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DEPARTMENT OF
PUBLIC WORKS

TRANSPORTATION DIVISION

CITY OF SACRAMENTO
CALIFORNIA

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July 23, 1991

APPROVED
BY THE CITY COUNCIL

JUL 23 1991

OFFICE OF THE
CITY CLERK

City Council
Sacramento, California

Honorable Members in Session:

SUBJECT: REPORT-BACK ON THE EFFECTIVENESS OF THREE-WAY STOPS AS A TRAFFIC SPEED CONTROL ALTERNATIVE

SUMMARY

This is a report-back on the effectiveness of three-way stops, installed at eight study locations for a period of six months as a vehicular speed control measure. This report back recommends City Council adopt the attached resolution which provides for the installation of three-way stops at an additional thirteen study locations and directs staff to report-back in 1992, after six additional months of monitoring all twenty-one study locations, with a final evaluation and recommendation regarding three-way stops.

BACKGROUND INFORMATION

Currently, City staff have three available alternatives to combat the City's speeding problem: the traffic undulation program; police radar enforcement; and the program of stop signs for speed control, which excludes three-way stops. Traffic undulations have been a very effective means of speed control as they create an actual physical deterrent to speeding, but the availability for wide spread use is highly constrained by their cost. Police radar enforcement is also an effective speed deterrent. There are not nearly enough officers available to maintain reduced speeds in given areas for more than a few days at a time. Stop signs however, do not require increased manpower or budget increases to be implemented. They are not a physical obstruction to speeders, but they have been an effective traffic control when installed at locations where they are warranted.

On October 30, 1990, the City Council adopted resolution 90-905 which approved a program involving the experimental installation of three-way stops at eight 'T' intersection locations. The purpose of the study was to evaluate the operation and effectiveness of the stop signs as a speed control measure at 'T' intersections. The study evolved through the need of the City for additional tools with which to counter the steadily increasing problem of vehicular speeding in residential areas.

The experimental three-way stop program's evaluation process includes collection of speed, volume, and accident data. The collection of information was conducted prior to the installation of the stop signs and again after the controls had been in place for six months (Appendix A). The results of the experimental program provide no indication that traffic volumes or the number of vehicular accidents were affected by the installation of three-way stops. However, on the whole there was a decrease in the speeds of vehicles. Of the eight study locations, seven experienced decreases in the 85th percentile speed, ranging from two to five MPH, the eighth location showed no appreciable change.

As a qualifying criteria for an intersection to be selected as a study location staff chose to use the County of Sacramento's warrants for all-way stops, which include three-way stops. Because the three-way stops do indicate that the decrease in speeds may be due to the stop signs, staff proposes to expand the study by installing three-way stops at thirteen additional locations. Staff would continue to use the warrants for all-way stops developed by the County and used as the selection criteria for the initial eight locations. The warrants include: considerations of distance to nearest traffic controls or intersection; volumes of traffic on the major and minor streets; pedestrian volume; sight distance (visibility); and the frequency of accidents susceptible to correction by stop signs. Additional observation of the existing eight locations in conjunction with thirteen new locations should provide sufficient information to make an objective determination as to the effectiveness of three-way stops as a speed control measure.

FINANCIAL DATA

The average cost of a three-way stop is approximately $500 per intersection. The total installation cost of approximately $6,500 will be absorbed by the FY 1991-92 Public Works Department, Transportation Division General Fund operating budget for stop signs.

POLICY CONSIDERATIONS

No formal policy changes are recommended at this time. However, if in the final report-back the use of three-way stops is recommended, there will be a policy issue involving the undulation program. Many of the streets on the undulation priority list may qualify for the installation of three-way stops. When formal policy is adopted, a determination will have to be made as to whether or not a street should be controlled with three-way stop signs and removed from the undulations priority list. Common traffic engineering practice indicates that the lower form of control be used before other measures are considered. There would be a substantial cost savings in using three-way stops versus undulations. Thus, streets on the undulations list that qualify for three-way stops would receive three-way stops and be removed from the priority list. This would necessitate a change in the undulation policy as well as the addition of policy regarding three-way stops.

MBE/WBE EFFORTS

This report will have no effect on MBE/WBE efforts.

RECOMMENDATION

This report-back recommends that the City Council adopt the attached resolution that provides for the installation of three-way stops at thirteen additional study locations shown in Appendix B and directs staff to report back to City Council in 1992, after six months of monitoring all twenty-one study locations, with a final evaluation and recommendation on the use of three-way stops for speed control.

Respectfully submitted,

FOR MICHAEL KASHIWAGI
Transportation Division Manager

RECOMMENDATION APPROVED:

WALTER J. SLIPE
City Manager

APPROVED:

MELVIN H. JOHNSON
Director of Public Works

Contact Person:

Edward H. Williams, Assistant Engineer
449-5307

July 23, 1991
All Districts

EW:lm
CA5-04.L
07.1291

RESOLUTION NO. 91-520

ADOPTED BY THE SACRAMENTO CITY COUNCIL

ON DATE OF _____

APPROVED
BY THE CITY COUNCIL
JUL 23 1991
OFFICE OF THE
CITY CLERK

APPROVAL OF THIRTEEN ADDITIONAL EXPERIMENTAL
THREE-WAY STOPS AS A TRAFFIC SPEED CONTROL ALTERNATIVE

WHEREAS, excessive vehicle speeds in residential areas of the city have increased, the number of speeding vehicles has increased, and traffic speed has become a focus of concern for the safety of neighborhoods and residents;

BE IT HEREBY RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

That Transportation Division staff are hereby directed to proceed with experimental installation of three-way stops at thirteen additional locations and report back in six months on the results of the installation at all twenty-one experimental locations.

_____
MAYOR

ATTEST:

_____
CITY CLERK

FOR CITY CLERK USE ONLY

RESOLUTION NO.: _____

DATE ADOPTED: _____

APPENDIX A

EXPERIMENTAL THREE WAY STOPS

17-Jul-91

LOCATIONS		6 MONTHS BEFORE	6 MONTHS AFTER		BEFORE	AFTER	% CHANGE		BEFORE	AFTER	% CHANGE
	ACCIDENTS	0	0								
				MAJOR	1973	2024	2.6%				
	APPROACH VOLUMES			MINOR	947	1054	11.3%	% > POSTED SPEED	84	84	0.0%
								85% SPEED	36.5	36.8	0.8%
JULLIARD DR & NOTRE DAME DR	SPEEDS							AVERAGE SPEED	32	33	3.1%
	ACCIDENTS	1	1								
				MAJOR	5113	5852	14.5%				
	APPROACH VOLUMES			MINOR	1028	1195	16.2%	% > POSTED SPEED	50	44.2	-11.6%
								85% SPEED	45	43	-4.4%
POCKET RD & WINDBRIDGE DR	SPEEDS							AVERAGE SPEED	41	39	-4.9%
	ACCIDENTS	0	0								
				MAJOR	3907	3777	-3.3%				
	APPROACH VOLUMES			MINOR	1055	750	-28.9%	% > POSTED SPEED	52.2	21.1	-59.6%
								85% SPEED	39.8	35.3	-11.3%
CALVINE RD & SUNNBRAE WAY	SPEEDS							AVERAGE SPEED	36	32	-11.1%
	ACCIDENTS	1	0								
				MAJOR	5367	3961	-26.2%				
	APPROACH VOLUMES			MINOR	1143	748	-34.6%	% > POSTED SPEED	67.9	54	-20.5%
								85% SPEED	41	35.3	-13.9%
EHRHARDT AVE & LOCKBORN DR	SPEEDS							AVERAGE SPEED	37	34	-8.1%
	ACCIDENTS	0	0								
				MAJOR	2350	1967	-16.3%				
	APPROACH VOLUMES			MINOR	467	374	-19.9%	% > POSTED SPEED	99	63.3	-36.1%
								85% SPEED	37.4	35	-6.4%
UNIVERSITY AVE & BRECKENWOOD WAY	SPEEDS							AVERAGE SPEED	35	31	-11.4%
	ACCIDENTS	2	1								
				MAJOR	7872	9328	18.5%				
	APPROACH VOLUMES			MINOR	1793	1984	10.7%	% > POSTED SPEED	91.5	72.6	-20.7%
								85% SPEED	45.6	40.6	-11.0%
SILVER EAGLE RD & MABLE ST	SPEEDS							AVERAGE SPEED	41	37	-9.8%
	ACCIDENTS	0	0								
				MAJOR	5957	5208	-12.6%				
	APPROACH VOLUMES			MINOR	1516	1166	-23.1%	% > POSTED SPEED	67.9	63.3	-6.8%
								85% SPEED	41	35.3	-13.9%
EHRHARDT AVE & CARLIN AVE	SPEEDS							AVERAGE SPEED	37	34	-8.1%
	ACCIDENTS	0	0								
				MAJOR	4152	4557	9.8%				
	APPROACH VOLUMES			MINOR	902	1050	16.4%	% > POSTED SPEED	77.8	66.7	-14.3%
								85% SPEED	35	32.2	-8.0%
SO. LAND PARK DR & GOLDEN OAK WAY	SPEEDS							AVERAGE SPEED	32	30	-6.3%

APPENDIX B

PROPOSED LOCATIONS FOR THREE-WAY STOPS

	LOCATIONS	DISTRICT
1.	5th Street & McClatchy Way	1
2.	Azevedo Drive & Pebblewood Drive	1
3.	Norwood Avenue & Fairbanks Avenue	2
4.	North Avenue & May Street	2
5.	34th Street & W Street	5
6.	La Riviera Drive & Lido Circle	6
7.	Wissemann Drive & Everglade Drive	6
8.	Center Parkway & Pomegranate Avenue	7
9.	Gloria Drive & Fennwood Court	8
10.	68th Avenue & Tamoshanter Way	8
11.	Bruceville Road & Calvine Road	7
12.	Monterey Way & Potrero Way	4
13.	35th Street & P Street	3