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LAKE STREET TRAFFIC CONDITIONS
A BEFORE AND AFTER STUDY

INTRODUCTION

Late in 1970, citizens living on and around Lake Street became strongly concerned over what they felt were serious traffic conditions on Lake Street. What the citizens were most aroused about were the vehicular speeds. Radar speed checks by the Department of Public Works indicated that 85 percentile speeds were running in the neighborhood of 32 to 34 miles an hour. The 85 percentile speed is the speed level which is exceeded by only 15 per cent of the vehicles and is about the upper limit at which responsible motorists drive. On January 28, 1971, a representative of the Department of Public Works attended a citizens' meeting at which 75 to 100 members of the local group were present. At this meeting, two different concepts were developed by the local group:

1. The placement of 4-way STOPS at regular intervals along Lake Street to control speeding and hopefully to provide for safety and a quieter street.

2. As an alternative to the above, traffic signal control along Lake Street in a progressive signal system which would limit speeds to 25 to 30 miles per hour range.

Both of these concepts were presented to the Fire, Safety and Police Committee of the Board of Supervisors at a hearing in March, and this committee decided to install 4-way STOP signs at seven intersections. The locations were 4th, 6th, 9th, 12th, 15th, 19th and 22nd Avenues. The local citizens groups also requested the Department of Public Works to install pavement markings to delineate narrower traffic lanes and to provide separate bicycle lanes and pedestrian refuge areas. The Department agreed and all these items were installed on May 23, 1971.

TRAFFIC STUDIES

The Department of Public Works decided to make a comprehensive traffic study to determine the effects of these traffic changes on traffic patterns. The studies made were as follows:

1. Comprehensive 24-hour traffic counts on all the east-west streets in the Richmond District.

2. Before and after spot speed studies.

3. A license plate survey to determine origins and destinations of motorists using Lake Street.

FINDINGS

Traffic Volumes - Table 1 shows 24-hour traffic volumes on east-west streets in the Richmond corridor. The before traffic counts were taken in the first part of May 1971, and the after traffic counts were taken a month later.

TABLE 1
BEFORE AND AFTER DAILY TRAFFIC VOLUMES
INNER RICHMOND CORRIDOR

Street	Before Volumes (May 1971)	After Volumes (June 1971)	Per Cent Change
Lake St.	9,943	6,945	-30%
California St.	15,641	18,452	+18%
Clement St.	9,251	9,548	+ 3%
Geary Blvd.	35,507	38,806	+ 9%
Anza St.	3,514	3,861	+10%
Balboa St.	12,521	12,707	+ 1%
Cabrillo St.	2,673	2,844	+ 6%
Fulton St.	17,286	21,031	+22%
Total	106,336	114,194	+ 7.2%

The corridor as a whole experienced a volume increase of slightly over seven per cent. Lake Street traffic decreased by about thirty per cent. It appears that practically the entire shift of traffic from Lake Street has been borne by California Street. There were about 3,000 less vehicles a day on Lake Street and about 2,800 more on California Street.

Table 2 shows the A.M. peak hour traffic counts on Lake, California, Clement Streets, and Geary Boulevard.

TABLE 2

BEFORE AND AFTER A.M. PEAK HOUR VOLUMES
LAKE, CALIFORNIA AND CLEMENT STREETS AND GEARY BLVD. (7:30-8:30 A.M.)

Street	Before Volume (May 1971)	After Volume (June 1971)	Change
Lake St. eastbound	628	357	-271
California St., eastbound	1,009	1,112	+103
Clement St., eastbound	413	419	+ 6
Geary Blvd., eastbound	2,280	2,190	- 90
Total	4,330	4,078	-252

There has been a considerable drop in Lake Street traffic that is only partially reflected in California Street growth. From this it appears that some motorists who have been using Lake Street have shifted to the Marina or other corridors.

Table 3 shows westbound traffic counts in the evening peak hour, 4:30 to 5:30.

TABLE 3
BEFORE AND AFTER P.M. PEAK HOUR TRAFFIC VOLUMES
LAKE, CALIFORNIA & CLEMENT STS. AND GEARY BLVD.
(4:30-5:30 P.M.)

Street	Before Volume (May 1971)	After Volume (June 1971)	Change
Lake St. westbound	725	505	-220
California St., westbound	853	1,056	+203
Clement St., westbound	374	389	+ 15
Geary Blvd., westbound	1,506	1,704	+198
Total	3,458	3,654	+196

The drop in Lake Street traffic seems to be entirely taken up on the adjacent streets; in fact, there is an increase in the total westbound volume in the Geary-Clement-California-Lake Street complex. This is probably due to the fact that other streets in competing corridors such as the Marina are saturated in the evening peak hour and thus people continue to use the Richmond corridor for their movements. Here it appears that California Street is taking the bulk of the shift.

TRAFFIC SPEEDS

Table 4 shows 85 percentile traffic speeds before and after the STOP sign installation at three locations on Lake Street. The locations are immediately adjacent to new STOP sign installations.

TABLE 4

85 PERCENTILE TRAFFIC SPEEDS ON LAKE STREET
LOCATIONS ADJACENT TO NEW STOP SIGNS

Location	Before	After
East of 4th Ave.	34 mph	24 mph
East of 12th Ave.	32 mph	25 mph
East of 19th Ave.	32 mph	29 mph

Eighty-five percentile speeds dropped from a 32-35 miles per hour range to 25-29 miles per hour.

Table 5 shows traffic speeds at intersections that were a block away from the new STOP signs. Here 85 percentile speeds were 29 to 31 miles per hour indicating that the effect of the STOP signs had lessened.

TABLE 5

85 PERCENTILE TRAFFIC SPEEDS ON LAKE ST.
LOCATIONS A BLOCK AWAY FROM NEW STOP SIGN

Location	After
East of 8th Ave.	29 mph
East of 11th Ave.	31 mph
East of 18th Ave.	29 mph

ORIGINS OF TRAFFIC

Table 6 shows the origins of westbound traffic using Lake Street before and after the traffic changes. The study is for a 2-hour period in the afternoon.

TABLE 6

ORIGINS OF WESTBOUND TRAFFIC ON LAKE STREET - BEFORE AND AFTER
(Before Study - April 29, 1971, 2 to 4 P.M.)
(After Study - June 22, 1971, 2 to 4 P.M.)

			RICHMOND DISTRICT			
	Jackson St., The Presidio, etc.	Sacramento St.	Arguello Blvd. from So.	Arguello to 4th Ave.	4th to 8th Ave.	8th to 12th Ave.
Before	389	209	132	154	101	142
After	285	135	98	47	100	154

This study showed that 65 per cent of the westbound traffic on Lake Street east of Park Presidio used to originate from the east or south and 35 per cent originated within the Richmond District itself. The traffic changes resulted in a considerable drop in total traffic but only a slight shift of origin patterns. Now 63 per cent originates from the east or south and 37 per cent originates within the Richmond District itself.

DESTINATIONS OF TRAFFIC

Table 7 shows the destinations of westbound traffic on Lake Street.

TABLE 7

DESTINATIONS OF WESTBOUND TRAFFIC
ON LAKE STREET - BEFORE AND AFTER
(Before Study - April 29, 1971, 2 to 4 P.M.)
(After Study - June 22, 1971, 2 to 4 P.M.)

	Arguello to 4th Ave.	4th to 8th Ave.	8th to 12th Ave.	Outer Richmond District	South on Park Pres. Blvd.	To North (Mainly Marin Co.)
Before	126	103	140	457	122	179
After	61	124	120	280	96	138

Previously, the largest individual component of traffic on Lake Street (41 per cent) was destined to the outer Richmond, and 33 per cent was local traffic destined to the inner Richmond District. Local traffic to the inner Richmond District now comprises a larger percentage (37 per cent) while other traffic now comprises 63 per cent.

The greatest drop has been in traffic to the outer Richmond which now comprises 34 per cent of the traffic. It appears that many of the longer type trips traffic have shifted to California Street.

CONCLUSIONS

The traffic changes on Lake Street have been successful in shifting a fair amount of traffic from Lake Street and most of it has been absorbed on adjacent California Street. In the morning peak hour, however, it appears that some traffic has shifted to other corridors.

In regard to traffic speeds at locations in blocks immediately adjacent to STOP signs, traffic speeds have been reduced in the order of 7 miles per hour while at locations a block away, the reduction has been about 3 miles per hour.

The study of traffic patterns indicates that the greatest change has been to shift longer-haul traffic away from Lake Street and on to adjacent streets. Local traffic destined or originating within the Richmond District has been less affected.

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