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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

REPORT ON
SPRING STREET
CONTRAFLOW LANE

July 1, 1974

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SOUTHERN CALIFORNIA
RAPID TRANSIT DISTRICT

1060 SOUTH BROADWAY • LOS ANGELES, CALIFORNIA 90015 • TELEPHONE (213) 749-6977

JACK R. GILSTRAP
GENERAL MANAGER

July 1, 1974

TO: Members of the Board of Directors

FROM: George W. Heinle, General Manager Pro Tempore

SUBJECT: Report on Spring Street Contraflow Lane

THE CONTRAFLOW OPERATION INITIATED ON SPRING STREET ON SUNDAY, MAY 19, 1974, HAS NOW BEEN IN OPERATION FOR APPROXIMATELY SIX WEEKS. DURING THIS PERIOD OF TIME AN ANALYSIS HAS BEEN MADE IN ORDER TO EVALUATE (1) ITS FUNCTIONING, (2) ITS EFFECT ON TRAFFIC, (3) ITS EFFECT ON SPRING STREET BUSINESS ESTABLISHMENTS, AND (4) ITS EFFECT ON RTD PATRONS.

THE RESULTS OF SUCH STUDIES ARE AS FOLLOWS:

EFFECT ON BUS MOVEMENTS

1. 15% INCREASE IN BUS SPEED IN THE CONTRAFLOW LANE AS COMPARED TO FORMER OPERATION FOR SIMILAR LENGTH OF MAIN STREET.

2. 4% INCREASE IN BUS SPEED SOUTHBOUND ON SPRING STREET.

3. 16% INCREASE IN BUS SPEED NORTHBOUND ON MAIN STREET DUE TO MOVING OF COMMUTER BUSES TO SPRING STREET.

4. NO SIGNIFICANT DELAYS IN THE CONTRAFLOW LANE SINCE MONDAY, MAY 20, 1974.

5. 6 OUT OF 10 PASSENGERS FEEL IT IS FASTER, WHILE ONLY 1 OUT OF 10 FEELS THAT IT IS SLOWER.

EFFECT ON BUS PASSENGERS

1. 74% FAVOR CONTRAFLOW OPERATION ON SPRING STREET.

2. 7% NEW RIDERS.

EFFECT ON ADJOINING BUSINESSES

1. 2/3 EITHER IN FAVOR OR DO NOT OPPOSE THE CONTRAFLOW.

2. LOADING AND ACCESS PROBLEMS SOLVED FOR MAJOR PORTION OF OTHER 1/3.

EFFECT ON ACCIDENTS

1. NO PEDESTRIAN ACCIDENTS INVOLVING BUSES.

2. 2 MINOR VEHICULAR ACCIDENTS WHERE AUTOMOBILES IN PARKING LOT DRIVEWAYS COLLIDED WITH SIDE OF BUS. IN ONE CASE, AUTOMOBILE ROLLED BACKWARDS INTO THE SIDE OF THE BUS.

EFFECT ON OTHER VEHICULAR TRAFFIC

1. 21% INCREASE IN AM PEAK SPEEDS SOUTHBOUND ON SPRING STREET.

2. 40% INCREASE IN PM PEAK SPEEDS NORTHBOUND ON MAIN STREET.

ADEQUACY OF SIGNS AND MARKINGS

1. 93% OF BUS PASSENGERS WHO ALSO DRIVE AUTOMOBILES INDICATED THEY WOULD HAVE NO DIFFICULTY UNDERSTANDING THE CONTRAFLOW.

2. 77% LIKED THE BUS STOP SIGNS; 63% LIKED THE PEDESTRIAN SIGNS; AND 65% LIKED THE TRAFFIC CONTROL SIGNS.

CONCLUSIONS

IT APPEARS THAT IN REGARD TO BUS MOVEMENTS, ITS EFFECT ON OTHER VEHICULAR TRAFFIC, ITS FUNCTIONAL FEASIBILITY AND PASSENGER ACCEPTANCE, THAT THE CONTRAFLOW LANE IS AN UNQUALIFIED SUCCESS. SOME PROBLEMS STILL EXIST WITH ITS ACCEPTANCE BY ADJOINING BUSINESS ESTABLISHMENTS, HOWEVER, ALL MAJOR PROBLEMS IN THIS RESPECT APPEAR TO HAVE BEEN SOLVED.

General Description of the Contraflow Operations

The contraflow operation on Spring Street was initiated on Sunday May 19, 1974, and provides an exclusive bus lane northbound on Spring Street from Ninth Street to Macy Street. Busway Route 60 utilizes the lane from Ninth Street to the freeway (Aliso Street). Other Busway routes enter the lane at First Street and exit at Aliso Street. In addition, commuter bus routes serving the San Fernando and San Gabriel Valleys, Burbank, Glendale, La Crescenta, Montrose, Pasadena and Sunland, also use this lane. In the PM peak hour, 112 buses move through the heaviest utilized portion of the lane just north of First Street. Addendum No. 1 is a brochure issued to the public providing a map and description of the operation.

Analysis Approach

Since this lane was intended to demonstrate the operational feasibility of such an arrangement, District staff has attempted to the greatest degree possible in such a short time to obtain statistical data which indicates its impact on the various segments of our community affected by the operation. These include the bus rider, the automobile driver, the pedestrian, and the adjoining business owners.

Evaluation procedure included (1) bus travel time checks by the District's Schedule Department, (Addendum No. 2); (2) "floating-car" test of vehicle movements by Wilbur Smith & Associates, (Addendum No. 3); (3) an opinion survey of RTD passengers utilizing buses in the lane, (Addendum No. 4); (4) personal interviews with managers of businesses adjacent to the contra-flow lane, (Addendum No. 5); and special observations by District supervisory force.

Effect on Bus Movements

1. Bus speeds:

   (1) Results of a check conducted by District staff indicates that since the initiation of the Contra Flow operation, a schedule speed of 8.6 m.p.h. has been attained by buses using the Contra Flow lane. When these buses operated on Main Street prior to the Contra Flow operation, the schedule speed was 7.3 m.p.h. The result, a 1.3 m.p.h. improvement in schedule speed. (Addendum #2)

(2) According to opinions of passengers surveyed, of those responding, 57% felt that buses operating on the Contra Flow lane carried them out of the Downtown area faster, 31% felt that there was no difference from the Main Street operation, and 12% indicated that they felt that buses on the lane were slower than before. (Addendum #4)

2. Service Reliability:

(1) District supervisory staff have reported that to date, the lane has been functioning smoothly and with the exception of a few minor delays experienced on Monday, May 20, 1974, the first weekday of operation, mostly because by then bus operators and other vehicle drivers had not yet become oriented, no delays of a significant nature have occurred.

(2) From those responding ot our Contra Flow passenger survey, it was learned that 49% felt that delays were less frequent, 35% felt delays were about as frequent as when the bus operated on Main Street, and 16% thought delays were more frequent. (Addendum #4)

Effect on Bus Passengers

1. Convenience:

From passenger response to the Contra Flow passenger survey, it was learned that 74% much preferred the convenience and greater safety of the Spring Street bus stops as opposed to the stops formerly on Main Street. 15% stated that it made no difference as to which street their bus stop was located on, and only 11% found that the new stops on Spring Street were less convenient to them. (Addendum #4)

2. New Bus Riders:

Of passengers responding to the survey, it was learned that 7% are new bus riders since the start of the Contra Flow operation. (Addendum #4)

3. General Comment:

562 passengers made general comments on the Contra Flow operation over and above answers to the questions asked. 73% of these were favorable, 27% unfavorable. (Addendum #4)

Effect on Adjoining Business Establishments

During the first two weeks of the Contra Flow operation (May 22, 1974 through May 31, 1974) District staff personally called on all of business establishments adjacent to the lane in order to survey the effect that the lane had on these businesses. (Addendum #5) This survey indicated to us that approximately 66% of these establishments were either in favor, or at least not opposed, to the operation of the lane. Approximately 34% were opposed. The opposition factors, for the most part, fell into the following three categories:

(1) Material loading and unloading problems.
(2) Customer access (by auto, taxi, etc.).
(3) Sidewalk litter and congestion problems.

It should be noted that District staff is constantly endeavoring to alleviate any problems that can be corrected.

Effect on Accidents

The District's accident data is not available in a form which would lend itself to a comparison of the former Main Street operation as opposed to the new Spring Street contraflow operation. It is worthy of note however, that to date, only two bus vs. other vehicle accidents have taken place on the contraflow lane. These two accidents were very minor in nature. One involved an auto rolling backwards from a driveway into the side of a bus. The other occurred when a motorist pulling from a driveway drove into the side of a passing bus.

Effect on Other Vehicular Traffic

Traffic Speed

Wilbur Smith and Associates studied before and after contraflow traffic speeds on both Spring and Main Streets. This study revealed that average traffic speeds on both of these streets have increased.

It was found that during the period from 7:00 a.m. to 9:00 a.m. that the traffic speed on Spring Street (southbound) had increased from 11.5 miles per hour as recorded in June 1973 to 13.9 miles per hour in June 1974. This represents a 20.9% increase in speed despite the dedication of one traffic lane for contraflow buses. On Main Street (northbound) traffic speeds between 4:00 p.m. and 6:00 p.m. have increased from 13.2 miles per hour in June of 1973 to 18.6 miles per hour in June of 1974. Seemingly the more regimented operation of buses on the Contra Flow lane and the self enforcement features of the Contra Flow lane on Spring Street have helped to speed traffic on both Spring and Main Streets. Also, on Spring Street, where vehicles may no longer stop and block the easterly most lane of traffic a smoother flow has resulted. In the case of Main Street, where many buses no longer operate "leap frog" fashion (moving in and out, to and from the curb, passing one another, virtually using two or more lanes at all times) a smoother flow has also resulted.

Adequacy of Signing and Markings

In the passenger survey that was conducted, several questions dealt with signs, markings, and the understanding of same. One question asked, "If you drive an automobile as well as take the bus, would you find any difficulty understanding how you may drive on Spring Street?", resulted in an interesting response. Of those responding, 92.6% indicated that they would have no difficulty understanding. Only 7.4% indicated that they didn't understand. Percentages of "good" opinions of signs were as follows: Bus stop signs 77.2%, Pedestrian signs 63.3%, and Traffic control signs 64.6%.

Respectfully submitted,

George W. Heinle

George W. Heinle
General Manager Pro Tempore

A D D E N D U M

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A D D E N D U M

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Addendum #2

RTD 37-11
REV. 3/65

DEPARTMENTAL

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

1060 SOUTH BROADWAY
LOS ANGELES

DO NOT INCLUDE MORE THAN ONE SUBJECT IN THIS COMMUNICATION

DATE: June 4, 1974

TO: G. W. HEINLE

FROM: K. W. WEBSTER

SUBJECT: SOUTHBOUND SPRING STREET RUNNING TIME BEFORE CONTRA-FLOW -VERSUS- AFTER CONTRA-FLOW

Attached is a comparison of consumed time for Suburban-Interurban bus lines on southbound Spring Street from Aliso St. to Seventh & Main St., before contra-flow compared to after contra-flow.

The before contra-flow running time checks were made Thursday, April 4, while the after contra-flow is a three day average of running time checks made on Tues. 5-28, Wed., 5-29 and Thurs. 5-30-74.

This comparison indicates after the contra-flow route was introduced, on an overall basis, the consumed time from Spring & Aliso St. to Seventh & Main St. was 0.2 minutes less.

K. W. Webster
Superintendent of Schedules

KWW:rrt
Attachment
cc: J. S. Wilkens
J. T. Johnston

CONSUMED TIME COMPARISON
SOUTHBOUND SPRING STREET
BEFORE CONTRA-FLOW -VERSUS- AFTER CONTRA-FLOW

TIME PERIOD	CONSUMED TIME IN MINUTES SPRING ST. & ALISO ST. TO SEVENTH & MAIN ST. BEFORE CONTRA-FLOW	AFTER CONTRA-FLOW	AFTER CONTRA-FLOW MINUTES DIFFERENCE
600AM	5.7	5.2	-0.5
700AM	7.3	7.1	-0.2
800AM	6.4	6.2	-0.2
900AM	6.0	5.6	-0.4
200PM	5.1	5.3	+0.2
300PM	5.4	5.3	-0.1
400PM	5.8	5.7	-0.1
500PM	5.5	5.3	-0.2
AVERAGE	5.9	5.7	-0.2

SCHEDULE DIVISION
JUNE 4, 1974

Addendum #2 a

RTD 37-11
REV. 3/65

DEPARTMENTAL

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

1060 SOUTH BROADWAY
LOS ANGELES

DO NOT INCLUDE MORE THAN ONE SUBJECT IN THIS COMMUNICATION

DATE: June 6, 1974

TO: G. W. HEINLE

FROM: K. W. WEBSTER

SUBJECT: NORTHBOUND MAIN STREET RUNNING TIME, BEFORE CONTRA FLOW SPRING ST. VERSUS AFTER CONTRA FLOW SPRING ST.

Attached is a comparison of consumed time for bus lines operating Northbound on Main Street from 8th Street to Macy, before Contra-flow Spring Street compared to after Contra-flow Spring Street.

The before Contra-flow Spring Street running time checks were made on Tuesday, October 16, 1973, while the after Contra-flow Spring Street checks were made on Monday, June 3, 1974

This comparison indicates after the bus lines were moved from Northbound Main street to Northbound Spring Street Contra-flow the running time for the remaining bus lines on Main Street, was reduced from 10.1 minutes to 8.7 minutes, a reduction of 1.4 minutes.

K. W. Webster
K. W. WEBSTER
Superintendent of Schedules

RECEIVED
JUN 7 1974
G.W.H.

CC:J.S. Wilkens
J.T. Johnston

CONSUMED TIME COMPARISON

NORTHBOUND MAIN STREET

BEFORE CONTRA-FLOW SPRING ST. -VERSUS- AFTER CONTRA FLOW SPRING ST.

MAIN & 8TH ST. TO MAIN & MACY

	BEFORE CONTRA-FLOW	AFTER CONTRA-FLOW	AFTER CONTRA-FLOW MINUTES DIFFERENCE
6:00AM	7.8	7.4	-0.4
7:00	8.0	8.2	+0.2
8.00	8.7	8.1	-0.6
9.00	9.2	7.9	-1.3
10:00	10.0	8.6	-1.4
11:00	9.8	9.0	-0.8
12:00P	10.8	8.7	-2.1
1:00	10.3	9.1	-1.2
2:00	10.3	9.0	-1.3
3:00	10.5	8.6	-1.9
3:30	11.3	8.8	-2.5
4:00	11.9	9.6	-2.3
4:30	12.1	9.7	-2.4
5:00	11.3	9.5	-1.8
5:30	9.0	8.8	-0.2
AVERAGE	10.1	8.7	-1.4

A D D E N D U M

NUMBER

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Wilbur Smith & Associates, Inc.

CABLE: WILSMITH CONSULTING ENGINEERS AND PLANNERS CALIFORNIA

5900 WILSHIRE BOULEVARD, SUITE 2950 • (213) 938-2188

Los Angeles, Calif. 90036

June 28, 1974

Mr. George Heinle
Southern California Rapid Transit District
1060 South Broadway
Los Angeles, California 90015

Dear Mr. Heinle:

We are presently continuing our investigation of vehicle operating speeds on Spring and Main Streets in Downtown Los Angeles. The "floating car" procedure is being used by the City Department of Traffic and by our firm to ascertain the impact of the Spring Street contra-flow lane upon traffic speeds on Main and Spring Streets.

City Department of Traffic travel speed data was available for the June, 1973, period to document the conditions before implementation of express bus or contra-flow operations on the Spring-Main one-way couple. Since these travel time runs were made, but before contra-flow operation was implemented, the City has completed a retiming program for traffic signals in the Downtown area. This program has, by City estimates, increased travel speeds on one-way streets by approximately 20 per cent. The City conducted a travel speed study in the Downtown after completion of the signal retiming program and before institution of the contra-flow lane on Spring Street. We are presently obtaining these data from the City.

Enclosed with this letter are two illustrations presenting travel speed data obtained for the morning peak period on Spring and afternoon peak on Main during June, 1973, and June, 1974. The travel time run for Spring Street began on Arcadia at Alameda Street, continued west to Spring, south on Spring to 7th, and east on 7th to Main. The Main Street route began on Main at 7th continued north to Aliso, then east on Aliso to Alameda Street. Floating car runs were made for each 15-minute period between 7 and 9 A.M. on Spring and 4 and 6 P.M. on Main.

The average speed recorded on Spring Street during the morning period was 11.5 mph in 1973 and 13.9 in 1974. This period reflects both the improved signal progression and the provision

of the northbound contra-flow lane. If a 20 per cent improvement in travel speed was realized from the retiming, these averages would indicate that the travel speed has been unaffected by provision of the contra-flow lane. Traffic volumes were approximately the same for each period.

The variations of operating speeds on Spring Street are depicted in Figure I. The floating car runs made this month recorded a higher average travel speed for each 15-minute interval throughout the morning peak hour. Average speeds for each data set decrease from the 7:00 A.M. interval to the 7:45 A.M. interval and then begin to increase as the peak traffic conditions dissipate. Average speeds are uniformly higher throughout the period, reflecting increased travel speeds resulting from the signal retiming, but moderated by the loss of one traffic lane to use as a northbound contra-flow lane. This is evident as the least increase in speed is found during the peak traffic conditions between 7:30 and 8:00 A.M. while the increase in speed becomes greater as traffic volumes decrease and the full advantage of the signal retiming is afforded the lower traffic densities.

Main Street peak-period operating speeds, as recorded by the two floating car studies, averaged 13.2 mph in 1973 and 18.6 in 1974. The travel speed improvement for Main results from both the signal retiming and the reduction in travel delay associated with lower transit volumes on Main. The operating speeds for each 15-minute period are at least 20 per cent faster for the June, 1974, runs as compared to the 1973 travel speeds (See Figure 2.) The least difference between the two data set again occurs during the peak traffic condition prevalent between 4:15 and 4:45 P.M. As traffic density is reduced, vehicles are more able to take advantage of the improved signal progression on Main.

Summary - A careful study of "before and after" traffic conditions resulting from "contra-flow" operation on Spring and Main Streets indicates improved travel flow for both transit vehicles and passenger cars. Improvements in traffic signal timing by the City Traffic Department have obviously been the major factor in these increased travel speeds. However, it appears the reduced volume on Main Street and the reduction of curb loading friction on the west side of Spring Street have also improved traffic flow.

Based upon presently available data, the contra-flow lane appears to have improved overall traffic conditions on the one-way couple of Spring and Main Streets. Improved running speeds were recorded during all peak A.M. and P.M. periods of analysis and traffic delays have been significantly minimized.

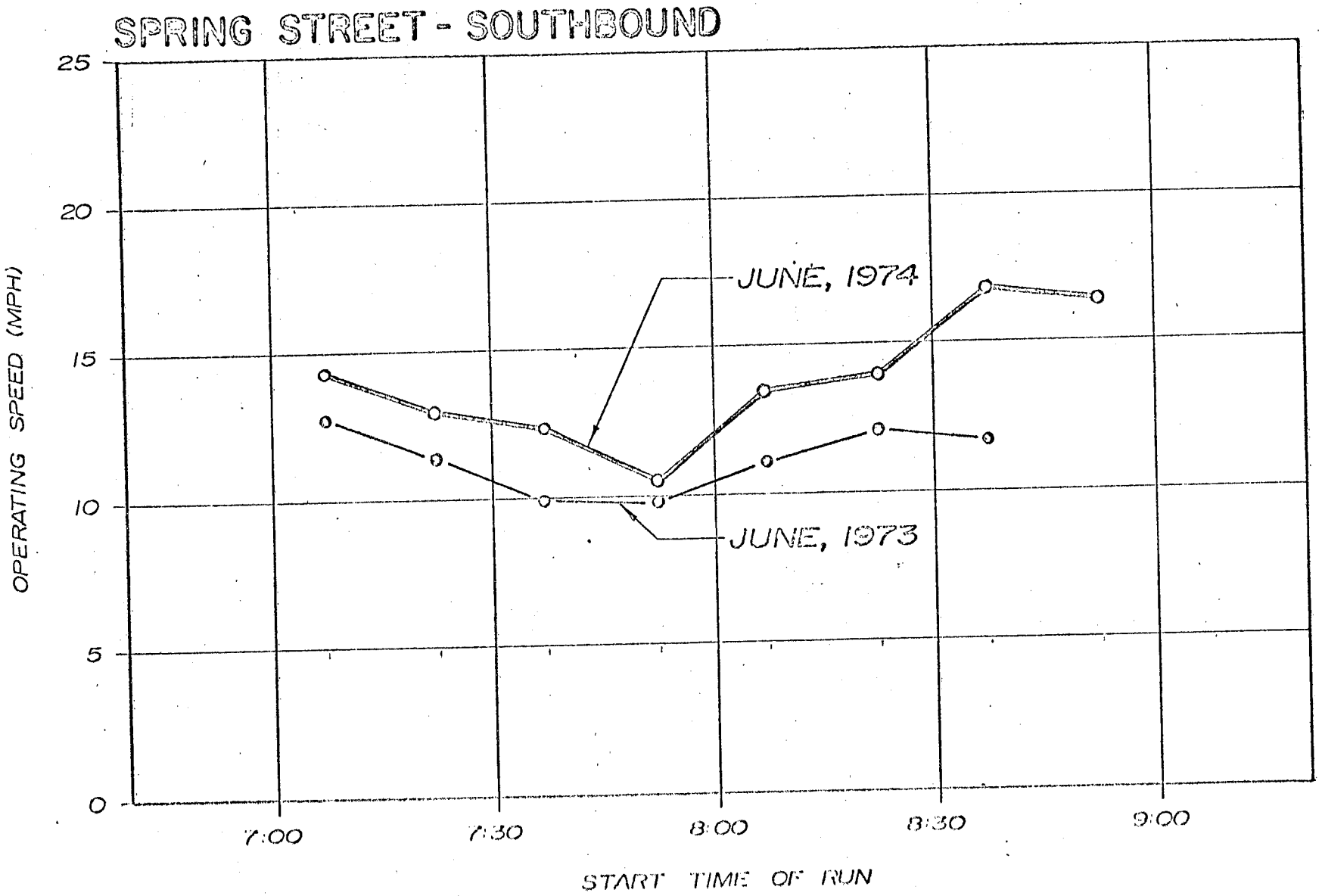
Upon receiving the City travel speed data for the pre-contra-flow, post-retiming period, we will incorporate the information and complete our analysis of the travel speed impact of the contra-flow lane. That letter will be forthcoming early next week.

Best regards.

Respectfully submitted,
WILBUR SMITH & ASSOCIATES

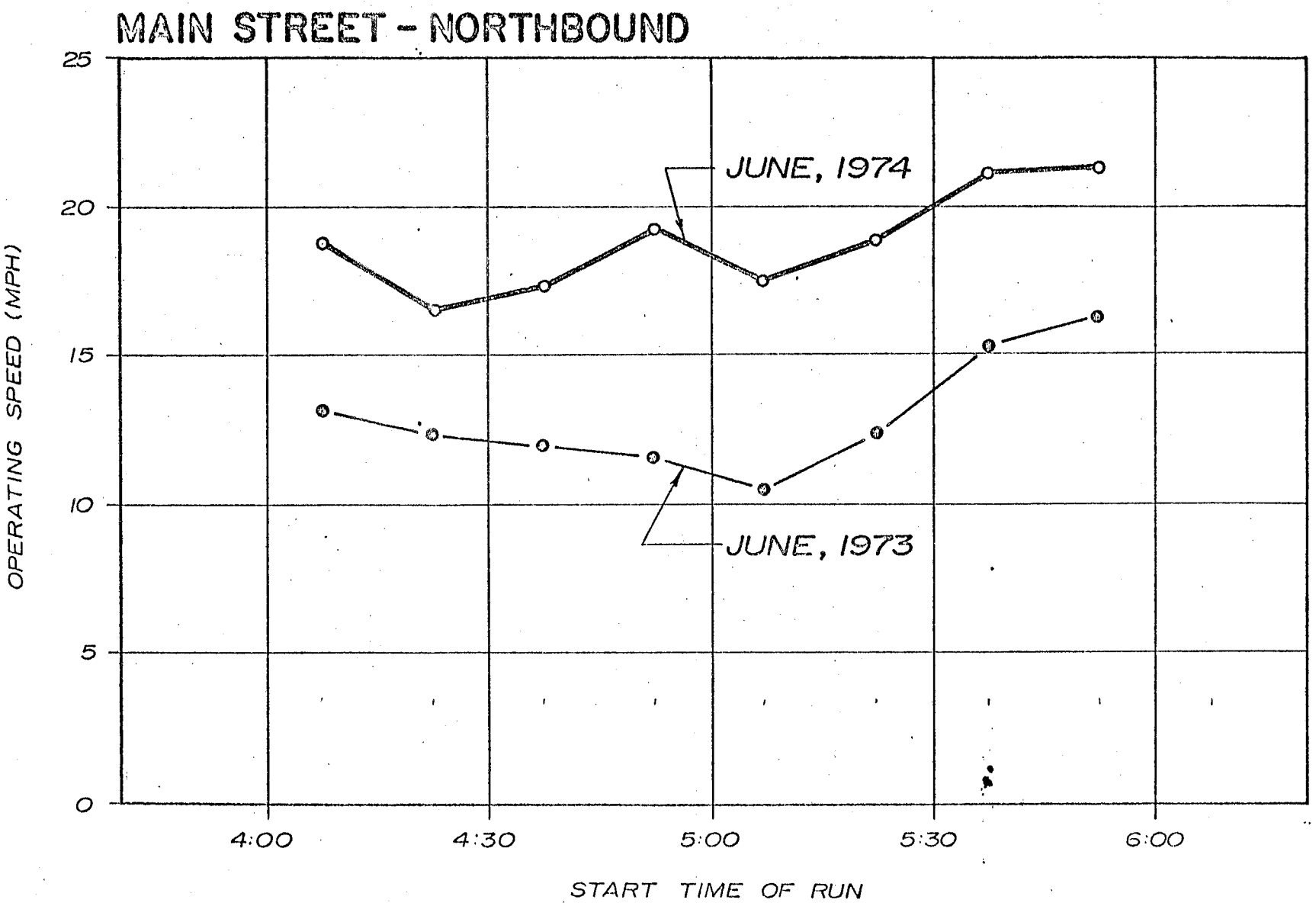
Bryant T. Brothers
Principal Engineer

BTB:nsl
Encls.



ROUTE SPEED COMPARISON

FIGURE 1



ROUTE SPEED COMPARISON

Wilbur Smith and Associates

FIGURE 2

A D D E N D U M

NUMBER

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RTD 37-11
REV. 3/65

DEPARTMENTAL

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

1060 SOUTH BROADWAY
LOS ANGELES

DO NOT INCLUDE MORE THAN ONE SUBJECT IN THIS COMMUNICATION

DATE: July 1, 1974

TO: G. W. Heinle

FROM: A. W. Styffe

SUBJECT: Contraflow Passenger Survey

On Monday, June 10, 1974, a survey was conducted by giving passengers that boarded each bus operating via the Spring Street Contraflow lane a postage paid postcard asking several questions. 1,463 persons responded by answering the questions and returning their cards.

Below is a reproduction of the questions asked and the answers as computed.

CONTRAFLOW SURVEY

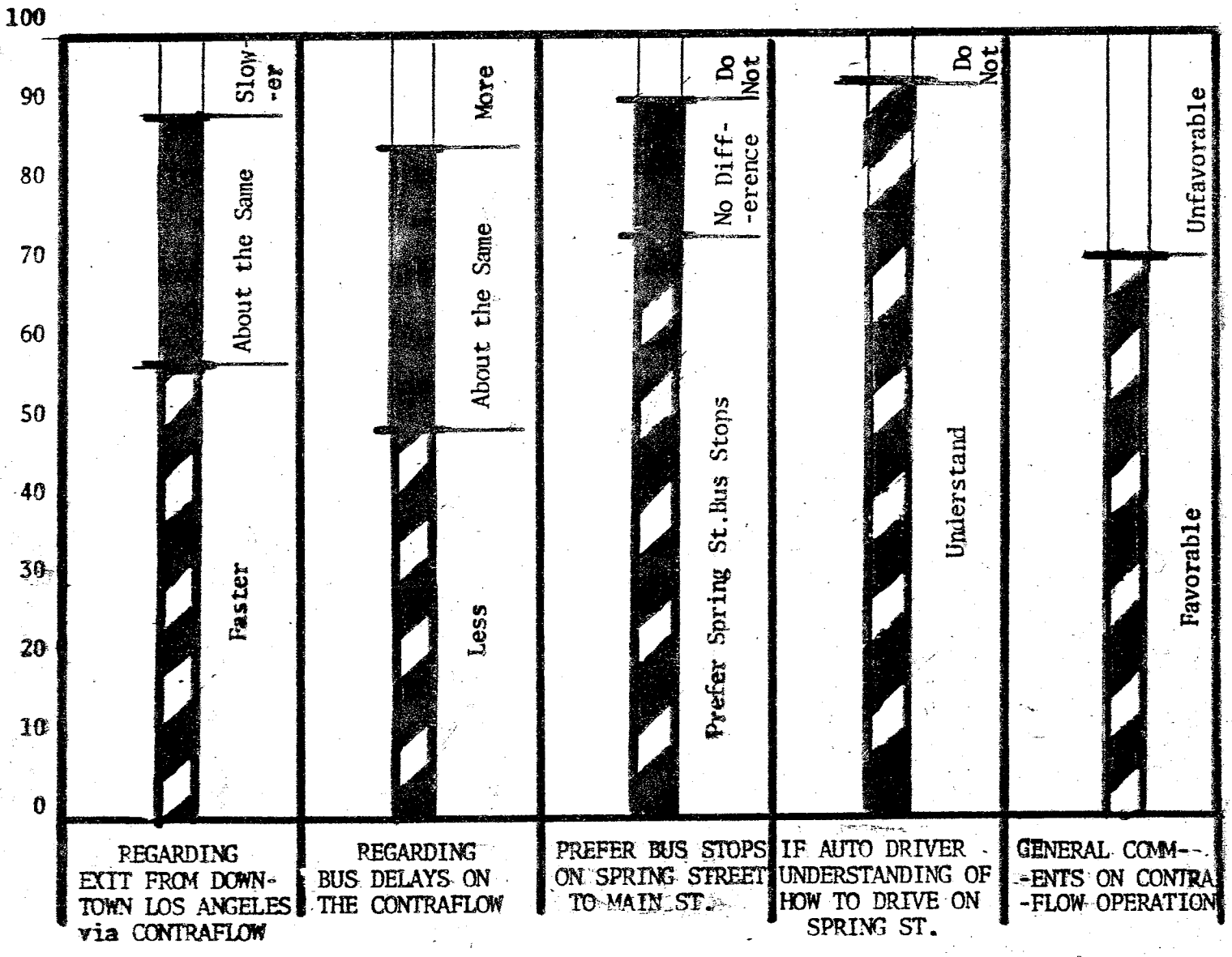
On May 19, RTD started operations of a contraflow bus lane on Spring St. The idea behind this new operation was to see if this type of priority bus lane would expedite transit service in Los Angeles and whether or not it would make better use of streets, while at the same time, providing more convenient and reliable public transportation service. We would appreciate your taking a few moments to give us your opinions regarding this new service.

1. Did you use the bus regularly prior to contraflow? YES =1361
   Or did you start using the bus after the contraflow lane was introduced? YES =95
2. Since contraflow, do you find that the bus now gets you out of the downtown area?
   Faster =822 More slowly =166 About the same as before =453
3. Do you find that since contraflow was started, major delays — that is when the bus is 10 or more minutes late — are:
   Less frequent =677 More frequent =224 About the same =471
4. As compared to the former bus stops on Main Street, are the new bus stop locations on Spring Street:
   More convenient =1049 Less convenient =151 No difference =219
5. If you drive an automobile as well as take the bus, would you find any difficulty understanding how you may drive on Spring Street? Yes=107 No =1356
6. What is your opinion as to the adequacy of the signs erected in connection with the contraflow lane;
   Bus stop signs: good=1108 adequate=253 inadequate =73
   Pedestrian signs: good=879 adequate =442 inadequate =66
   Traffic control signs: good =889 adequate=421 inadequate =65

May we have any additional comments you might have regarding contraflow operation:
Comments dealing only with the Contra Flow lane operation and the Contra Flow lane bus stops .
Favorable = 410 Unfavorable = 152

On the following page is a chart showing the percentages of opinion on certain key questions.

SURVEY OF CONTRAFLOW PASSENGERS INDICATES
APPROVAL OF CONTRAFLOW LANE



OPINIONS OF PASSENGERS RESPONDING TO SURVEY QUESTIONS

A D D E N D U M

NUMBER

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RTD 37-11
REV. 3/63

DEPARTMENTAL

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

1060 SOUTH BROADWAY
LOS ANGELES

DO NOT INCLUDE MORE THAN ONE SUBJECT IN THIS COMMUNICATION

DATE: June 3, 1974

TO: G. W. Heinle

FROM: A. W. Styffe

SUBJECT: Survey of Commercial and Professional Establishments Adjacent to Contraflow Lane on Spring Street

Between May 22 and May 31, 1974, representatives of 52 businesses on the east side of Spring Street from the Civic Center to Ninth Street, were contacted and interviewed by District staff to elicit comments regarding the effects had on them by the contraflow operation for buses, established on Spring Street Sunday, May 19, 1974.

The method of operation followed during these interviews was to listen to what comments were made by the persons interviewed and to make note of them. Suggestions of possible problems resulting from the contraflow operation were not introduced, therefore the responses received were spontaneous in nature.

Of the 52 establishments contacted, a favorable or non-objecting response to the contraflow operation was received from 34 of these firms. Representatives of the other 18 establishments voiced objection, for various reasons, to the operation of the contraflow lane. From the interviews conducted, it is shown that the percentage not opposed to the contraflow operation is approximately 66%, as compared to approximately 34% opposed to the contraflow operation.

Of the various complaints voiced as reasons for being opposed to the contraflow operation, it is found that they fall, for the most part, into three principal categories, those being: (1) Loading and unloading difficulties, (2) Customer access difficulties (via auto), and (3) Complaints of persons waiting for buses causing congestion and littering sidewalks.

District staff has attempted to work with the business people in an effort to solve or alleviate the problems. In the area of loading and unloading problems, alternate locations, such as side streets, alleys and across the street have been suggested.

To those complaining of the lack of auto access it has been pointed out that increased business from the greater pedestrian traffic on Spring Street, because of the bus stops, should, in the long run, make up for other business lost.

With regard to sidewalk congestion and the litter problem, efforts are being made, where possible, to adjust bus stop locations. District staff has requested the city to locate trash baskets on the sidewalk in the vicinity of the bus stops, but to date there has not been a positive response to this request.

It should be noted that the great majority of persons contacted expressed appreciation of the fact that at least the R.T.D. did care enough to contact and speak with them. This response came ever from those opposed to the contraflow operation.