

WORKING PAPER 88-11

A COMPARISON OF TRI-STATE TOLLWAY
TRAVEL TIMES BEFORE AND DURING
DAN RYAN RECONSTRUCTION

by

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The Dan Ryan reconstruction project has reduced the capacity of the expressway by 50 percent resulting in increases in delay and travel time. These factors have caused many motorists to seek shorter travel times on alternate routes. The main alternate route for motorists traveling beyond Chicago is the Tri-State Tollway (I-80/294). The purpose of this report is to examine changes in travel times on the tollway which might be attributed to the Dan Ryan reconstruction.

During May and June 1987, the Chicago Area Transportation Study (CATS), in cooperation with the Illinois State Toll Highway Authority, conducted a travel time study on the Tri-State, East West and Northwest tollways. The portion of the Tri-State Tollway which was studied extended from the Illinois/Indiana state line on the south to Deerfield Road on the north.⁽¹⁾ The current effort was conducted during May and June 1988 with the limits extending from the state line to Touhy Avenue. This portion includes all but the northernmost portion of the original study area. This segment of the tollway includes links with all expressways leading into the City of Chicago with the exception of the Edens Expressway (I-94).

The travel time data were collected using the floating car method, sometimes referred to as the moving car method. This method employs a test car which is driven over the roadway in a series of runs during peak travel hours. The driver of the test car attempts to float in the flow of traffic by passing as many vehicles as pass the test car. Each roadway was driven a total of five times per direction of travel in the 1987 study and four times per direction in the current effort.

1) "Illinois Toll Highway System Travel Time Study," Technical Memorandum 88-01, January 1988.

The measurement points were the main line toll plazas and the Illinois/Indiana state line. These points were chosen to ensure that all time measurements were made at the same locations during each run. All measurements were in lapsed time and were recorded on the form shown in Figure 1. Each driver was equipped with data sheets listing the measurement points. The data were collected between the hours of 6:45 AM to 9:00 AM and 4:15 PM to 6:00 PM.

By comparing the current figures and those from a year ago, it is possible to begin to quantify the effect of traffic diversion from the Dan Ryan Expressway (I-90/94) to the Tri-State Tollway (I-80/294). This comparison reveals an overall increase in travel time for each time period and direction on the tollway. These increases are minor except for southbound traffic in the PM peak period. In this instance, travel time from the Touhy Avenue toll plaza to the Illinois/Indiana state line increased approximately 11.5 minutes, 18.6%. Travel times and speeds are summarized by link in Table 1 and Figures 2-5, and overall in Table 2.

Average travel speeds decreased on all but two segments, with declines ranging from -0.2 to -13.6 miles per hour. On the two links where travel speed increased, the gain was less than 1.5 miles per hour, which represent no significant change. The average travel speeds decreased by more than five miles per hour on six links, four of which were in the southbound direction in the PM peak period.

During the AM peak period only the segment from Cermak Road to Touhy Avenue appeared to be meaningfully affected (a change in travel speed greater than or equal to 5 MPH). Northbound traffic on this segment proceeded at a rate which was 6.0 MPH slower than in 1987. Traffic traveling southbound was slowed by an average of just over 8.0 MPH.

During the PM peak period northbound traffic was not greatly affected. Only speeds between 163rd Street and 83rd Street showed a decline, 4.6 MPH, which approached a significant amount. The greatest travel speed changes were in the southbound direction. The average travel speed decreased 13.6 MPH from Touhy Avenue to Irving Park Road, 10.9 MPH from Cermak to 83rd Street, 5.5 MPH from 83rd Street to 163rd Street and 7.7 MPH from 163rd Street to the state line.

Although it is recognized that the tollway may have exhibited normal, non-diverted, increases in traffic volumes in the period from 1987 to 1988, data were not available on the size of this growth. Thus, it is difficult to assess the impact of Dan Ryan related traffic diversions upon the Tri-State Tollway.

Figure 1

TOLL HIGHWAY
TRAVEL TIME

ATTACHMENT A

Date: _____
Start Time: _____
Route: _____
Direction
of Travel: _____

Page ___ of ___

Observations	Milepost/Tollbooth/ Reference Point	Distance	Lapsed Time	Remarks
1	Touhy Toll plaza			
2	Irving Park Rd. Toll plaza			
3	Cermak Toll Plaza			
4	83rd Street Toll plaza			
5	163rd Street Toll plaza			
6	Illinois/Indiana State Line			
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Weather: _____ Crew: _____

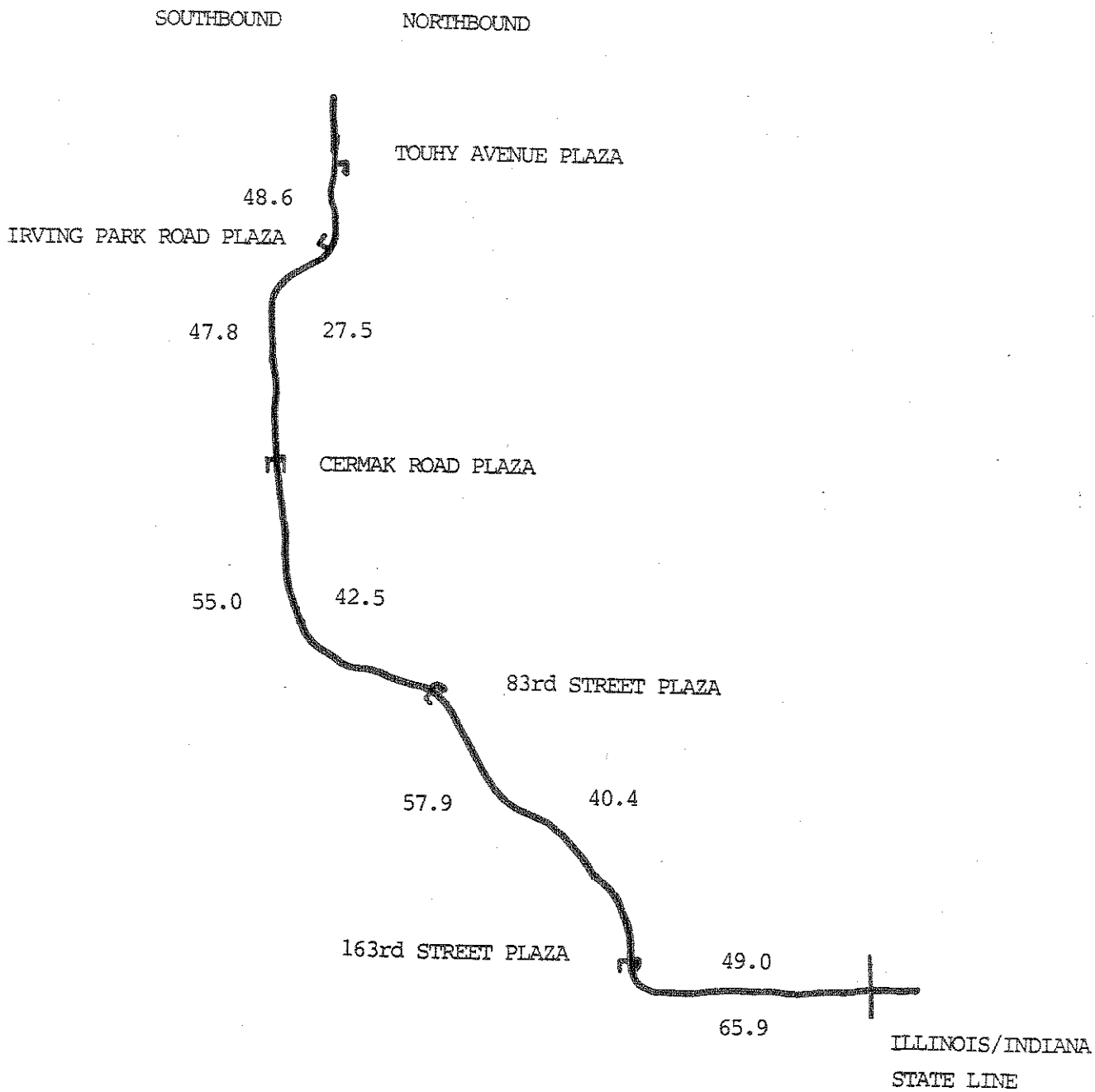
Table 1

Peak Period Travel Time and Speed Summary

	<u>Preconstruction</u> <u>May-June 1987</u>		<u>During Construction</u> <u>May-June 1988</u>	
	<u>Average</u> <u>Travel Time</u> <u>(minutes:seconds)</u>	<u>Average</u> <u>Travel Speed</u> <u>(miles per hour)</u>	<u>Average</u> <u>Travel Time</u> <u>(minutes:seconds)</u>	<u>Average</u> <u>Travel Speed</u> <u>(miles per hour)</u>
<u>Northbound AM Peak Period</u>				
Illinois/Indiana State Line	0:00	-	0:00	-
163rd Street Plaza	11:31	49.5	11:30	49.0
83rd Street Plaza	32:51	41.2	32:15	40.4
Cermak Road Plaza	47:52	42.7	47:15	42.5
Touhy Avenue Plaza	70:29	33.5	73:30	27.5
<u>Southbound AM Peak Period</u>				
Touhy Avenue Plaza	0:00	-	0:00	-
Irving Park Road Plaza	3:37	48.8	3:45	48.6
Cermak Road Plaza	13:04	56.0	15:00	47.8
83rd Street Plaza	24:04	57.8	26:45	55.0
163rd Street Plaza	37:41	60.5	41:00	57.9
Illinois/Indiana State Line	46:21	64.4	49:30	65.9
<u>Northbound PM Peak Period</u>				
Illinois/Indiana State Line	0:00	-	0:00	-
163rd Street Plaza	9:22	59.7	9:45	57.6
83rd Street Plaza	22:58	60.5	24:30	55.9
Cermak Road Plaza	33:46	58.9	35:15	59.3
Touhy Avenue Plaza	48:04	49.9	50:00	48.3
<u>Southbound PM Peak Period</u>				
Touhy Avenue Plaza	0:00	-	0:00	-
Irving Park Road Plaza	3:48	46.7	5:45	33.1
Cermak Road Plaza	19:46	40.9	20:30	37.6
83rd Street Plaza	38:09	35.5	46:30	24.6
163rd Street Plaza	52:33	57.2	62:30	51.7
Illinois/Indiana State Line	61:21	63.4	72:45	55.7

Figure 2

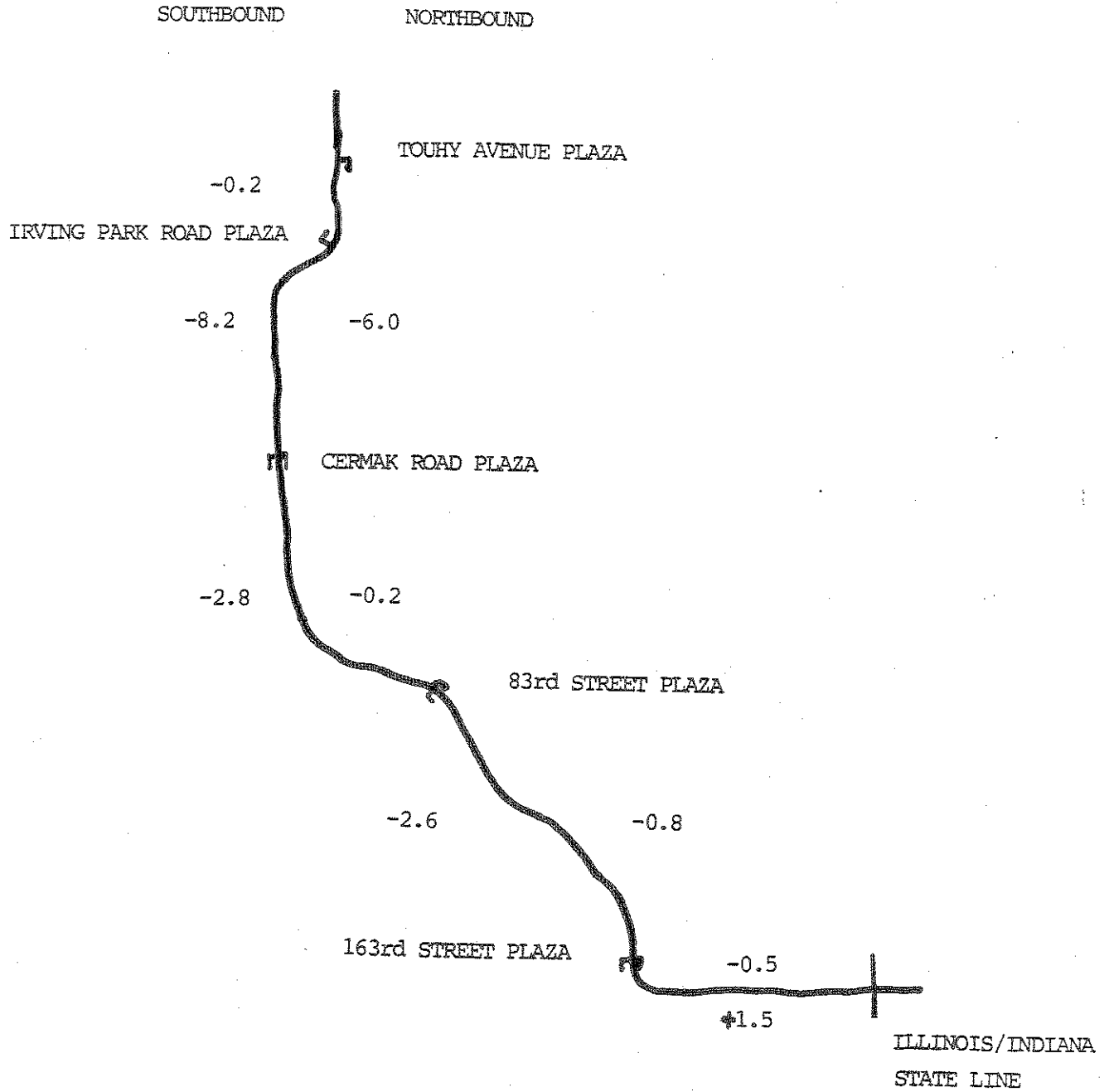
AM PEAK PERIOD TRAVEL SPEED SUMMARY
DURING CONSTRUCTION



Note: Travel speeds shown are in miles per hour

Figure 3

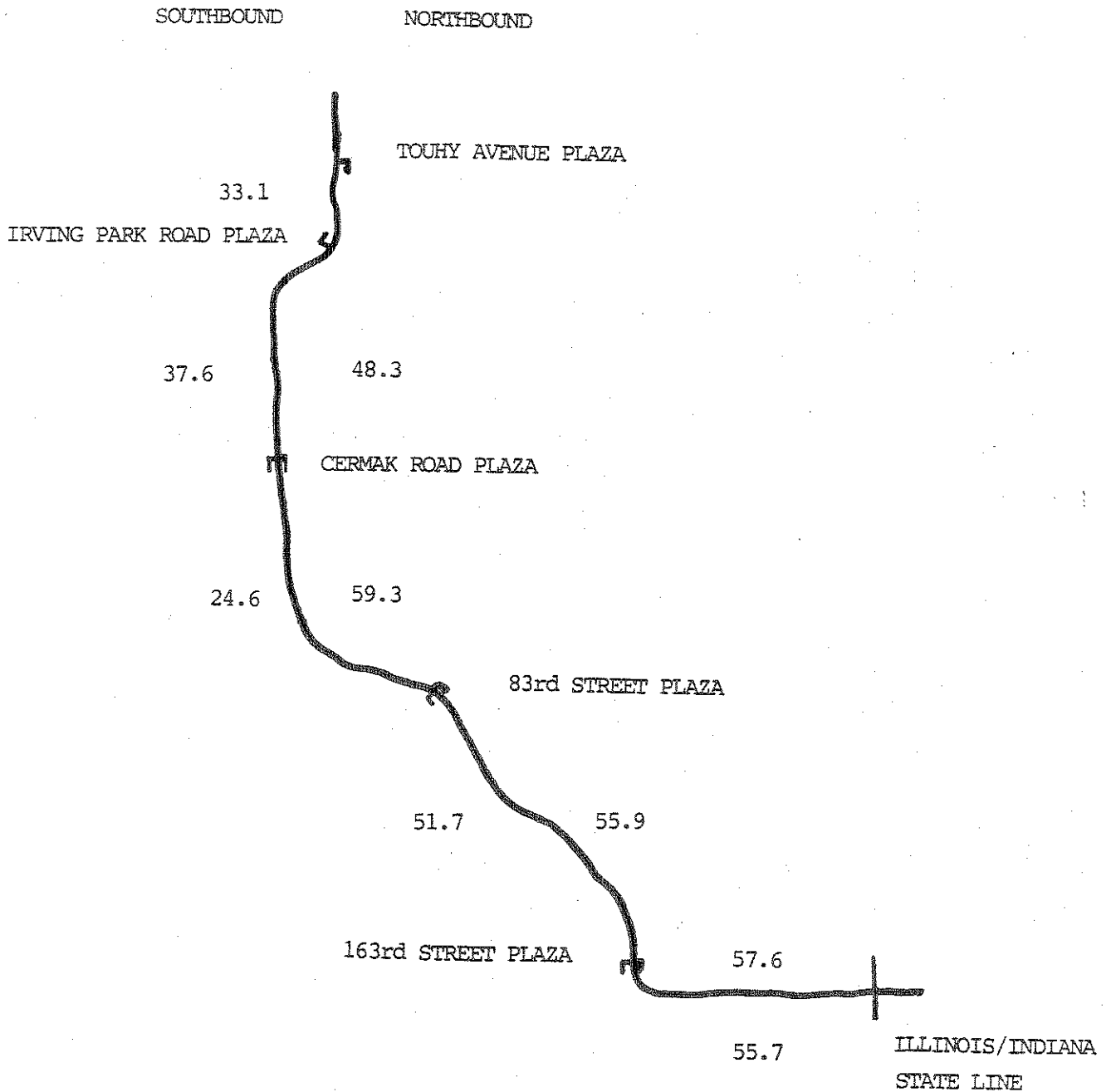
AM PEAK PERIOD TRAVEL SPEED SUMMARY
CHANGE IN TRAVEL SPEEDS
PRECONSTRUCTION TO DURING CONSTRUCTION



Note: Travel speeds shown are in miles per hour

Figure 4

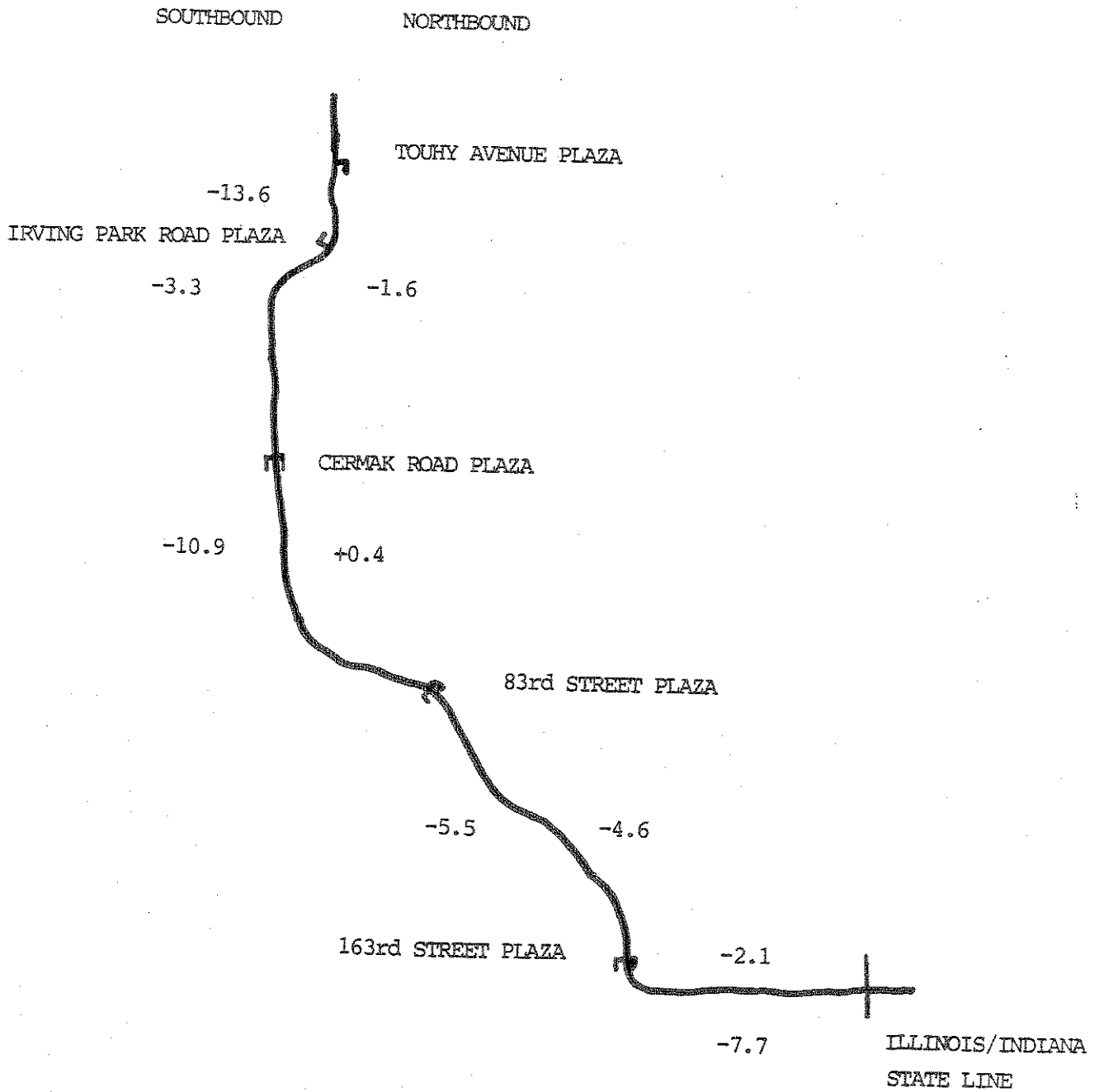
PM PEAK PERIOD TRAVEL SPEED SUMMARY
DURING CONSTRUCTION



Note: Travel speeds shown are in miles per hour

Figure 5

PM PEAK PERIOD TRAVEL SPEED SUMMARY
CHANGE IN TRAVEL SPEEDS
PRECONSTRUCTION TO DURING CONSTRUCTION



Note: Travel speeds shown are in miles per hour

Table 2

Overall Travel Time and Speed Summary

	<u>AM Peak</u>				<u>PM Peak</u>			
	<u>Preconstruction</u>		<u>During Construction</u>		<u>Preconstruction</u>		<u>During Construction</u>	
	<u>Average Travel Time</u>	<u>Average Travel Speed</u>	<u>Average Travel Time</u>	<u>Average Travel Speed</u>	<u>Average Travel Time</u>	<u>Average Travel Speed</u>	<u>Average Travel Time</u>	<u>Average Travel Speed</u>
Northbound	70:29	38.6	73:30	37.0	48:04	56.4	50:00	54.4
Southbound	46:21	58.6	49:30	54.9	61:21	44.3	72:45	37.4