

Run Beginning	Travel Time (min)	
	Northbound	Southbound
10:00 A.M.	11.58	12.89
10:30	9.77	10.92
11:00	9.69	10.28
11:30	10.18	9.95
12:00 P.M.	10.37	10.14
12:30	11.05	10.29
1:00	10.45	10.65
1:30	10.54	11.40

APPENDIX J

MAY 1993 AVERAGE TRAVEL SPEEDS

TABLE J-1. Peak Period, Peak Direction Average Travel Speed on North-South Routes (May 1993)

Run Beginning		Travel Speed (mph)								
		DNT	Preston	Hillcrest	US-75	US-75 Fr. Rd.	Greenville	Skillman	Abrams	Garland
A.M. Peak Period South-bound	6:00	52	26	26	61	27	32	29	31	32
	6:30	56	27	25	60	26	29	30	28	29
	7:00	57	23	23	53	25	32	33	29	35
	7:30	47	21	19	29	20	24	29	23	25
	8:00	36	19	19	28	20	23	28	25	29
	8:30	37	21	21	35	23	25	36	26	33
	9:00	52	24	22	47	26	30	29	29	33
P.M. Peak Period North-Bound	3:00	48	21	21	50	27	28	25	26	30
	3:30	47	19	21	50	29	26	27	25	32
	4:00	50	17	18	46	23	24	29	25	29
	4:30	50	19	20	38	25	24	30	28	31
	5:00	53	15	22	24	21	19	26	24	28
	5:30	43	15	20	21	19	21	25	25	28
	6:00	51	18	25	28	22	19	32	31	31
	6:30	48	22	25	43	22	28	29	32	30
	7:00	52	23	25	56	22	26	26	30	32

TABLE J-2. Peak Period, Off-Peak Direction Average Travel Speed on North-South Routes (May 1993)

Run Beginning		Travel Speed (mph)								
		DNT	Preston	Hillcrest	US-75	US-75 Fr. Rd.	Greenville	Skillman	Abrams	Garland
A.M. Peak Period Northbound	6:00	50	34	24	59	26	32	36	37	33
	6:30	50	28	22	57	27	33	27	29	33
	7:00	45	24	23	55	21	28	27	26	27
	7:30	48	22	19	44	23	27	26	24	27
	8:00	43	18	21	40	21	25	26	24	31
	8:30	52	20	21	45	19	26	27	24	28
	9:00	45	21	26	48	30	26	30	30	28
P.M. Peak Period Southbound	3:00	49	21	22	44	23	25	N/A	30	35
	3:30	51	21	23	43	27	23	29	25	29
	4:00	46	21	20	42	23	25	27	26	29
	4:30	52	21	23	47	17	24	25	26	27
	5:00	46	18	23	45	16	23	29	28	27
	5:30	45	18	24	35	16	23	26	26	26
	6:00	51	20	25	39	19	24	27	26	32
	6:30	52	25	28	47	22	25	31	27	30
	7:00	53	24	26	55	27	26	33	28	33

TABLE J-3. Peak Period Average Travel Speed on East-West Routes (May 1993)

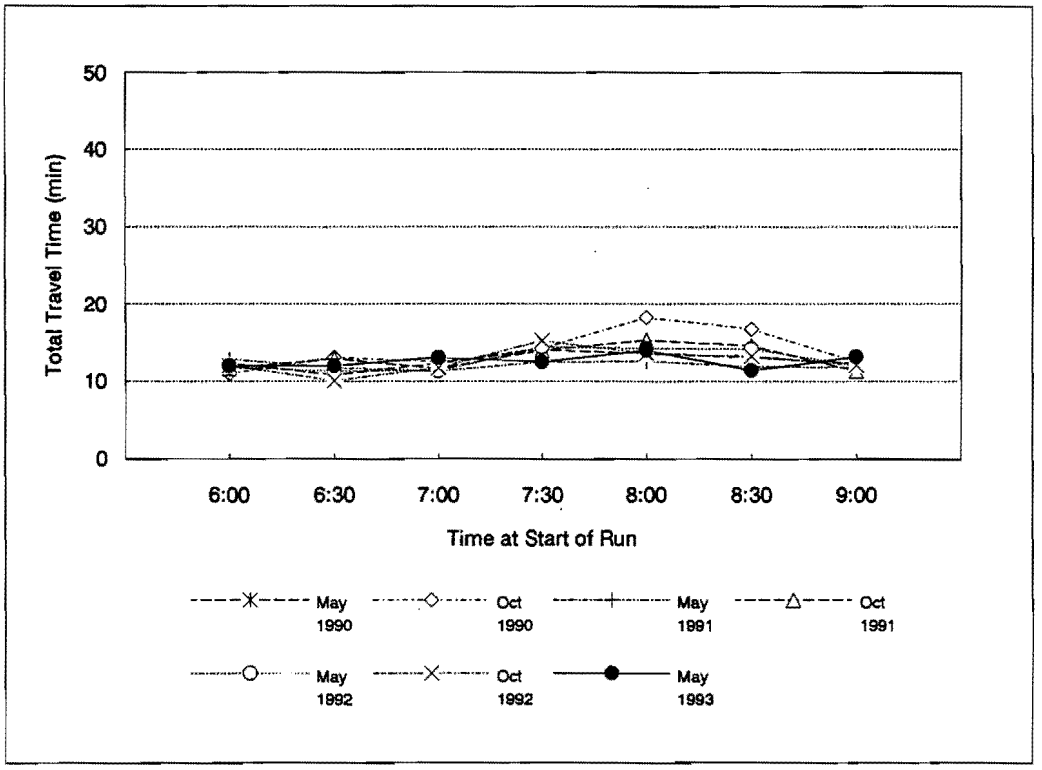
Run Beginning		Travel Speed (mph)					
		Eastbound			Westbound		
		Loop 12	Mockingbird	Royal	Loop 12	Mockingbird	Royal
A.M. Peak Period	6:00	38	21	26	43	25	31
	6:30	35	25	34	38	27	27
	7:00	33	23	23	35	24	32
	7:30	30	20	26	19	18	24
	8:00	29	19	25	23	16	28
	8:30	21	20	31	25	20	28
	9:00	32	22	29	31	19	36
P.M. Peak Period	3:00	26	20	28	40	23	34
	3:30	25	19	28	26	18	34
	4:00	24	16	26	26	17	27
	4:30	22	18	26	25	19	29
	5:00	20	16	22	23	19	29
	5:30	14	16	19	27	16	29
	6:00	16	12	23	28	20	34
	6:30	22	14	29	32	23	31
	7:00	29	18	29	37	20	32

TABLE J-4. Off-Peak Period Average Travel Speed on US-75 (May 1993)

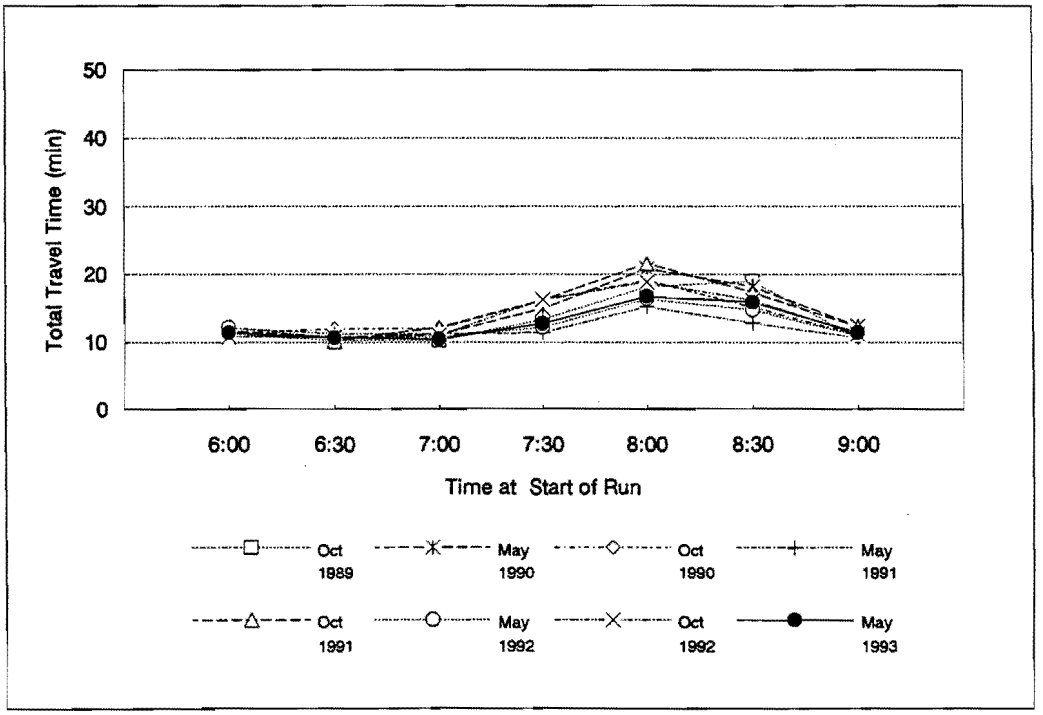
Run Beginning	Travel Speed (mph)	
	Northbound	Southbound
10:00 A.M.	50	48
10:30	57	52
11:00	57	54
11:30	55	56
12:00 P.M.	54	55
12:30	51	54
1:00	53	52
1:30	53	49

APPENDIX K

AVERAGE TRAVEL TIME PLOTS

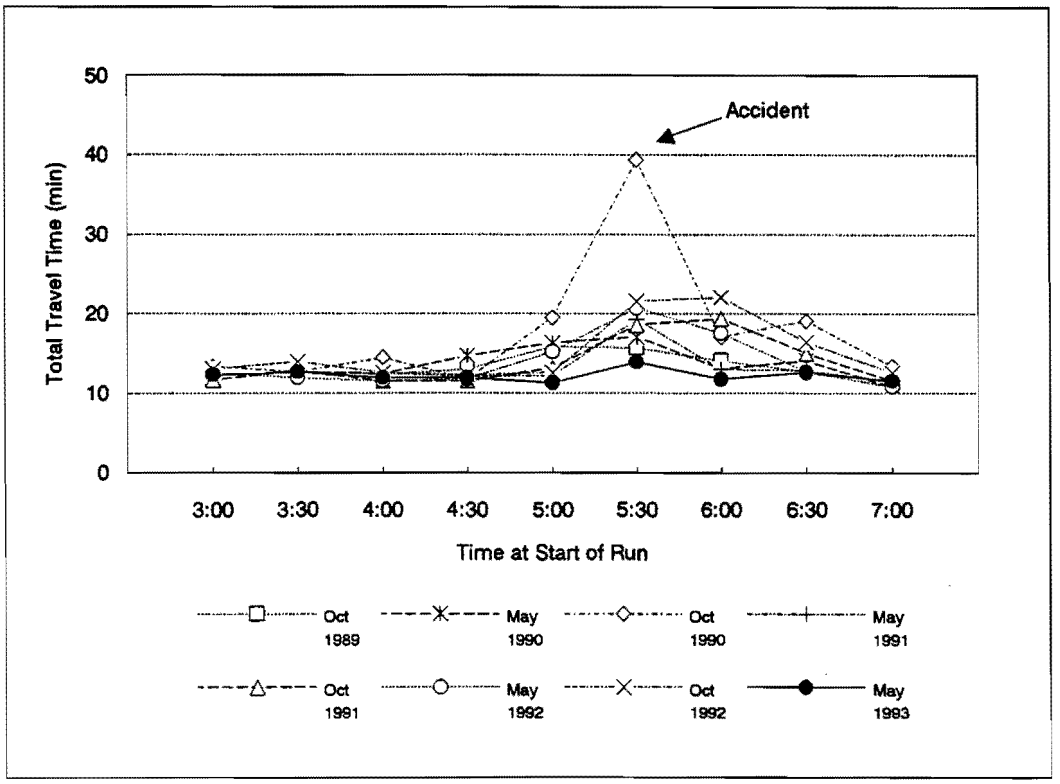


(a) Northbound

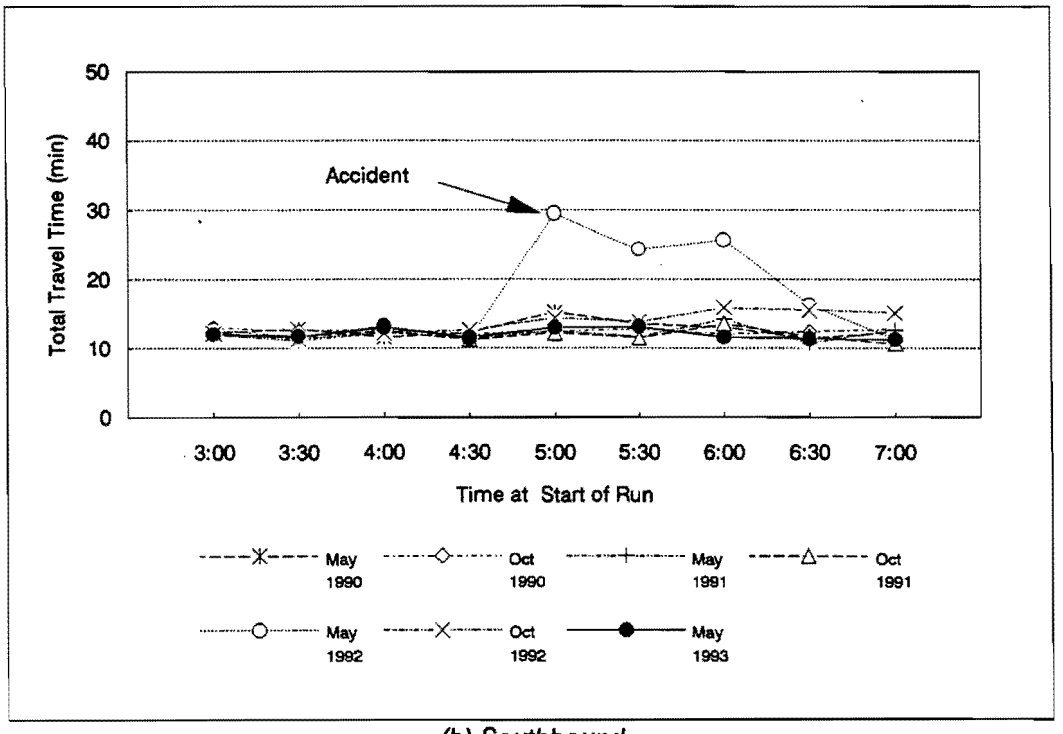


(b) Southbound

Figure K-1. A.M. Peak Period Total Travel Time Between I-635 and CBD: DNT

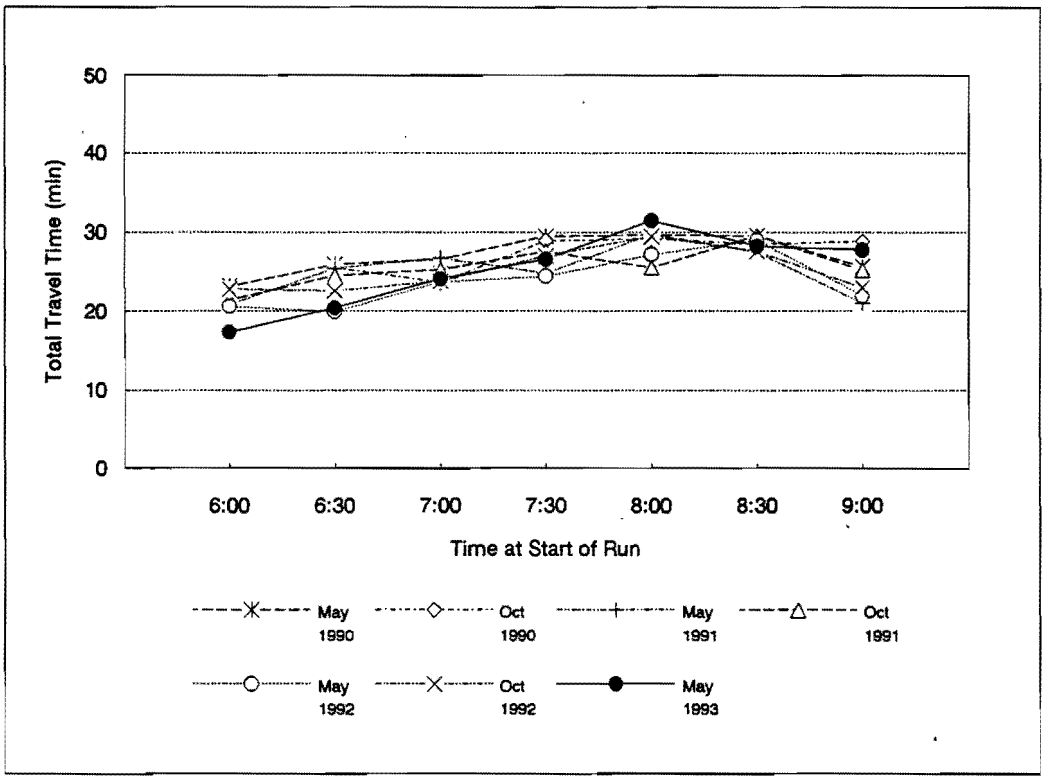


(a) Northbound

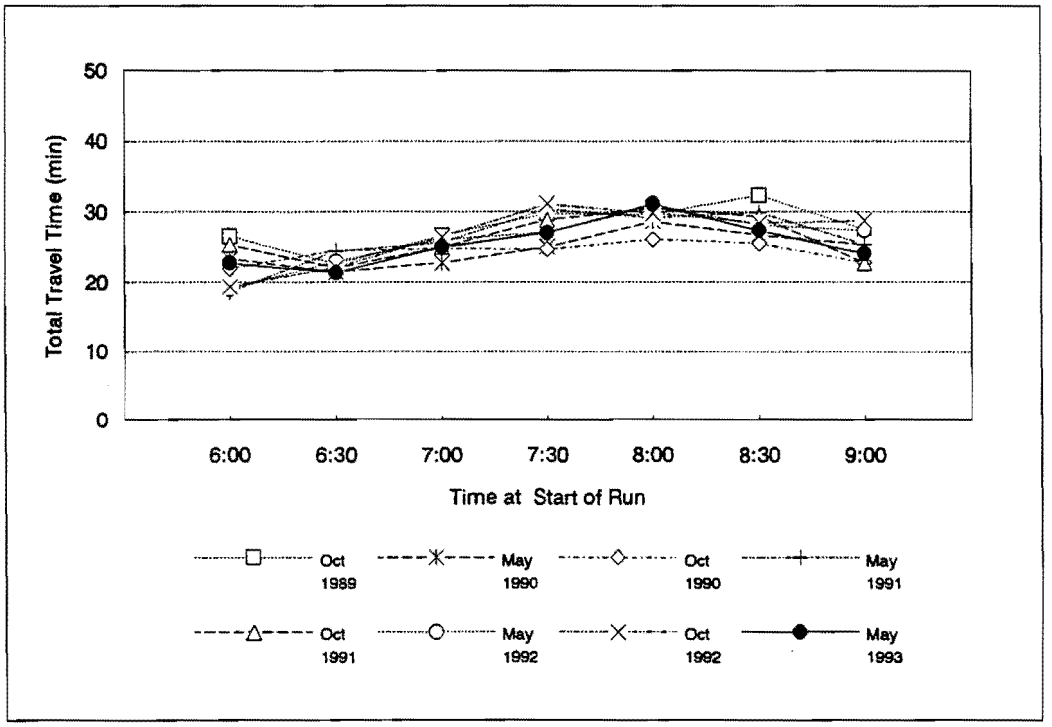


(b) Southbound

Figure K-2. P.M. Peak Period Total Travel Time Between I-635 and CBD: DNT

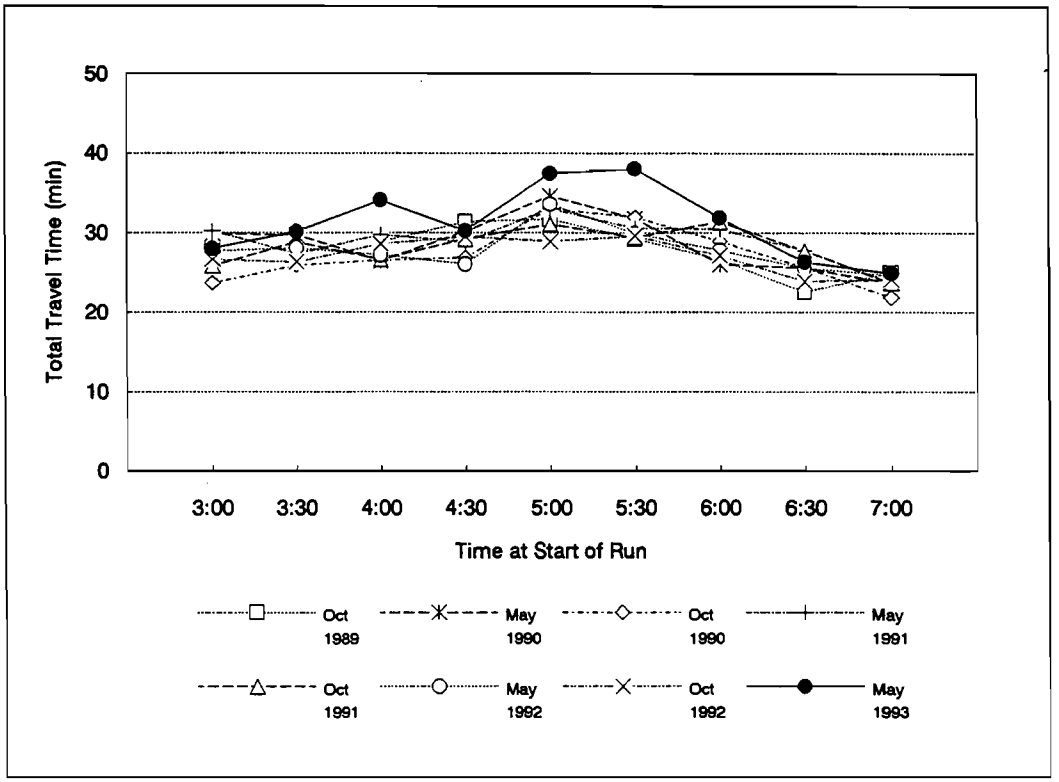


(a) Northbound

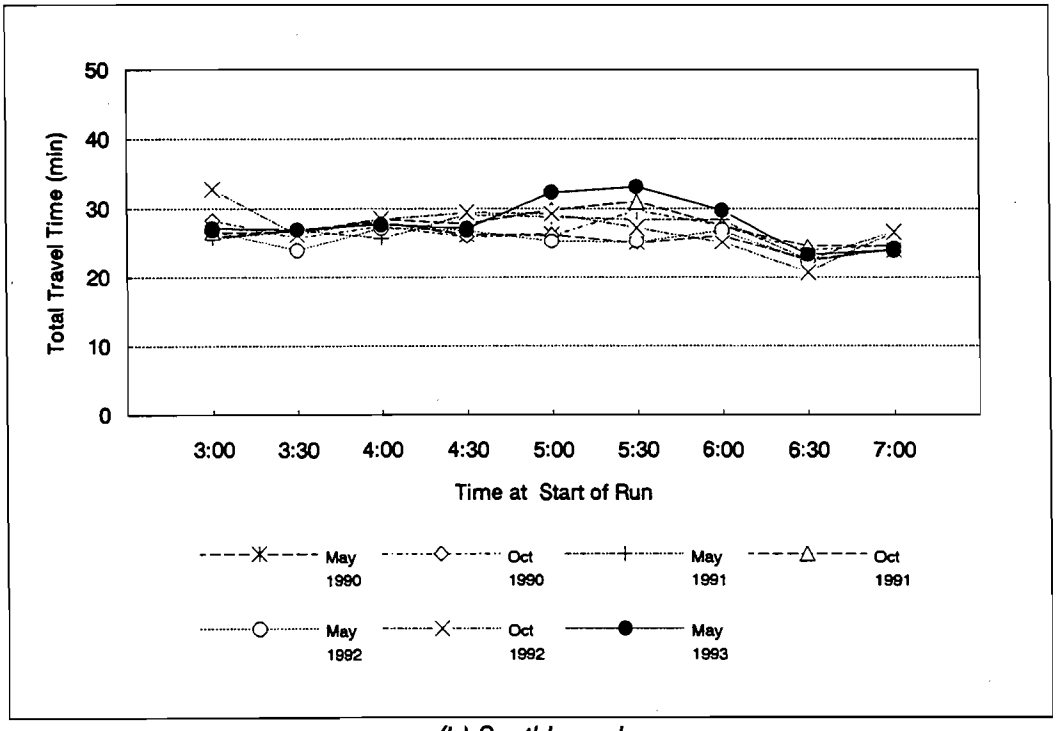


(b) Southbound

Figure K-3. A.M. Peak Period Total Travel Time Between I-635 and CBD: Preston

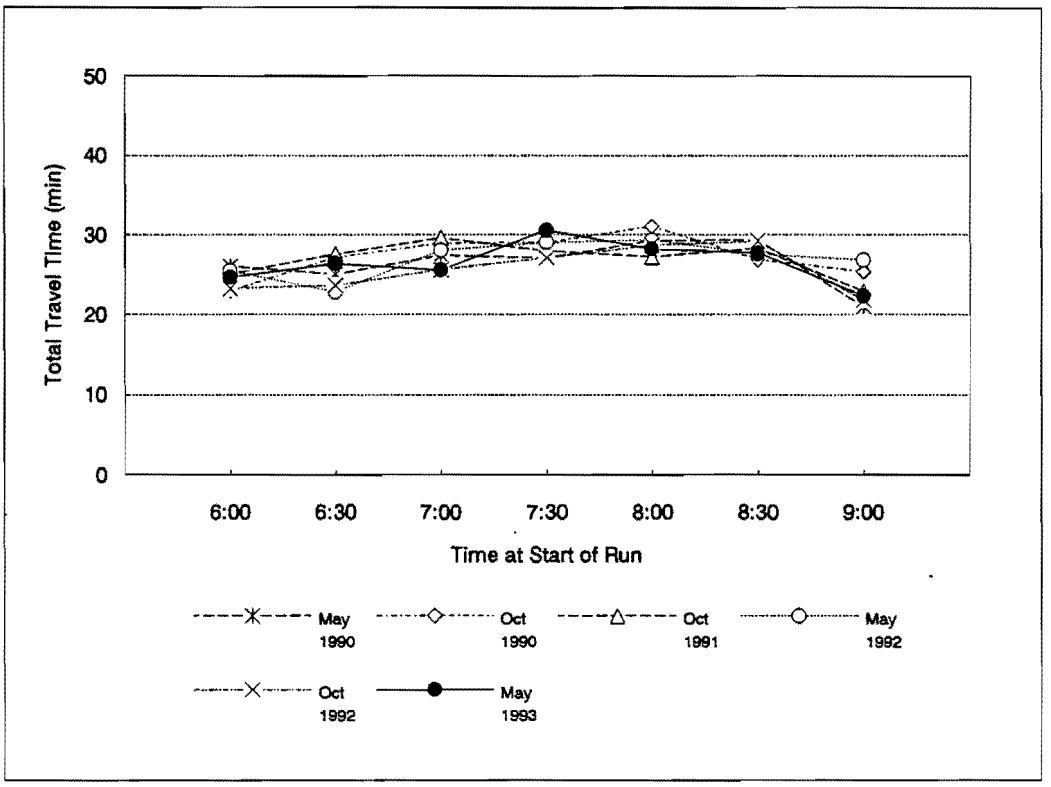


(a) Northbound

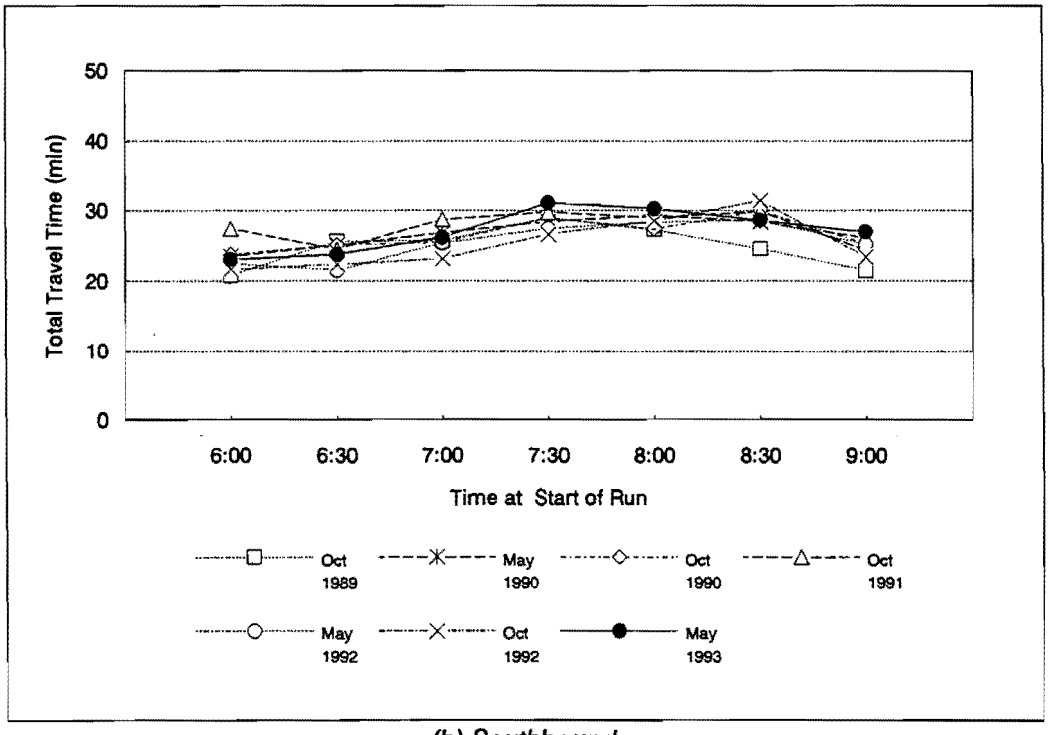


(b) Southbound

Figure K-4. P.M. Peak Period Total Travel Time Between I-635 and CBD: Preston

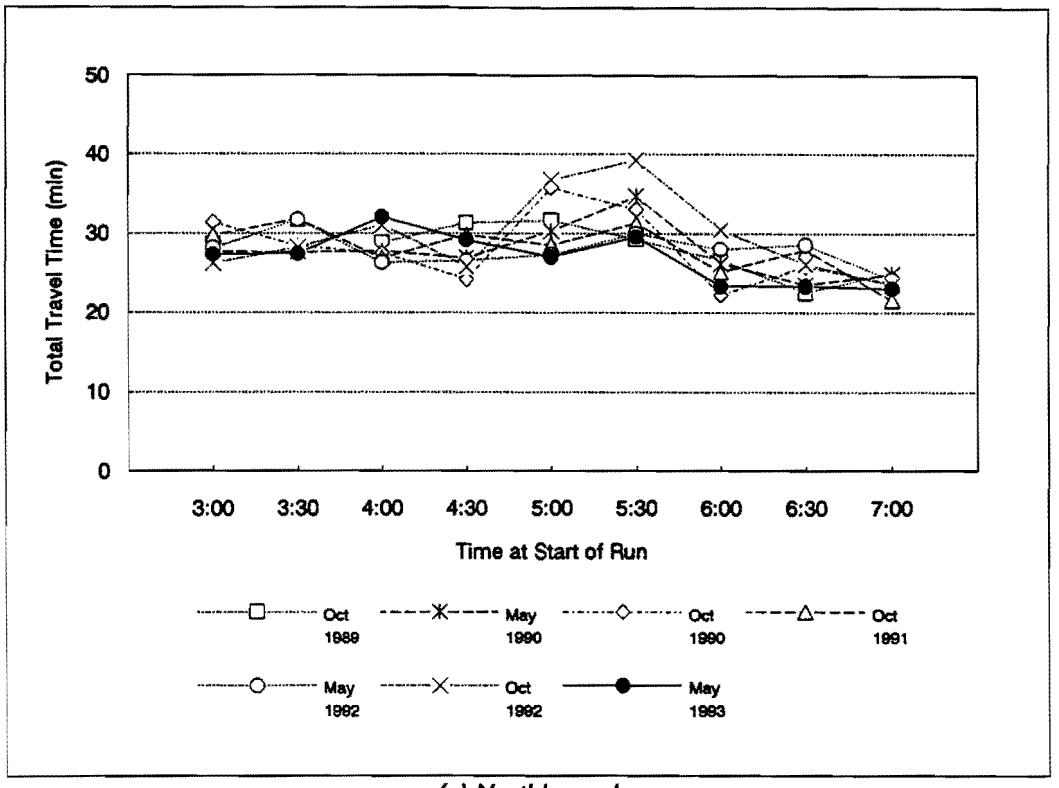


(a) Northbound

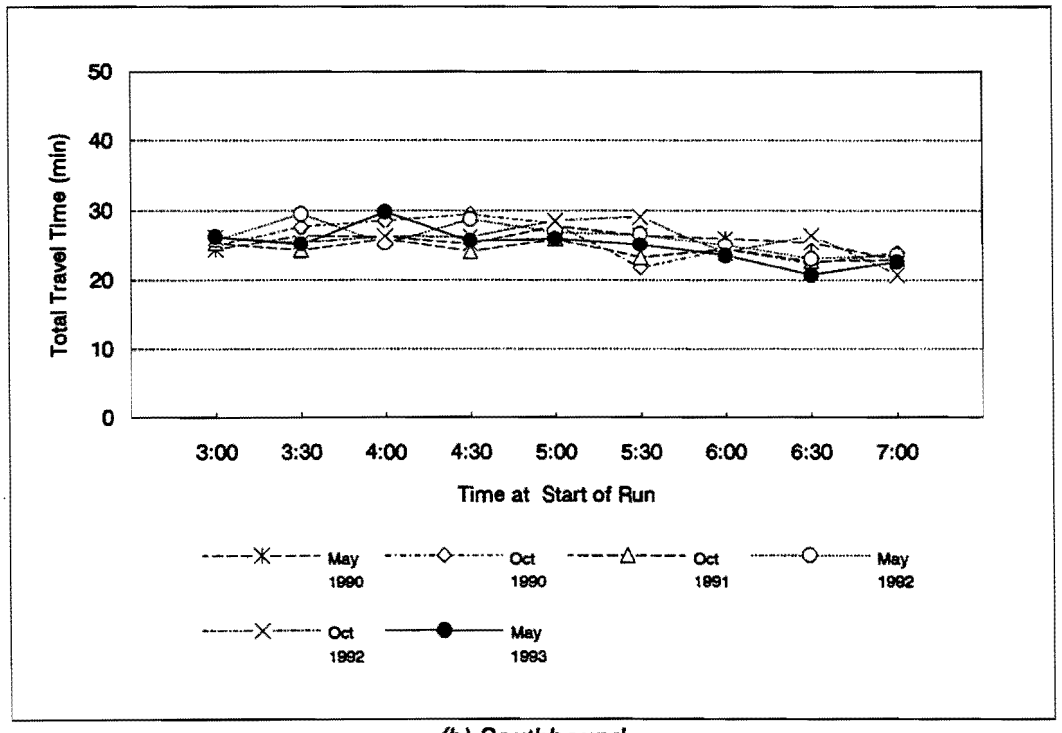


(b) Southbound

Figure K-5. A.M. Peak Period Total Travel Time Between I-635 and CBD: Hillcrest

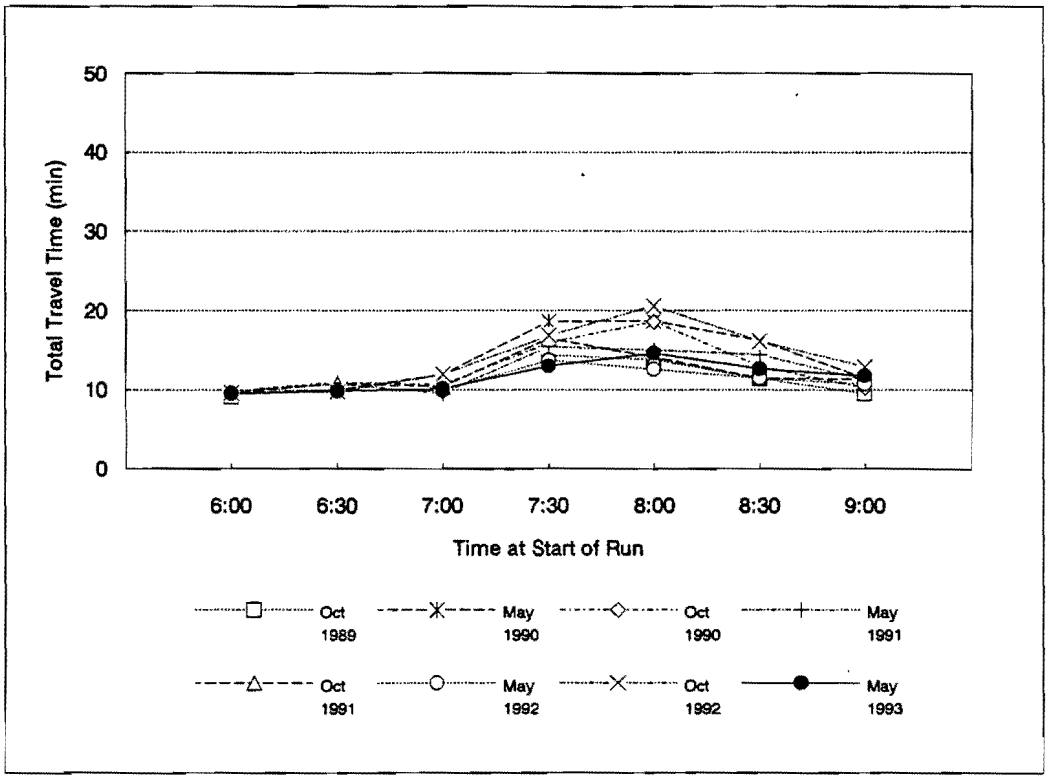


(a) Northbound

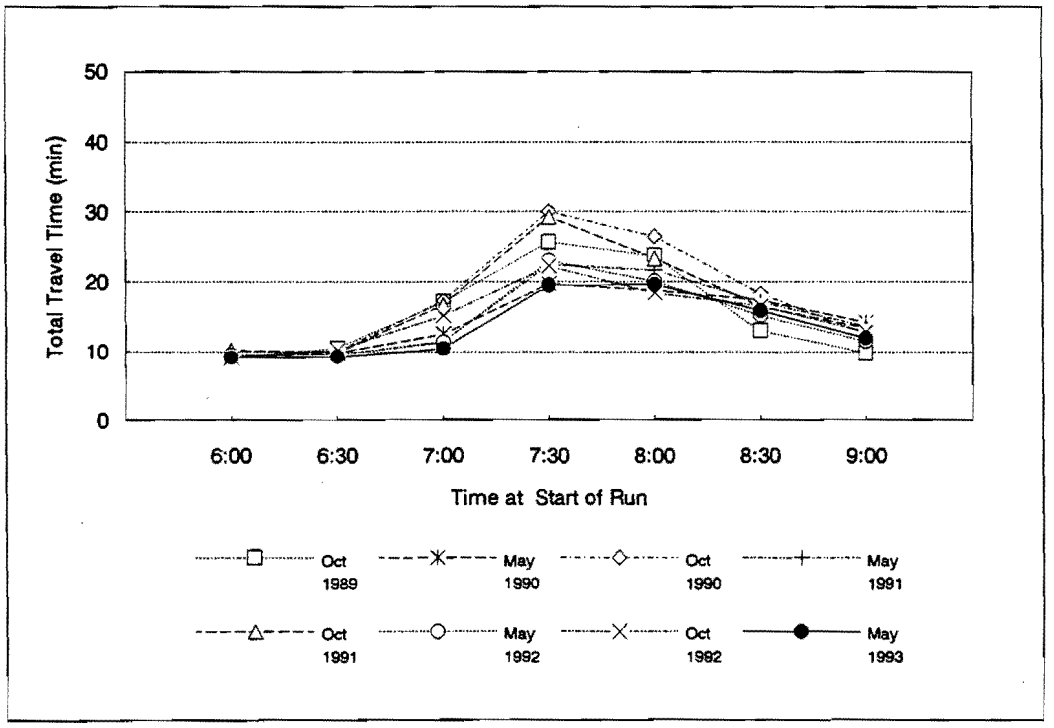


(b) Southbound

Figure K-6. P.M. Peak Period Total Travel Time Between I-635 and CBD: Hillcrest

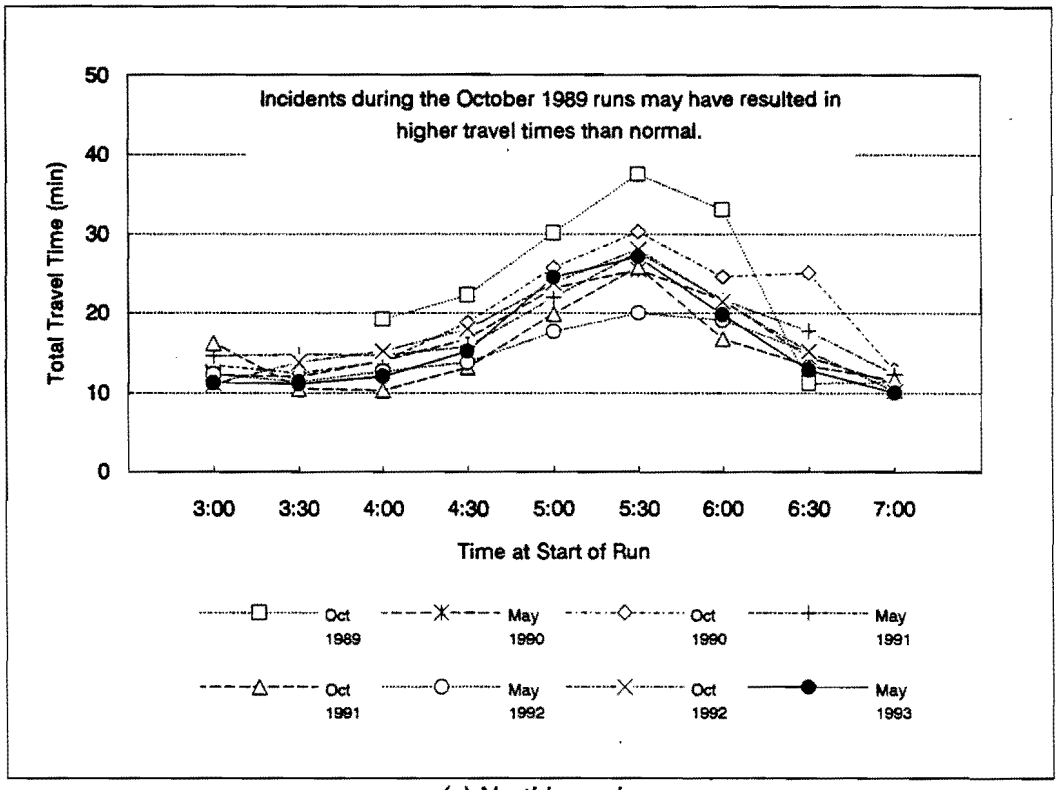


(a) Northbound

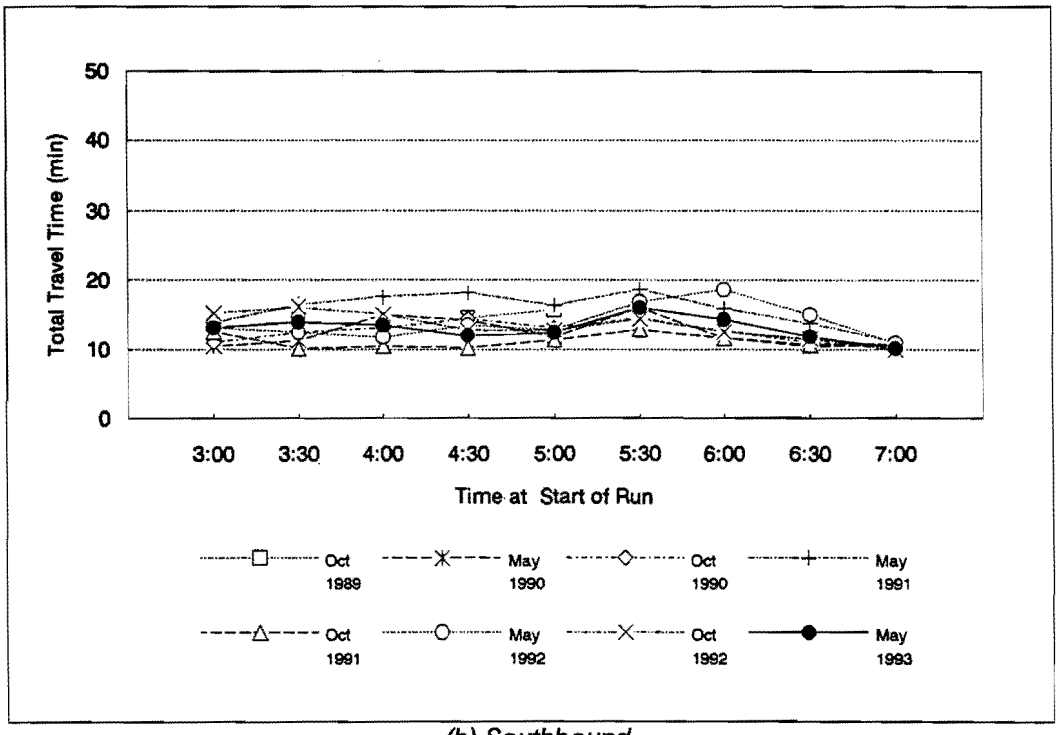


(b) Southbound

Figure K-7. A.M. Peak Period Total Travel Time Between I-635 and CBD: US-75

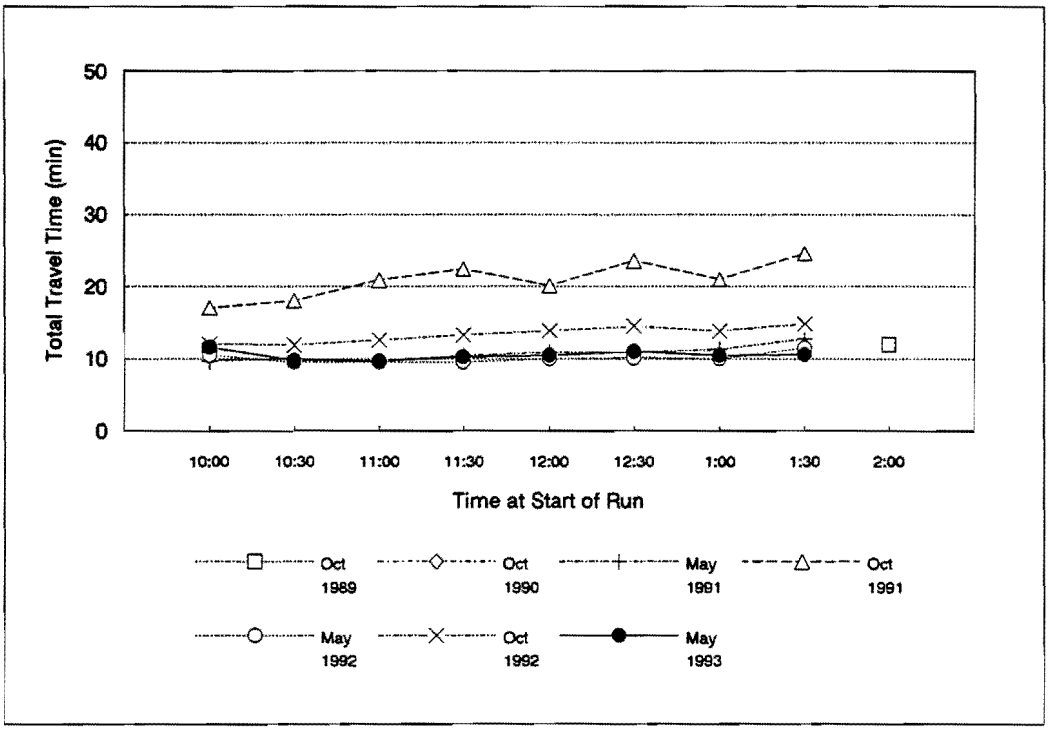


(a) Northbound

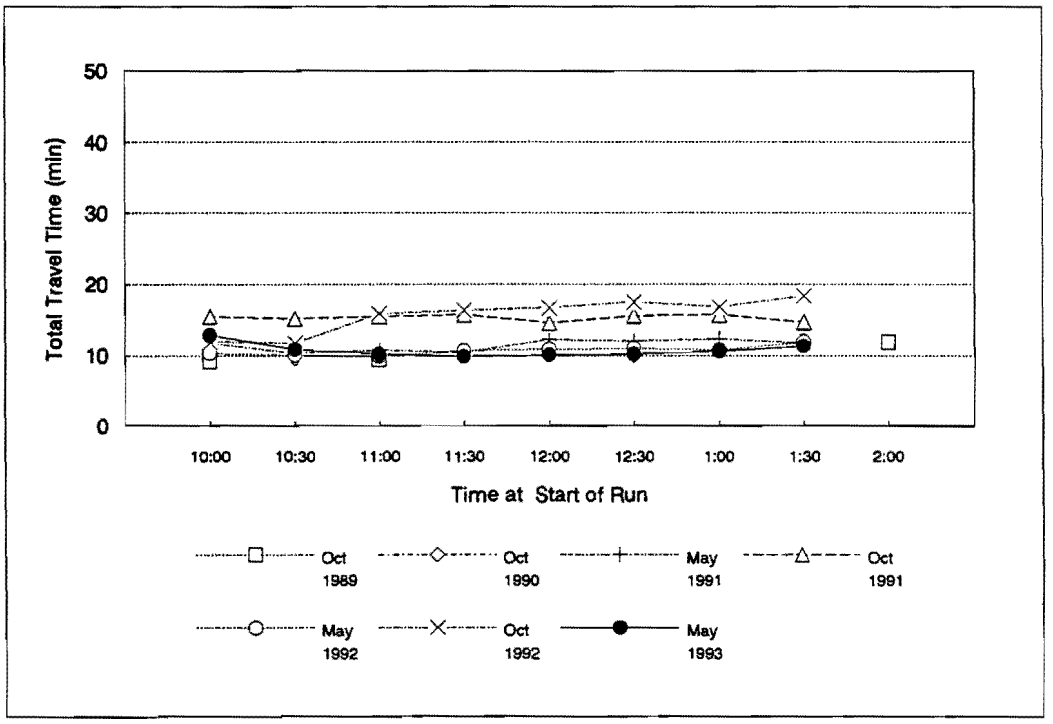


(b) Southbound

Figure K-8. P.M. Peak Period Total Travel Time Between I-635 and CBD: US-75

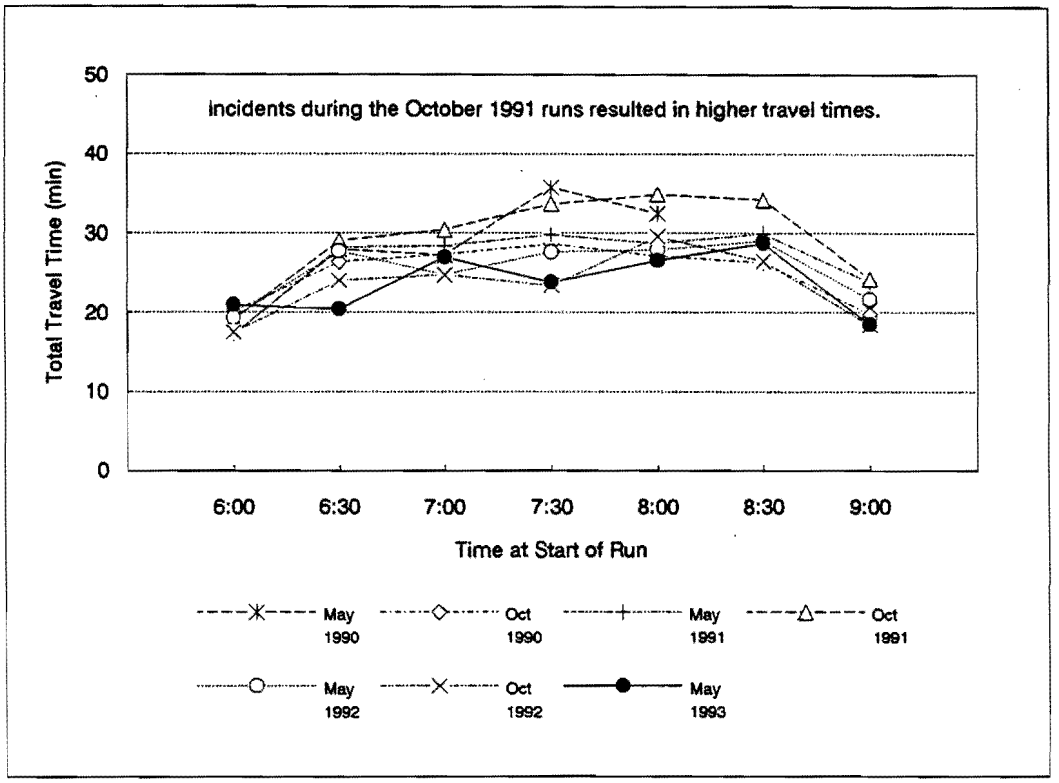


(a) Northbound

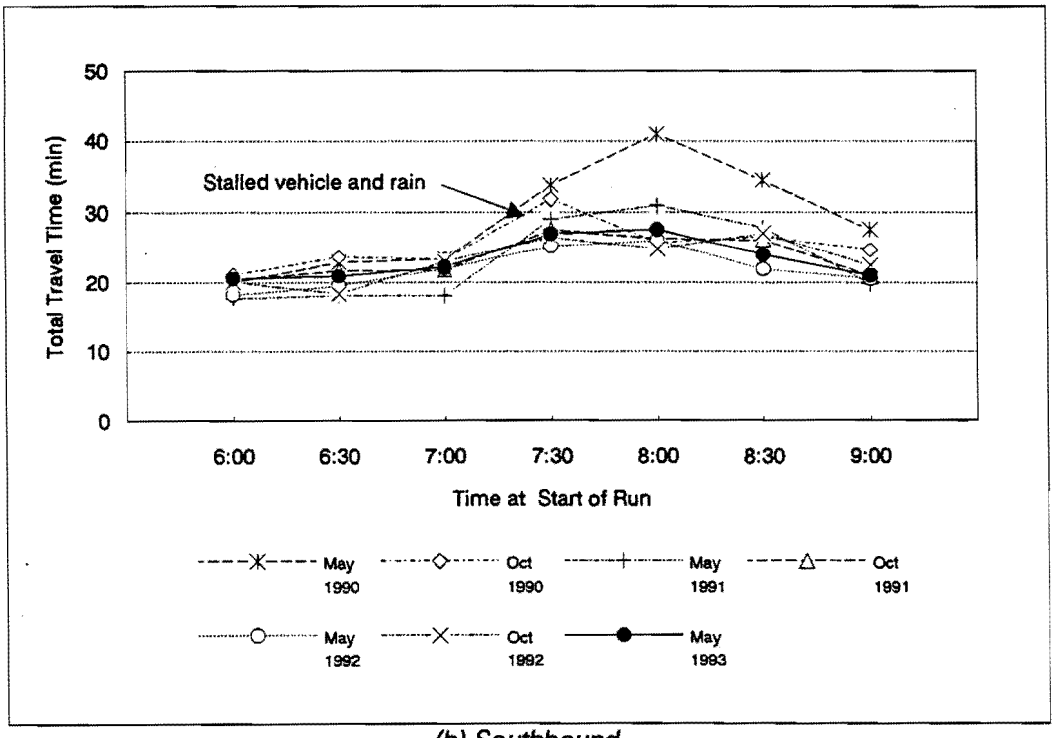


(b) Southbound

Figure K-9. Off-Peak Period Total Travel Time Between I-635 and CBD: US-75

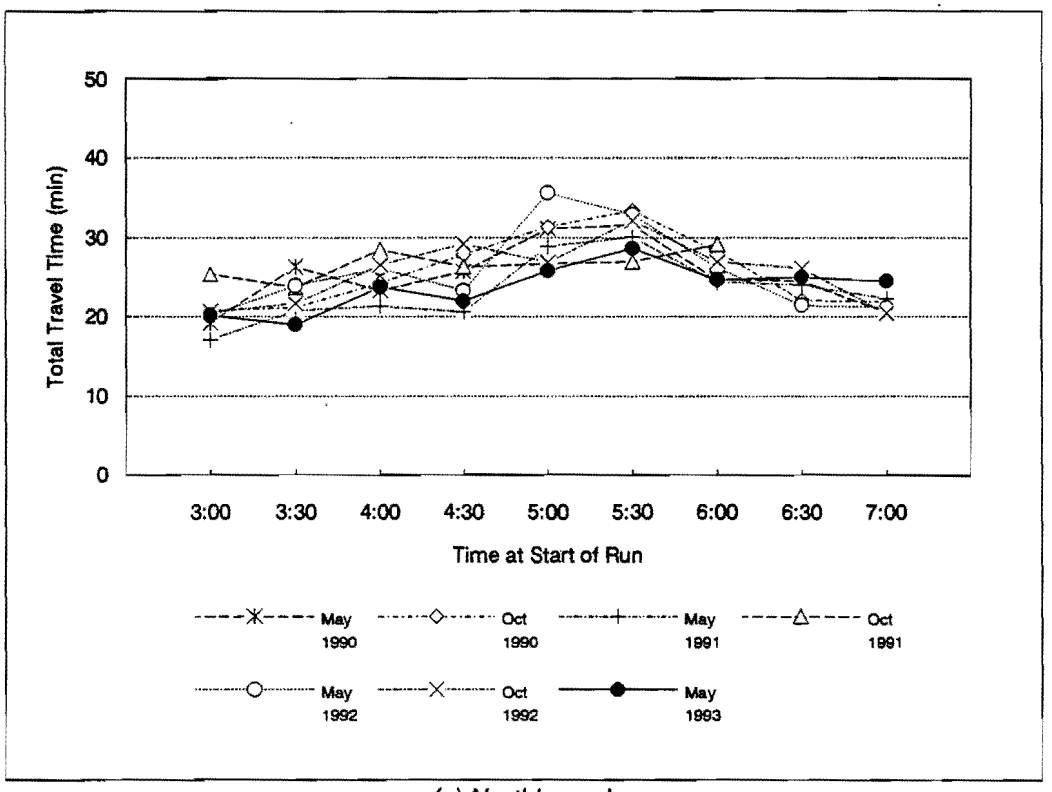


(a) Northbound

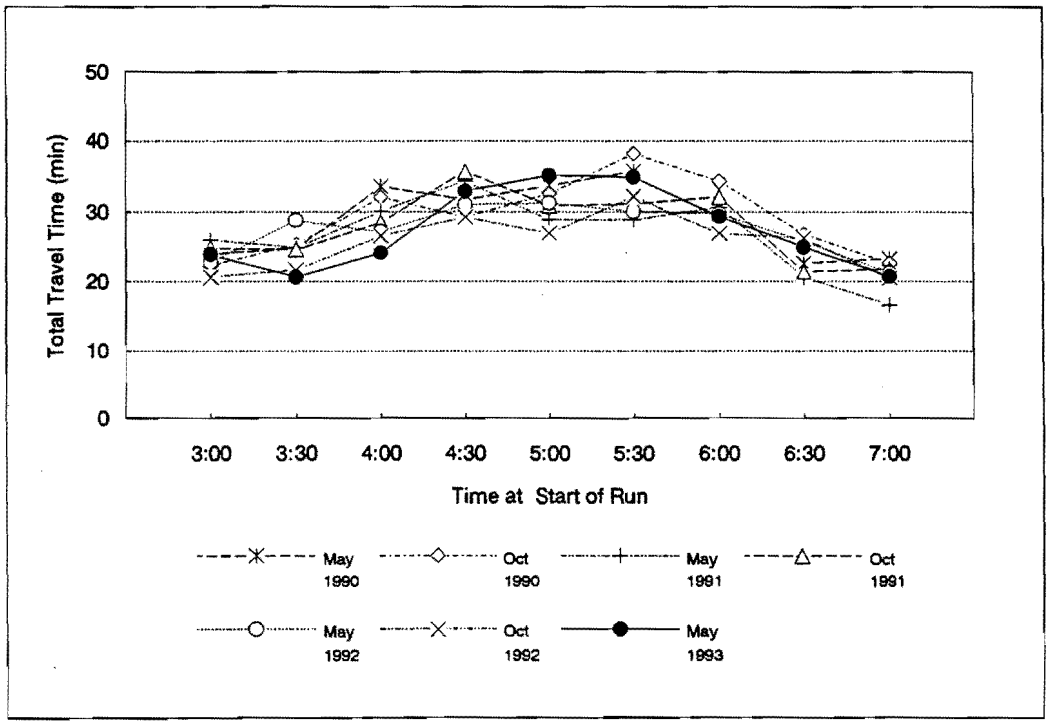


(b) Southbound

Figure K-10. A.M. Peak Period Total Travel Time Between I-635 and CBD: US-75 Frontage Road

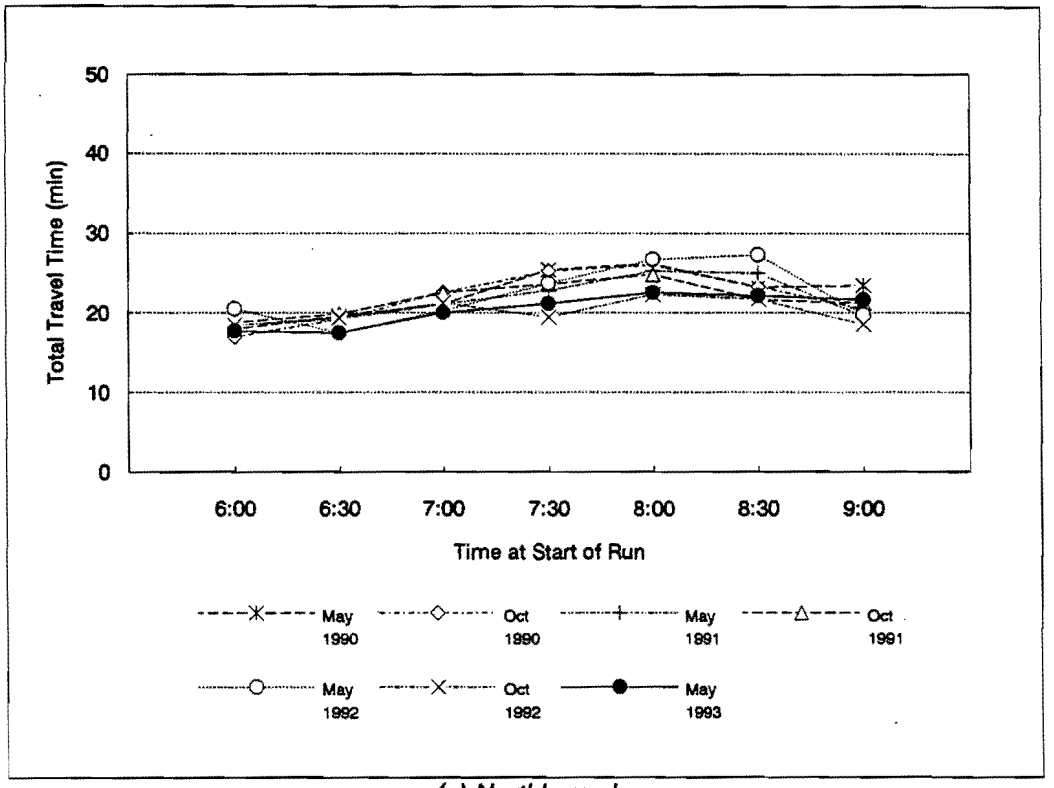


(a) Northbound

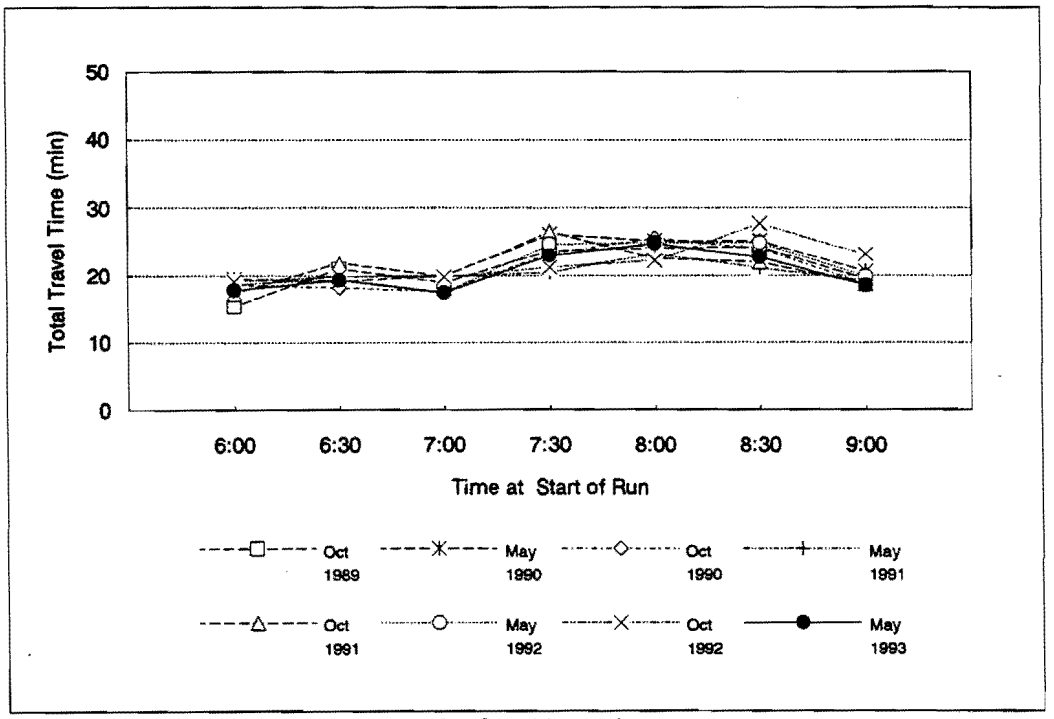


(b) Southbound

Figure K-11. P.M. Peak Period Total Travel Time Between I-635 and CBD: US-75 Frontage Road

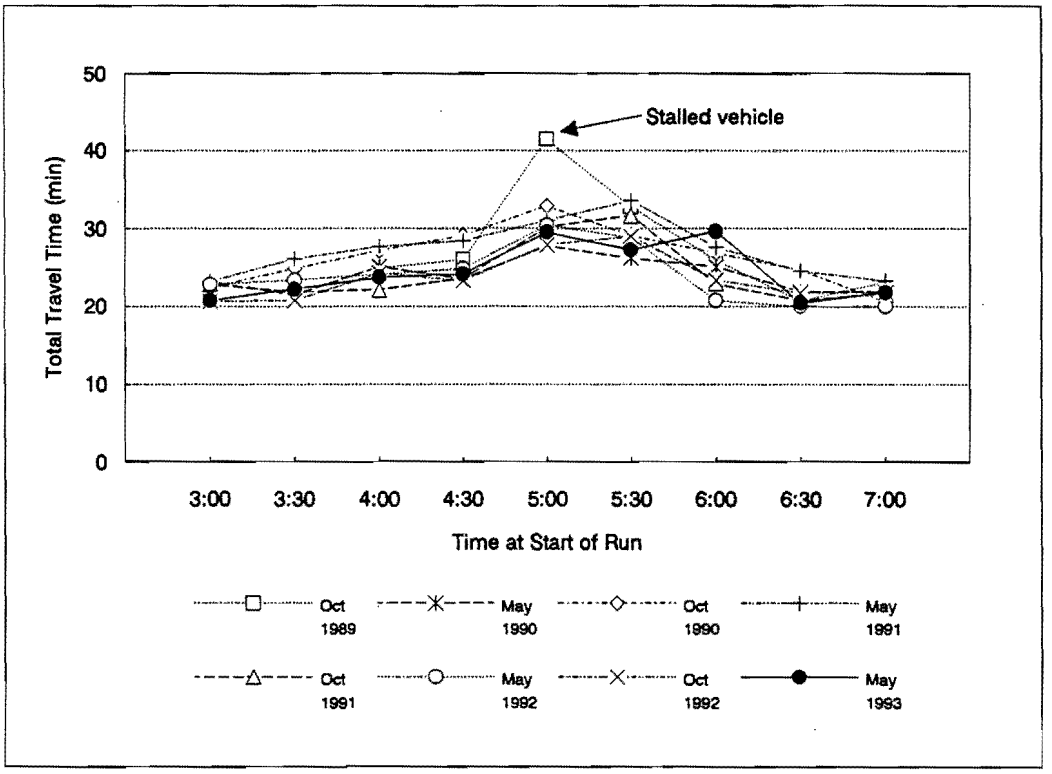


(a) Northbound

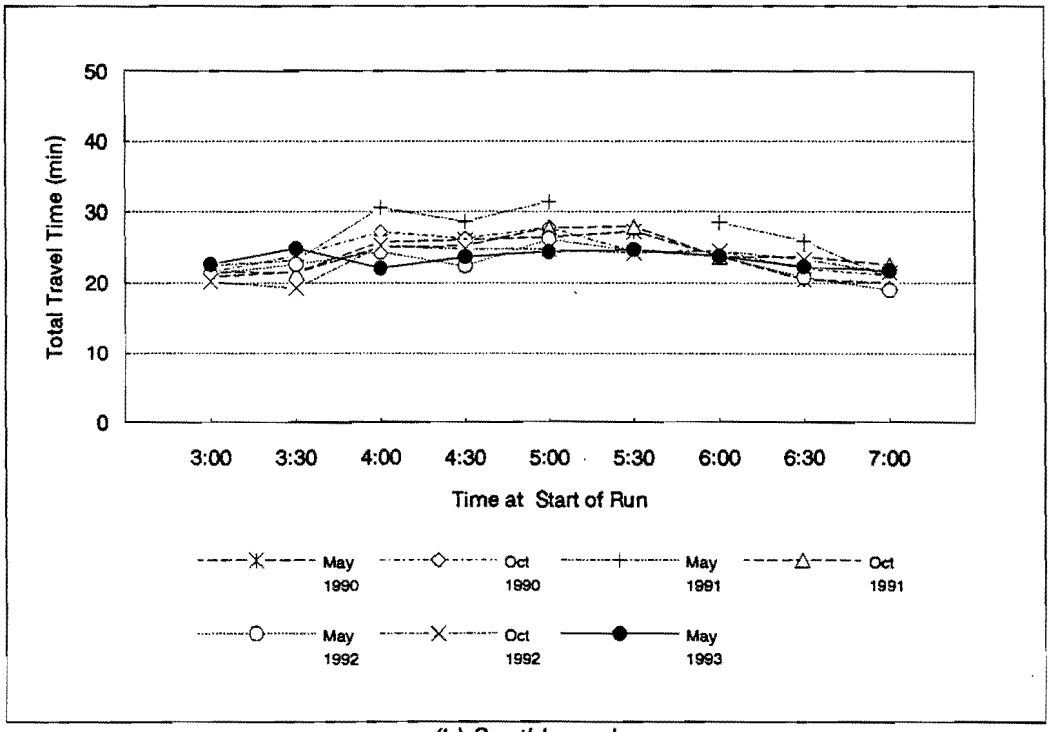


(b) Southbound

Figure K-12. A.M. Peak Period Total Travel Time Between I-635 and CBD: Greenville

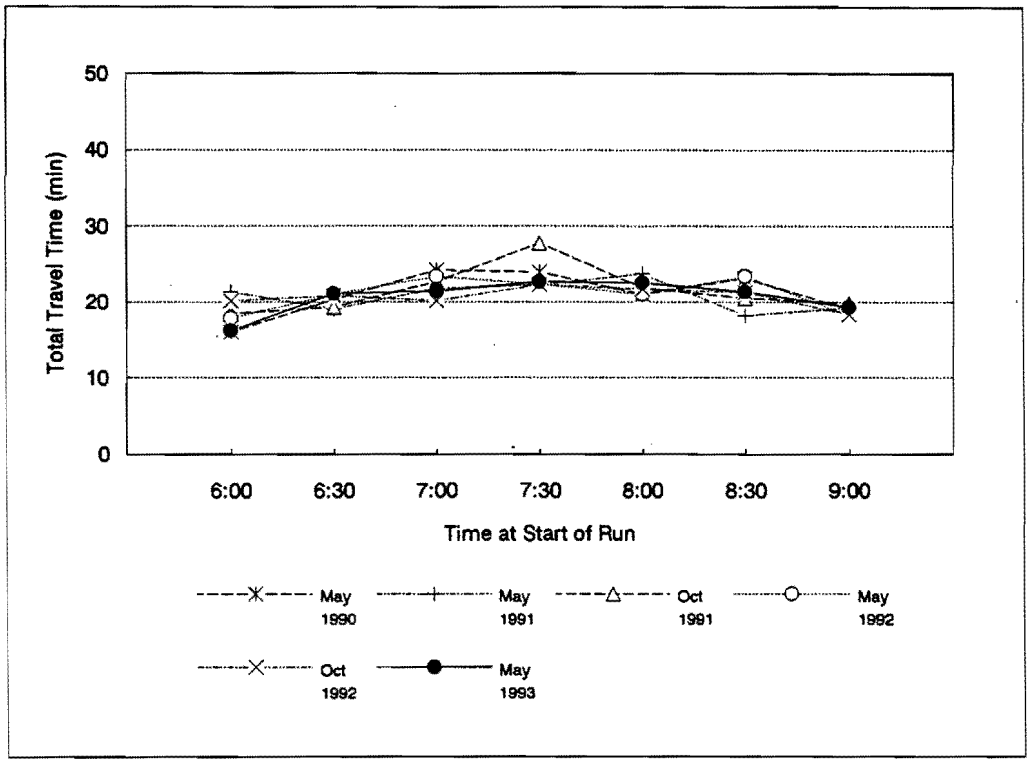


(a) Northbound

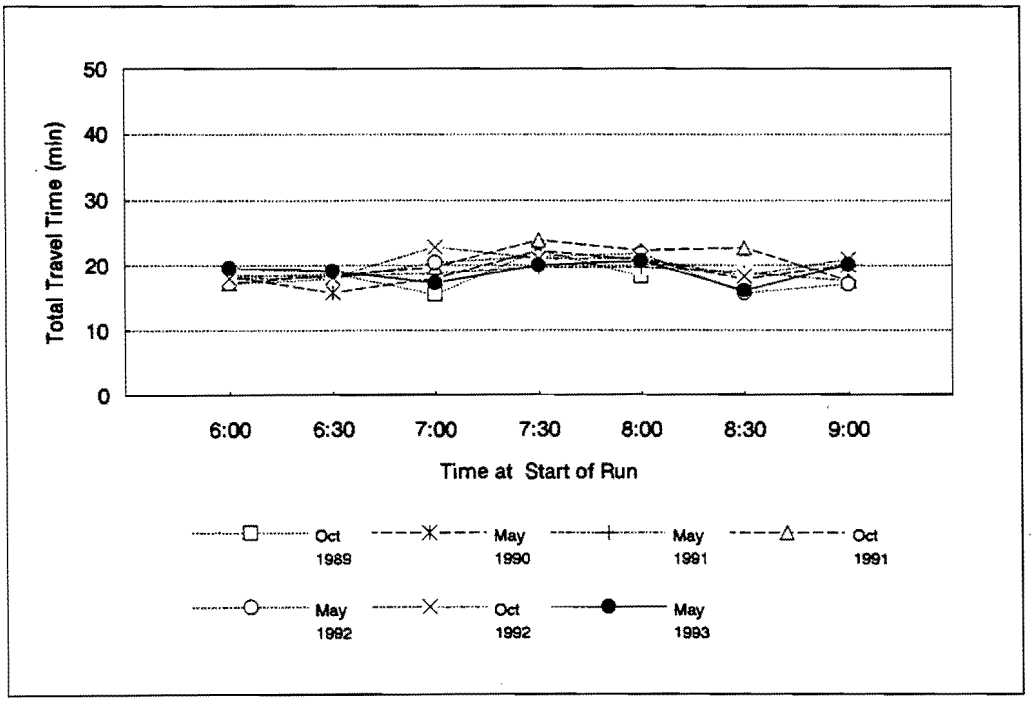


(b) Southbound

Figure K-13. P.M. Peak Period Total Travel Time Between I-635 and CBD: Greenville

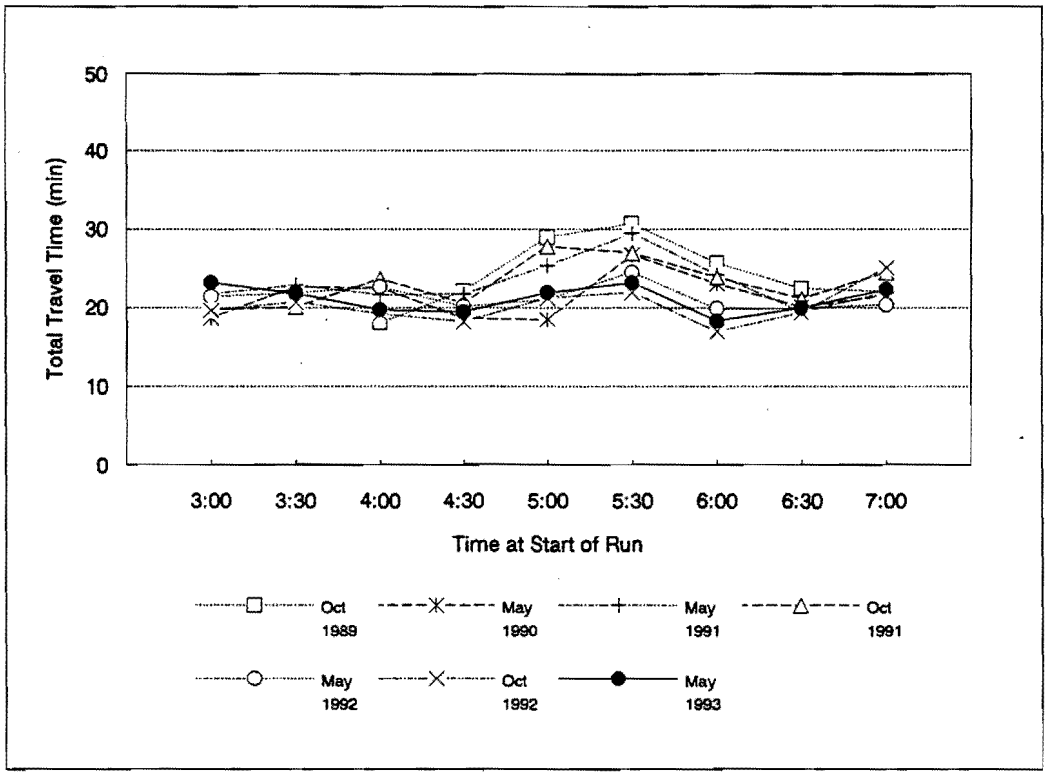


(a) Northbound

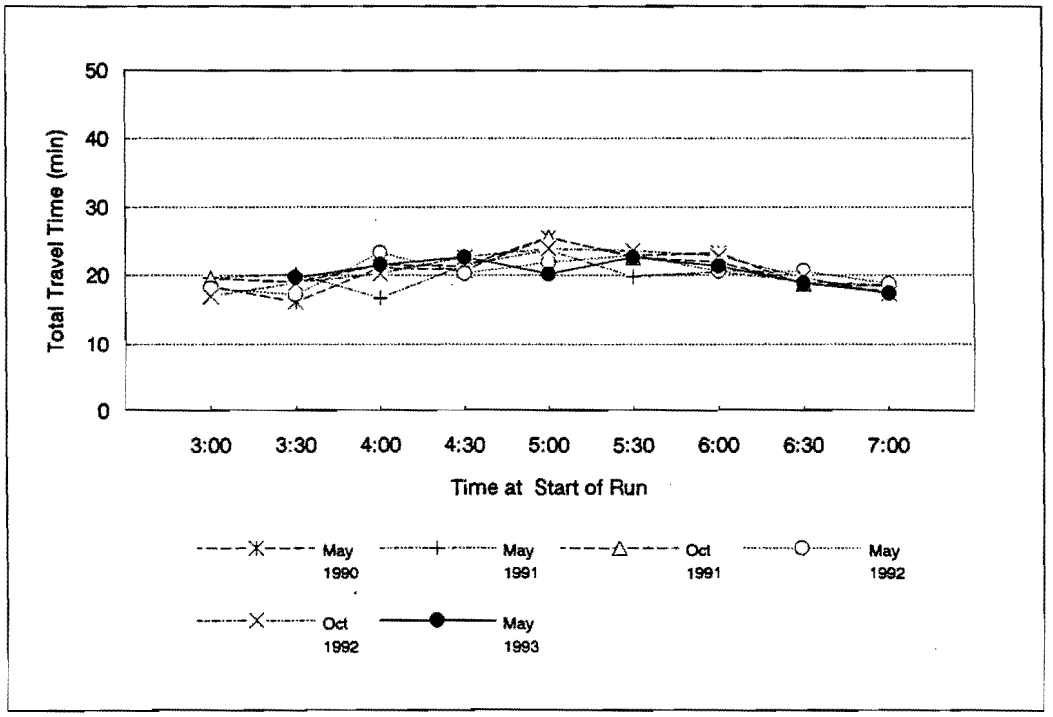


(b) Southbound

Figure K-14. A.M. Peak Period Total Travel Time Between I-635 and CBD: Skillman

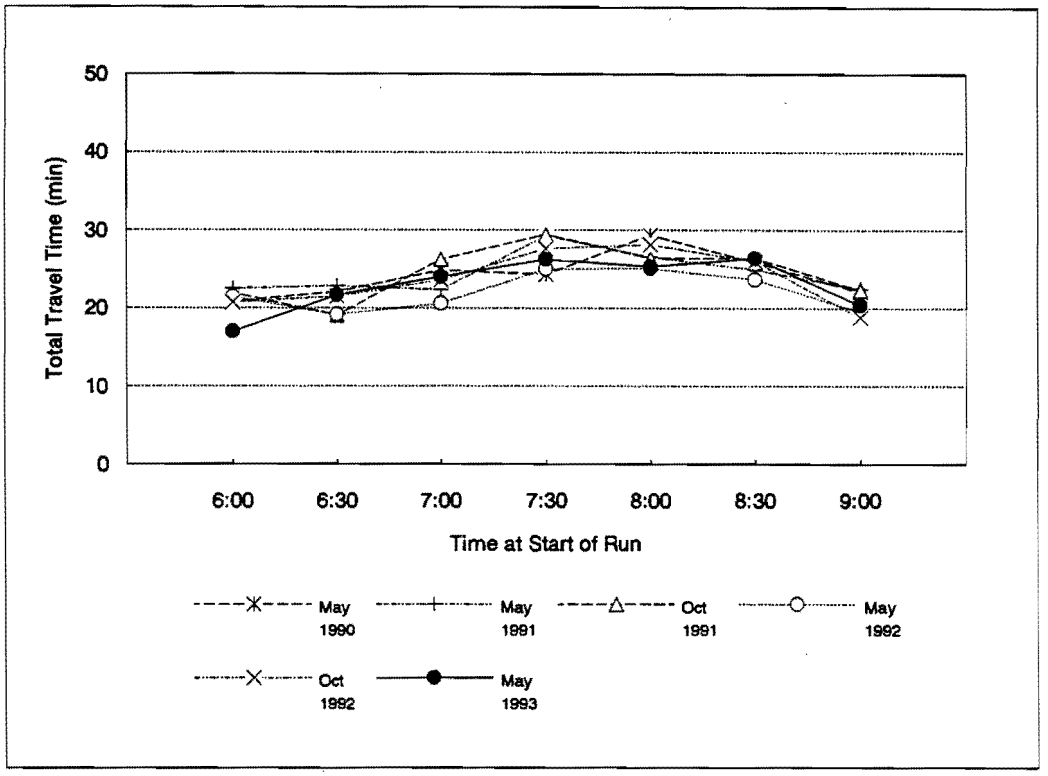


(a) Northbound

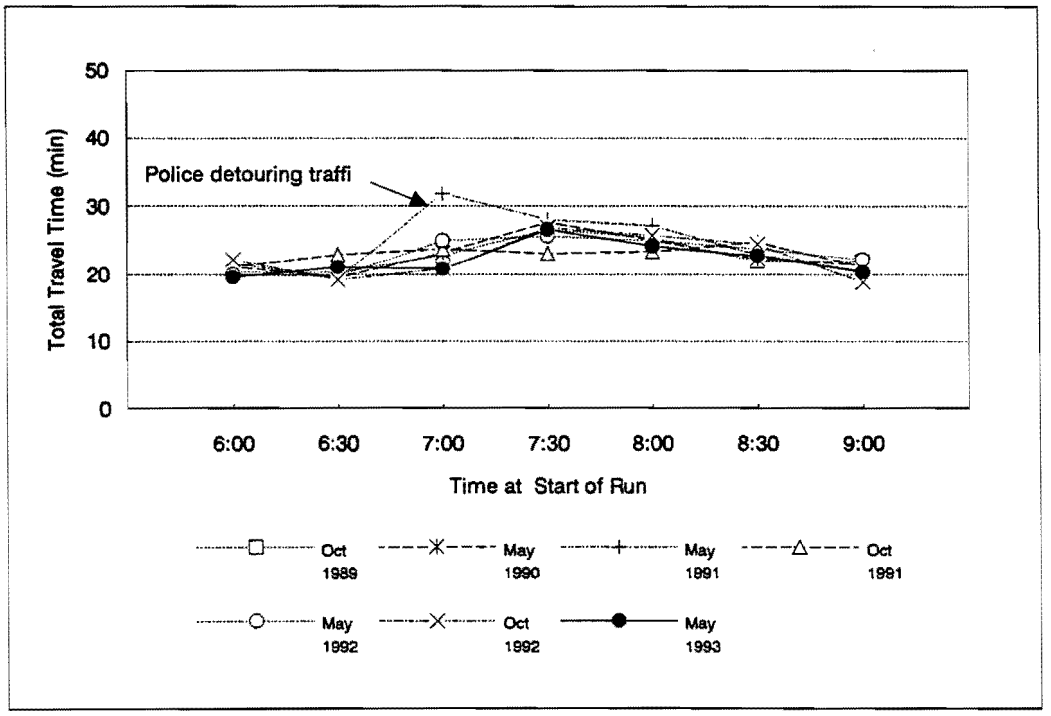


(b) Southbound

Figure K-15. P.M. Peak Period Total Travel Time Between I-635 and CBD: Skillman

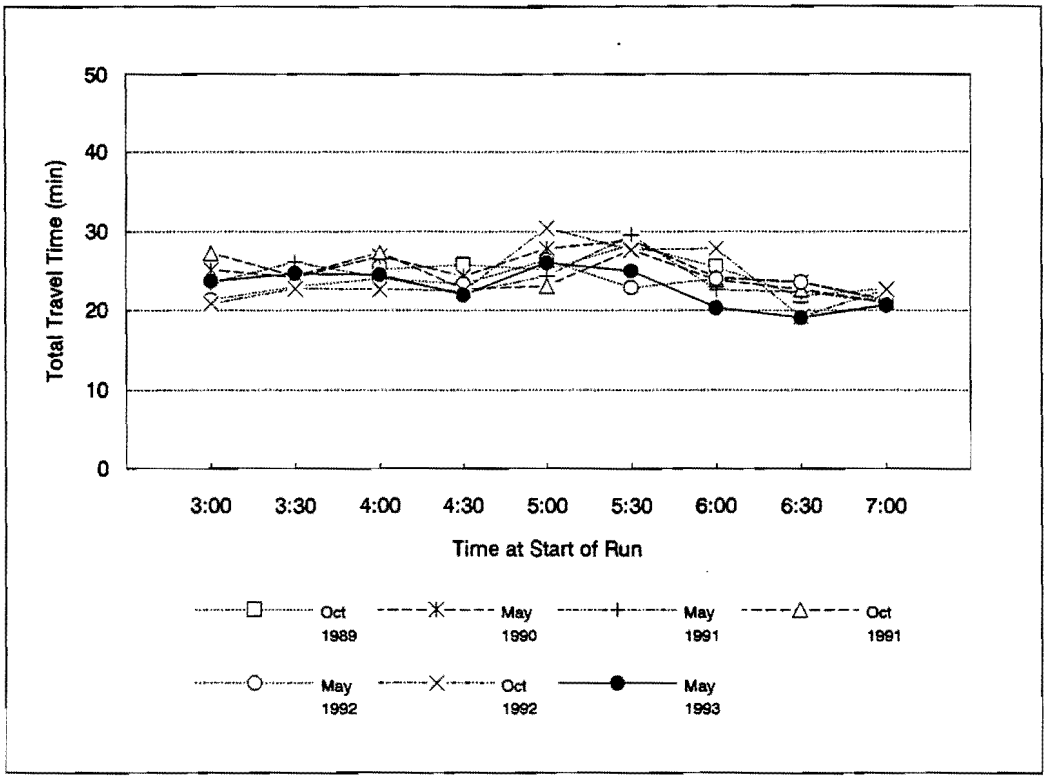


(a) Northbound

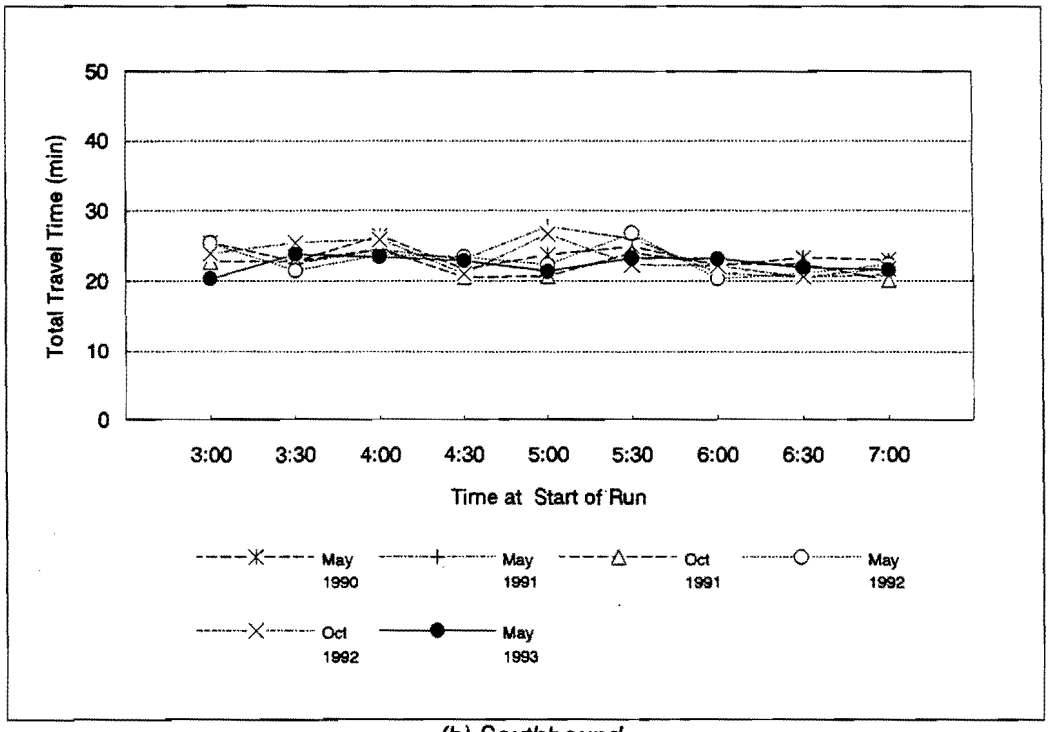


(b) Southbound

Figure K-16. A.M. Peak Period Total Travel Time Between I-635 and CBD: Abrams

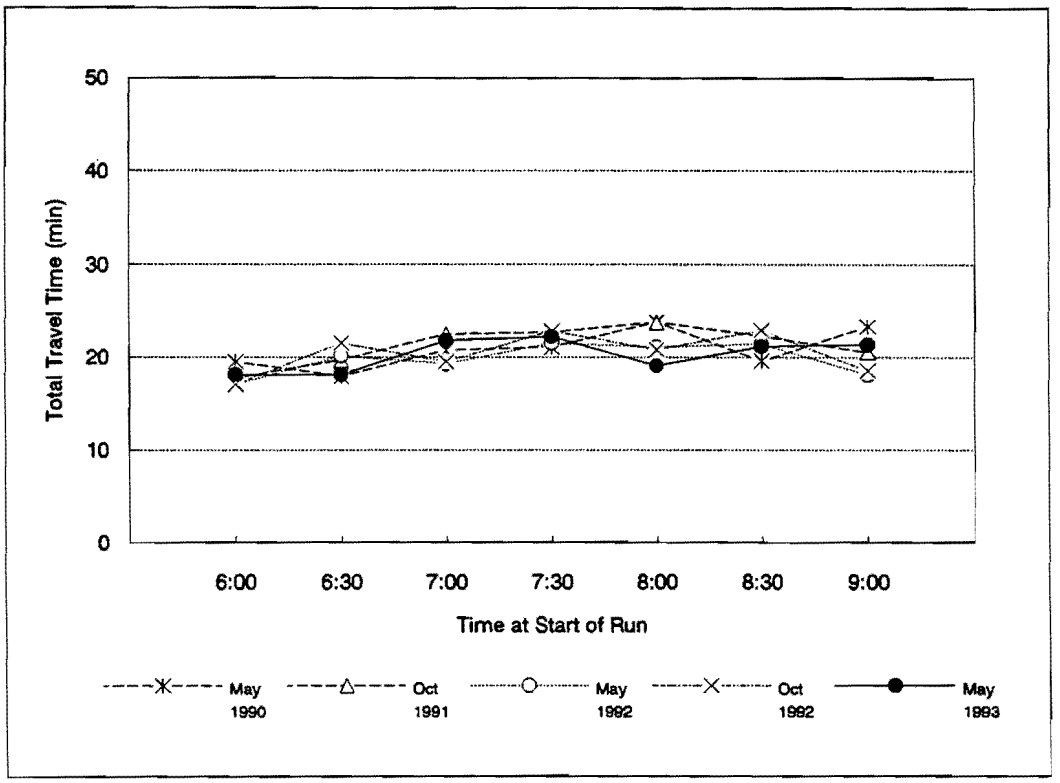


(a) Northbound

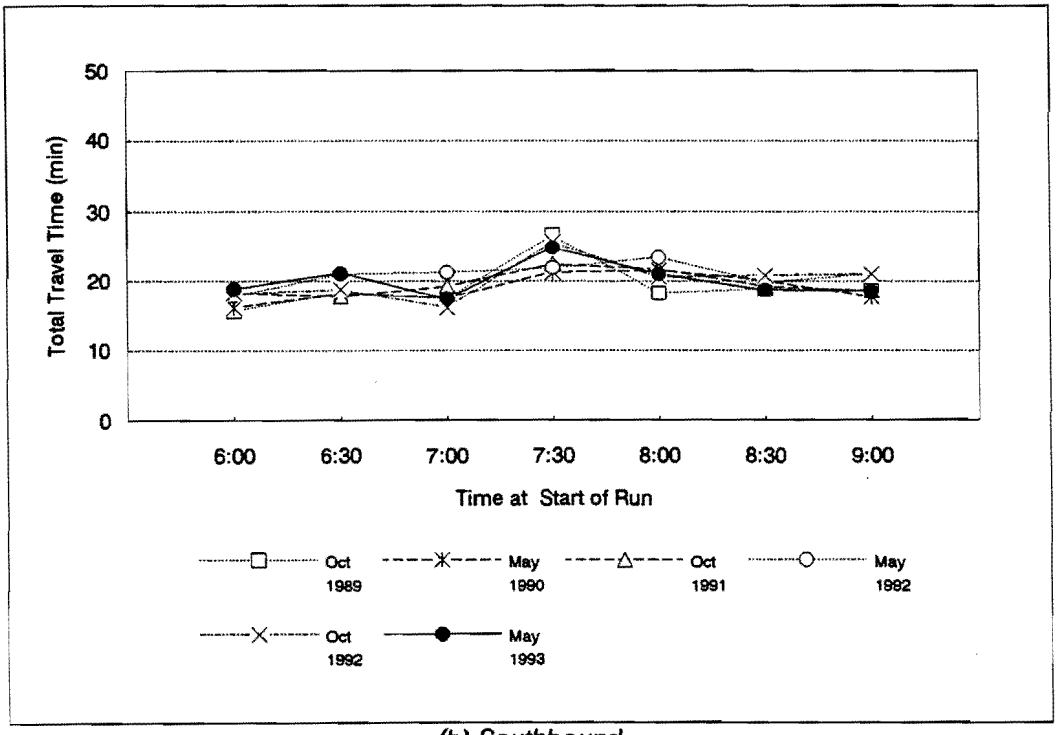


(b) Southbound

Figure K-17. P.M. Peak Period Total Travel Time Between I-635 and CBD: Abrams

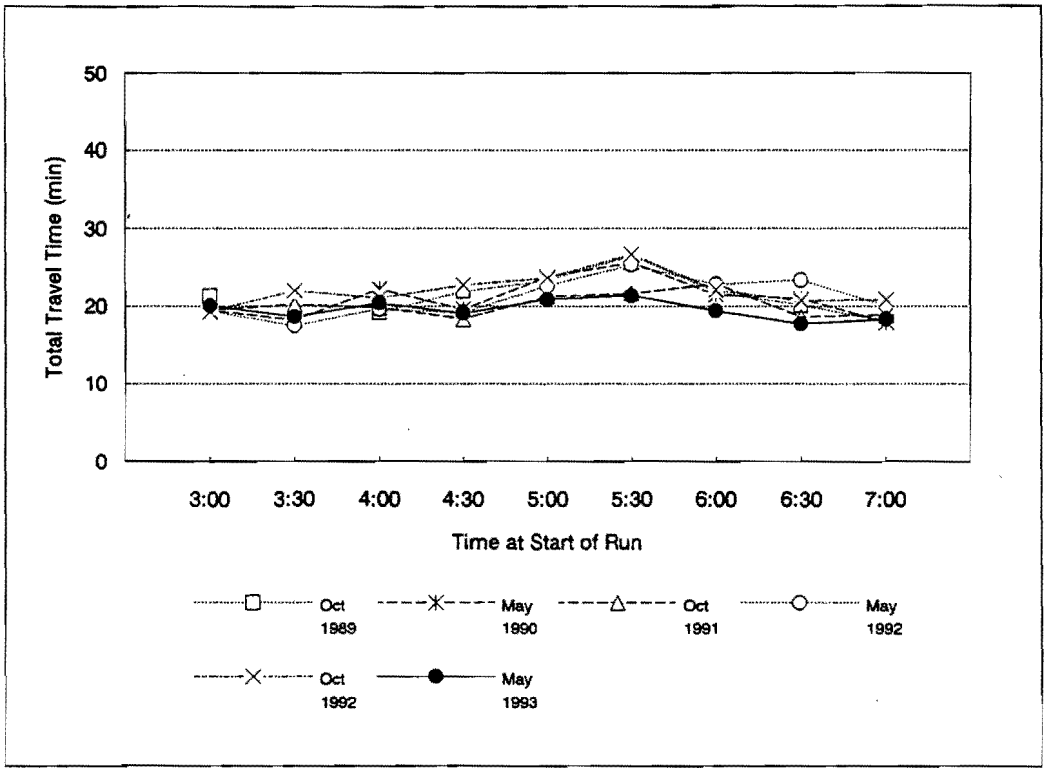


(a) Northbound

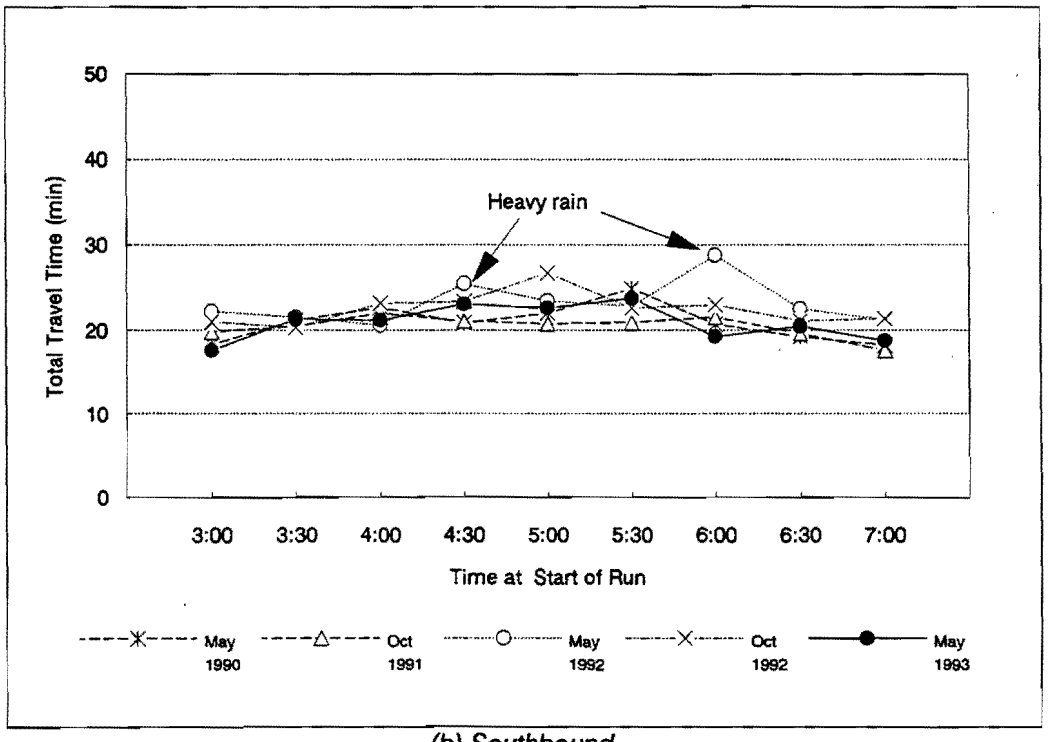


(b) Southbound

Figure K-18. A.M. Peak Period Total Travel Time Between I-635 and CBD: Garland

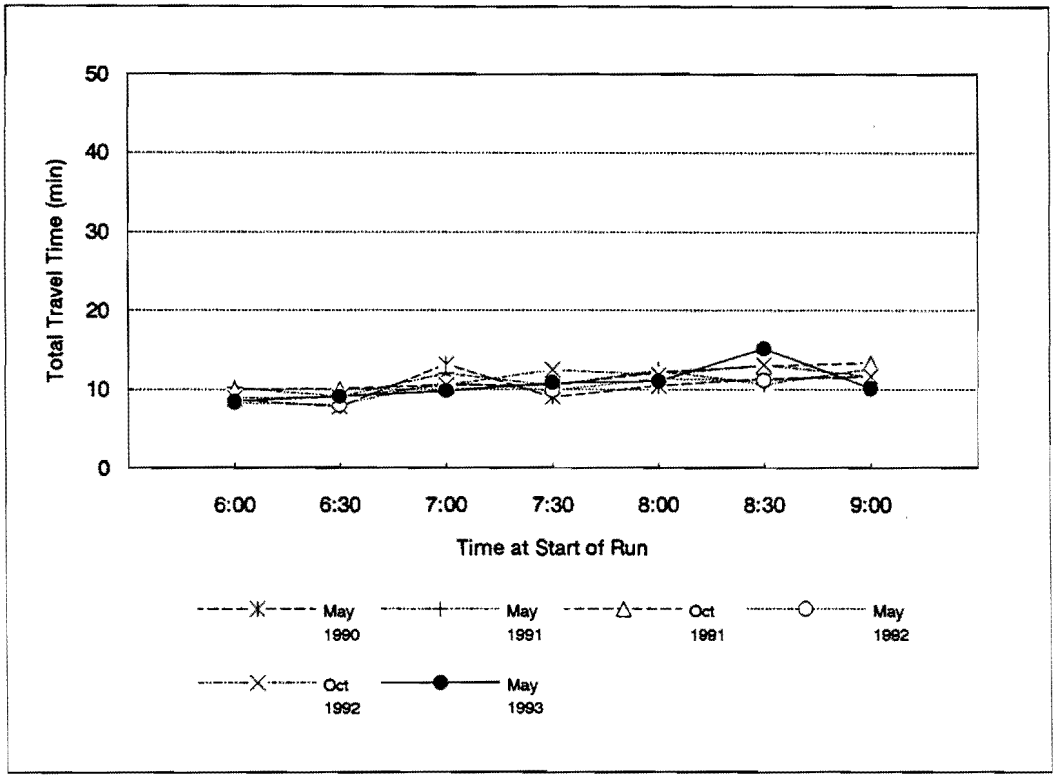


(a) Northbound

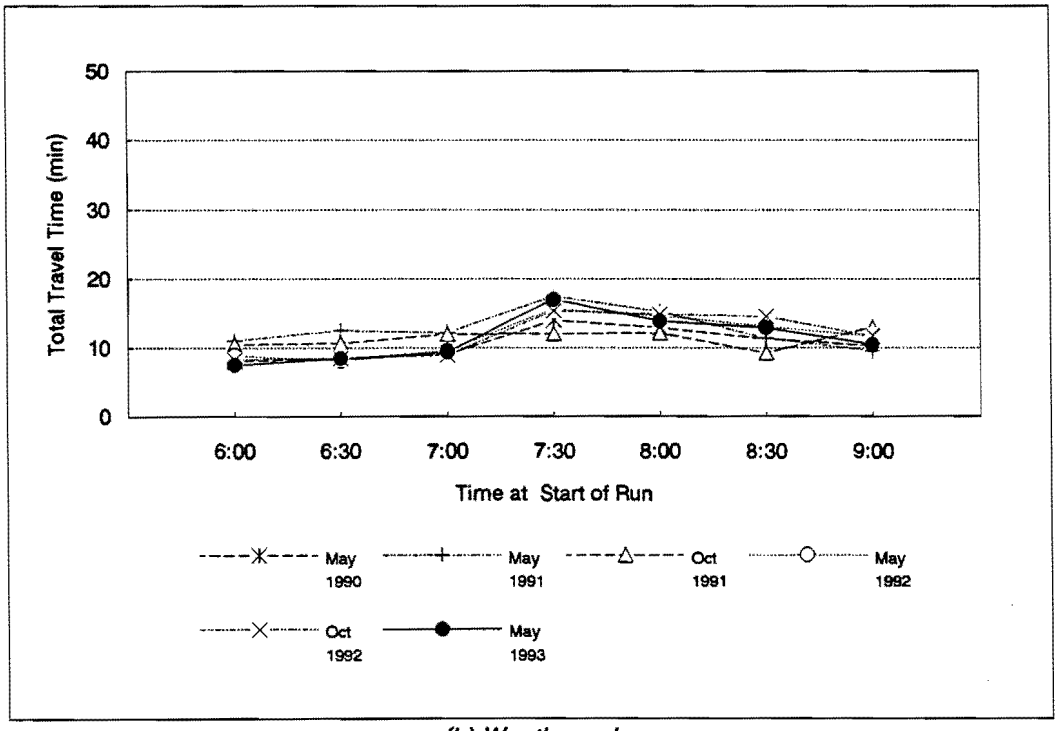


(b) Southbound

Figure K-19. P.M. Peak Period Total Travel Time Between I-635 and CBD: Garland

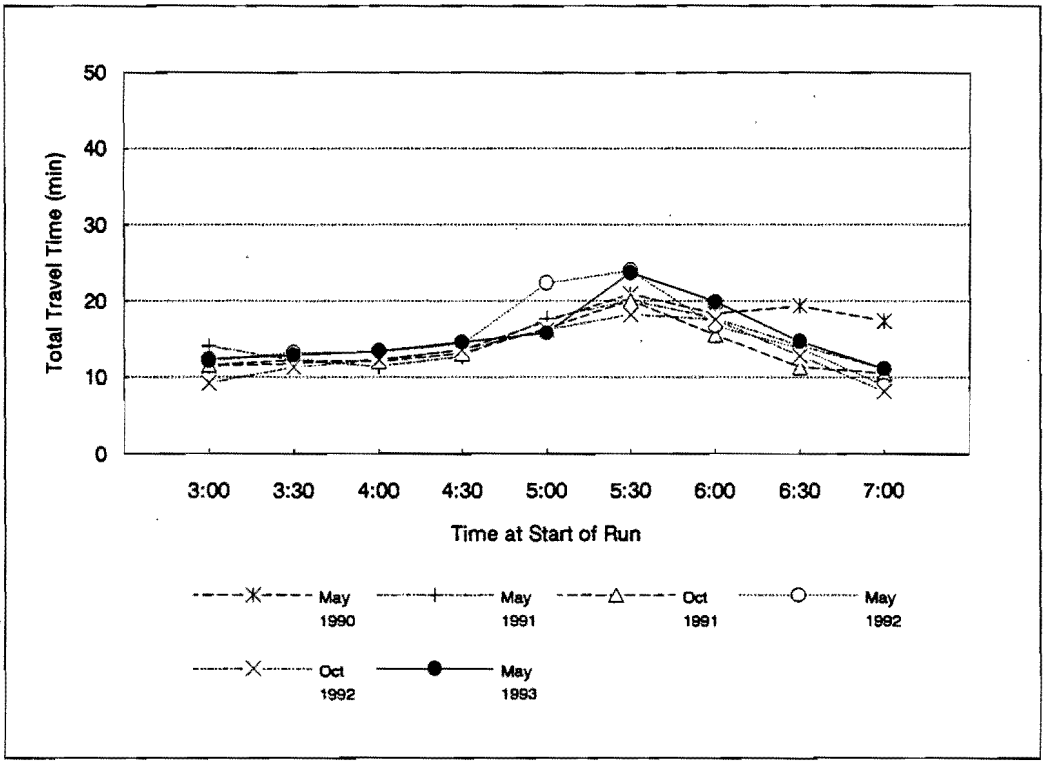


(a) Eastbound

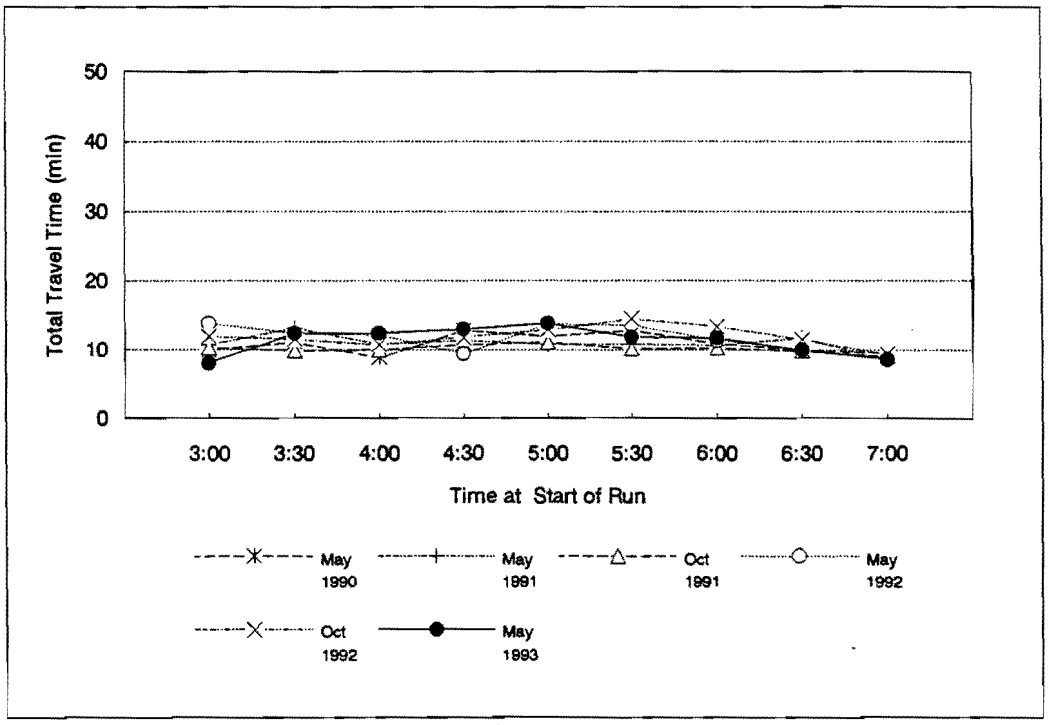


(b) Westbound

Figure K-20. A.M. Peak Period Total Travel Time Between Midway and Abrams: Loop 12

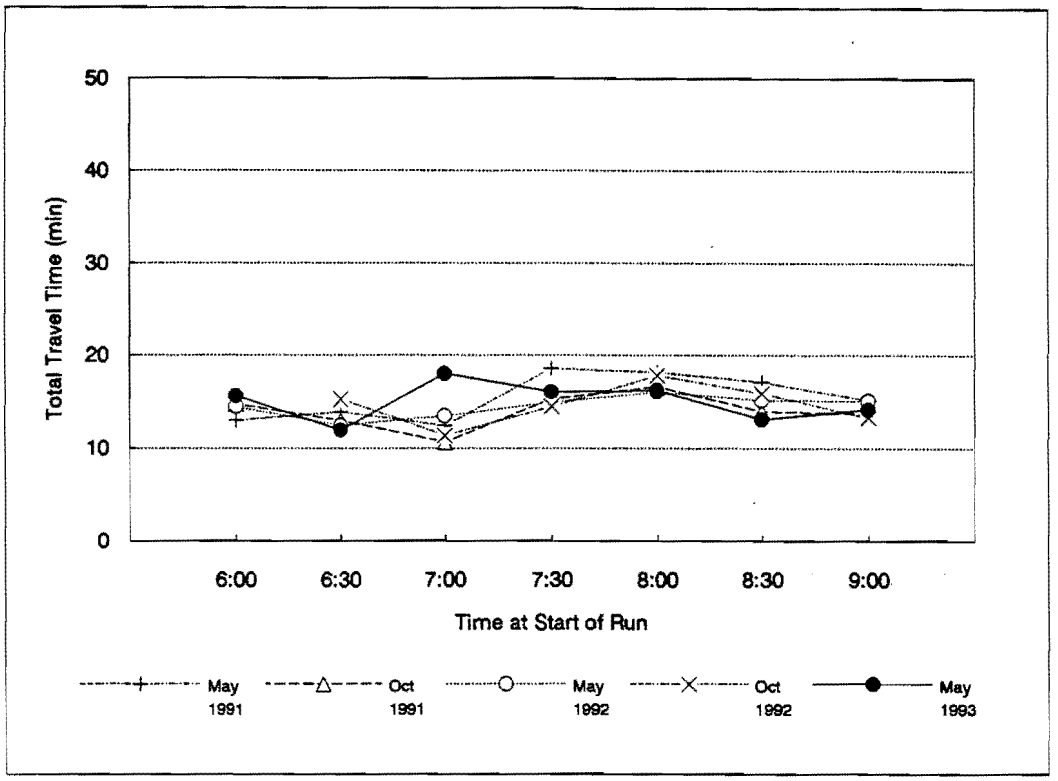


(a) Eastbound

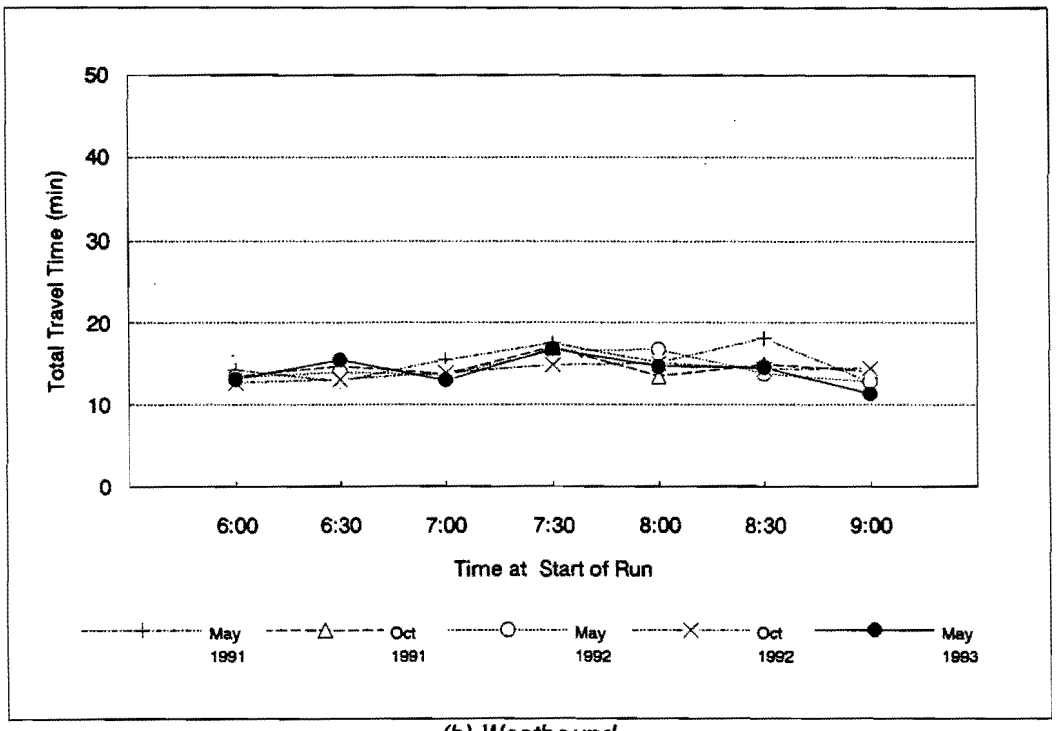


(b) Westbound

Figure K-21. P.M. Peak Period Total Travel Time Between Midway and Abrams: Loop 12

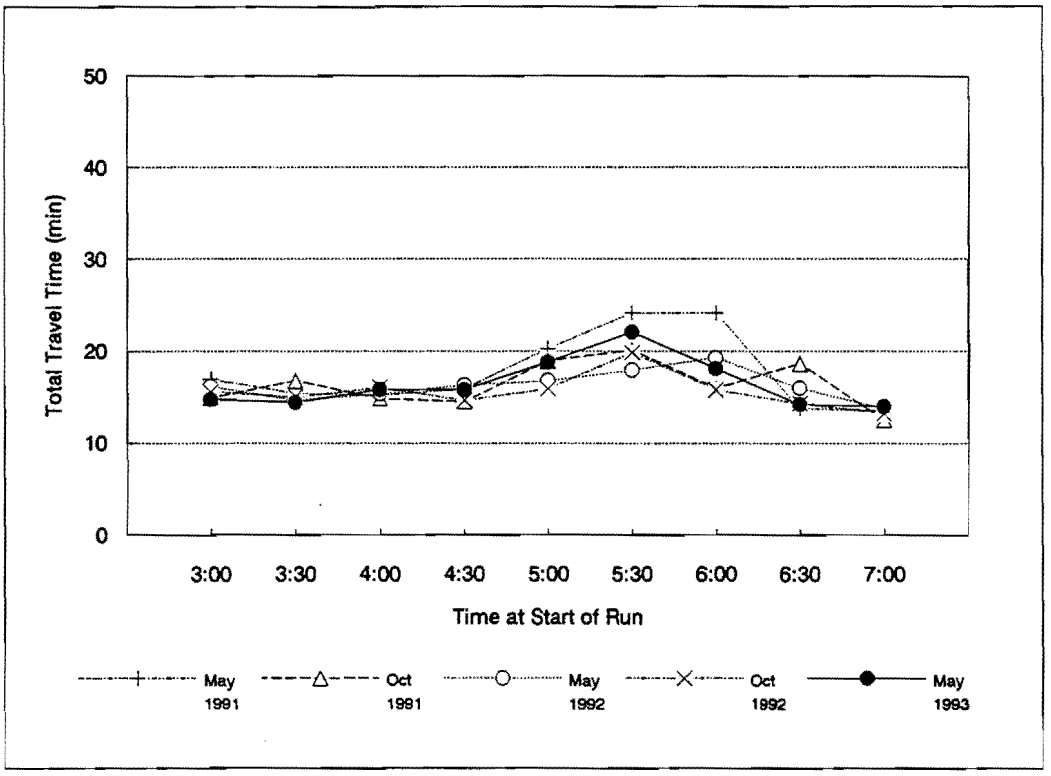


(a) Eastbound

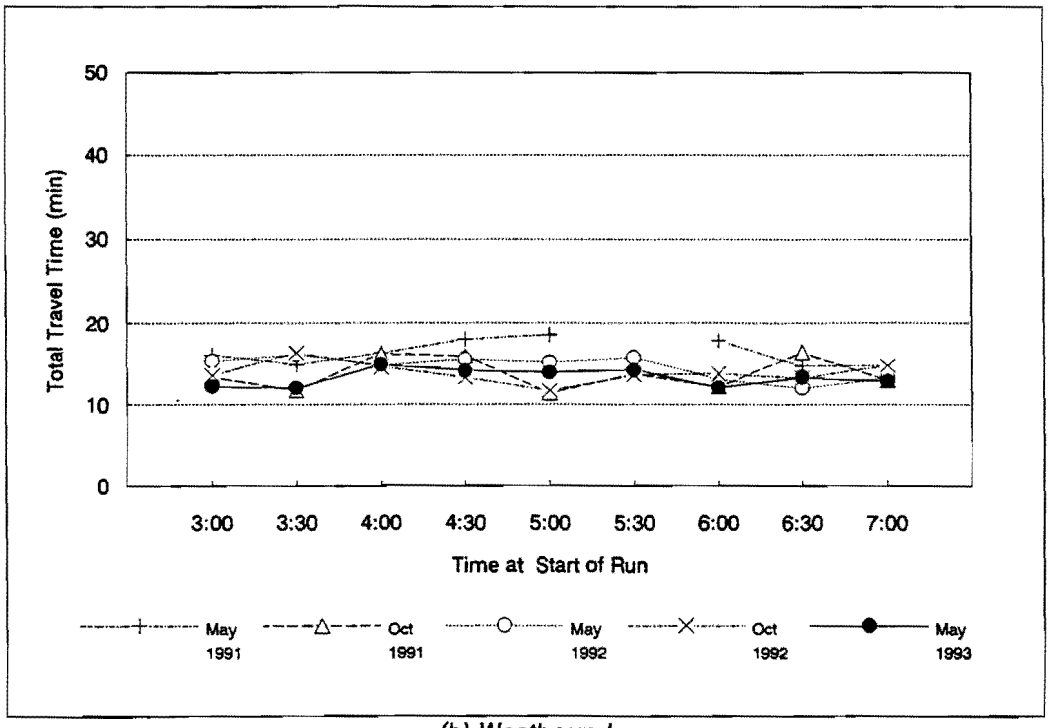


(b) Westbound

Figure K-22. A.M. Peak Period Total Travel Time Between Midway and Skillman: Royal

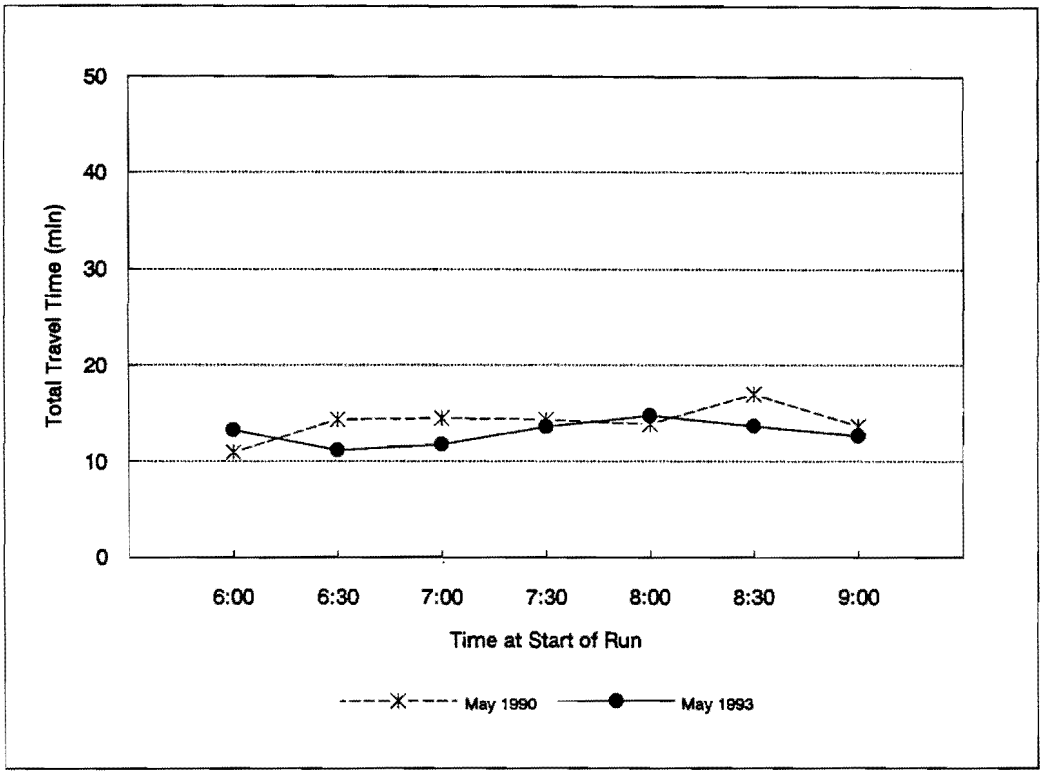


(a) Eastbound

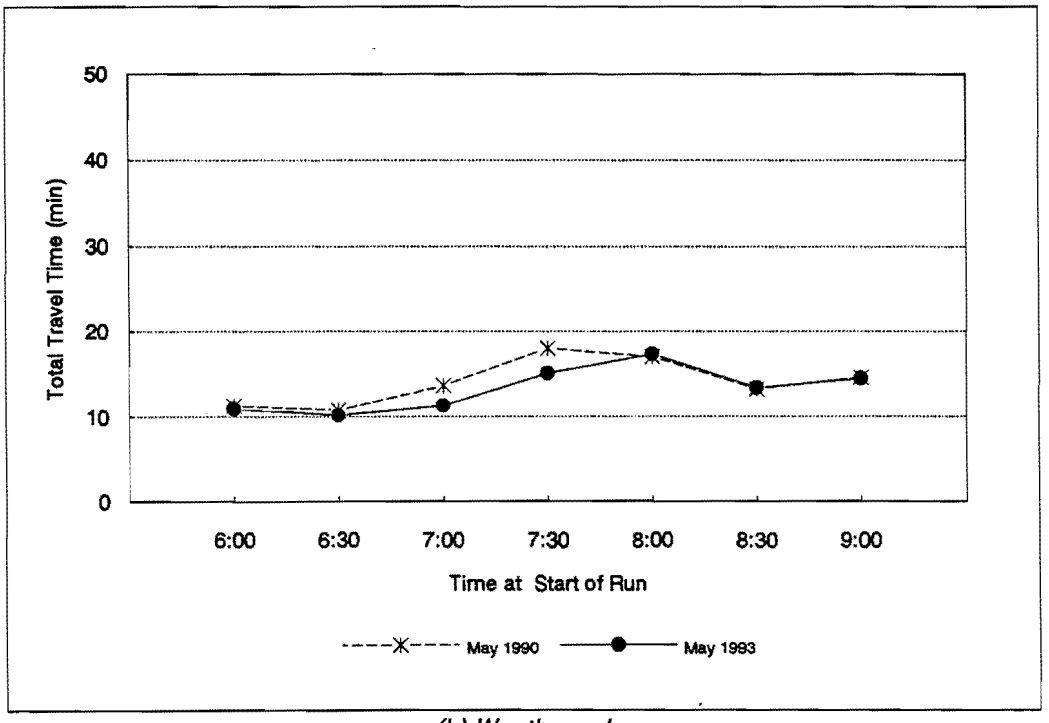


(b) Westbound

Figure K-23. P.M. Peak Period Total Travel Time Between Midway and Skillman: Royal

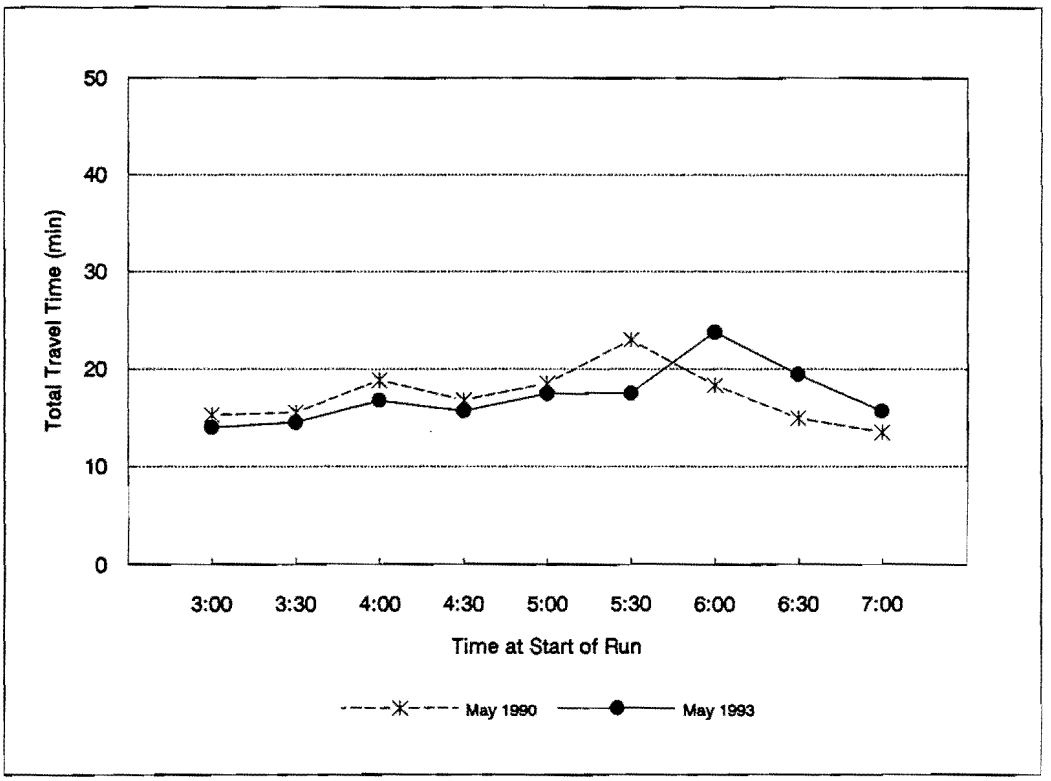


(a) Eastbound

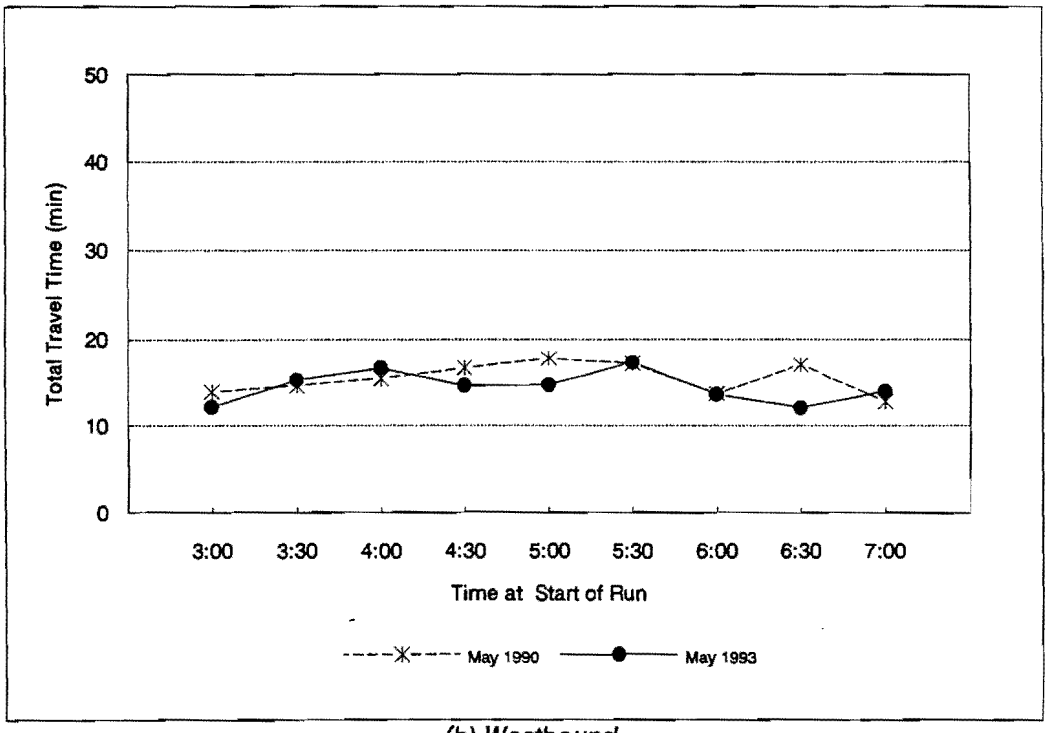


(b) Westbound

Figure K-24. A.M. Peak Period Total Travel Time Between Lemmon and Abrams: Mockingbird



(a) Eastbound

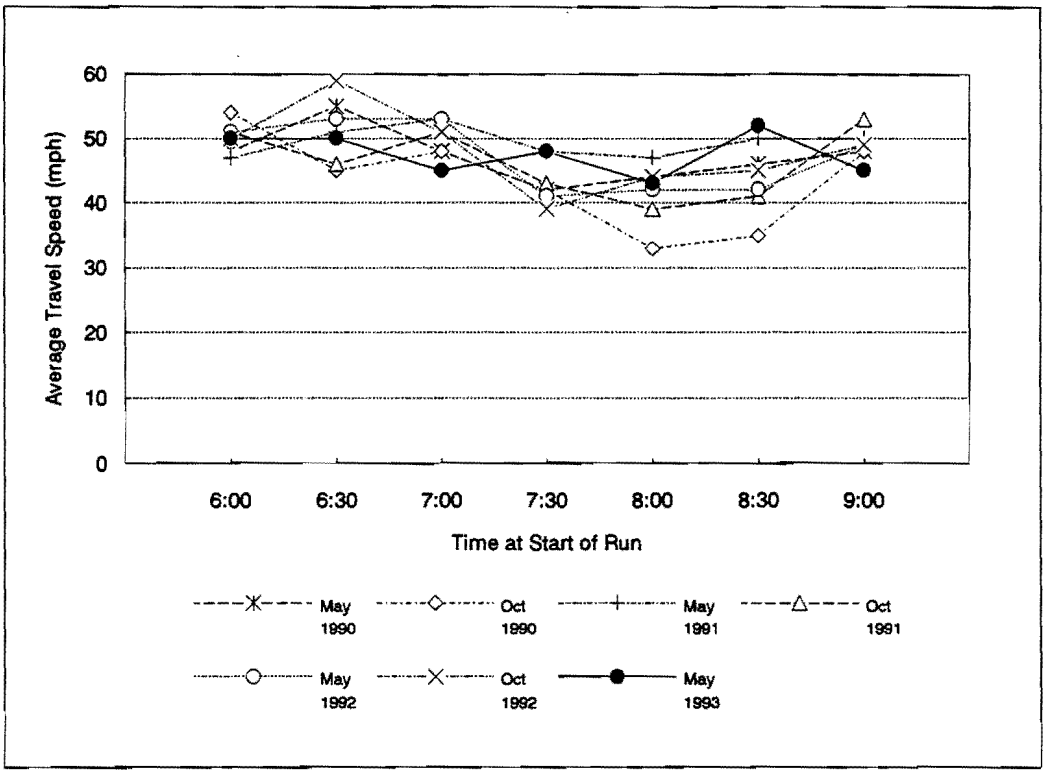


(b) Westbound

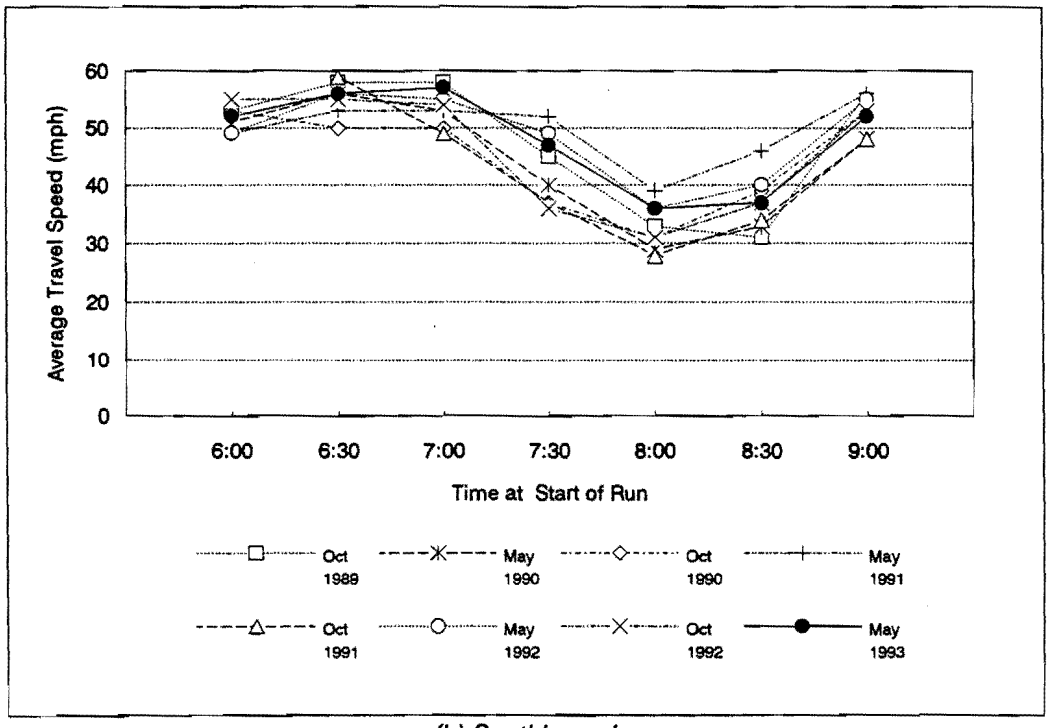
Figure K-25. P.M. Peak Period Total Travel Time Between Lemmon and Abrams: Mockingbird

APPENDIX L

AVERAGE TRAVEL SPEED PLOTS

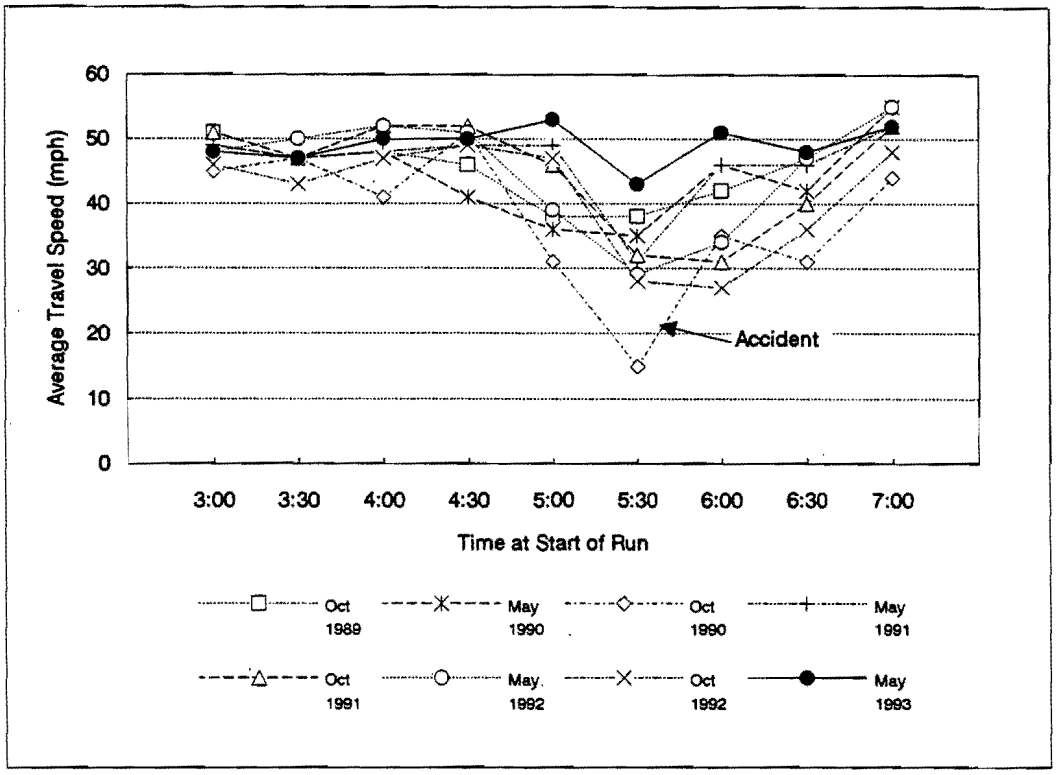


(a) Northbound

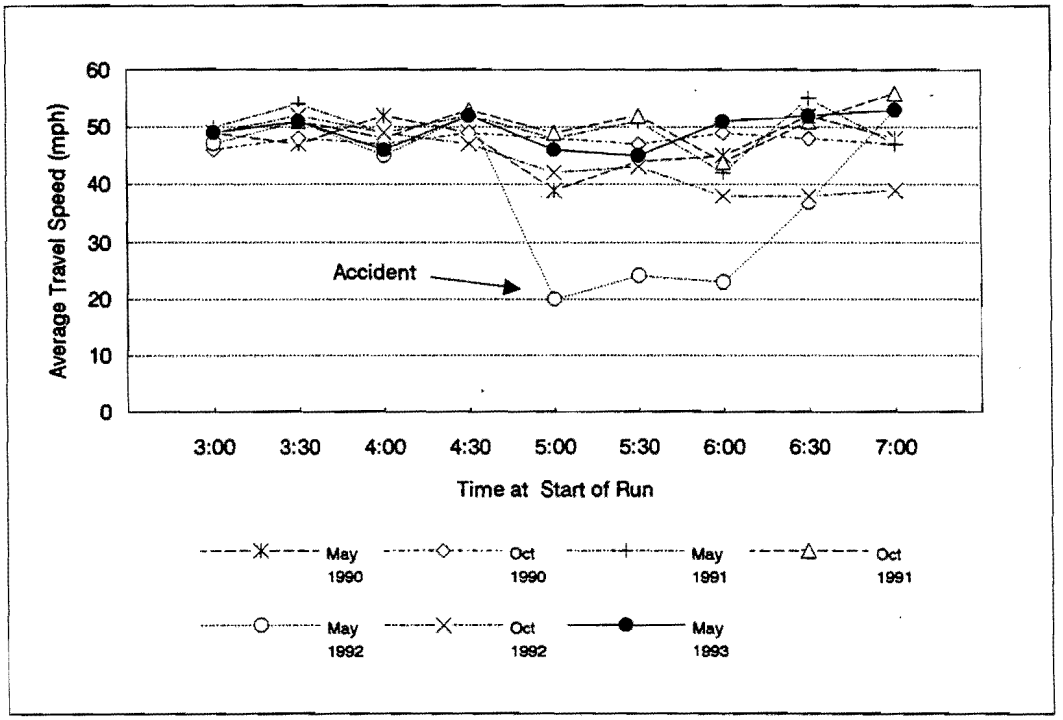


(b) Southbound

Figure L-1. A.M. Peak Period Average Travel Speed Between I-635 and CBD: DNT

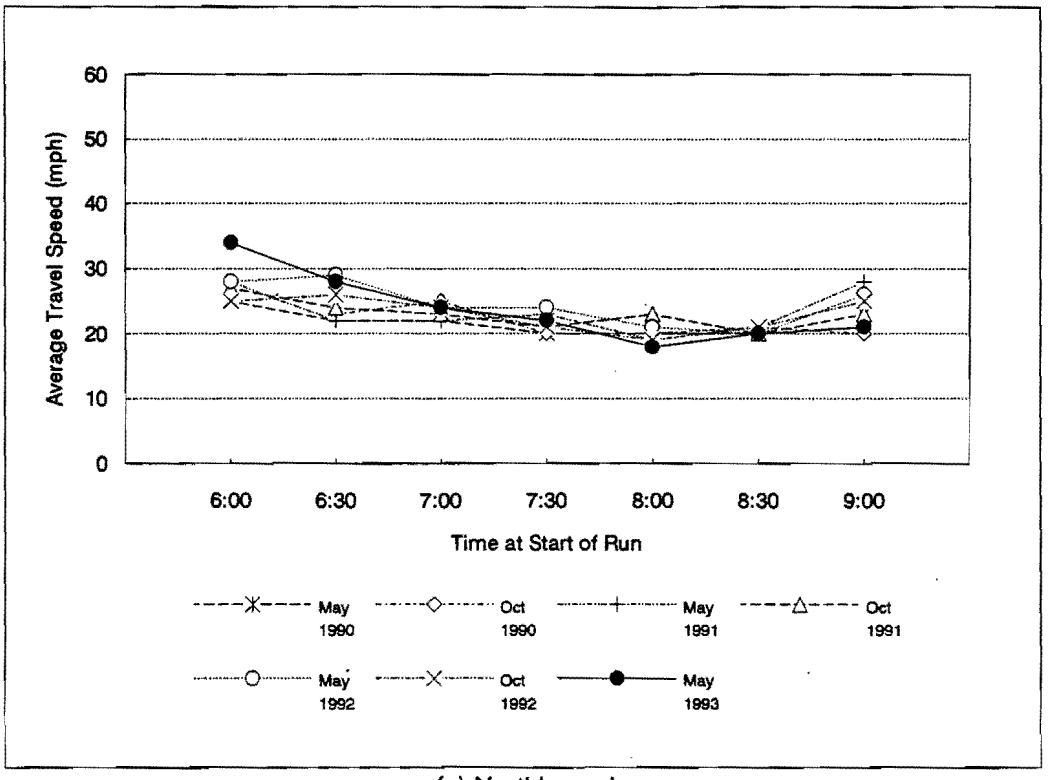


(a) Northbound

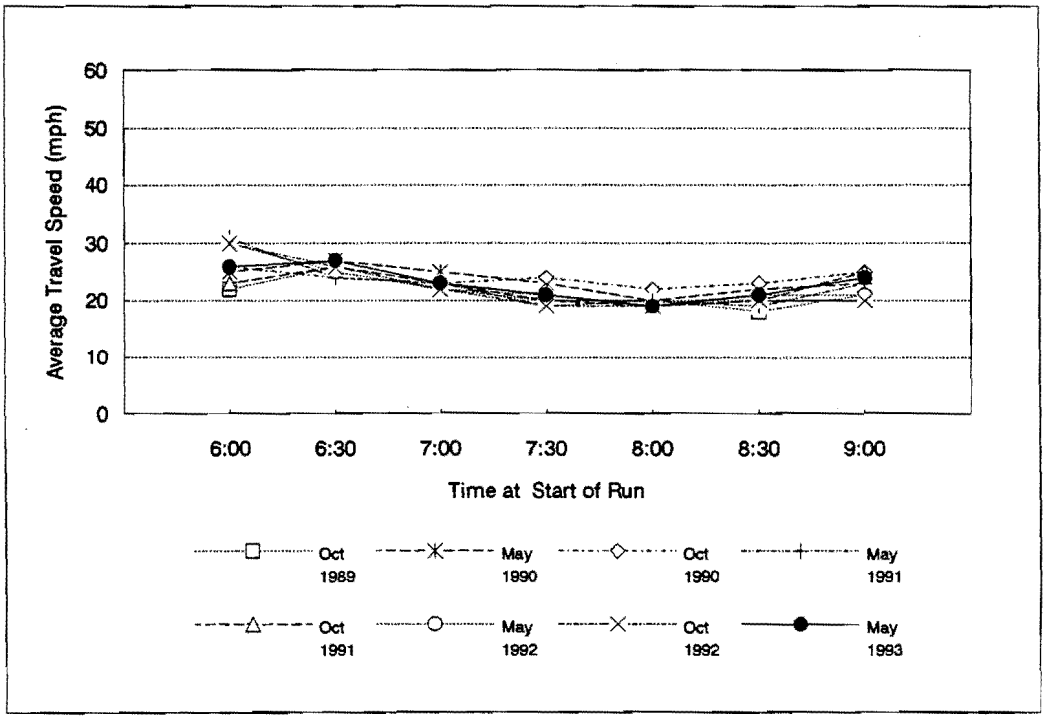


(b) Southbound

Figure L-2. P.M. Peak Period Average Travel Speed Between I-635 and CBD: DNT

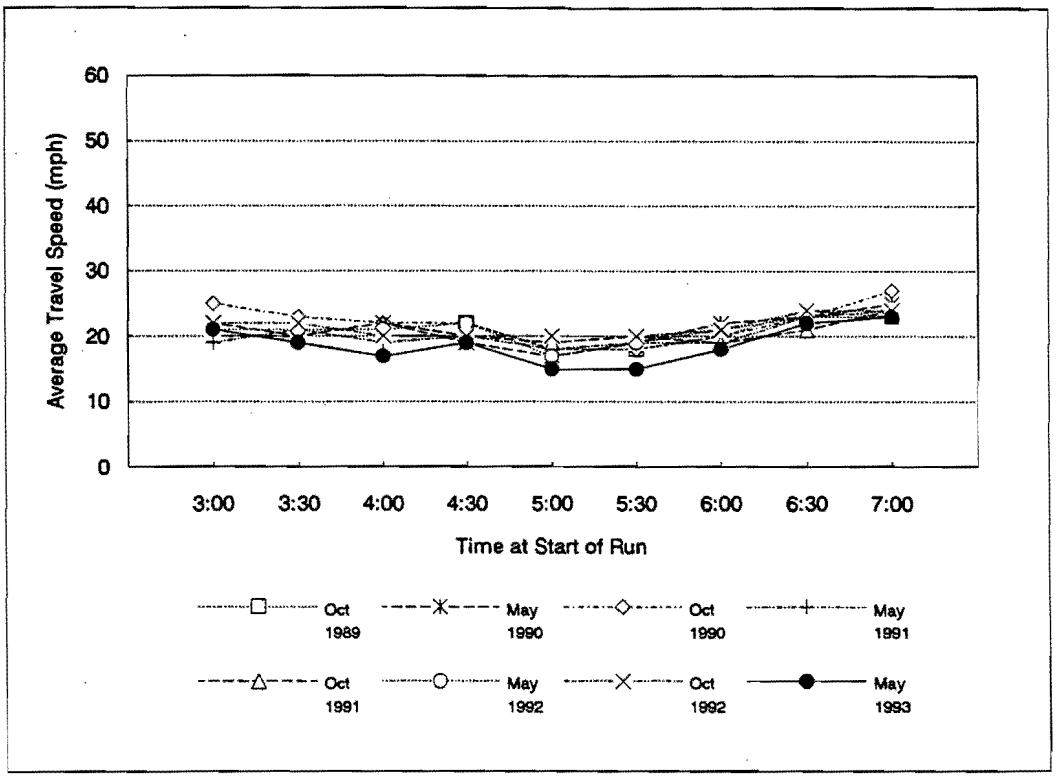


(a) Northbound

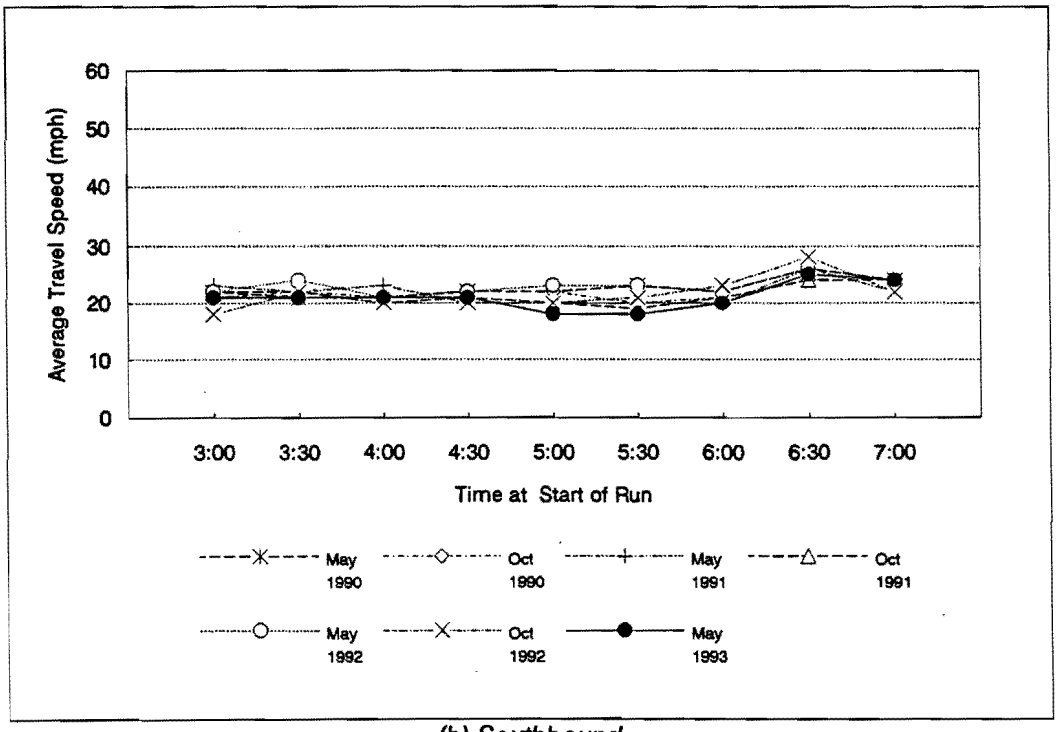


(b) Southbound

Figure L-3. A.M. Peak Period Average Travel Speed Between I-635 and CBD: Preston

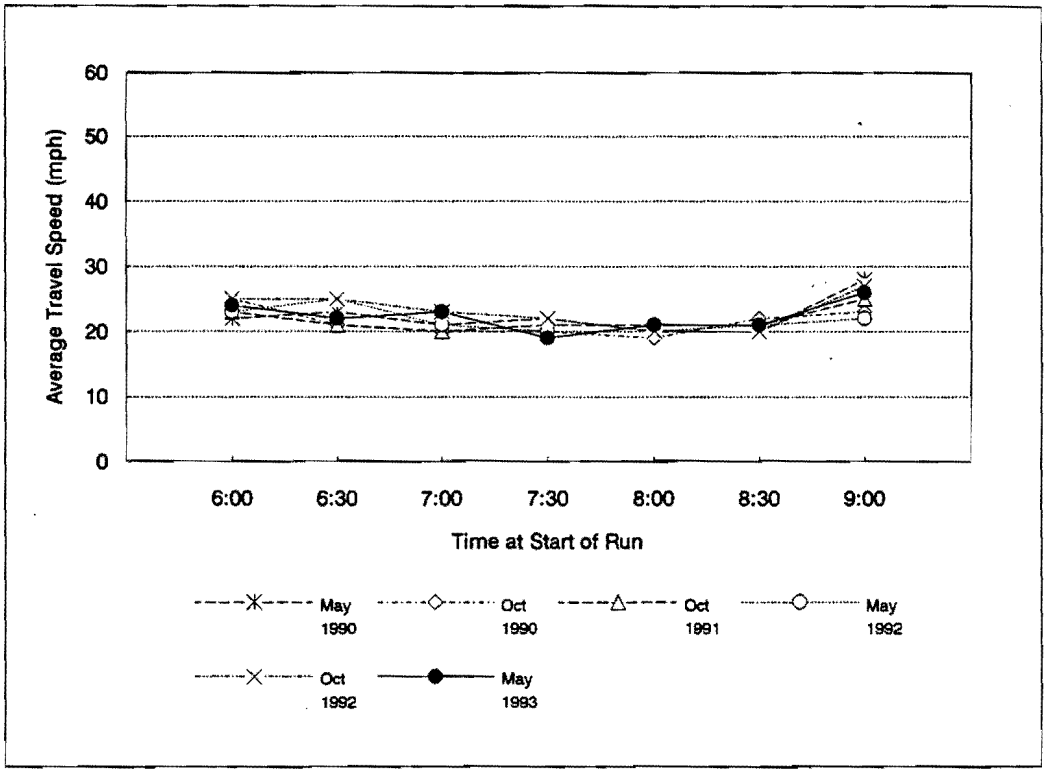


(a) Northbound

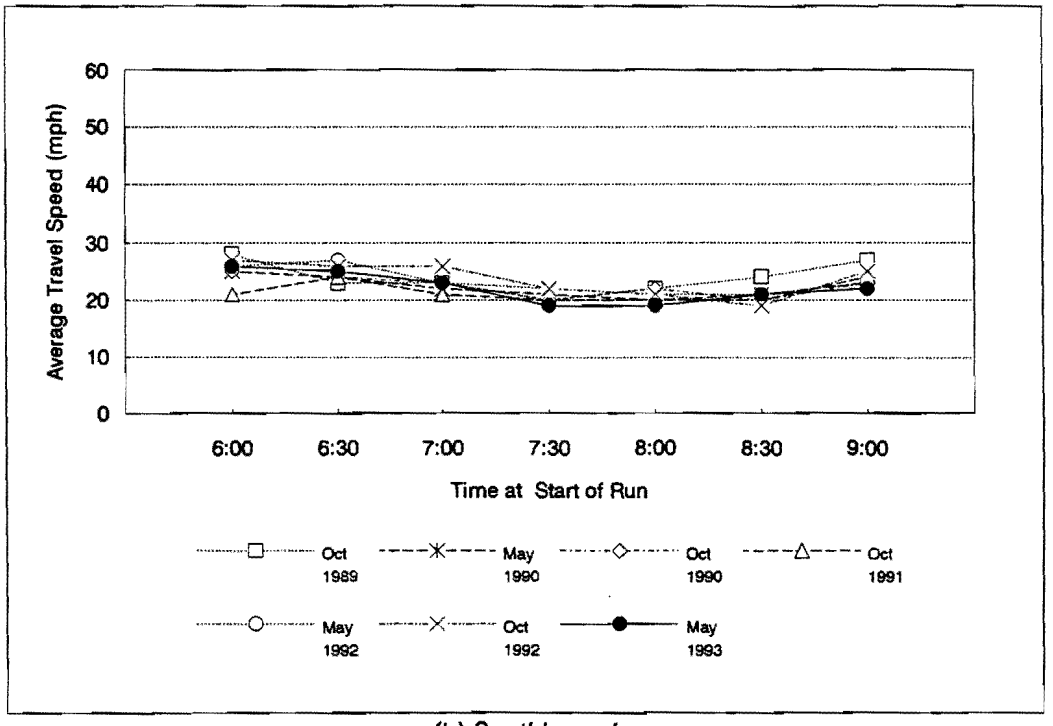


(b) Southbound

Figure L-4. P.M. Peak Period Average Travel Speed Between I-635 and CBD: Preston

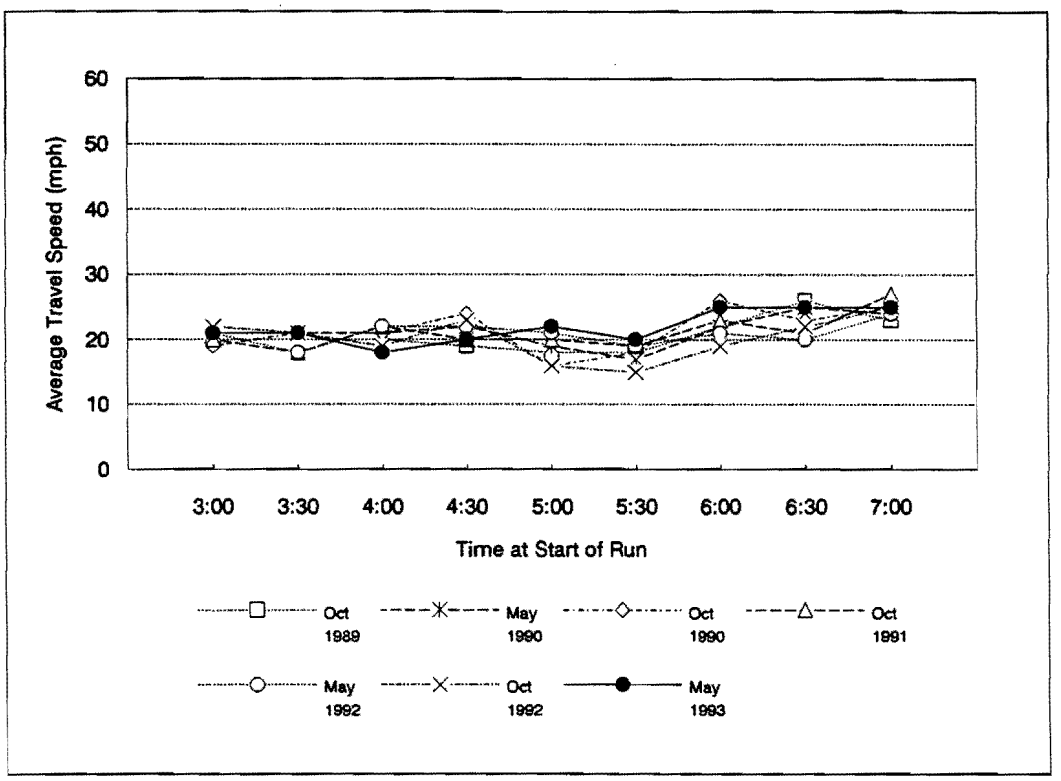


(a) Northbound

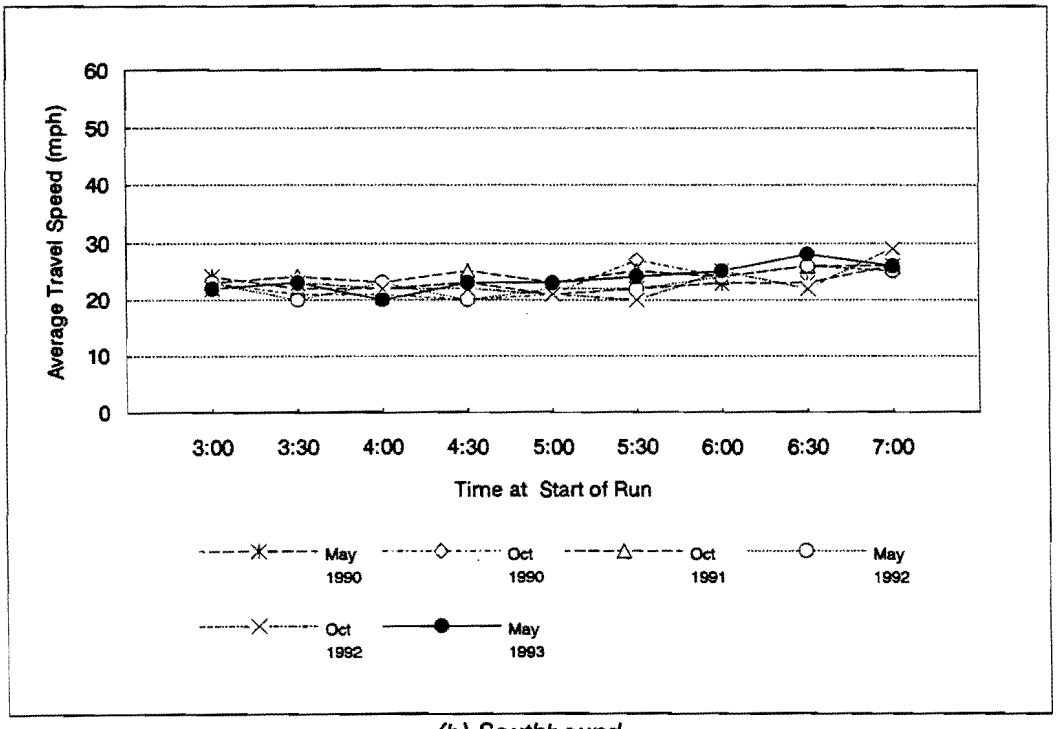


(b) Southbound

Figure L-5. A.M. Peak Period Average Travel Speed Between I-635 and CBD: Hillcrest

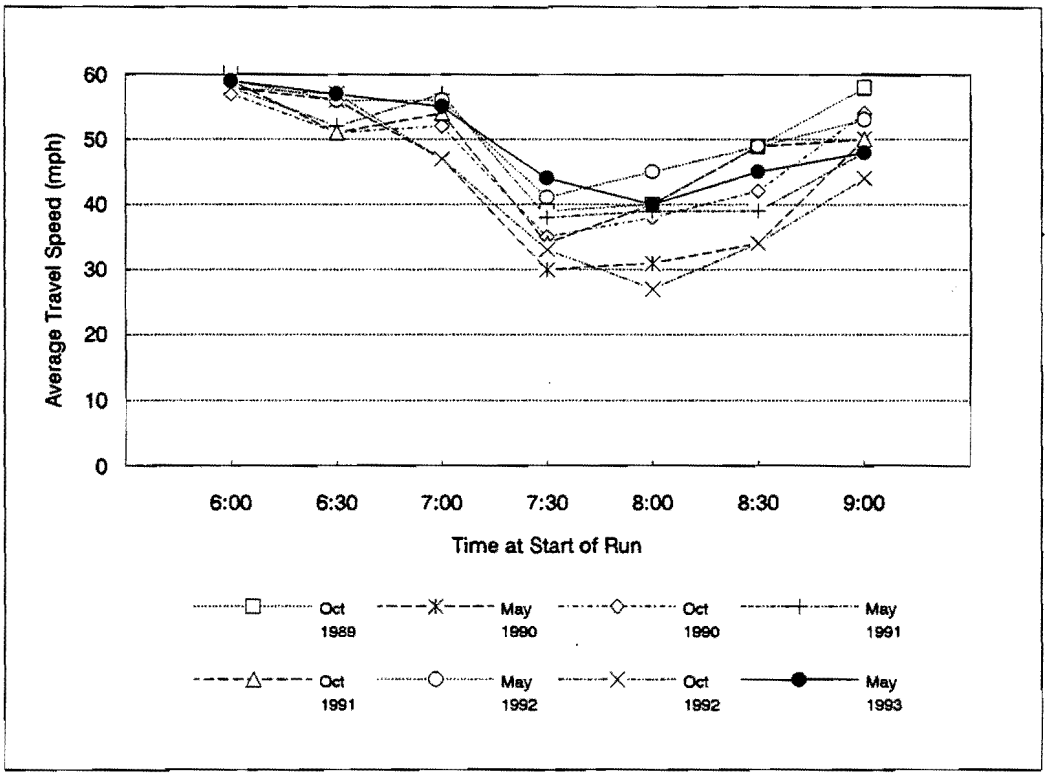


(a) Northbound

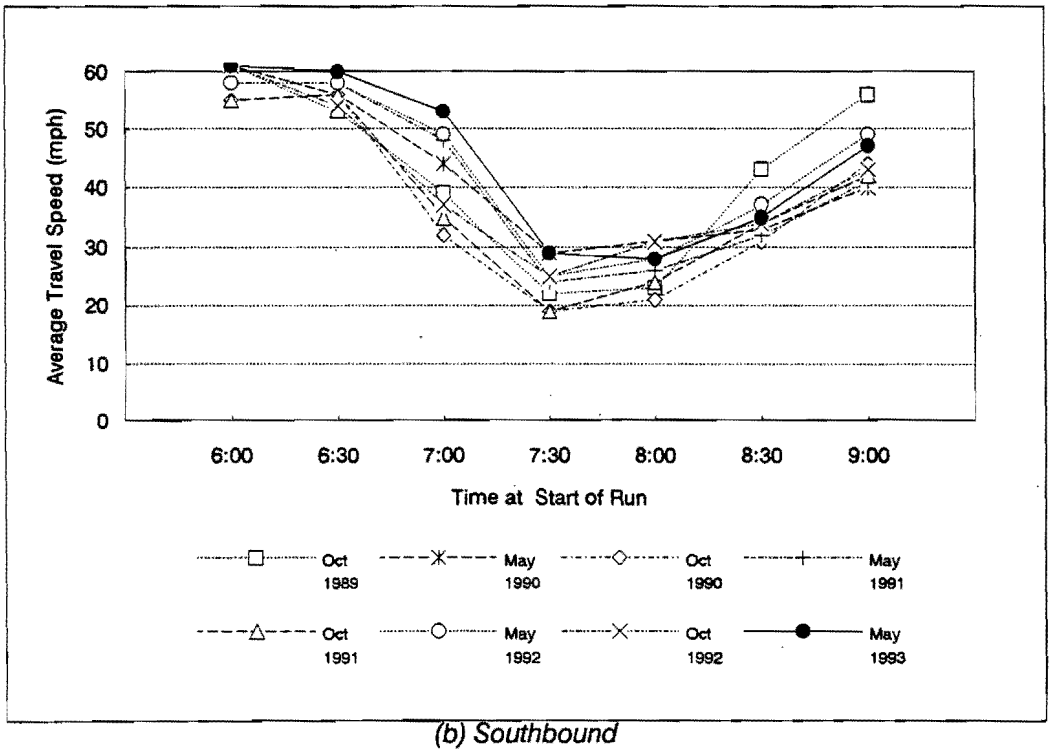


(b) Southbound

Figure L-6. P.M. Peak Period Average Travel Speed Between I-635 and CBD: Hillcrest

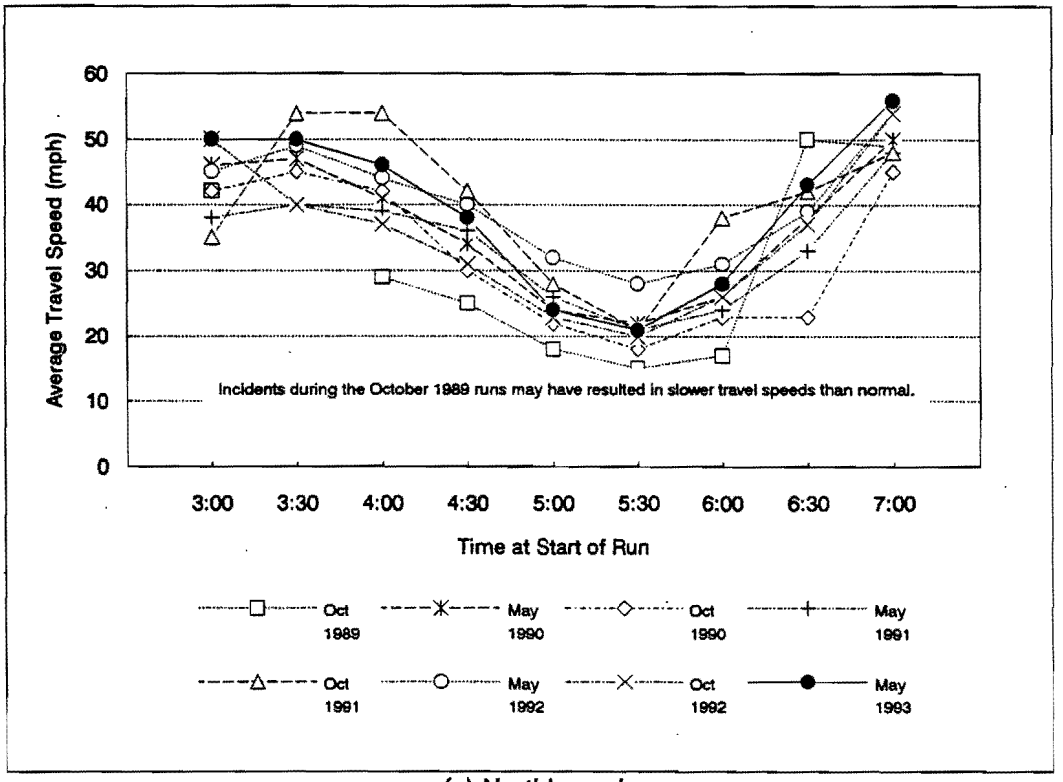


(a) Northbound

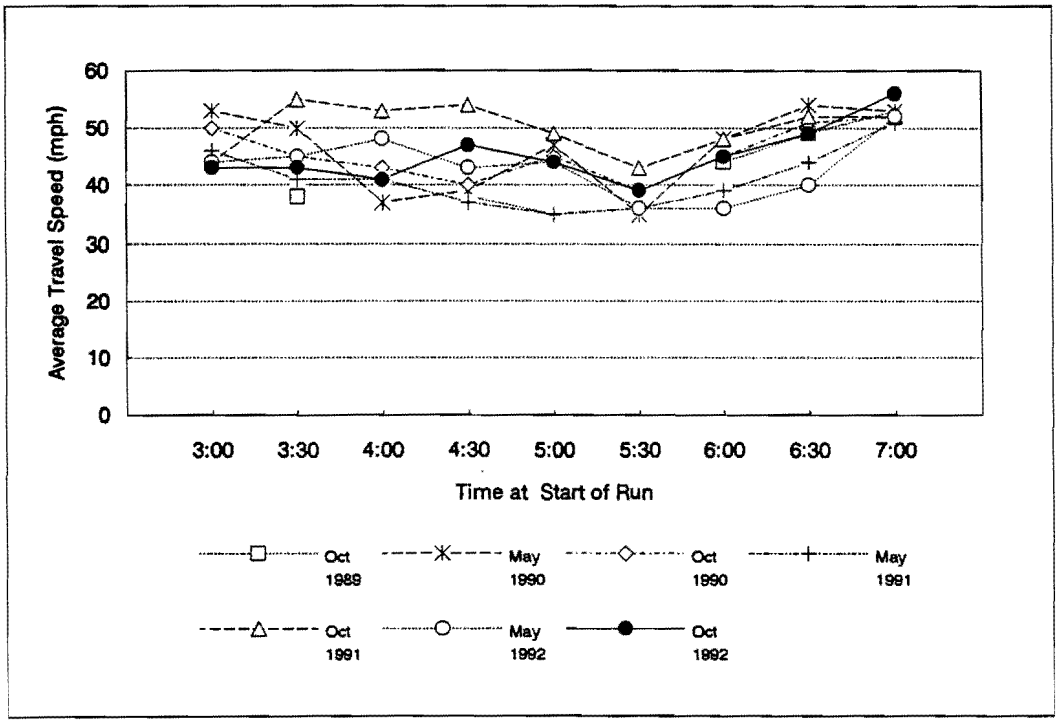


(b) Southbound

Figure L-7. A.M. Peak Period Average Travel Speed Between I-635 and CBD: US-75

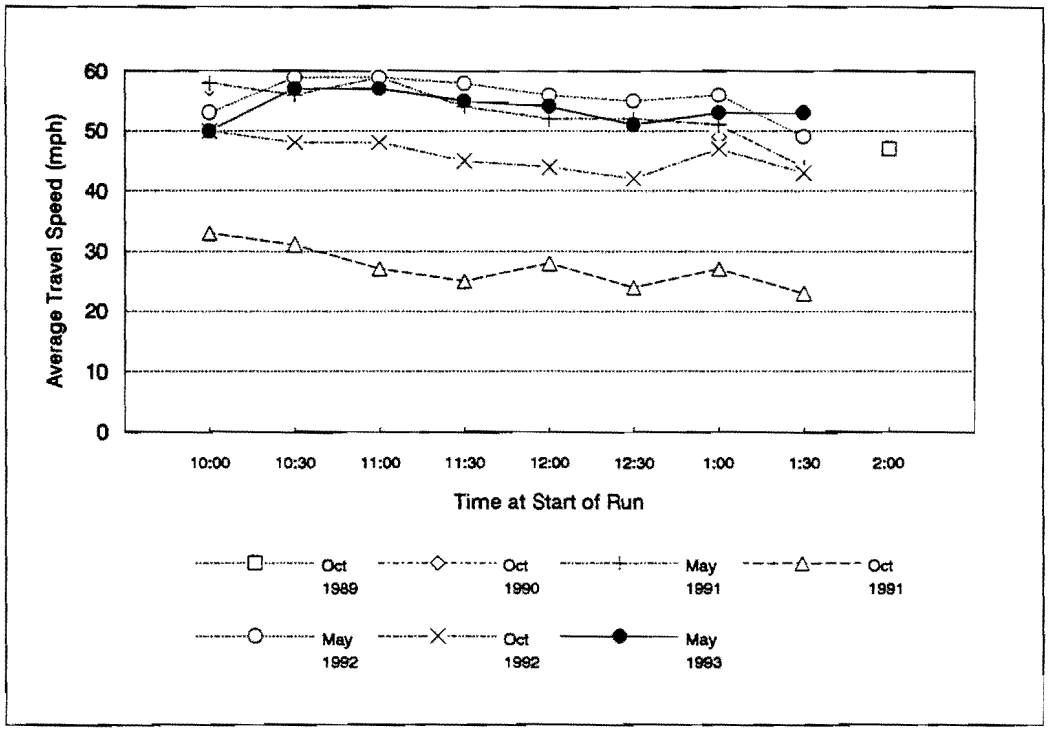


(a) Northbound

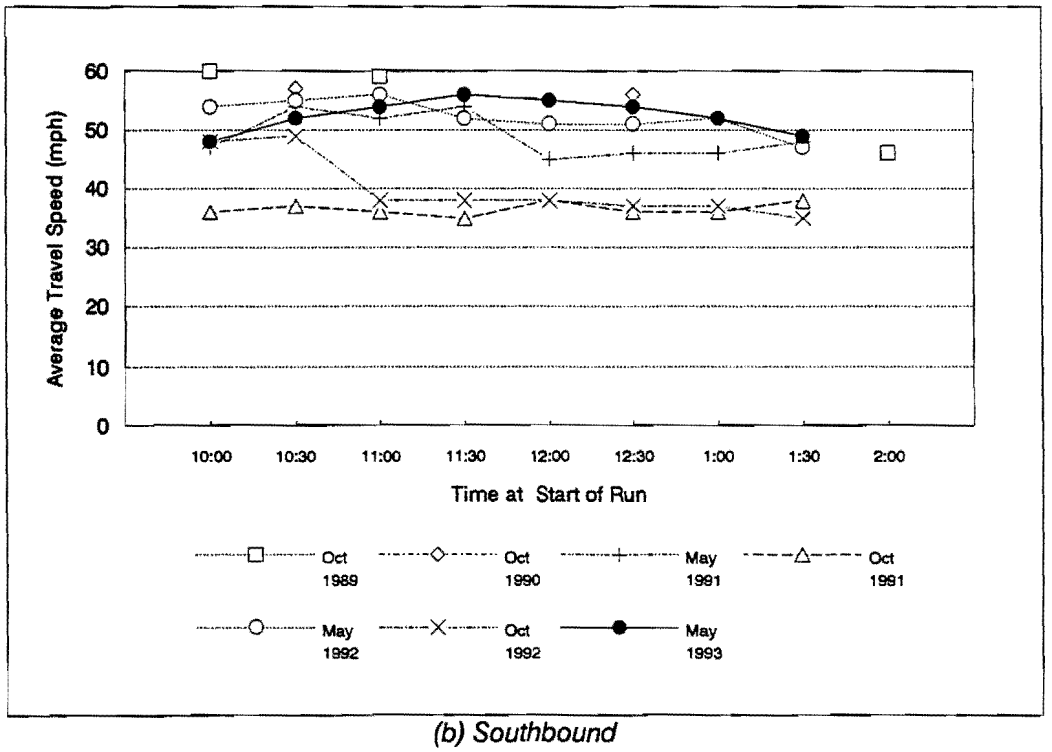


(b) Southbound

Figure L-8. P.M. Peak Period Average Travel Speed Between I-635 and CBD: US-75

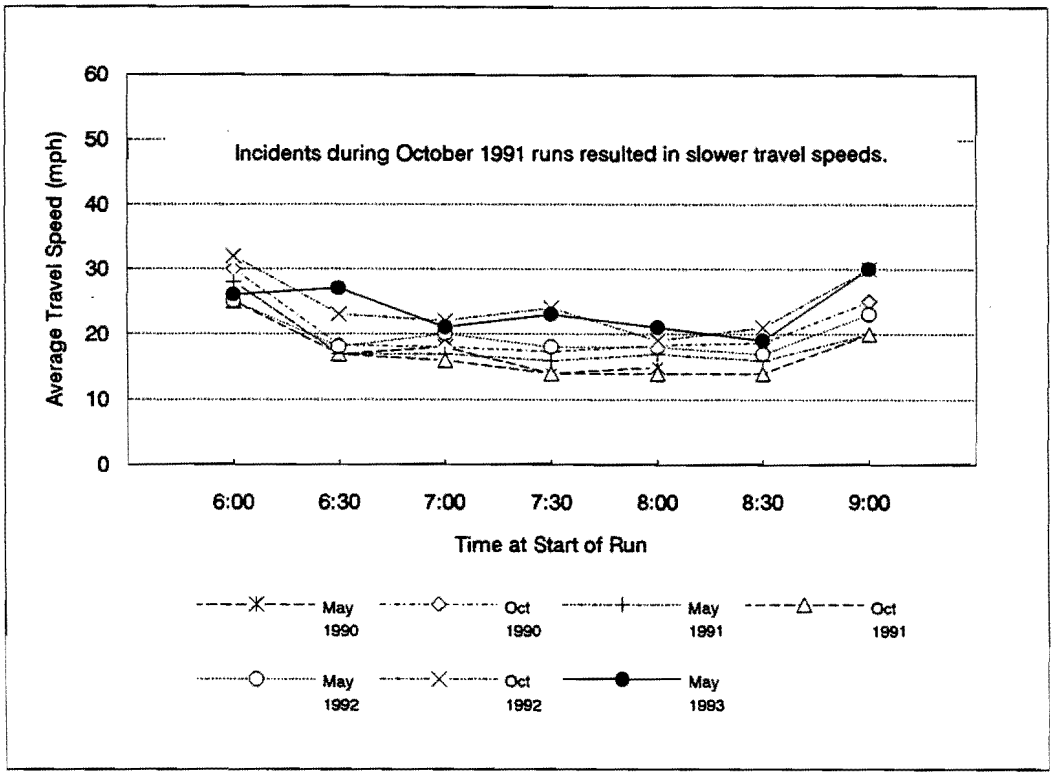


(a) Northbound

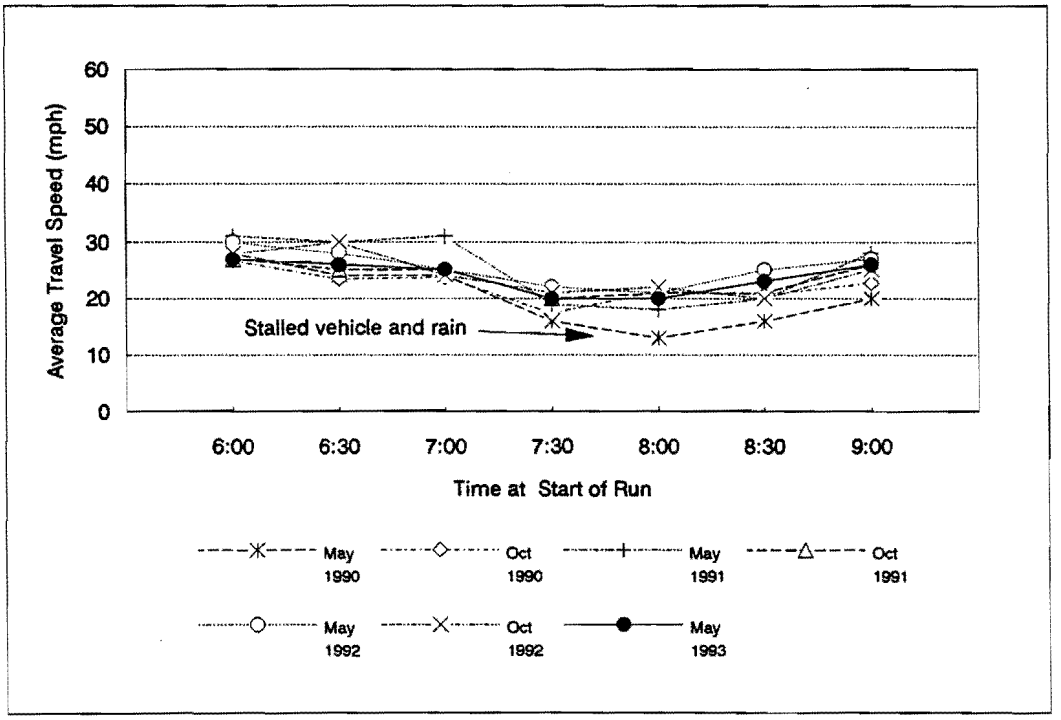


(b) Southbound

Figure L-9. Off-Peak Period Average Travel Speed Between I-635 and CBD: US-75

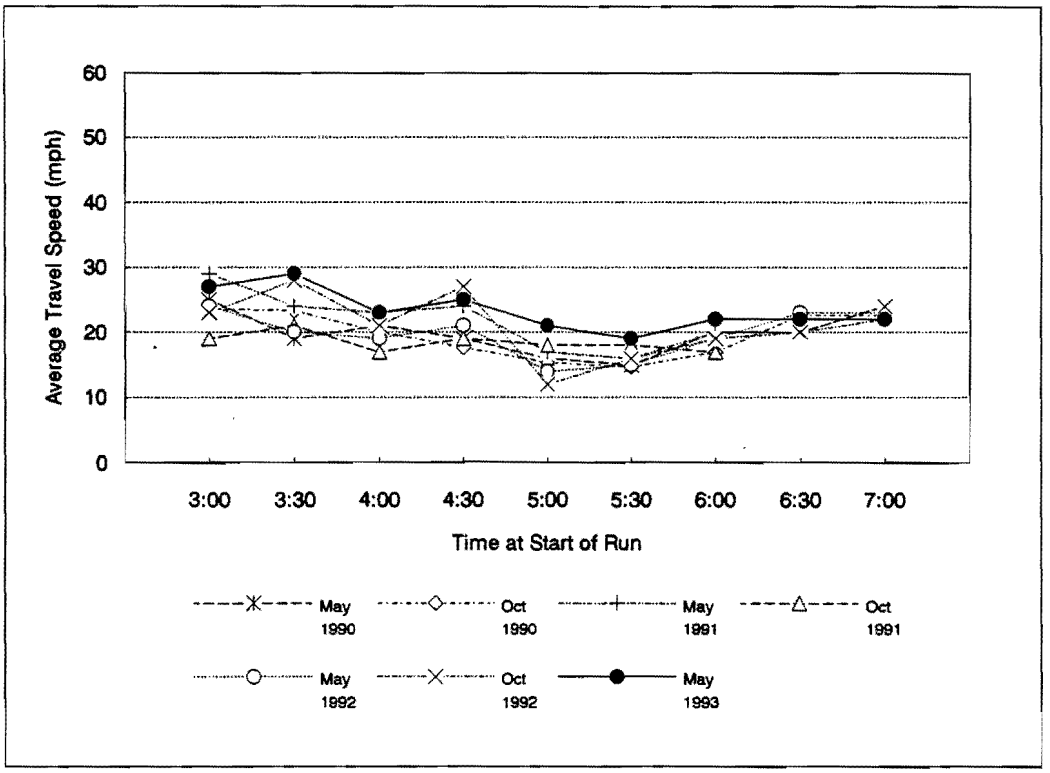


(a) Northbound

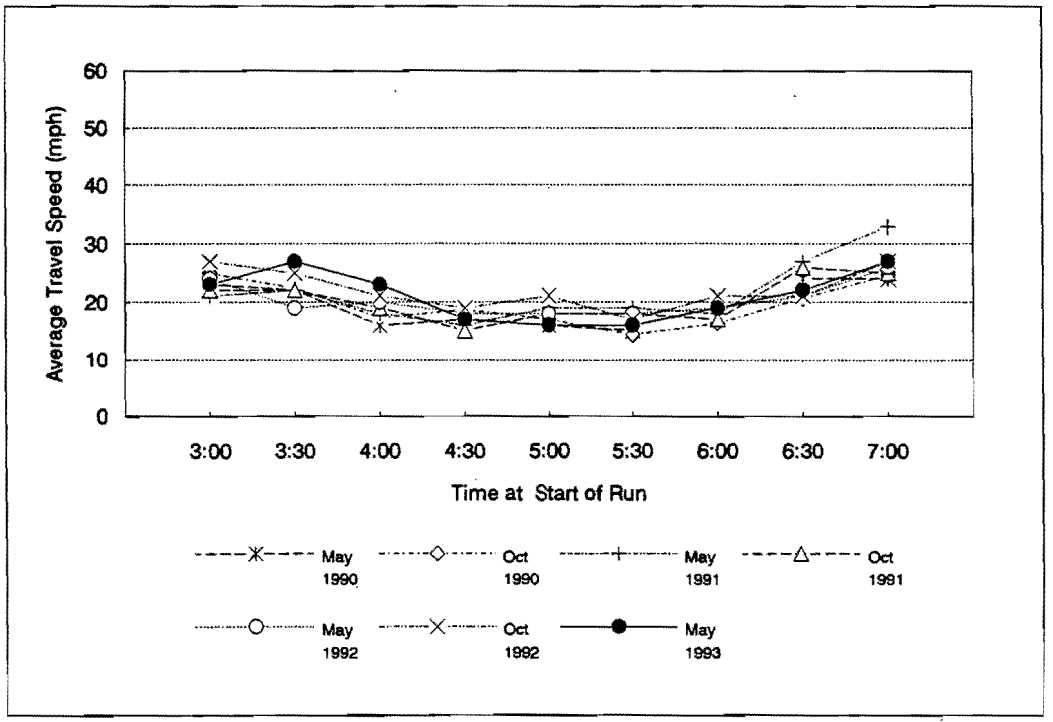


(b) Southbound

Figure L-10. A.M. Peak Period Average Travel Speed Between I-635 and CBD: US-75 Frontage Road

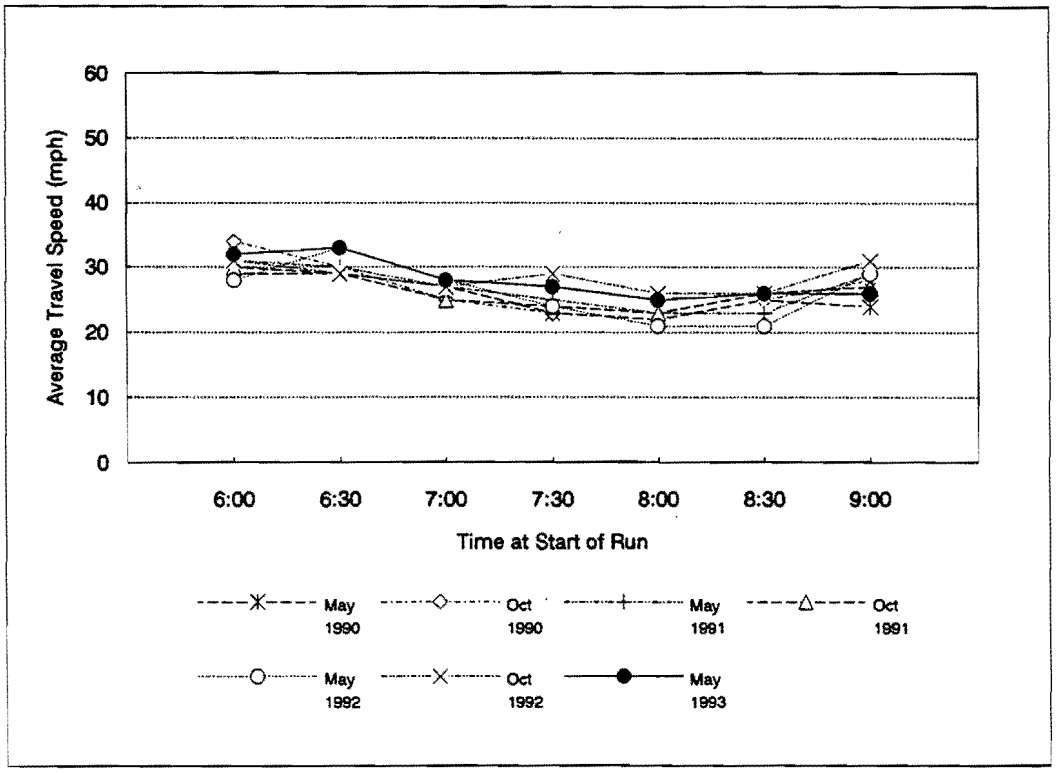


(a) Northbound

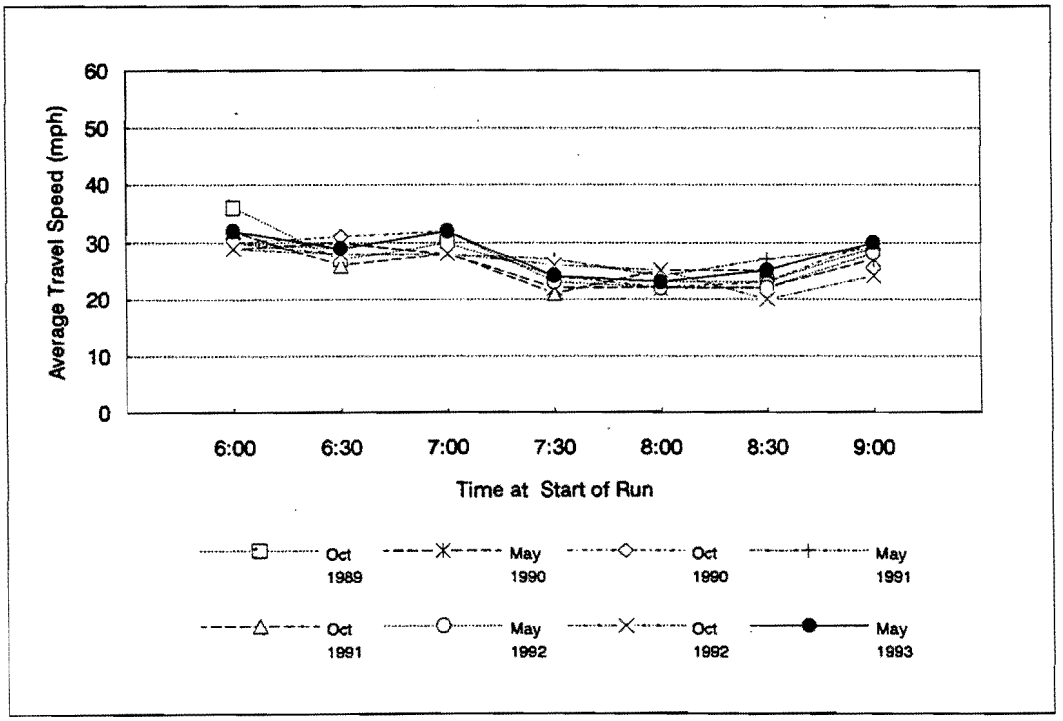


(b) Southbound

Figure L-11. P.M. Peak Period Average Travel Speed Between I-635 and CBD: US-75 Frontage Road

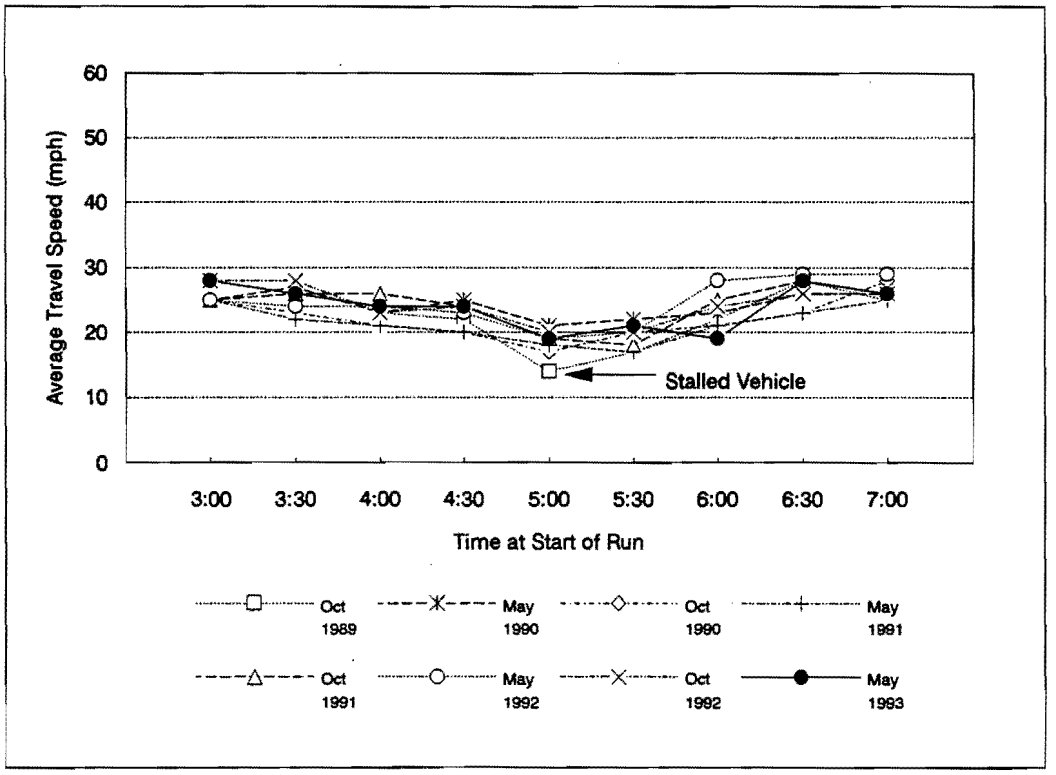


(a) Northbound

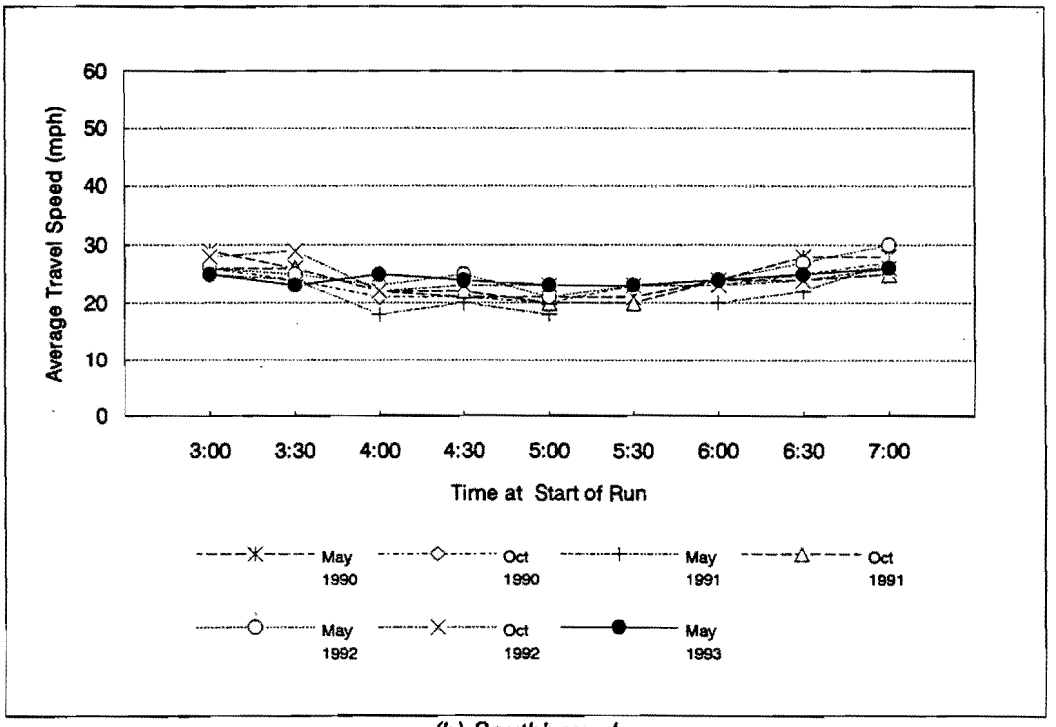


(b) Southbound

Figure L-12. A.M. Peak Period Average Travel Speed Between I-635 and CBD: Greenville

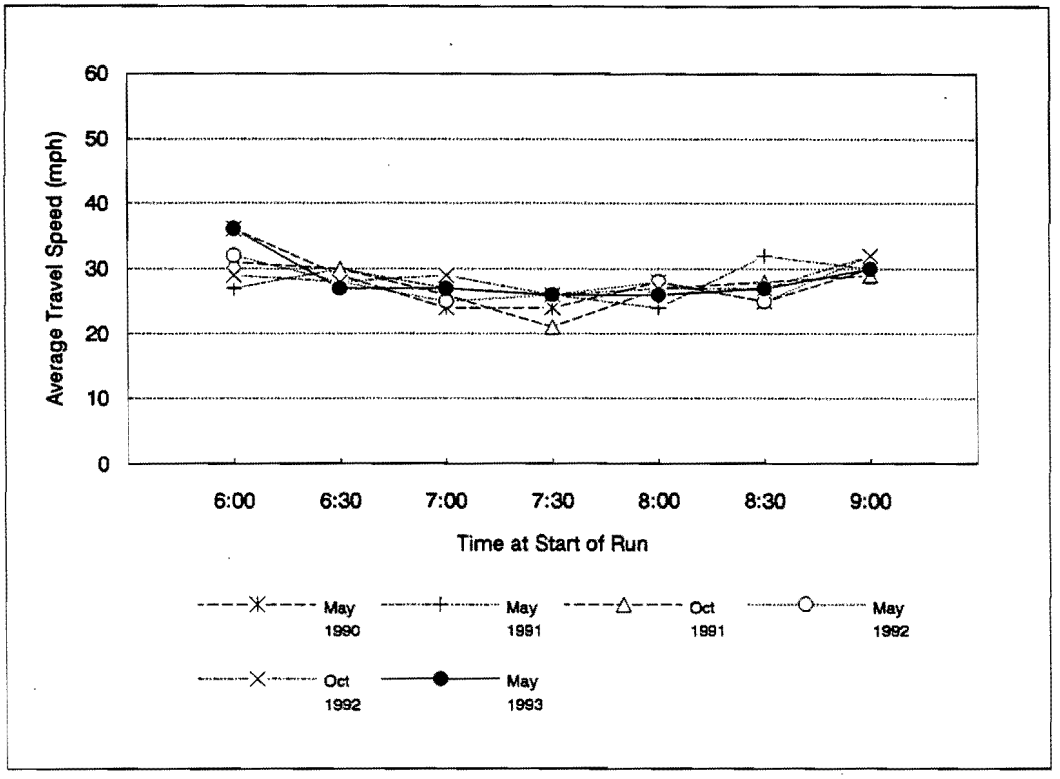


(a) Northbound

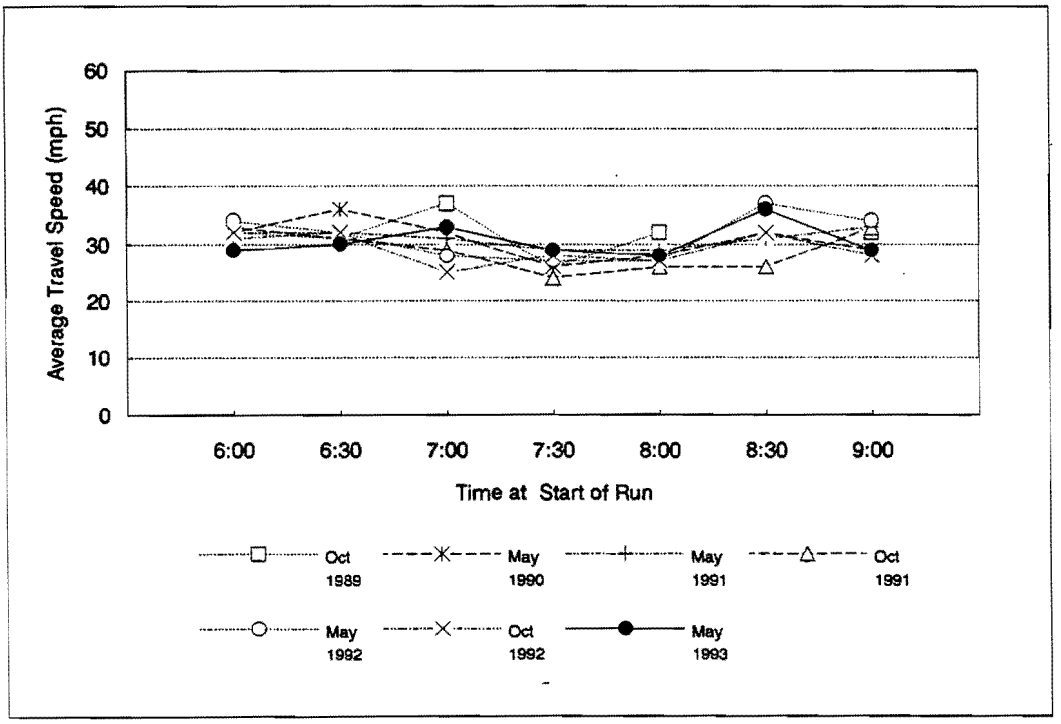


(b) Southbound

Figure L-13. P.M. Peak Period Average Travel Speed Between I-635 and CBD: Greenville

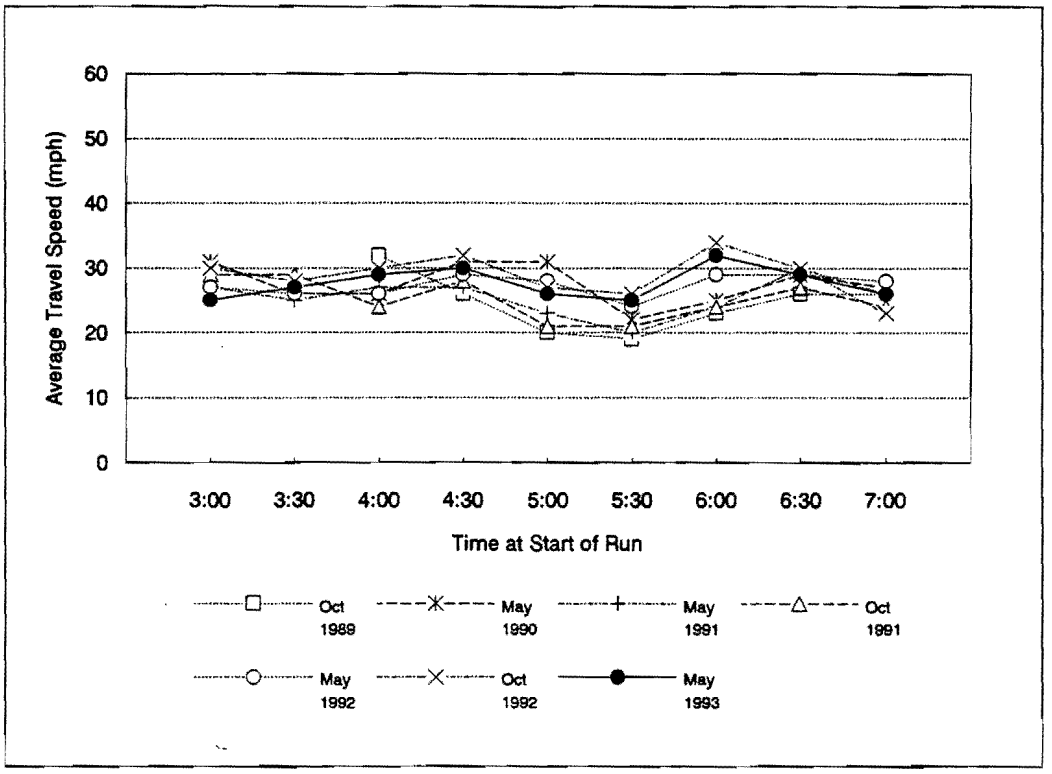


(a) Northbound

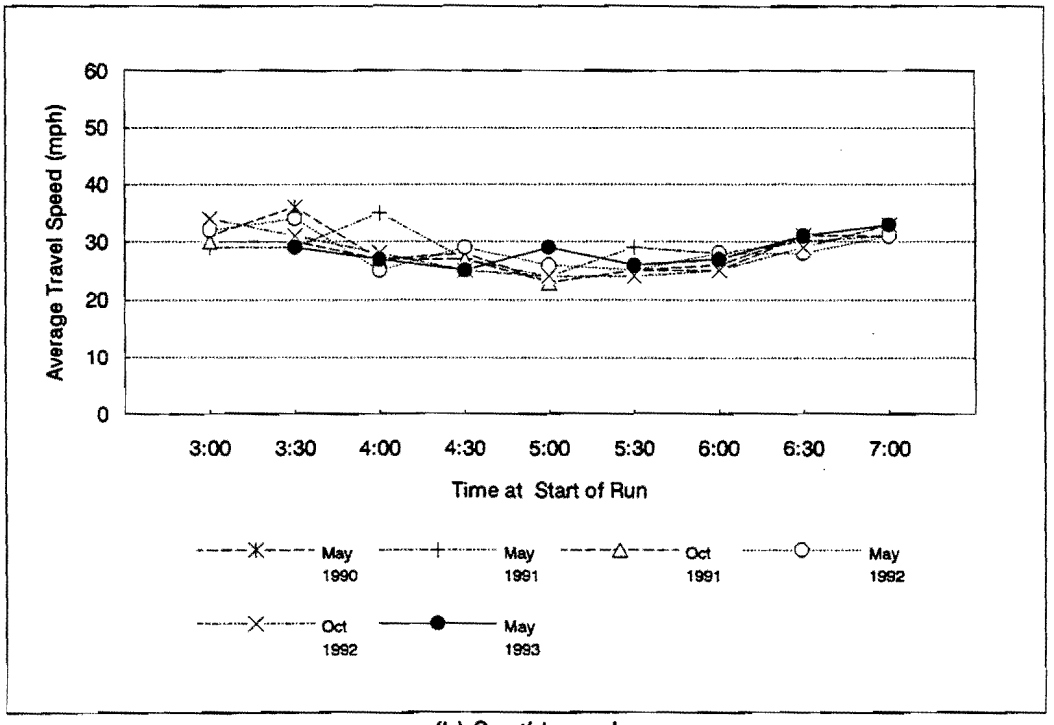


(b) Southbound

Figure L-14. A.M. Peak Period Average Travel Speed Between I-635 and CBD: Skillman

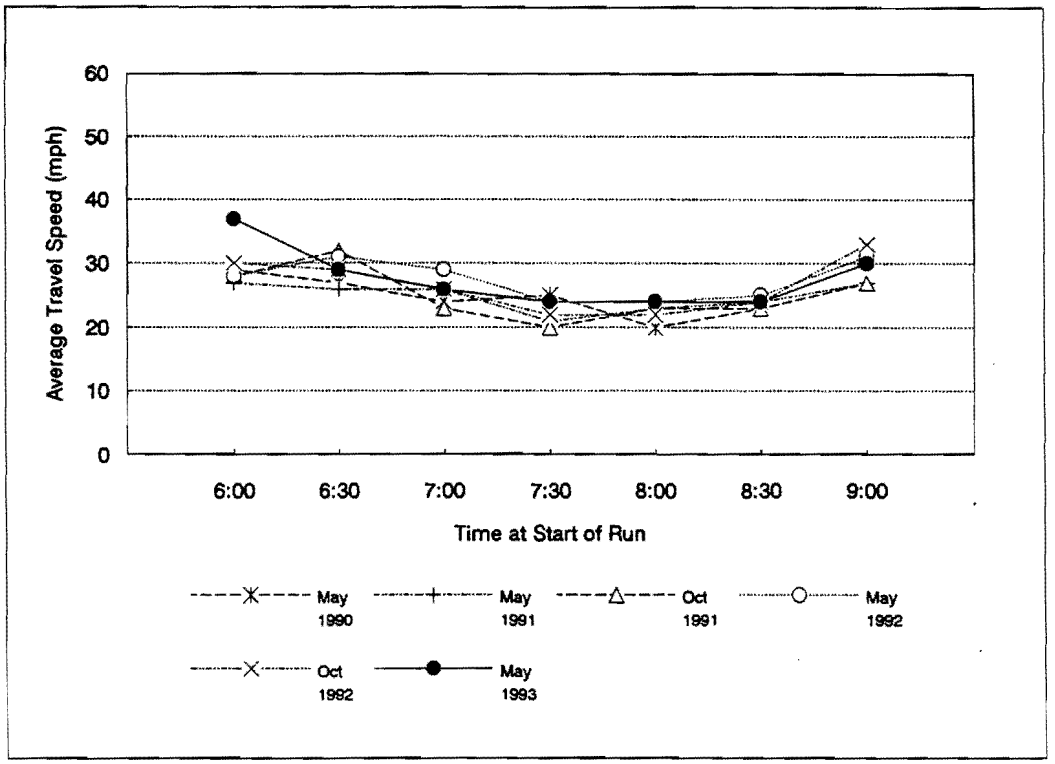


(a) Northbound

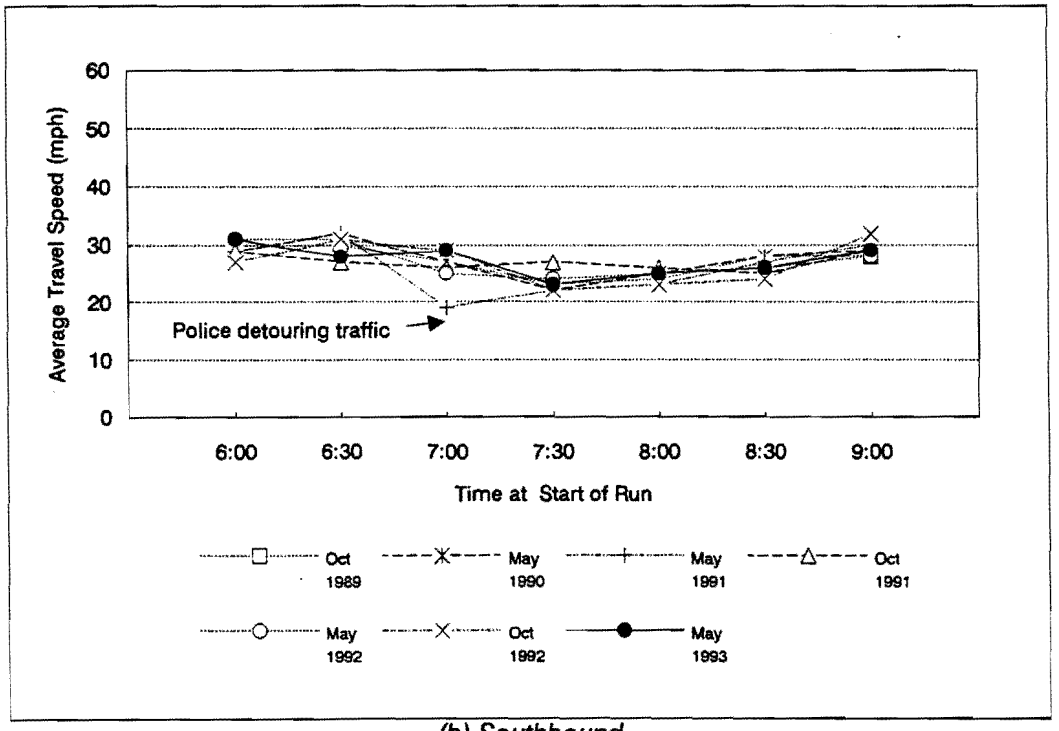


(b) Southbound

Figure L-15. P.M. Peak Period Average Travel Speed Between I-635 and CBD: Skillman

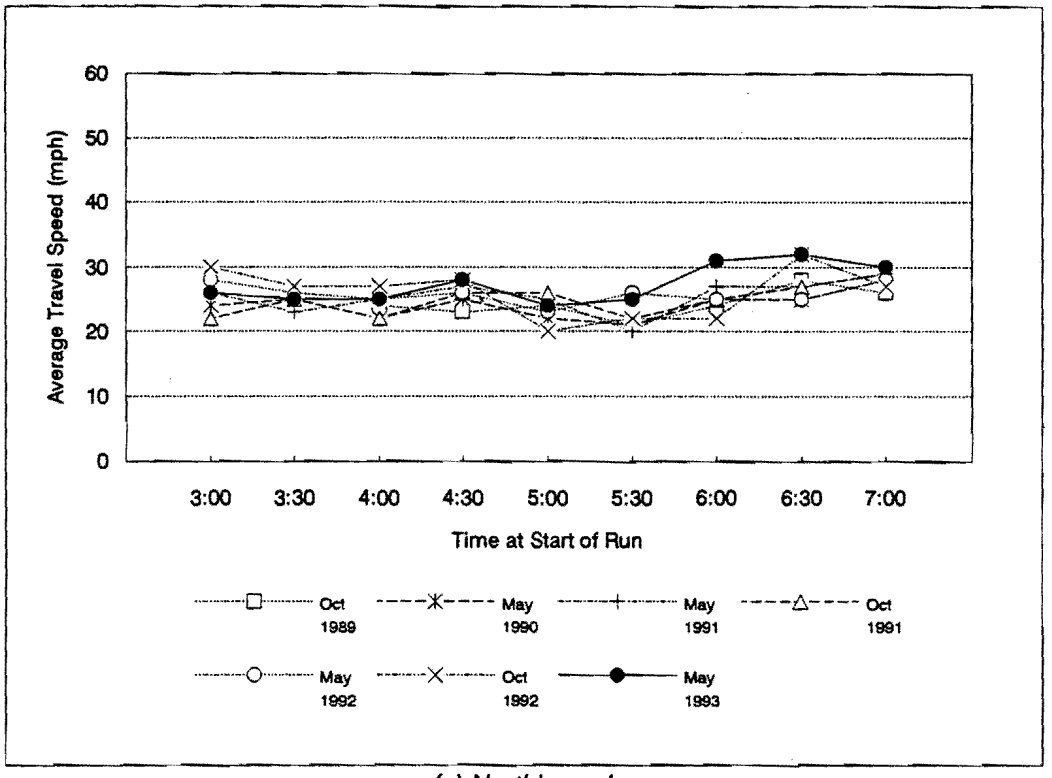


(a) Northbound

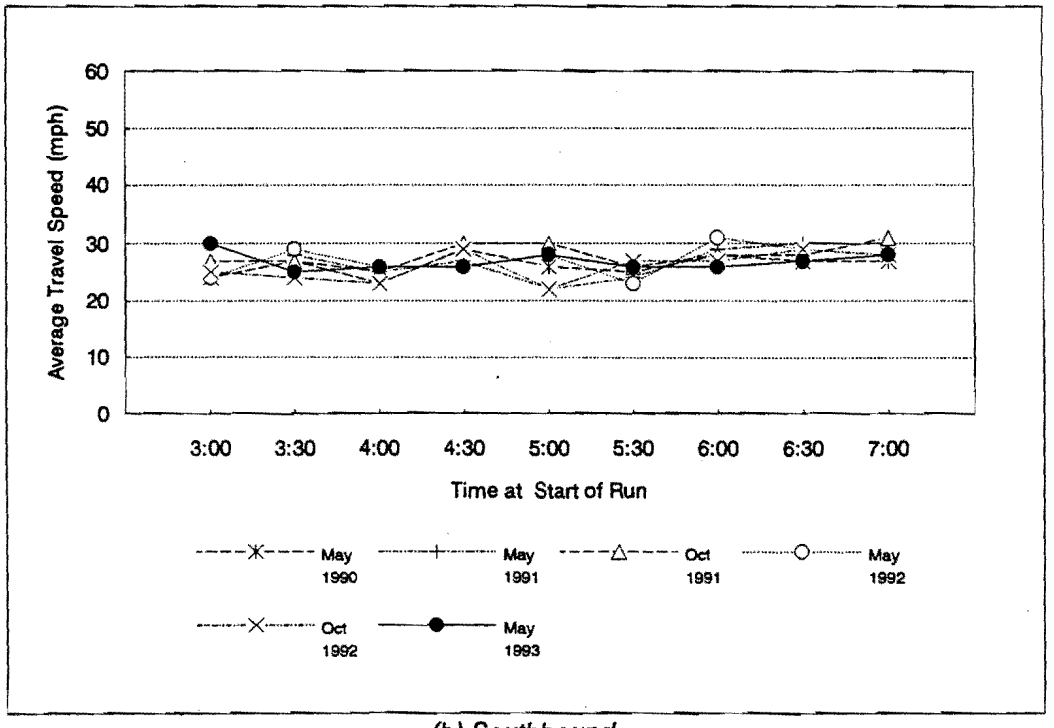


(b) Southbound

Figure L-16. A.M. Peak Period Average Travel Speed Between I-635 and CBD: Abrams

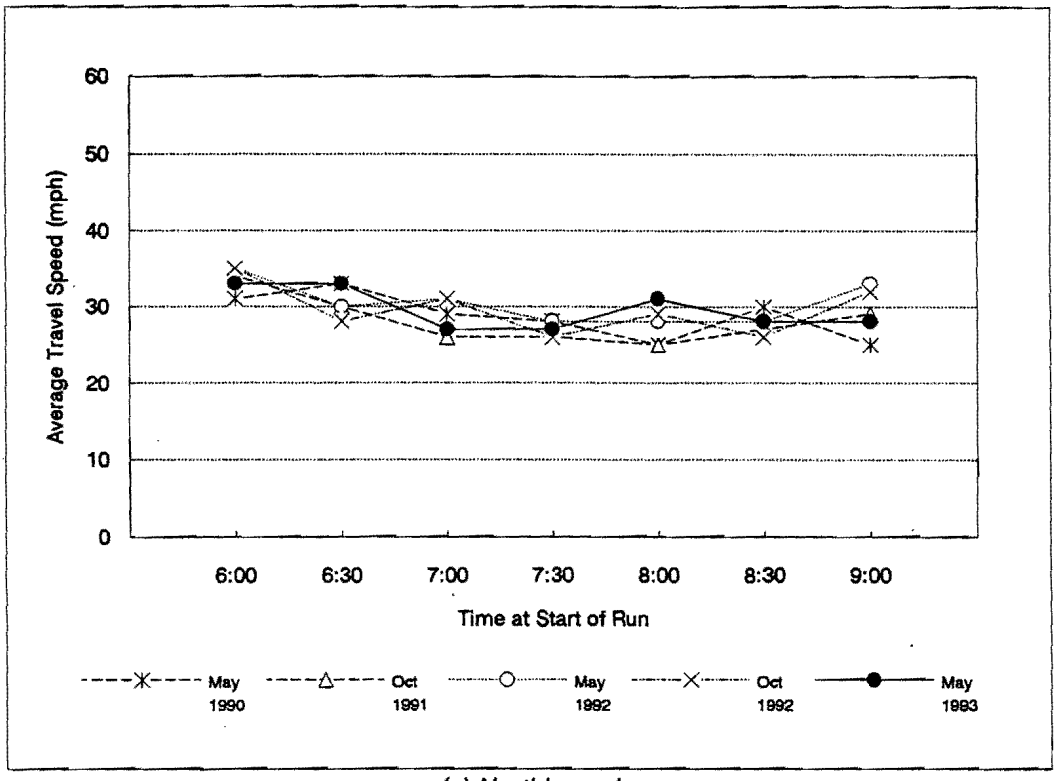


(a) Northbound

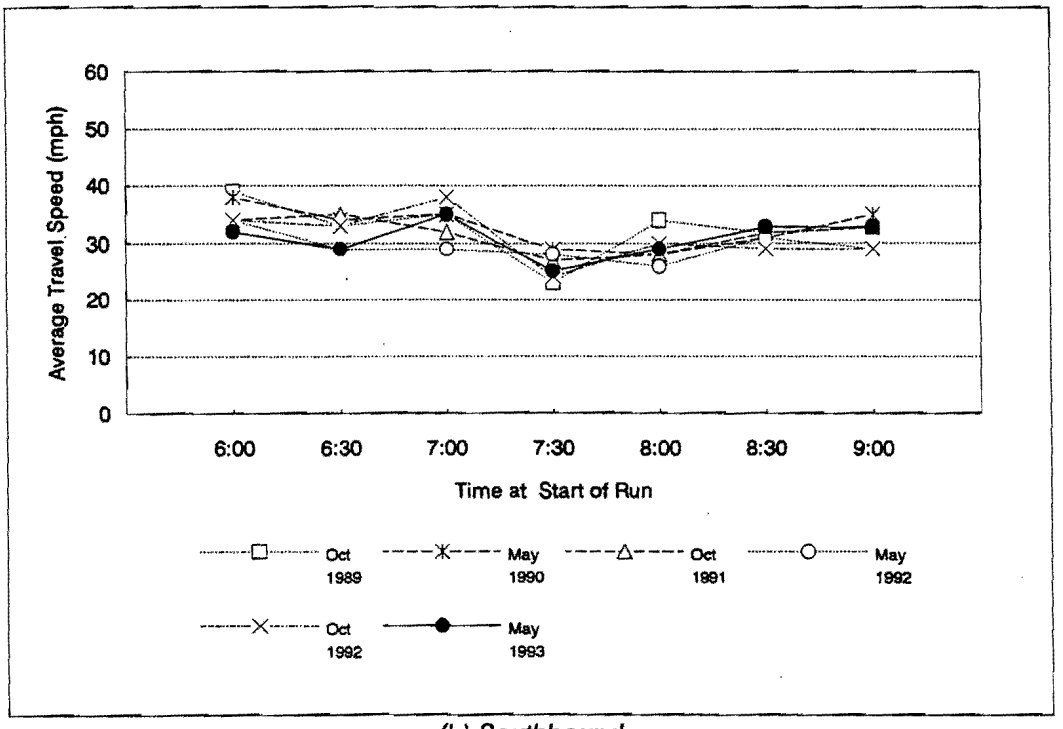


(b) Southbound

Figure L-17. P.M. Peak Period Average Travel Speed Between I-635 and CBD: Abrams

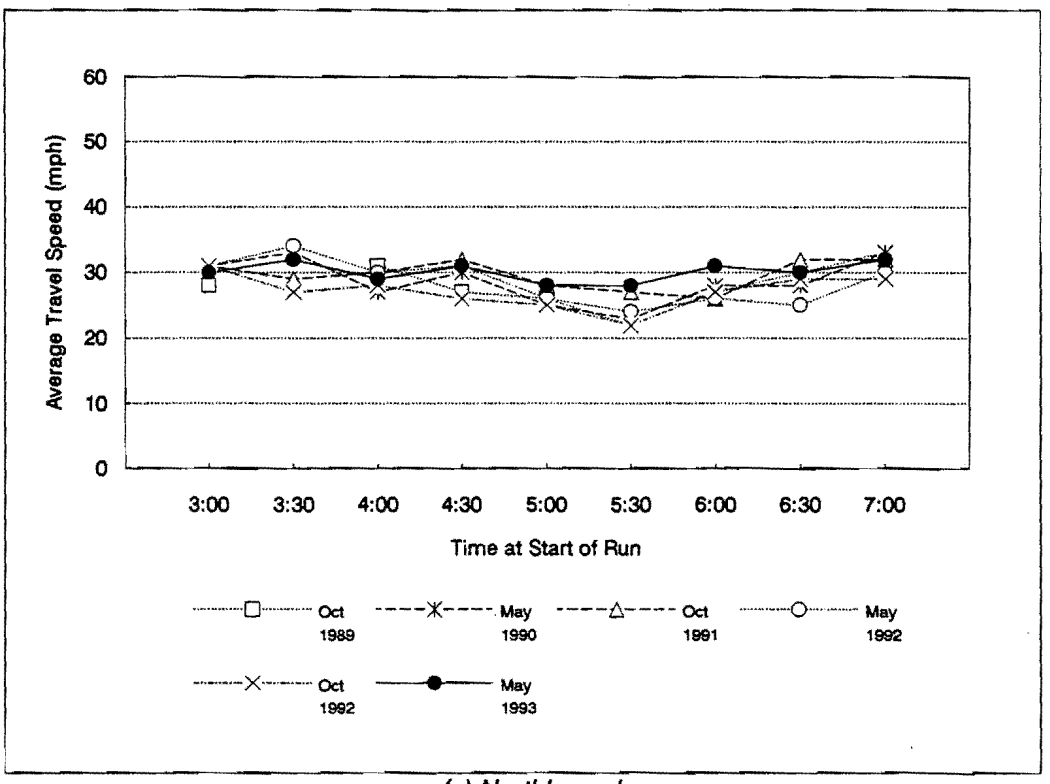


(a) Northbound

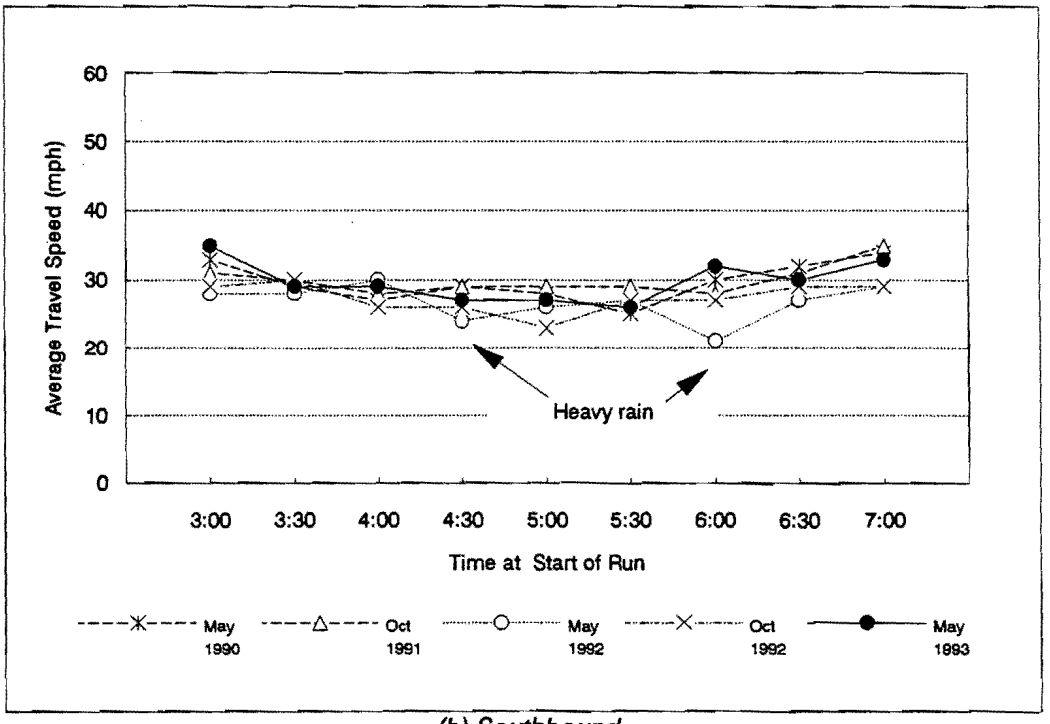


(b) Southbound

Figure L-18. A.M. Peak Period Average Travel Speed Between I-635 and CBD: Garland

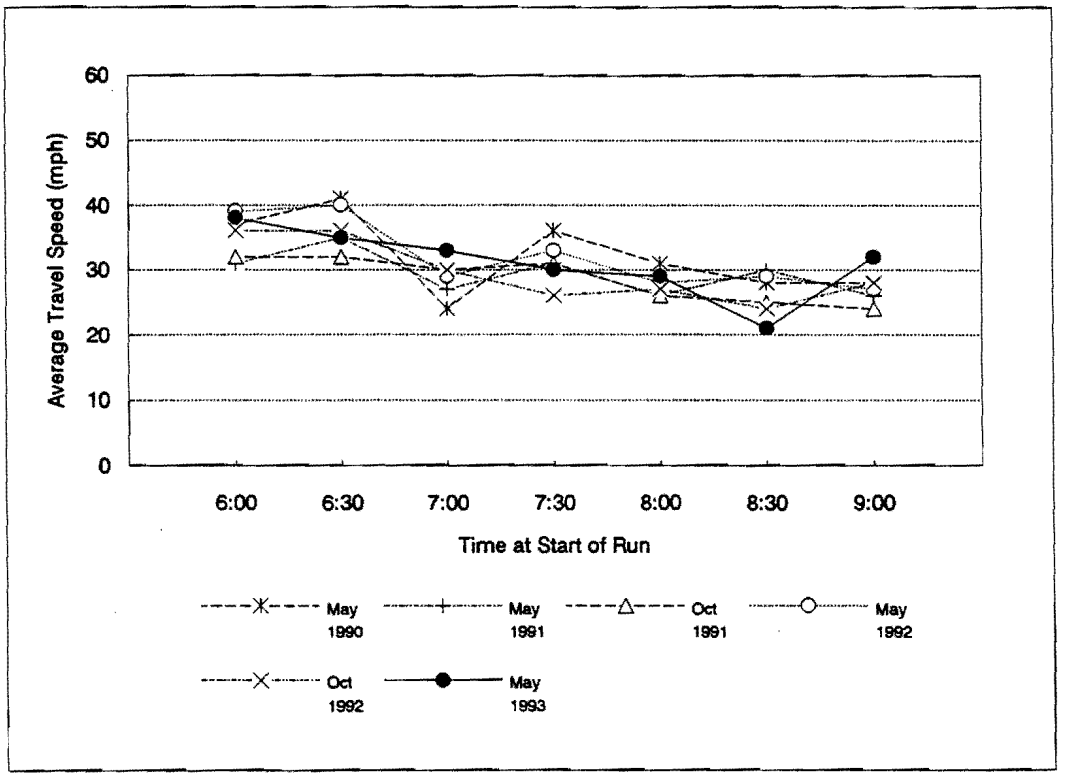


(a) Northbound

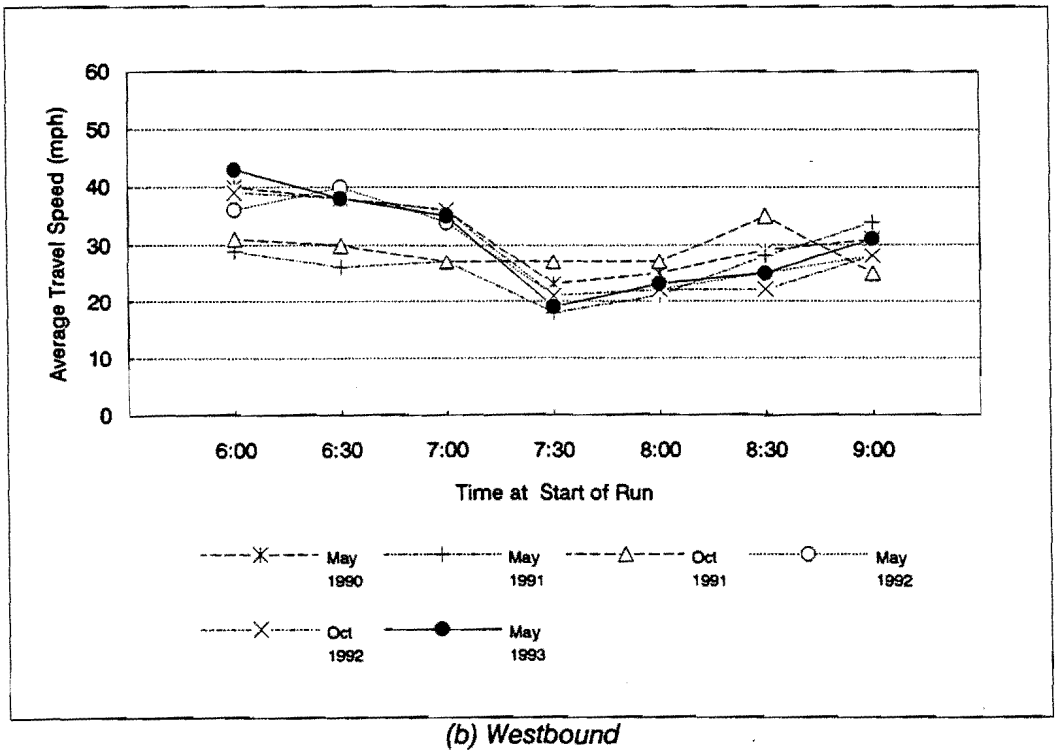


(b) Southbound

Figure L-19. P.M. Peak Period Average Travel Speed Between I-635 and CBD: Garland

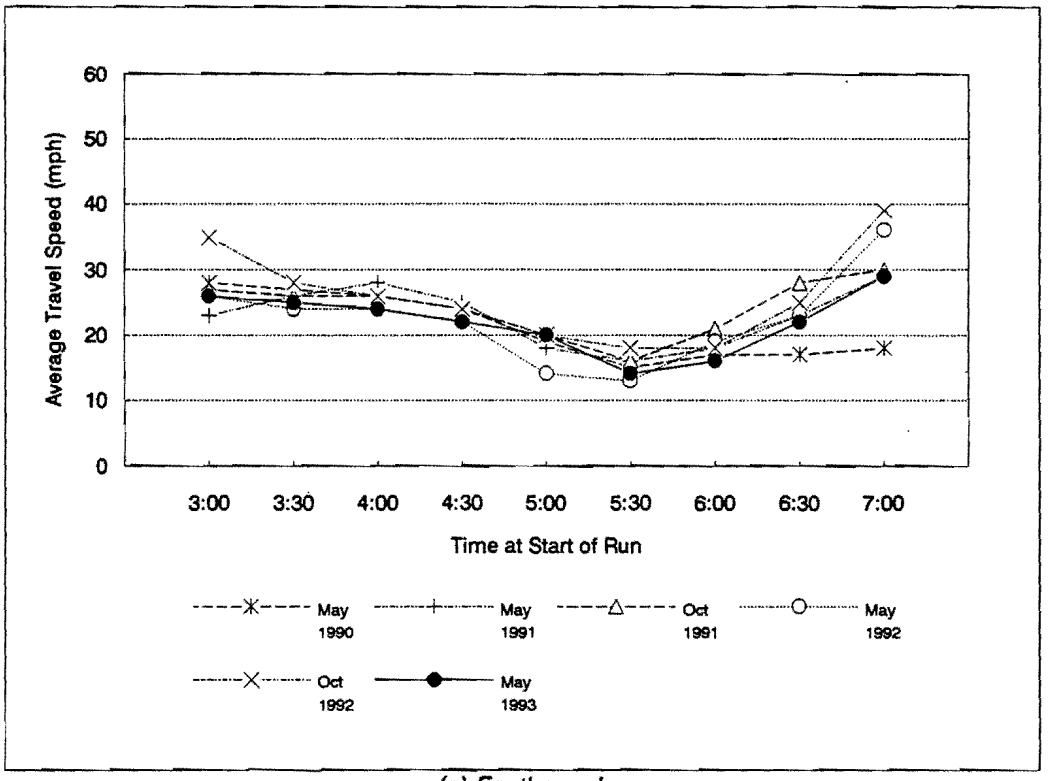


(a) Eastbound

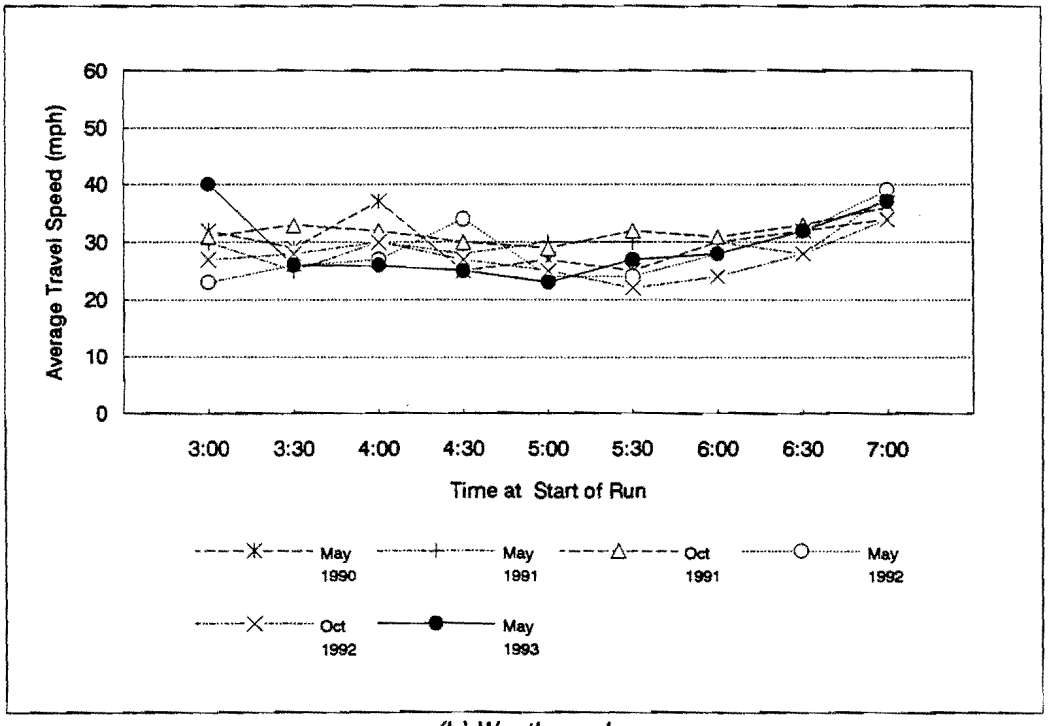


(b) Westbound

Figure L-20. A.M. Peak Period Average Travel Speed Between Midway and Abrams: Loop 12

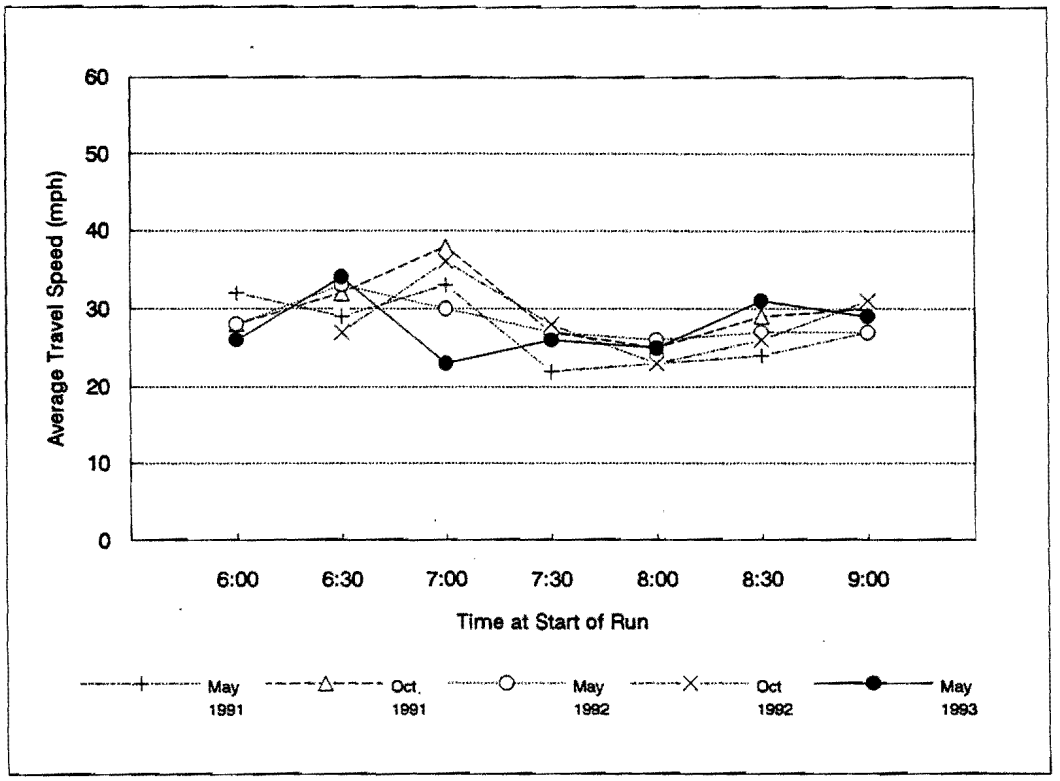


(a) Eastbound

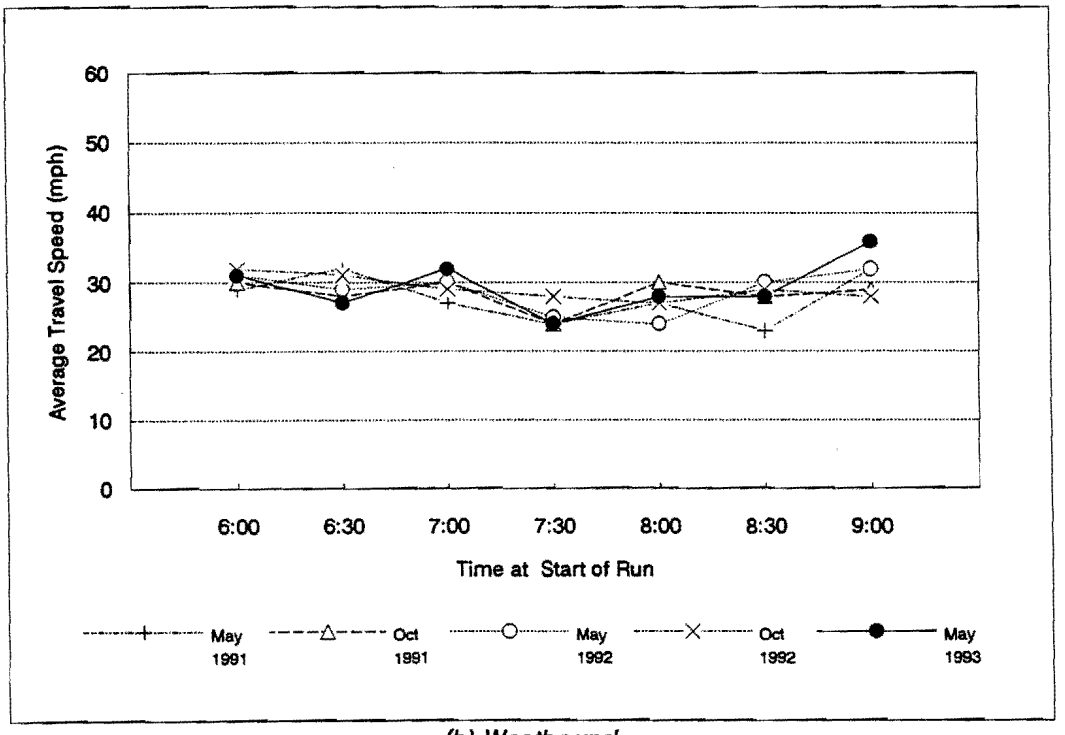


(b) Westbound

Figure L-21. P.M. Peak Period Average Travel Speed Between Midway and Abrams: Loop 12

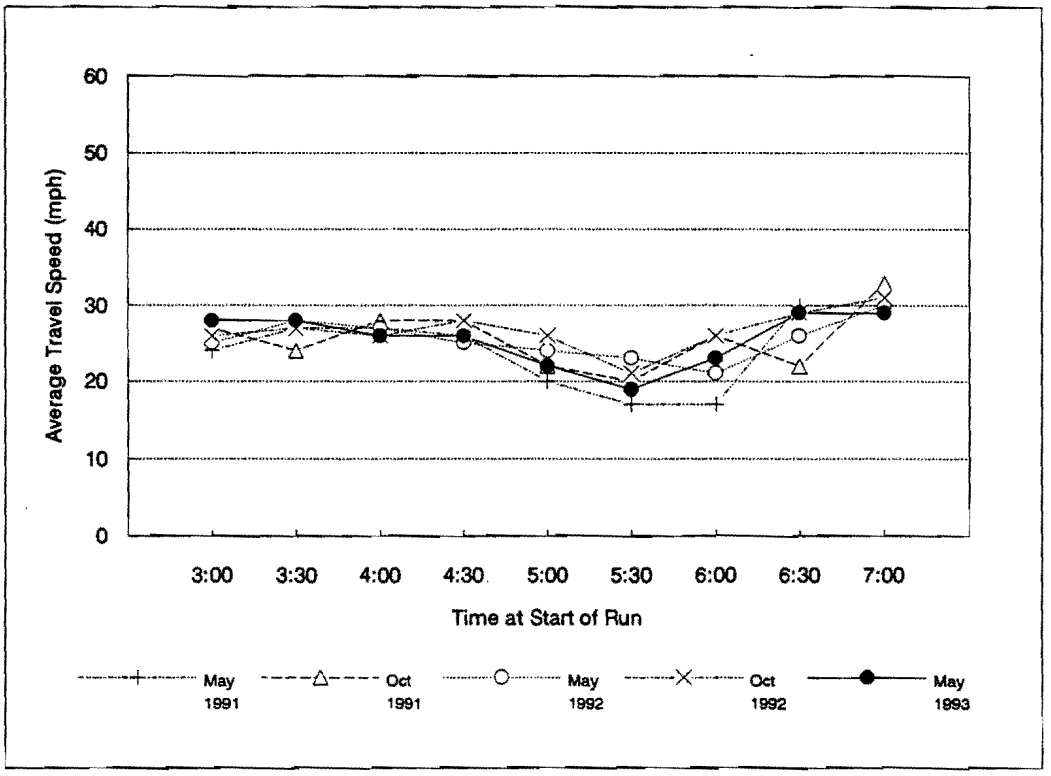


(a) Eastbound

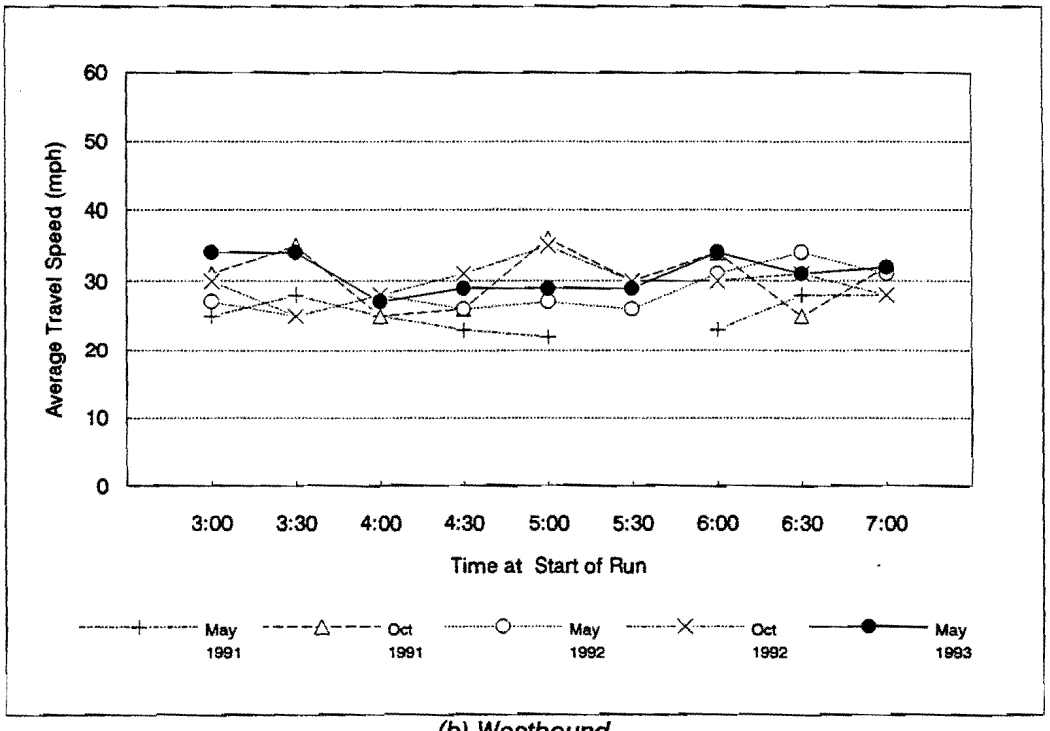


(b) Westbound

Figure L-22. A.M. Peak Period Average Travel Speed Between Midway and Skillman: Royal

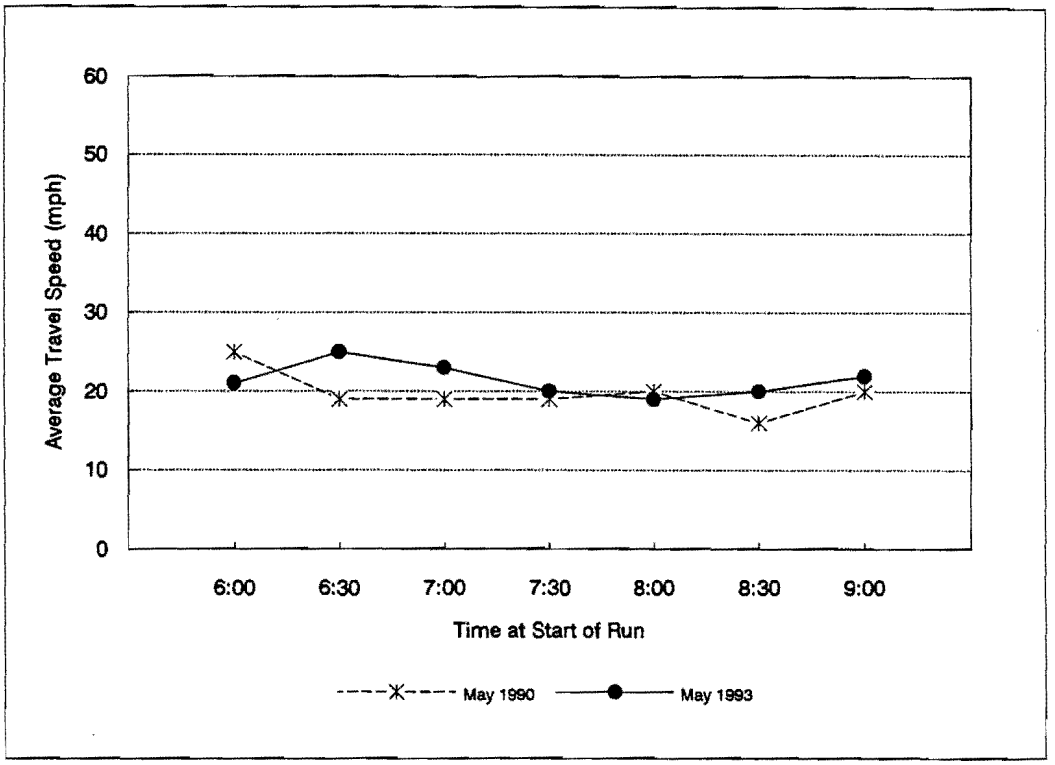


(a) Eastbound

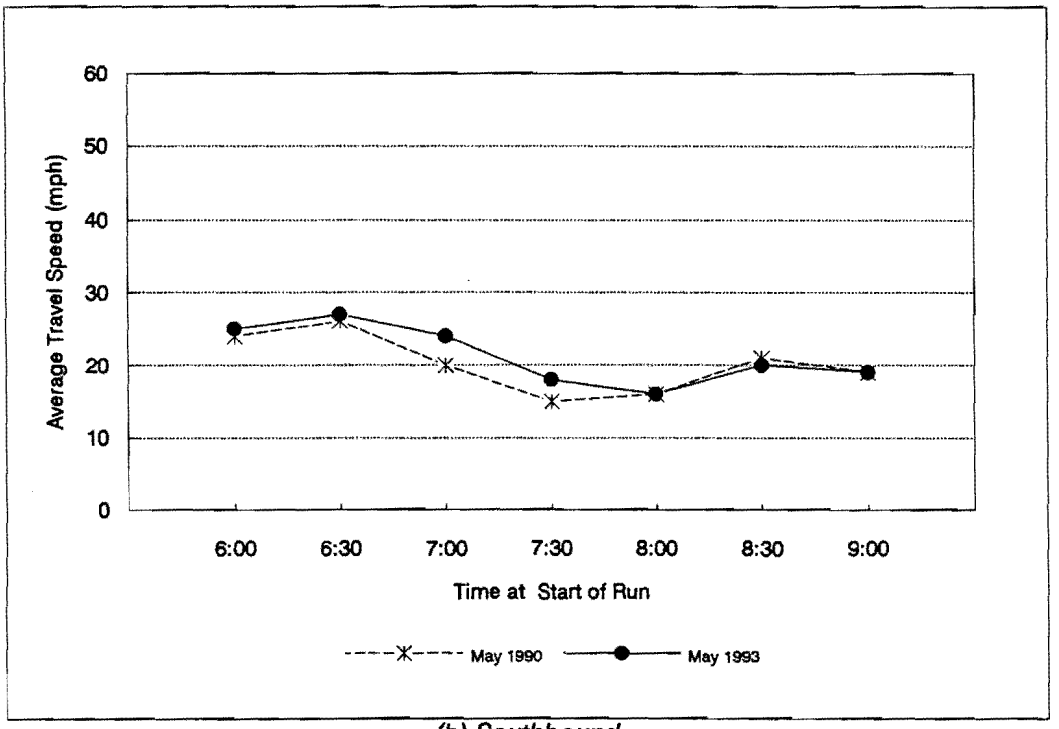


(b) Westbound

Figure L-23. P.M. Peak Period Average Travel Speed Between Midway and Skillman: Royal

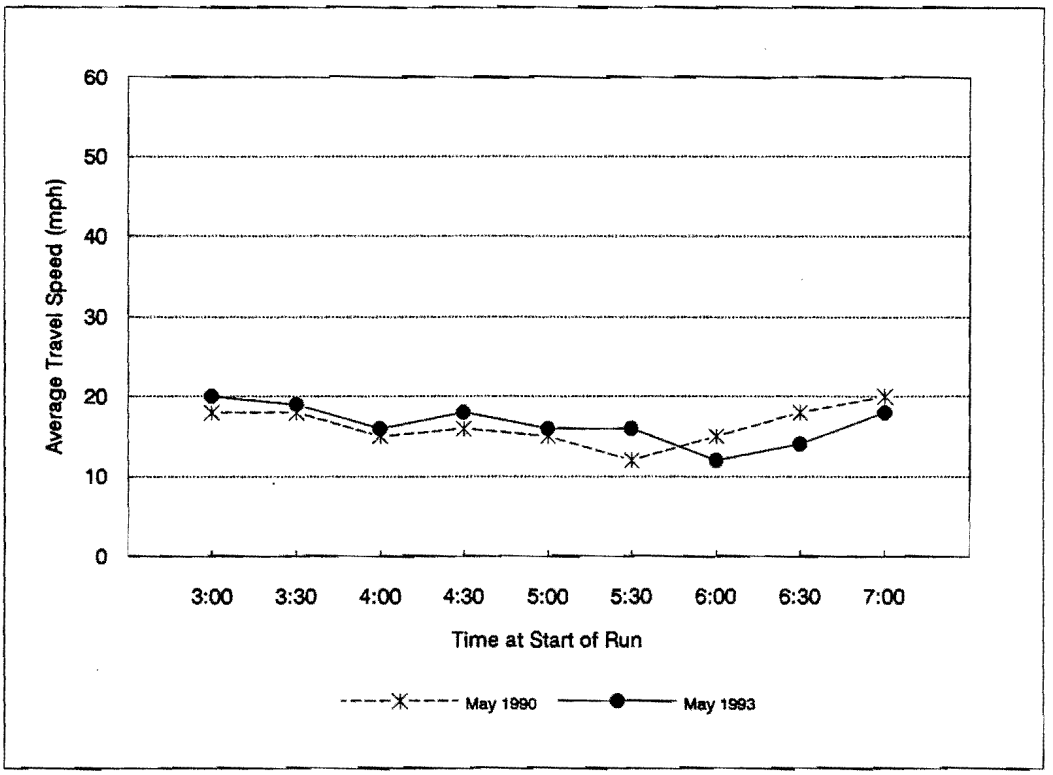


(a) Northbound

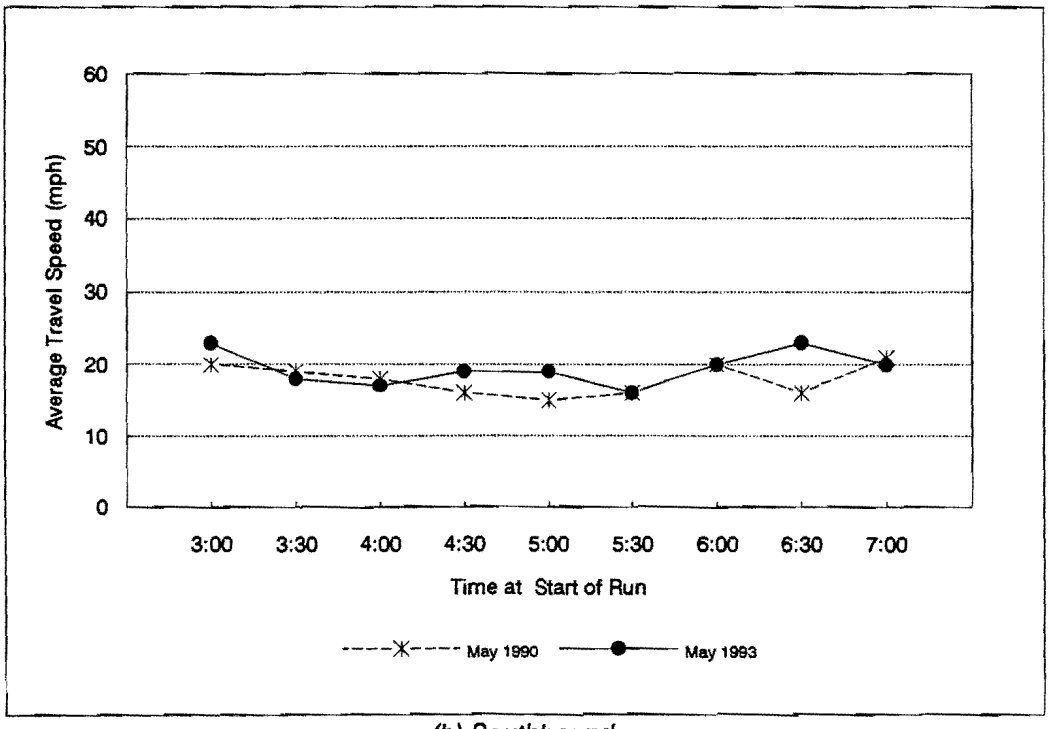


(b) Southbound

Figure L-24. A.M. Peak Period Average Travel Speed Between Lemmon and Abrams: Mockingbird



(a) Northbound



(b) Southbound

Figure L-25. P.M. Peak Period Average Travel Speed Between Lemmon and Abrams: Mockingbird