



CITY OF SACRAMENTO

32

TRAFFIC ENGINEERING DIVISION

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December 26, 1979

RECEIVED
DEC 26 1979

City Council
Sacramento, California

CITY MANAGER'S OFFICE

Honorable Members in Session:

SUBJECT: Undulations

SUMMARY

We have completed our study of the experimental undulations that were installed on Sandburg Drive. The results are generally positive and we recommend that they be installed on several other streets around the city.

BACKGROUND

After experimenting with undulations on an abandoned street for several months, the Council authorized an installation on Sandburg Drive on October 2, 1979. Four sets of two undulations each were placed along Sandburg Drive on October 11th and 12th. Prior to the installation, we made traffic counts and speed surveys in order to measure the effects of these pavement features. These surveys were repeated after the installation along with a postcard survey of the residents along the street. We found that the general speed along the street was reduced by approximately 5 miles per hour. The reduction was about 10 miles per hour within 400 feet of the undulations and about 15 miles per hour at the undulations. The traffic counts made before and after the undulations were not significantly different. However, it appears that there was a slight reduction in traffic volume. It is difficult to evaluate the traffic volume effects since there is a large seasonal variation due to Glenn Hall Park and Paradise Beach. We also checked the traffic volume on Carlson, which is the only alternative street to Sandburg and, again, changes in traffic volume were overshadowed by seasonal variations.

About 70 percent of the postcards sent to the residents along Sandburg were returned. Of those returned, 73% felt that the undulations had reduced speeding and 68% were in favor of keeping the undulations. The respondents were about evenly split on whether they felt the amount of traffic had been reduced. About 45% felt that the undulations were adequate but 30% felt they were not.

APPROVED
BY THE CITY COUNCIL

JAN 2 1979

OFFICE OF THE
CITY CLERK

We have identified several advantages and disadvantages to the placement of undulations. The main advantage is that they do appear to reduce speeding on streets such as Sandburg Drive. We would caution, however, that these undulations have only been in place for a couple of months and they may have less effect as time goes by. They may encourage traffic to use other routes but we are not sure of this at this time. The combination of the undulations and the extensive signing and markings should provide a reminder to motorists to keep their speed under control as they drive down long continuous streets. They seem to be well accepted by the residents living along the street.

The main disadvantages appear to be that some motorists will drive onto the sidewalk to avoid the undulations. This appears to be mostly motorcycles and small cars. The undulations have varying effects on different sizes and types of vehicles. They can be quite severe for small vehicles and for trucks with very stiff suspension systems. They have practically no effect on large cars with good suspension systems. The intensive signing on the approach to the undulations is not very aesthetic in a residential neighborhood. They should not be used along bus routes because they may eventually do mechanical damage to buses that drive over them many times every day. Utilizing undulations on some streets may increase traffic and speed on adjacent streets.

The following criteria are suggested for future installations:

1. They should only be used on neighborhood collector streets where all intersections are the "T" type. They would be inappropriate on major streets and stop signs can be used on streets with full intersections.
2. Since these installations are considered neighborhood improvements rather than traffic controls, they should be placed using General Funds or on an Assessment District basis.
3. Experimentation should continue as additional undulations are installed by trying various heights, widths and spacing.

FINANCIAL DATA

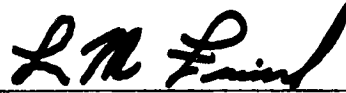
The Sandburg Drive undulations were installed by city crews. There were four sets and the total cost was \$2,400, including the signs and markings. It is suggested that in the future they be installed by contract and, to be safe, the cost should be estimated at about \$1,500 per set. To be effective, they should be installed about one set per 1,000 feet.

RECOMMENDATION

- A. It is recommended that this program be continued and expanded with the following qualifications:

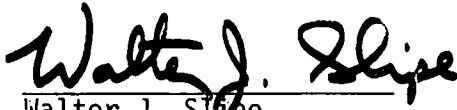
1. That the design used on Sandburg be modified in future installation in an attempt to affect further speed reduction.
 2. That adequate funds be provided for this program using either General Funds or Assessment Districts.
 3. That they only be placed on neighborhood collector streets with all "T" intersections.
 4. That the traffic engineering division establish a priority list for the placement of undulations.
- B. If the Council approves of this program, staff will proceed to prepare a priority list and recommendations for the 1980-81 Capital Improvement Budget.

Respectfully submitted,



L. M. Frink
Traffic Engineer

Recommendation Approved:



Walter J. Slupe
City Manager

LMF/mf

January 2, 1980
All Districts

CITY OF SACRAMENTO

INTER-OFFICE ROUTING

To:

- Mayor / City Council Office
- City Manager
- Asst. City Manager
- Asst. City Manager, Community Development
- Asst. to City Manager
- Public Information
- City Clerk
- Finance Administration
- Revenues & Collections
- Purchasing
- Central Stores
- Accounting
- Utility Billing
- Data Processing
- City Treasurer
- City Attorney
- Planning Department
- Personnel Administration
- Employee Relations
- Employee Services
- Management Services
- Personnel Selections
- Training
- Police Department

To:

- Fire Department
- Fire Prevention
- Weed Abatement
- Emergency Planning
- City Engineer
- Asst. City Engr. Administration
- Animal Control
- Real Estate & Street Assessment
- Facility Maintenance
- Street Maintenance
- Traffic - Parking
- Water & Sewer
- Building Inspection
- Electrical Inspection
- Plumbing Inspection
- Community Improvement
- Waste Removal
- Equipment Maintenance

To:

- Museum & History Commission
- Recreation & Parks Administration
- Recreation
- Parks
- Golf
- Zoo

- Crocker Art Gallery
- Library Administration
- Housing and Redevelopment
- Community Center
- _____

Note:


- For Your Information
- Return with Recommendations
- Please Comment
- Prepare Draft and Return
- Prepare Letter
- Take Necessary Action
- Investigate and Report
- Per Your Request
- Reply, Send Copy To:

- _____
- _____
- _____

To: L. FRINK, TRAFFIC ENGINEER REFERRAL OF AGENDA ITEM, MEETING OF 1-2-80

Comments ITEM NO. 33: Investigate parking problem in vicinity of 4445-4449-4453
Riverside Boulevard, Darrell Martin, owner.

cc: City Manager
City Engineer

Signature  Title or Dept. CITY CLERK Date 1-3-80
(1976)