

Working Paper 88-10

Dan Ryan Reconstruction
Travel Time Study

by

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Chicago Area Transportation Study
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In order to help with the planning for the Dan Ryan reconstruction project the State of Illinois Department of Transportation (IDOT) commissioned the Chicago Area Transportation Study (CATS) to examine how travel patterns are being affected by the project.

Operating speed is a good measure of how well a roadway is performing and also provides a means to identify areas of congestion. The lane closures and detours on the Dan Ryan were expected to result in increased travel times for drivers thereby causing them to divert to Chicago's arterial street system. This diversion was then expected to result in increased travel times for motorists normally using these streets.

In response to the concerns about increases in travel times on the Dan Ryan and the arterial streets parallel to the expressway, a travel time study was conducted by CATS in cooperation with IDOT and the City of Chicago. The study was conducted in three phases. The first phase took place in February 1988 before construction work began. The second phase took place in late March 1988, about one month after the first barricades were put in place. The third phase was in late April 1988 when traffic patterns had stabilized following the start of construction.

The study was conducted in the northbound direction during the AM peak period (7:00 AM to 8:00 AM and in the southbound direction during the PM peak period (4:30 PM to 5:30 PM). Midday runs (10:00 AM to 2:00 PM) were completed for both directions during phases 1 and 2. The data for the peak periods in all three phases are summarized in Table 1 and are compared in Figures 1 through 3. Midday data are summarized in Table 2.

The data for the Dan Ryan Expressway reveal that the average travel time for northbound AM peak period traffic is 6.0 minutes longer than before the construction. This is an average of 5.4 miles per hour slower. Southbound traffic, in the PM peak period, experienced an average travel time that was thirty seconds longer, with an average decrease of 0.4 miles per hour in travel speeds. There are two reasons to consider that may explain the smaller increase in the southbound travel time. First, is the fact that the time spent in the queue just north of the construction zone was not included in the study. The second and more subtle explanation is that the present lane configuration causes a degree of unused capacity at 31st Street as one leaves the construction zone.

The data for the marked detour route from 39th Street (Pershing Road) to the Kennedy Expressway, via 39th Street, Ashland Avenue and Ogden Avenue, reveal that the travel time for the northbound AM peak period traffic is 4.3 minutes longer since the start of the construction. The average travel speed for this traffic is 4.7 miles per hour slower. Southbound traffic, in the PM peak period, had an increase in travel time of 10.1 minutes. The average travel speed decreased 8.4 miles per hour for these motorists. The increased travel time is due in part to the congestion on Ashland Avenue between Roosevelt and Cermak Roads, and at the intersection with Archer Avenue. Chicago Police assisted traffic flow in these areas which helped keep delay to a minimum.

The combination of Lake Shore Drive and Stony Island Avenue provides an alternate route for the Dan Ryan drivers from the southeastern portion of Chicago and suburbs. This route, due to its multi-lane limited access design between the downtown area and 57th Street, has become a favored alternate. The data show that the travel time for the AM peak period has increased by 5.8 minutes, while average speed has decreased 9.8 miles

per hour. The southbound traffic, in the PM peak period, had increased travel times which averaged 5.75 minutes longer. The average vehicle speeds decreased 10.2 miles per hour. Currently, traffic is congested between Monroe Street and Cermak Road and approaching 57th Street.

The arterial streets which parallel the Dan Ryan, King Drive, Indiana Avenue (one-way northbound), Michigan Avenue (one-way southbound), State Street, Halsted Street, Ashland Avenue, Damen Avenue and Western Avenue, have also experienced increases in average travel time. The data for the northbound direction reveal that travel time has increased 1.3 minutes. Southbound traffic had an average travel time increase of 1.2 minutes. Average travel speeds have decreased 1.4 miles per hour northbound and 0.9 miles per hour southbound. The main sources of delay identified were illegally parked vehicles and lane closures due to construction/repair of streets, curbs and gutters, sewers, etc.

Table 1

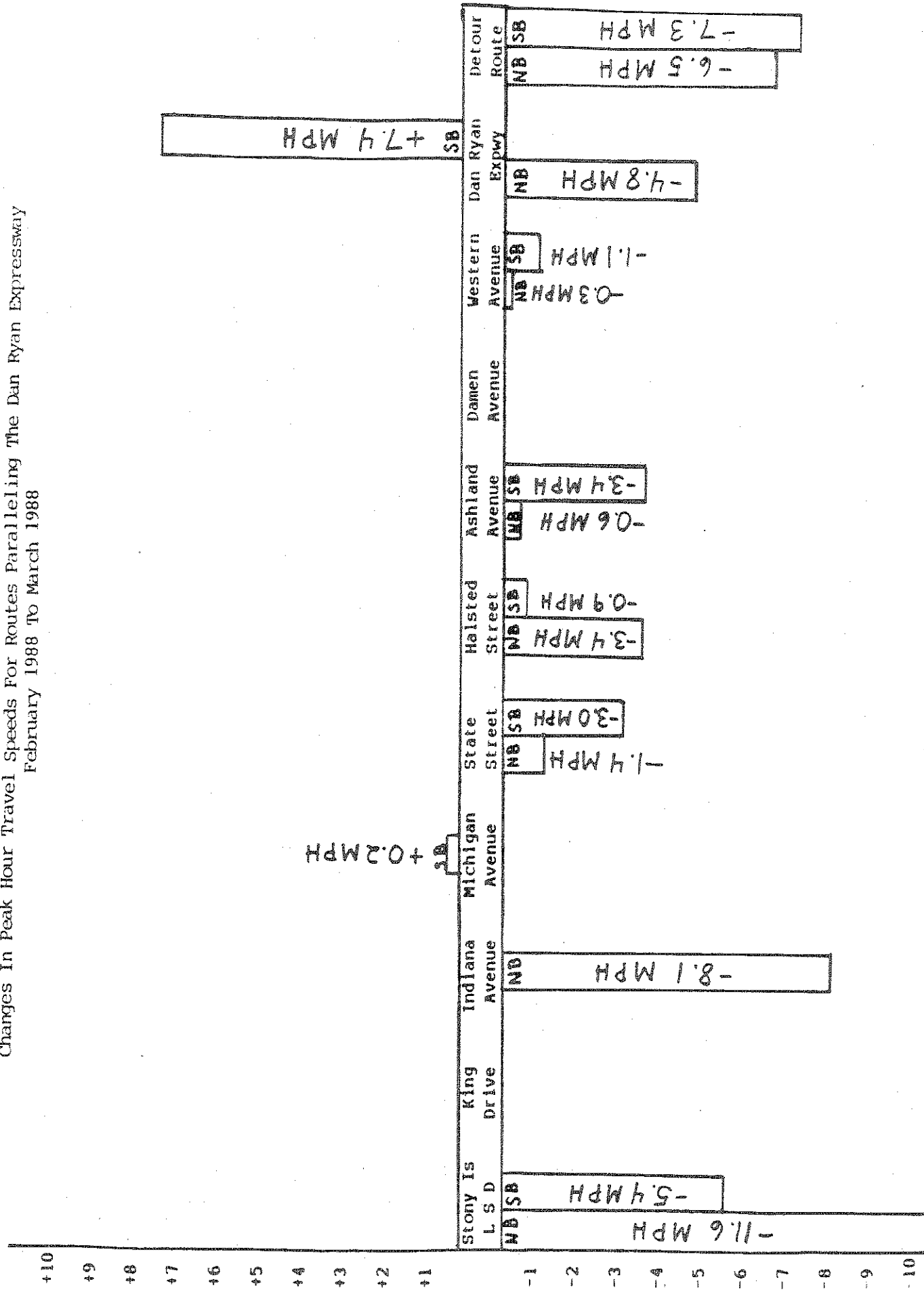
Peak Period Travel Time and Speed Summary
Average Travel Times in Minutes and Seconds
(Average Travel Speeds in Miles per Hour)

Route (Limits)	Preconstruction February 1988		During Construction March 1988		During Construction April 1988	
	AM Peak Inbound	PM Peak Outbound	AM Peak Inbound	PM Peak Outbound	AM Peak Inbound	PM Peak Outbound
Stony/Lake Shore Dr. (75th to Monroe)	15:34 (35.9)	15:06 (37.0)	23:01 (24.3)	17:40 (31.6)	21:23 (26.1)	20:51 (26.8)
King Drive (63rd to Roosevelt)	17:24 (24.1)	22:11 (18.9)	NC	NC	22:12 (18.9)	21:08 (19.9)
Indiana Avenue (63rd to Roosevelt)	14:30 (26.9)	-	20:43 (18.8)	-	16:27 (23.7)	-
Michigan Avenue (63rd to Roosevelt)	-	16:04 (23.8)	-	15:58 (24.0)	-	16:29 (23.2)
State Street (79th to Congress)	20:00 (27.8)	23:30 (23.6)	21:00 (26.4)	27:00 (20.6)	22:00 (25.2)	28:05 (19.8)
Halsted Street (67th to Eisenhower)	22:01 (21.1)	28:01 (16.6)	26:46 (17.4)	29:43 (15.7)	26:37 (17.5)	29:26 (15.8)
Ashland Avenue (63rd to Eisenhower)	23:04 (18.9)	23:55 (18.2)	23:44 (18.3)	29:29 (14.8)	21:24 (20.3)	24:07 (18.0)
Damen Avenue (63rd to Eisenhower)	24:51 (17.5)	24:44 (17.6)	NC	NC	23:51 (18.2)	29:57 (14.5)
Western Avenue (63rd to Eisenhower)	19:40 (22.1)	27:20 (15.9)	20:00 (21.8)	29:20 (14.8)	18:20 (23.7)	24:52 (17.5)
Pulaski Road (63rd to Eisenhower)	22:48 (19.1)	23:20 (18.6)	NC	NC	NC	NC
Dan Ryan Expressway (63rd to Eisenhower)	23:20 (26.9)	28:43 (22.0)	28:32 (22.1)	21:29 (29.4)	29:20 (21.5)	29:12 (21.6)

Dan Ryan Detour Route (39th to Kennedy)						
Inbound	18:40 (24.8)	-	25:14 (18.3)	21:48 (21.2)	22:56 (20.1)	19:47 (23.4)
Outbound	-	19:00 (24.3)	19:29 (23.7)	27:13 (17.0)	19:25 (23.8)	29:08 (15.9)

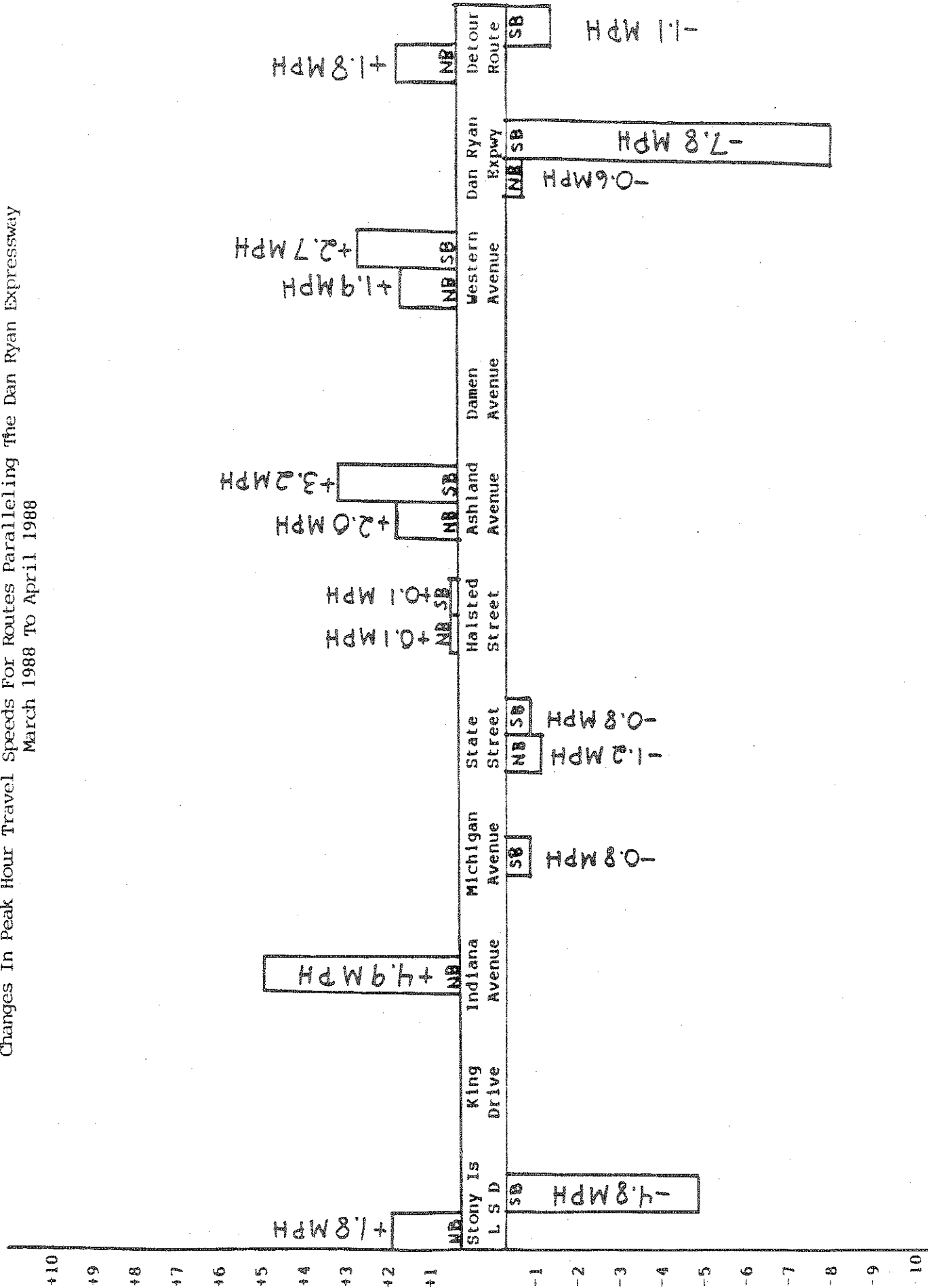
Source: Measurements taken by IDOT, CATS and the City of Chicago.

Figure 1
 Changes in Peak Hour Travel Speeds For Routes Paralleling The Dan Ryan Expressway
 February 1988 To March 1988



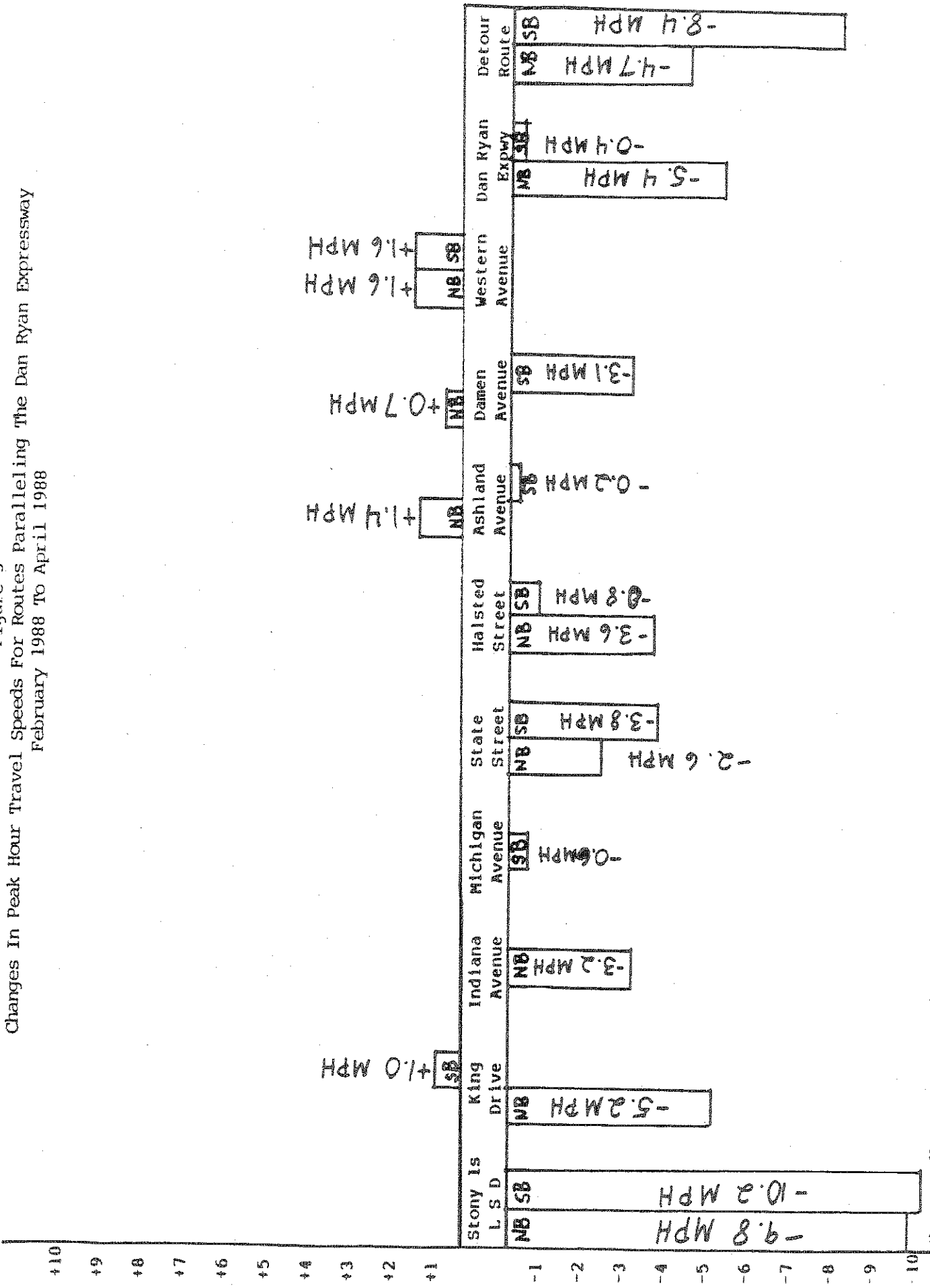
Source: Measurements taken by CATS, IDOT and City of Chicago (Winter and Spring of 1988).

Figure 2
 Changes in Peak Hour Travel Speeds For Routes Paralleling the Dan Ryan Expressway
 March 1988 TO April 1988



Source: Measurements taken by CATS, IDOT and City of Chicago (Winter and Spring of 1988).

Figure 3
 Changes in Peak Hour Travel Speeds For Routes Paralleling The Dan Ryan Expressway
 February 1988 To April 1988



Source: Measurements taken for CRIS from 1 City of Chicago (Winter and Summer of 1988)

Table 2

Midday Travel Time and Speed Summary
Average Travel Times in Minutes and Seconds
(Average Travel Speeds in Miles per Hour)

Route (Limits)	Preconstruction February 1988		During Construction March 1988	
	Inbound	Outbound	Inbound	Outbound
Stony/Lake Shore Dr. (75th to Monroe)	16:40 (33.5)	15:58 (35.0)	19:26 (28.7)	18:09 (30.8)
King Drive (63rd to Roosevelt)	19:25 (21.6)	15:40 (26.8)	18:48 (22.3)	17:21 (24.2)
Indiana Avenue (63rd to Roosevelt)	16:08 (24.2)	-	15:26 (25.3)	-
Michigan Avenue (63rd to Roosevelt)	-	14:13 (26.9)	-	13:45 (27.8)
State Street (79th to Congress)	24:03 (23.1)	22:50 (24.4)	23:17 (23.8)	28:43 (19.3)
Halsted Street (67th to Eisenhower)	22:50 (20.4)	24:13 (19.2)	24:16 (19.2)	24:36 (18.9)
Ashland Avenue (63rd to Eisenhower)	17:13 (25.3)	20:38 (21.1)	16:56 (25.7)	18:08 (24.0)
Damen Avenue (63rd to Eisenhower)	15:55 (27.3)	15:30 (28.1)	17:33 (24.8)	16:33 (26.3)
Western Avenue (63rd to Eisenhower)	18:13 (23.9)	17:55 (24.3)	18:27 (23.6)	17:17 (25.2)
Pulaski Road (63rd to Eisenhower)	18:40 (23.3)	20:28 (21.3)	18:59 (22.9)	19:47 (22.0)
Dan Ryan Expressway (87th to Madison)	12:25 (50.9)	19:00 (33.3)	20:56 (30.2)	13:23 (47.2)
Dan Ryan Detour Route (39th to Kennedy)	19:35 (23.6)	22:08 (20.9)	18:38 (24.8)	23:08 (20.0)

Source: Measurements taken by IDOT, and summarized by CATS.