

## SYNOPSIS

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It is known that a considerable variation exists across the country in the design of narrow medians. Since the roadside and type of highway conditions vary widely it is to be expected that designs for them will differ. But data are not available to predict traffic patterns and behavior adjacent to a prescribed narrow median for a known general condition. In the absence of a large scale research project, this symposium was developed as a form of collective research for examination of resultant operation data with different narrow median sections, related to the conditions for which they were designed.

Through the cooperation of seven State Highway Departments it was possible to obtain reports with information on 23 different narrow median designs for 5 general highway conditions. Narrow medians were considered to be those 8 ft or less in width, of raised curb, rounded or flush section. The general conditions were: (1) rural divided highways, without control of access, (2) major streets through residential or suburban areas, (3) major streets through business areas or with ribbon commercial development, (4) long structures or elevated highways, and (5) expressways. Separate reports for each median include a description of the highway site condition, highway cross section, median details, costs, data on traffic volumes, turning movements, speeds, placement, accident experience, and general conclusions as to suitability of the design.

California reported a narrow median (3) in general suitable but emphasized the need for a wider section to include a median lane. Their long structure report (4) shows need for striping adjustment.

Connecticut reported narrow medians reasonably suitable on residential and business streets, (2) and (3), but find inefficient pavement use because of parallel parking. On long structures (4) there was no significant difference with three types of high narrow medians. Their expressway (5) section appears suitable.

Illinois reported a rural narrow median (1) that was found unsuitable and changed to a flush section. In a second case (2 and 3) local demand resulted in addition of a great many median openings. On a Belt Line they used narrow medians over structures (4) as a logical design with wide medians elsewhere on the route.

Michigan reported a 3-ft. bituminous median (1 and 2) being tried as a low cost separator. Early experience is favorable.

New Jersey reported use of a high barrier curb (1) on a section with sharp curvature and steep grades to avoid very expensive alignment and profile changes. Also, they reported (2) use of precast reflecting flat curbs as a minimum street section; experience record good.

New York presented a preliminary report of large-scale speed-placement studies on different sections of the Long Island Parkways. Placement data are given but relation of volumes, speeds, etc., have yet to be analyzed.

The following tabulation is a summary of these reports. The condition number is that above indicated. The curb face slope is a ratio of the horizontal to vertical dimensions in inches. Where the vertical dimension is less than the curb height there is a bottom vertical section. Placement is the left wheel position measured from the curb face for free-moving vehicles. Accidents are shown as the rate per 100 million vehicle miles; the second value indicates fatalities.

SUMMARY - SYMPOSIUM ON HIGHWAYS WITH A NARROW MEDIAN

| State | Condition | Length Miles | Year Built | Median       |                 |                     | Pavement Loops ft. | ADT Volume thousands | Avg Speed mph | Avg Placements, Left Wheel, ft. | Accident Rate   | Remarks |
|-------|-----------|--------------|------------|--------------|-----------------|---------------------|--------------------|----------------------|---------------|---------------------------------|---|---------|
|       |           |              |            | Type Surface | Curb Height, in | Curb Face Slope-H V |                    |                      |               |                                 |   |         |
| Ill   | 1         | 1.75         | 1939       | 2            | 4               | 3 in open           | 10-10-Sh           | 38-55                | -             | (High)                          | Removed in 1947                                       |         |
| N J   | 1         | 2.04         | 1949       | 2.5          | 16              | Concave             | 12-11-Sh           | 50 P<br>16-51T       | 3±            | .                               | Steep grade section                                   |         |
| Mich  | 1 & 2     | 10           | 1950       | 3            | 6               | 2 in steps          | 11-11-Sh           | 51.5                 | 4.5           | .                               | Experimental low cost type                            |         |
| Conn  | 2         | 3.77         | 1942       | 6            | 4               | 1.3                 | 13-6-12            | 27.3                 | 7.0           | 6.2                             | 2.6 ft. gutter pan within minor load                  |         |
| "     | 2         | 1.85         | 1941       | 6            | 4               | 4.1.3               | 13-15              | 45.8                 | 5.2           | 2.50                            |   |         |
| N J   | 2         | 4.0          | 1949       | 2            | 2.5             | 12.1                | 12-12              | 40.0 P<br>35.7 T     | 2.1           | .                               | Minimum design example                                |         |
| Ill   | 2 & 3     | 1.95         | -          | 4            | 6               | Vertical            | 10-10-8            | 30±                  | -             | -                               | Originally 7 median openings changed to 46            |         |
| Ohio  | 2 & 3     | 17.9         | 1940-50    | 2 & 4        | 2.5             | 6.2                 | -                  | -                    | -             | -                               | Blocks 12 by 29 in placed at 45 deg on 12-ft centers  |         |
| Calif | 3         | 1.0          | 1946       | 4            | 6               | 1.6                 | 11-11-11           | 28.8-42.2            | 3.4           | 530                             | Light poles in median                                 |         |
| Conn  | 3         | 1.50         | 1940       | 5            | 7               | 1.7                 | 31                 | 28.5                 | 3.8           | 540                             | No lane lines, parallel parking                       |         |
| "     | 3         | 1.85         | 1940       | 4            | 5               | 1.4                 | 11.5-10.5-6        | 35.6                 | 4.3           | 420                             | Parallel parking                                      |         |
| Calif | 4         | 0.42         | 1944       | 4            | 5               | 6.4.8               | 13-12              | 49.1                 | 4.3           | 54                              | Double strips adjacent to median                      |         |
| Conn  | 4         | 0.61         | 1941       | 4            | 21              | 10.8.14             | 12-12              | 38.6                 | 4.9           | 210                             | Charter Oak Bridge, Hartford                          |         |
| "     | 4         | 1.12         | 1941       | 2.5          | 19              | Two Step            | 12-12              | 35.4                 | 4.8           | 180                             | Thomas R. Groton                                      |         |
| "     | 4         | 0.34         | 1939       | 4            | 18              | 12.18               | 13-13              | 46.0                 | 4.8           | 970                             | Housatonic R, Merritt Parkway                         |         |
| Ill   | 4         | 1.68         | 1940-44    | 4            | 4               | 2.5.4               | 11-11              | 50±                  | -             | -                               | Bloomington Belt Lane, median 30-40-ft off structures |         |
| Conn  | 5         | 1.01         | 1938       | 4            | 4               | 4.1.3               | 12-12-10           | 40.5                 | 4.6           | 210                             | Riverfront Blvd., Hartford                            |         |
| N Y   | 5         |              |            | 2.5          | 17              | Concave             | 10-11              | **                   | 1.5           | -                               | Long Island Parkways, parabolic deflector type curb   |         |
| "     | 5         |              |            | 0.5          | -               | -                   | 10-11              | **                   | 1.9           | -                               | " " " "   |         |
| "     | 5         |              |            | 1.0          | 12.5            | 2.7.12              | 10.5-11            | **                   | 1.9           | -                               | " " " "   |         |
| "     | 5         |              |            | 1.0          | 15              | 4.1.1               | 22                 | **                   | 2.9           | -                               | " " " " .5 in pipe on concrete curb                   |         |
| "     | 5         |              |            | 9            | 4               | 4.3                 | 13-12              | **                   | 3.4           | -                               | " " " "   |         |
| "     | 5         |              |            | 42           | None            | -                   | 12-11              | **                   | 2.6           | -                               | " " " "   |         |

\*Data but rate not given

\*\*Passenger cars, one-way volumes 500 to 2700, legal speeds 35 & 40 mph. Data yet to be analyzed. Placements at volume of 1500 vph