

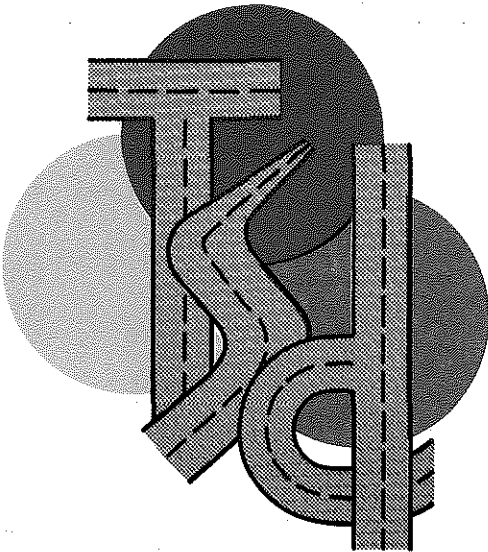
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1972 ANALYSIS OF STATE HIGHWAY

ACCIDENT FACTS

JANUARY, 1974

ACCIDENT ANALYSIS UNIT



TRAFFIC and SAFETY DIVISION

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OF
STATE HIGHWAYS AND TRANSPORTATION

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Prepared By The

Traffic Research and Development Section
Traffic and Safety Division
Michigan Department of State Highways and Transportation

in cooperation with

The U.S. Department of Transportation
Federal Highway Administration

"The opinions, findings and conclusions expressed in this publication are those of the authors and not necessarily those of the State or U.S. Department of Transportation, Federal Highway Administration."

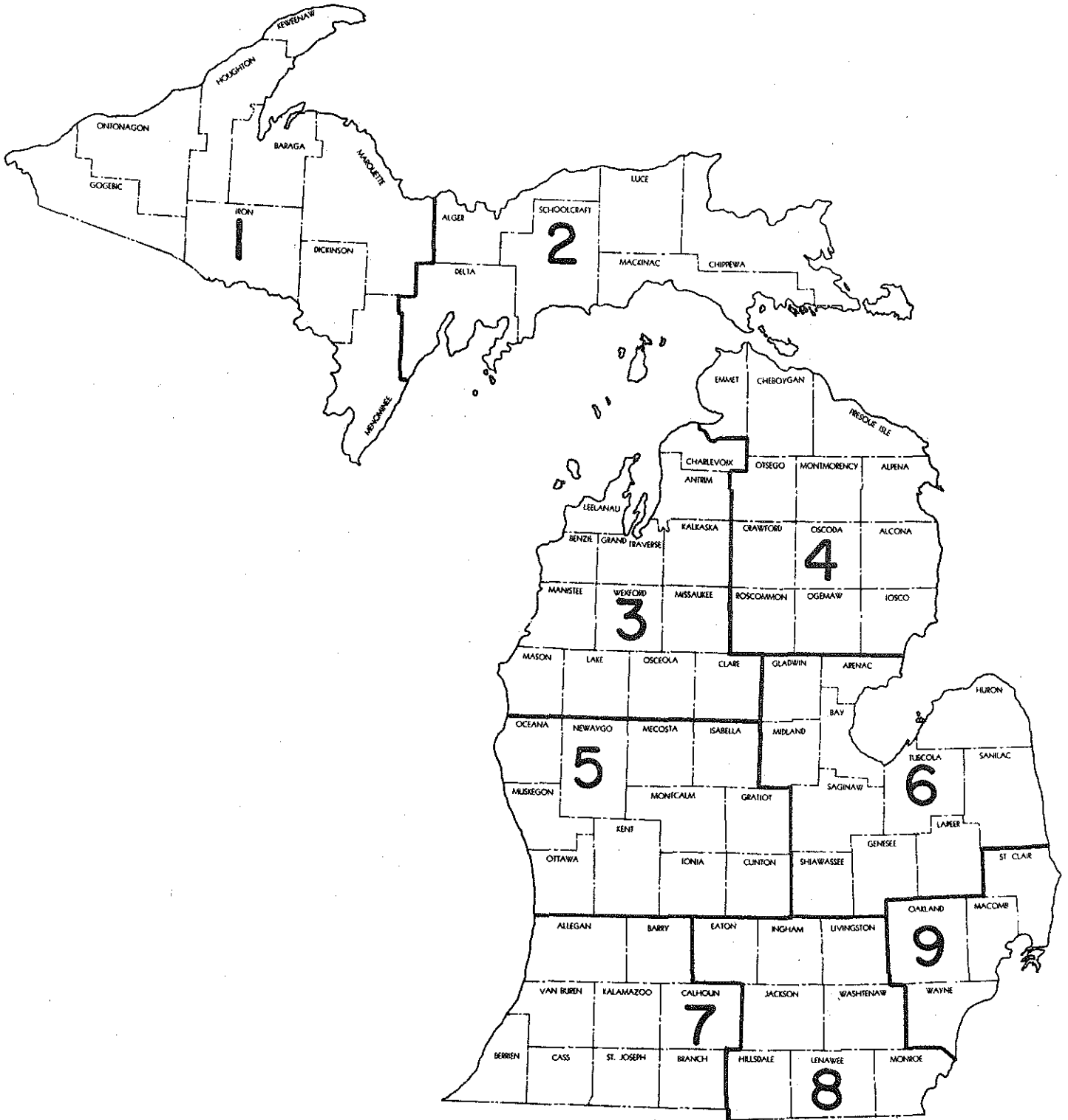
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HIGHWAY DISTRICTS



NOTE: For the purpose of this report, Eaton County is included in District #7.

SUMMARY OF FINDINGS

Statewide trunkline traffic accidents have increased 11.5 percent between 1971 and 1972 while travel has increased only 4.1 percent in the same period. A major cause of the increase is wet surface accidents experienced during 1972 (it should be noted that the top of the ten year run cycle had been reached in 1972). Night accidents increased 12.0 percent during 1972 giving high night-to-day ratios during the winter months. The Interstate system had a greater than average night-to-day accident ratio.

Accident severity has decreased slightly during 1972, however, the freeway system in the Detroit Metropolitan area shows greater accident severity than the system as a whole. A study of 100 high accident free access spot locations shows considerable congestion, as illustrated by a large proportion of parking and rear end collisions. A special traffic control device study of accidents indicates that flashing beacons are not providing adequate safety during the nighttime period.

The Division's Traffic and Safety engineers are studying ways of improving all of these conditions.

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GENERAL ANALYSIS

All roadway systems in Michigan have shown an increase in accident experience from the previous 1972 calendar year. Accidents on the trunkline system (excluding Detroit) increased 11,489 (12.0 percent) for a total of 107,603.

A review of factors which affect accident experience such as surface condition, weather and light condition indicate that precipitation in the form of rain or snow was a major factor in the increase. Wet surface accidents increased 7,752 (40.2 percent) during the year for a total of 27,041. Snow/ice surface accidents increased 1,964 (12.9 percent) for a total of 17,180.

Wet-to-dry surface accident ratios increased from .32 in 1971 to .43 in 1972. Snow/ice-to-dry surface accident ratios increased from .25 to .27 in the same period. Rain-to-clear weather accident ratios increased from .14 to .17 in the 1971-1972 period. Snow-to-clear weather accident ratios were constant in the period at .15.

TABLE I
Michigan Trunkline Accident Trends
1966-1972

| <u>Year</u> | <u>Detroit</u> | <u>% Change</u> | <u>Outstate</u> | <u>% Change</u> | <u>Total</u> | <u>% Change</u> |
|-------------|----------------|---------------------|-----------------|---------------------|--------------|---------------------|
| 1966 | 15,463 | - | 67,445 | - | 82,908 | - |
| 1967 | 15,486 | 0.1 | 69,796 | 3.5 | 85,292 | 2.9 |
| 1968 | 15,560 | 0.5 | 85,097 | 21.9 | 100,657 | 18.0 |
| 1969 | 16,004 | 2.9 | 92,182 | 8.3 | 108,186 | 7.5 |
| 1970 | 14,516 | -9.3 | 92,469 | 0.3 | 106,986 | -1.1 |
| 1971 | 14,080 | -3.0 | 96,114 | 3.9 | 110,194 | 3.0 |
| 1972 | 15,274 | 8.5 | 107,603 | 12.0 | 122,877 | 11.5 |

TABLE II
Michigan Statewide Trends
1966-1972

| <u>Year</u> | <u>All Accs.</u> | <u>% Change</u> | <u>Annual Veh. Mi. (Millions)</u> | <u>% Change</u> | <u>M. V. Registrations (Millions)*</u> | <u>% Change</u> |
|-------------|----------------------|---------------------|---|---------------------|--|---------------------|
| 1966 | 302,880 | - | 43,940 | - | 4.13 | - |
| 1967 | 299,004 | -1.3 | 45,054 | 2.5 | 4.16 | 0.7 |
| 1968 | 305,495 | 2.2 | 48,047 | 6.6 | 4.33 | 4.0 |
| 1969 | 331,223 | 8.4 | 50,905 | 5.9 | 4.56 | 5.4 |
| 1970 | 313,715 | -5.3 | 53,148 | 4.4 | 4.68 | 2.6 |
| 1971 | 314,015 | 0.1 | 55,557 | 4.5 | 4.84 | 3.4 |
| 1972 | 359,745 | 14.6 | 57,817 | 4.1 | 5.16 | 6.6 |

*Excluding trailers and coaches.

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NIGHT ACCIDENT PROBLEM

Night accidents increased 4,484 (12.0 percent) for a total of 41,739 accidents during the 1971-1972 period. Night-to-day ratios of .63 were constant during the 1971-1972 period. Fatal accident night-to-day ratios for the trunkline system increased from 1.32 to 1.40 in the same period.

A study of the Interstate highway system shows that above average night-to-day ratios exist on that system. An overall ratio of night-to-day accidents of .76 and fatal accident night-to-day ratio of 1.84 occurred in 1972.

Several studies of cross median and median accidents reinforces our belief that motorists are experiencing difficulties at night during the fall and winter seasons on the Interstate system.

TABLE III

Monthly Night-to-Day Accident Ratios

Statewide Trunkline Accident

1972

| | <u>Dark</u> | <u>Daylight</u> | <u>Dark/Day</u> |
|-----------|--------------|-----------------|-----------------|
| January | 4,386 | 5,031 | .87 |
| February | 3,720 | 5,126 | .73 |
| March | 3,155 | 5,579 | .57 |
| April | 2,614 | 4,431 | .59 |
| May | 2,482 | 5,664 | .44 |
| June | 2,373 | 5,897 | .40 |
| July | 2,337 | 6,043 | .39 |
| August | 2,558 | 6,460 | .40 |
| September | 2,838 | 5,395 | .53 |
| October | 3,957 | 5,311 | .75 |
| November | 5,470 | 4,820 | 1.13 |
| December | <u>6,263</u> | <u>6,036</u> | <u>1.04</u> |
| Total | 42,153 | 65,793 | .64 |

ACCIDENT SEVERITY

Fatal accidents on the state highway system have shown an increase from 850 in 1971 to 878 in 1972. Fatality rates have remained unchanged at 3.0 fatal accidents per 100 million vehicle miles. Interstate freeway fatal accident rates have decreased from 2.2 to 1.7 per 100 million vehicle miles in the same period.

Injury accidents have increased from 34,930 in 1971 to 38,586 in 1972 for a 10.5 percent increase. Injury accident rates have increased from 125.8 to 133.5 accidents per 100 million vehicle miles.

Interstate freeway injury accidents appear to be a greater problem in the Detroit area than outstate. A 1972 study of freeways in the suburban Detroit area shows 40 percent injury and fatal accidents. A normal proportion of injury and fatals for the Interstate system, excluding Detroit, is 33 percent. Detroit freeways are experiencing a 43 percent of fatal and injury accidents.

ACCIDENT RATE COMPARISON

1971 - 1972

Table IV gives the average accident rates for urban and rural state highway segments of various cross sections and laneages. In most instances the wider pavements have improved rates when compared to the narrow pavements in each category. Rural segments have improved safety over urban segments of similar cross sections. Freeways have superior safety when compared with free access road cross sections.

TABLE IV

Accident Rates for Rural and Urban Roads

| <u>Roadway System</u> | <u>Urban Rates</u> | | <u>Rural Rates</u> | |
|--------------------------|--------------------|-------------|--------------------|-------------|
| | <u>(1)</u> | <u>(2)</u> | <u>(1)</u> | <u>(2)</u> |
| | <u>1971</u> | <u>1972</u> | <u>1971</u> | <u>1972</u> |
| a) Freeways | | | | |
| 4 lane | 242.0 | 265.5 | 147.2 | 151.7 |
| 6 lane | 86.0 | 98.3 | 138.0 | 163.8 |
| b) Divided Free Access | | | | |
| 4 lane | 639.6 | 723.4 | 347.3 | 386.9 |
| 6 lane | 528.0 | 576.8 | - | - |
| c) Undivided Free Access | | | | |
| 2 lane | 811.6 | 876.5 | 344.9 | 364.5 |
| 4 lane | 845.1 | 903.7 | 612.3 | 678.5 |

(1) Accidents/100 million vehicle miles.

(2) Excluding Detroit.

TABLE V

1972 Accident Rates

| | Urban Rates (1) (2) (3) | | | | | | Rural Rates (1) (2) (3) | | | | | |
|----------------|-------------------------|-------------|---------------------|--------------|--------------|--------------|-------------------------|--------------|---------------------|---|--------------|--------------|
| | Freeway | | Divided Free Access | | Undivided | | Freeway | | Divided Free Access | | Undivided | |
| Lanes Dist. | 4 | 6 | 4 | 6 | 2 | 4 | 4 | 6 | 4 | 6 | 2 | 4 |
| 1 | | | 880.5 | | 701.0 | 1100.9 | | | 447.4 | | 340.0 | 496.4 |
| 2 | 560.4 | | 505.0 | | 992.9 | 1298.0 | 216.0 | | 273.2 | | 306.5 | 310.4 |
| 3 | | | 1164.1 | | 883.0 | 1690.1 | 236.4 | | 239.6 | | 359.0 | 898.1 |
| 4 | 304.3 | | 1029.1 | | 917.3 | 1594.1 | 153.6 | | 922.4 | | 388.6 | 808.6 |
| 5 | 314.5 | 382.9 | 853.9 | 700.2 | 778.0 | 1211.8 | 152.4 | | 300.8 | | 357.2 | 551.6 |
| 6 | 178.3 | 1097.6 | 556.1 | 600.1 | 822.2 | 789.2 | 175.1 | 174.0 | 408.0 | | 313.2 | 477.1 |
| 7 | 243.6 | 211.3 | 937.1 | 1888.7 | 987.8 | 1182.6 | 131.0 | 146.7 | 373.0 | | 383.0 | 905.6 |
| 8 | 287.9 | | 858.0 | 1705.7 | 934.7 | 1340.0 | 147.1 | 235.9 | 430.9 | | 397.1 | 907.9 |
| 9 | <u>242.1</u> | <u>81.6</u> | <u>656.3</u> | <u>509.4</u> | <u>923.6</u> | <u>628.2</u> | <u>152.5</u> | <u>160.8</u> | <u>507.9</u> | | <u>446.3</u> | <u>699.2</u> |
| Average | 265.5 | 98.3 | 723.4 | 576.8 | 876.5 | 903.7 | 151.7 | 163.8 | 386.9 | | 364.5 | 678.5 |
| Miles | 118 | 115 | 86 | 48 | 485 | 254 | 1,047 | 76 | 311 | | 6,286 | 156 |

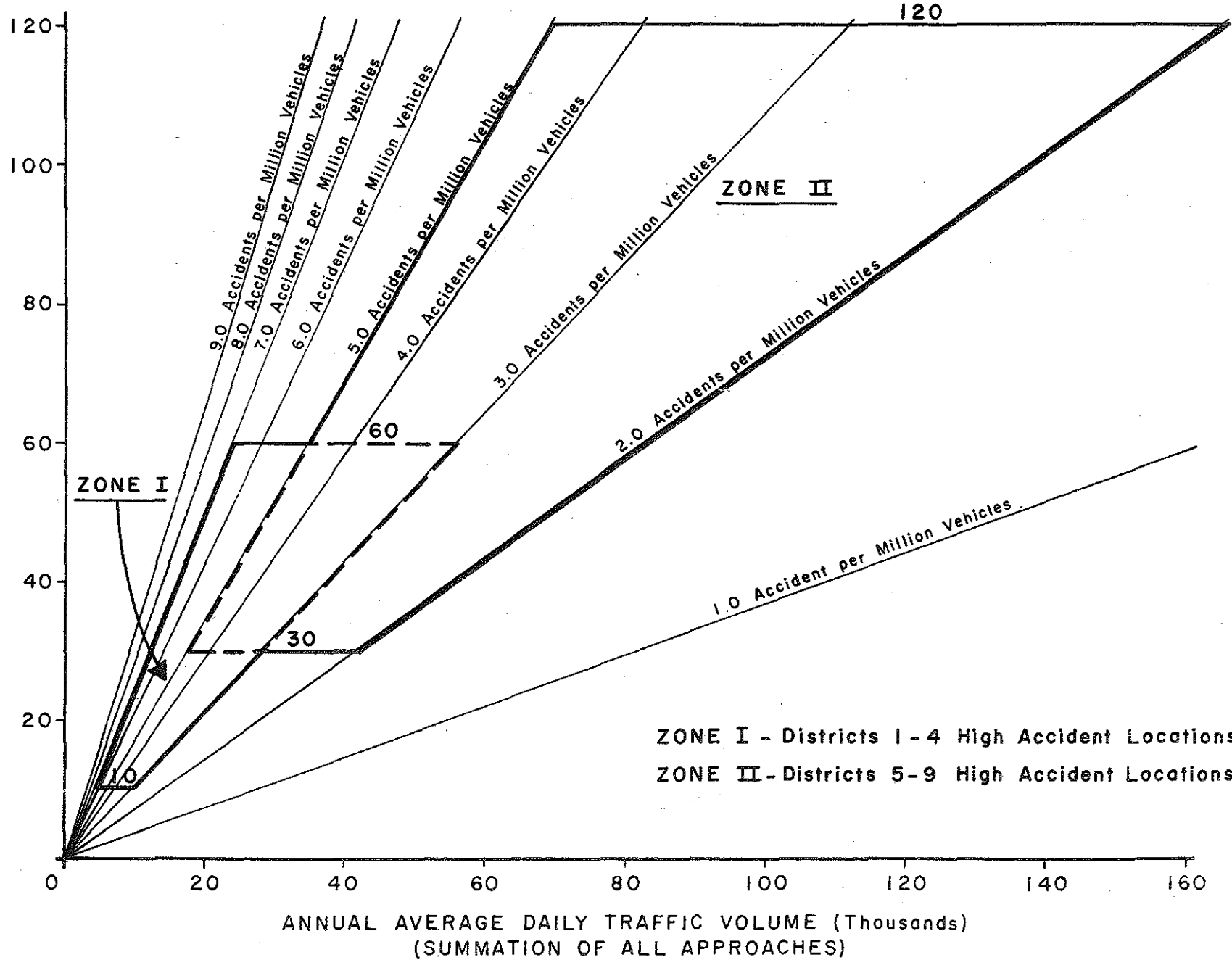
(1) 1972 accidents, 1971 traffic increased by 4 percent.

(2) Excluding City of Detroit.

(3) Accidents per 100 million vehicle miles.

TABLE VI
INTERSECTION ACCIDENT RATE CHART
 FREE ACCESS ROADS

No. of
 Accidents



10

HIGH ACCIDENT LOCATIONS

The number of high accident locations on the trunkline system is on the increase. Recent studies indicate that the number of high accident locations has increased from 803 in 1971 to 983 in 1972. Twenty-five percent of the high accident locations are Districts 1-4, Zone I. Seventy-five percent are located in Districts 5-9, Zone II.

Zone I's highest locations are I-75BS and Easterday Avenue in Sault Ste Marie (62 accidents) and US-41 westbound (Sheldon Avenue) between Portage Street and Dodge Street in Houghton (59 accidents). Zone II's highest locations are Telegraph Road (US-24) between Van Born Road and I-94, and Plymouth Road (M-14) between Middlebelt Road and Haller Road. Each of these locations had a total of 115 accidents in 1972.

The greatest single factor contributing to the increase in accident experience during 1972 was wet weather. Wet surface accidents increased (trunkline system) from 19,288 (1971) to 27,041 in 1972 for a 40 percent increase. The installation of traffic control devices can contribute to the decrease in accident experience during most periods of the day, especially during the night period. The following is a distribution

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of the night-to-day ratios for the various controls:

TABLE VII

| | <u>Night-to-day Ratio</u> | <u>Accidents</u> |
|-----------|-------------------------------|------------------|
| Flasher | 1.34 | 972 |
| Warning | 0.94 | 1,671 |
| No Device | 0.73 | 67,059 |
| Signal | 0.50 | 21,580 |
| Yield | 0.41 | 520 |
| Stop Sign | 0.40 | 15,881 |
| Average | 0.63 | |

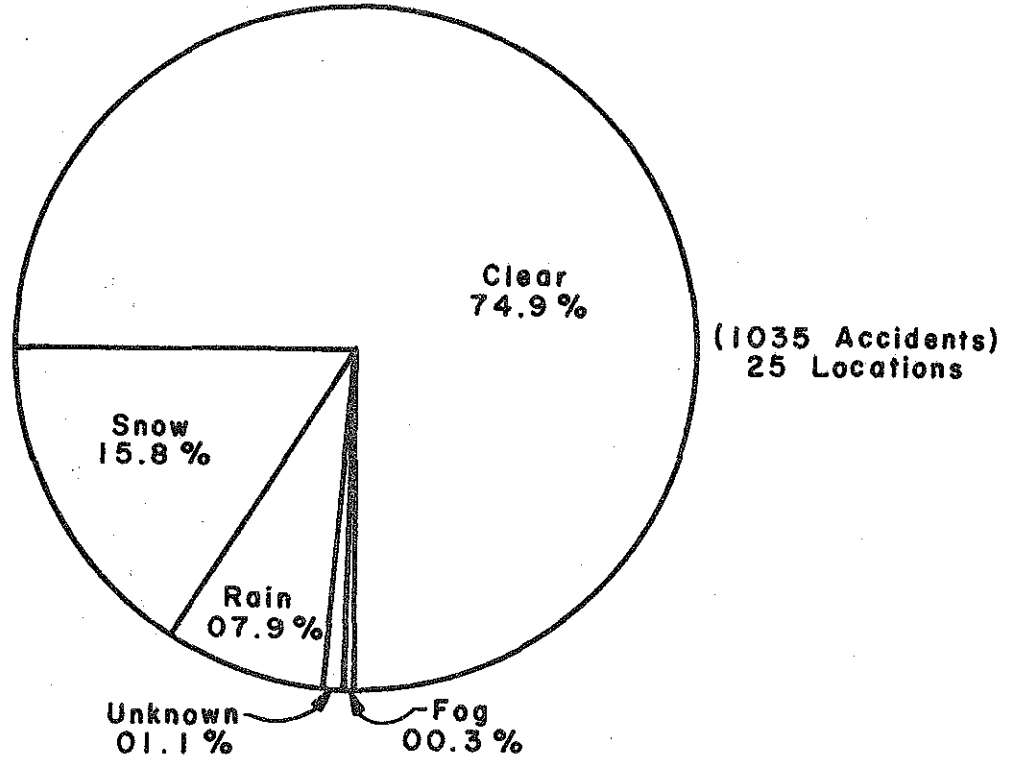
Care must be used in the selection of traffic control devices. Most of the recent studies indicate that accidents increase rather than decrease with the installation of traffic signal controls. A comparison of 15,881 accidents at stop controlled intersections with 21,580 accidents at signal controlled intersections indicates that angle accidents are decreased, while head on left turn accidents and rear ends are increased. The severity of the accident at a signalized location is increased rather than decreased, since 23 percent of the accidents are of the right angle type.

The following charts give the distribution of surface conditions and accident types for the top 100 high accident locations. Capacity is the greatest common deficiency as illustrated by the large percentage

of parking and rear end accidents. Surface condition also affects the accident experience as shown in the differences between Districts 1-4 and 5-9 percentages of snow/ice accidents.

TABLE VIII
1972 HIGH ACCIDENT LOCATION STUDY
Percentage Distribution by Weather

DISTRICTS 1 - 4



DISTRICTS 5 - 9

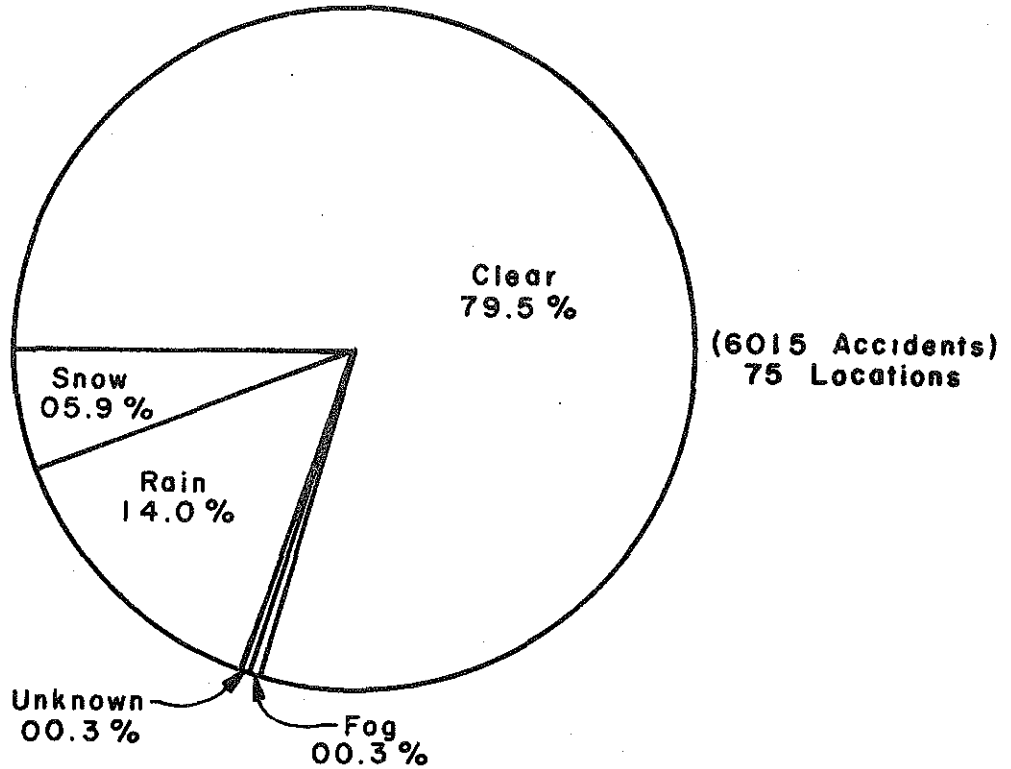
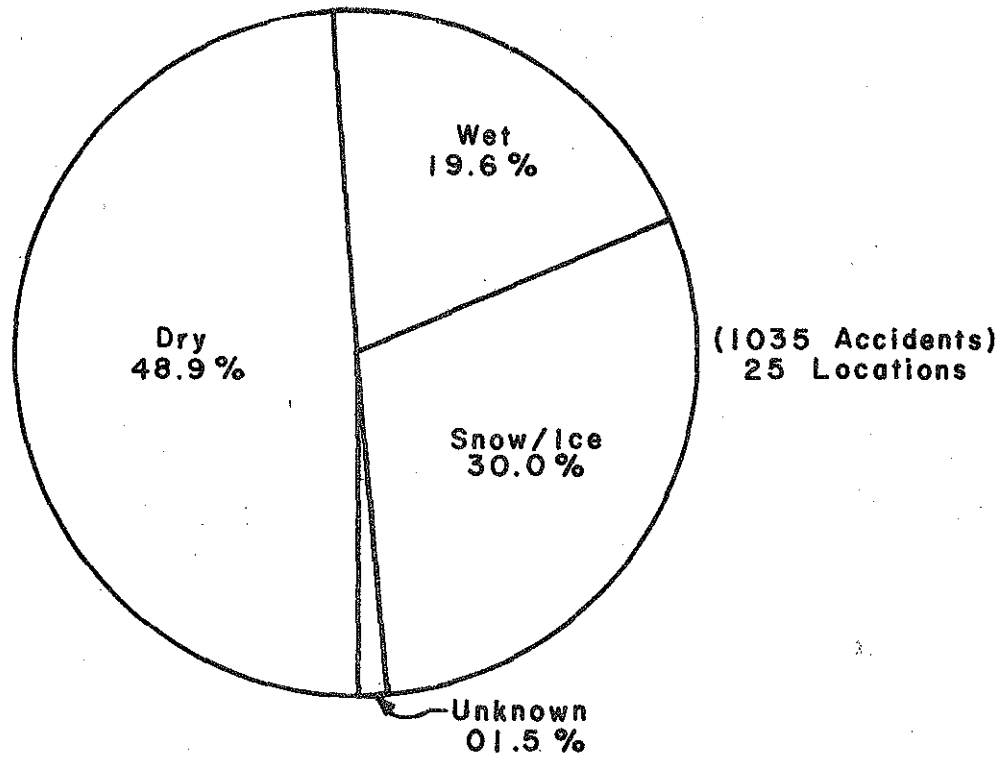


TABLE IX
1972 HIGH ACCIDENT LOCATION STUDY
Percentage Distribution by Surface Conditions

DISTRICTS 1 - 4



DISTRICTS 5 - 9

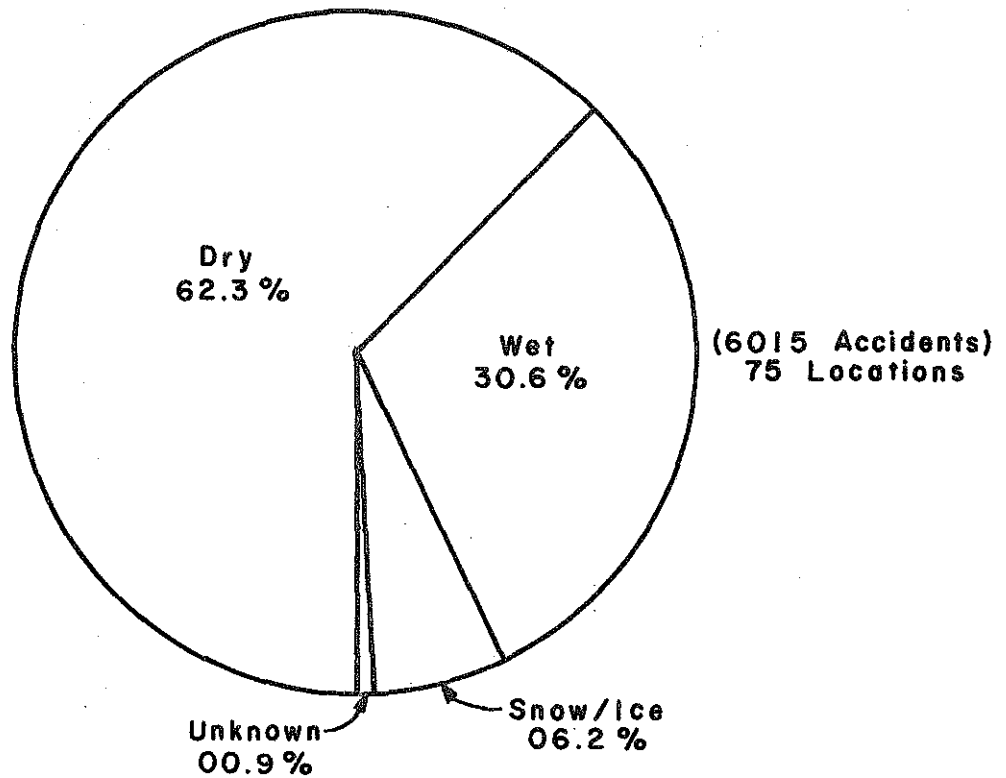
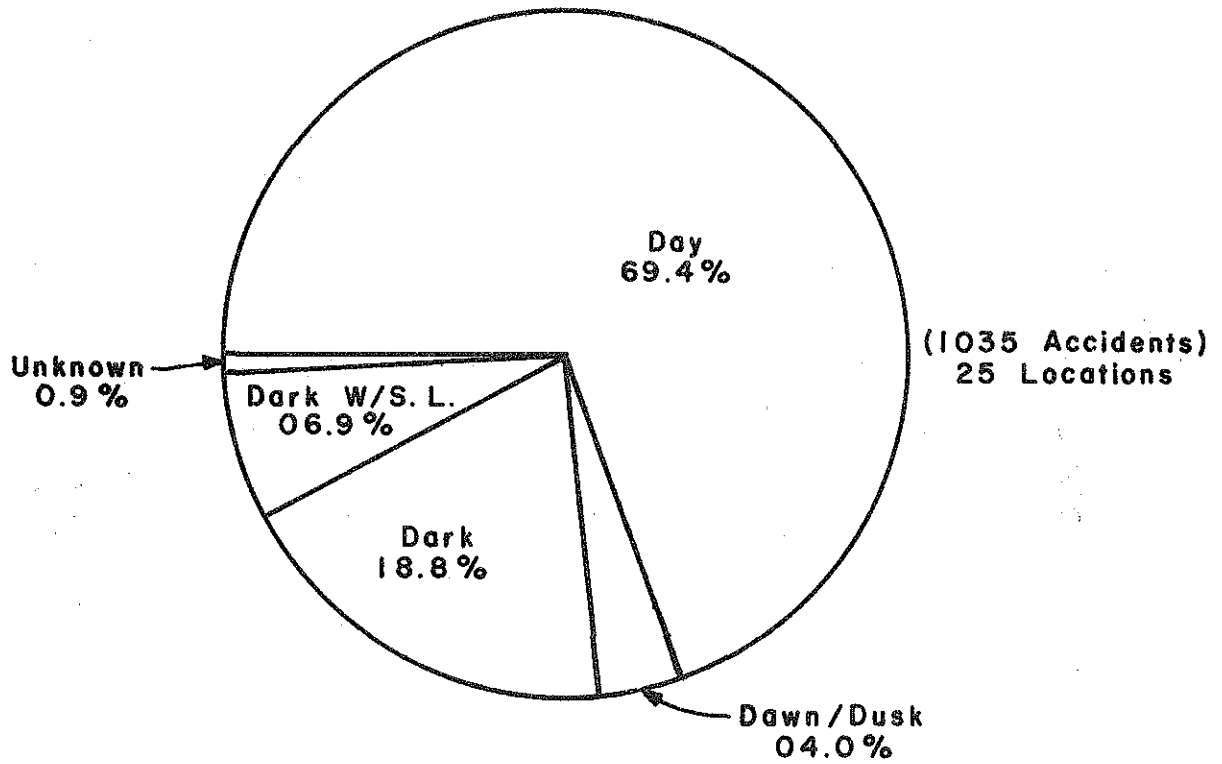


TABLE X
1972 HIGH ACCIDENT LOCATION STUDY
Percentage Distribution by Light Conditions

DISTRICTS 1 - 4



DISTRICTS 5 - 9

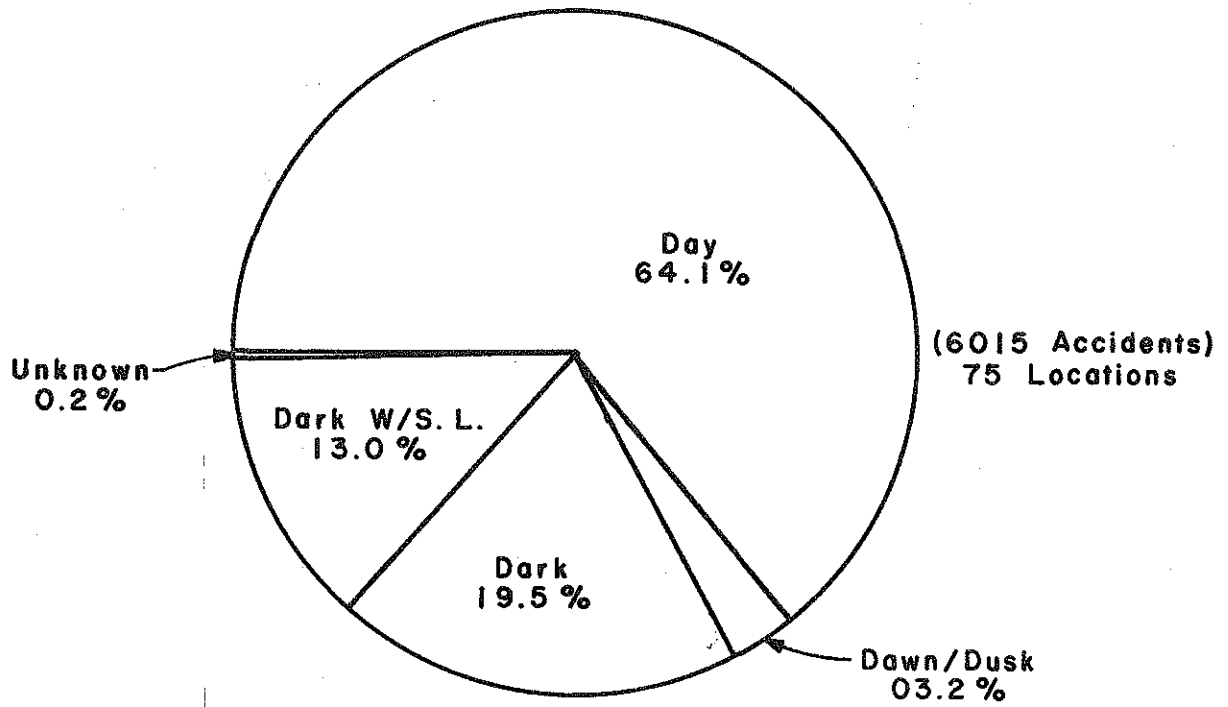
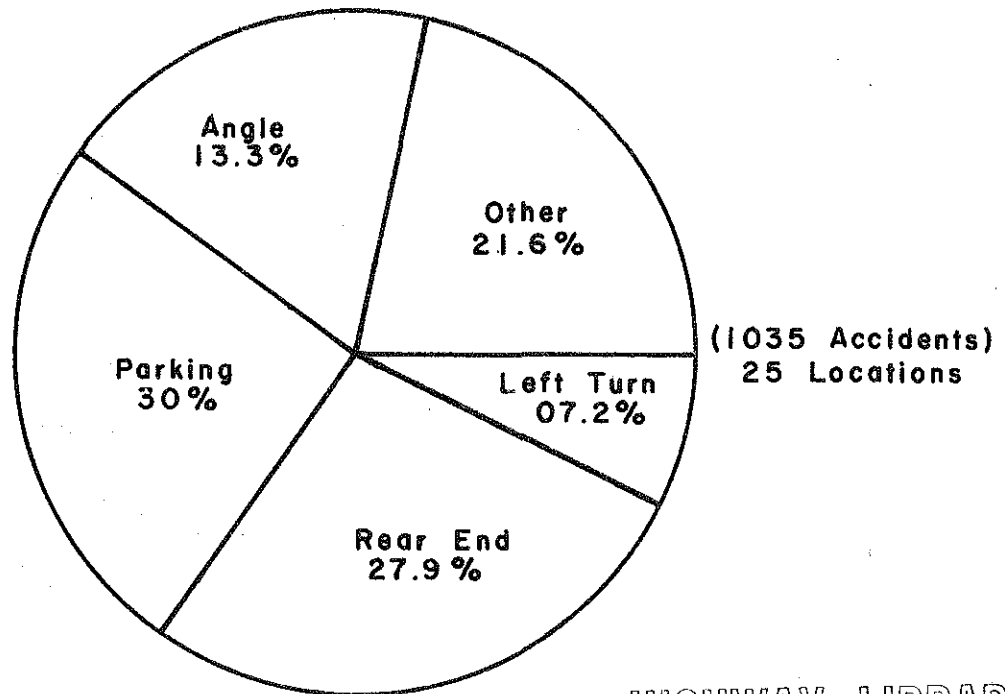


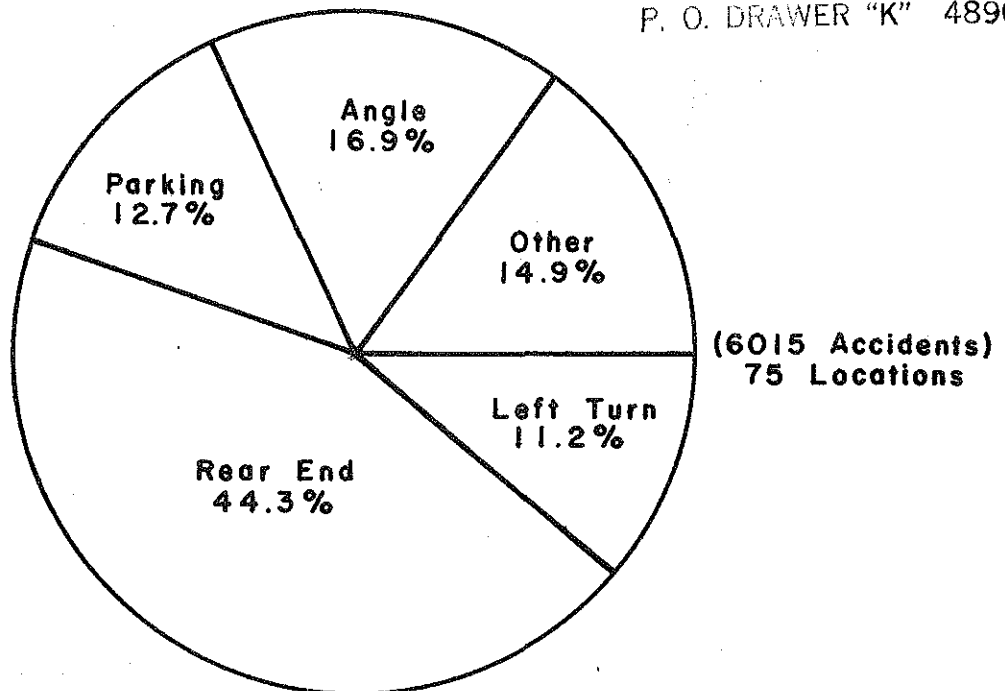
TABLE XI
1972 HIGH ACCIDENT LOCATION STUDY
Percentage Distribution by Type of Accident

DISTRICTS 1 - 4



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DISTRICTS 5 - 9



HIGH ACCIDENT LOCATIONS

District #1

- 1) US-41 (Sheldon One-way W. Bd.) from a point 10 ft W. of Prospect St. or 220 ft E. of Montezuma & Sheldon Sts. west to a point 35 ft E. of Portage St., City of Houghton. 33 accidents
- 2) US-41 from 50 ft W. of 11th St. (N.) east to 10th St. & north on 10th St. to 13th St., City of Menominee. 34 accidents
- 3) US-41 from 65 ft E. of Ravine St. on Quincy St., west to a point 15 ft W. of Mesnard St., City of Hancock. 36 accidents
- 4) US-41 from 130 ft N. of Hancock St. on Reservation St. north & west to a point 165 ft E. of Ravine St. on Quincy St., City of Hancock. 37 accidents
- 5) US-41 from 15 ft W. of Portage St. (@ Sheldon W. Bd.) west to a point 145 ft W. of Dodge St. (@ Sheldon), City of Houghton. 59 accidents
- 6) US-41BR from 10 ft E. of street south (E. of McClellan Ave.) east to a point 5 ft E. of Lincoln Ave., City of Marquette. 34 accidents
- 7) US-41BR from 105 ft W. of Fourth St. east to a point 160 ft W. of the intersection of Washington & Front St., City of Marquette. 49 accidents
- 8) US-41BR from 10 ft W. of Front St. on Washington, east to Front St. & south on Front St. to a point 25 ft S. of the D.S.S. & A. RR, City of Marquette. 58 accidents

District #2

- 1) I-75BS from 135 ft S. of Easterday Ave. north to a point 25 ft S. of Leroy St., City of Sault Ste Marie. 62 accidents
- 2) I-75BS from 25 ft N. of Leroy St. north to 65 ft N. of Dawson St., City of Sault Ste Marie. 34 accidents

District #2

- 3) I-75BS from 265 ft N. of Dawson St. north to a point 120 ft N. of Ridge St. W., Maple St. E., City of Sault Ste Marie. 40 accidents
- 4) US-2, US-41, M-35 from S. Jct. M-35 (Ludington & 23rd Sts.) north to a point 200 ft S. of 3rd Ave., City of Escanaba. 45 accidents

District #3

- 1) US-10 from 110 ft S. of Ludington Ave. on Williams, north to Ludington & east on Ludington to a point 105 ft W. of James St., City of Ludington. 46 accidents
- 2) US-10 from 55 ft W. of James St. east to a point 85 ft E. of Rowe St., City of Ludington. 58 accidents
- 3) US-31 (Bridge St.) from 100 ft N. of Antrim St. north to Park Ave., City of Charlevoix. 30 accidents
- 4) US-31, M-72 & M-37 from Hope St. east to a point 200 ft E. of Barlow St., City of Traverse City. 33 accidents
- 5) US-31, M-72 & M-37 from 300 ft W. of Park St. east to a point 0.14 Mile W. of the Boardman River, City of Traverse City. 35 accidents
- 6) US-31, M-72 & M-37 from 300 ft W. of Peninsula Dr. east to a point 50 ft W. of Gilbert, City of Traverse City. 36 accidents
- 7) US-31, M-72 & M-37 from 0.1 Mile W. of Front St. east to a point 50 ft W. of Hope St., City of Traverse City. 41 accidents
- 8) US-31, M-72, M-37 from 300 ft E. of Gilbert east to a point 300 ft W. of Milliken Dr., City of Traverse City. 47 accidents
- 9) US-131 (Mitchell) from 100 ft N. of Spruce St. (E.), northwest to a point 100 ft N.W. of Bremer St., City of Cadillac. 31 accidents
- 10) US-131, M-42 from the N. Jct. M-55, north to a point 50 ft N. of Spruce (E.), City of Cadillac. 55 accidents

District #4

- 1) I-75BL, M-72 from 200 ft N. of Oliver St., north to a point 50 ft N. of Michigan, City of Grayling. 33 accidents
- 2) M-32 from Illinois St. east to a point 100 ft W. of Court Ave., City of Gaylord. 34 accidents
- 3) US-23 (Chisholm St.) from M-32 (Washington) & First Ave. northwest to a point 115 ft N.W. of Third Ave., City of Alpena. 33 accidents

District #5

- 1) M-11 from 350 ft E. of Buchanan Ave., east to 25 ft W. of Division Ave., City of Wyoming. 63 accidents
- 2) M-11 from a point 415 ft E. of the C & O RR east to 65 ft E. of Breton Ave., City of Grand Rapids. 72 accidents
- 3) M-11 from Division St. east to a point 430 ft W. of Jefferson Ave., City of Grand Rapids. 73 accidents
- 4) M-11 from a point 165 ft E. from the beginning of Grand Rapids & Kentwood on bdry. east to 145 ft E. of Ridgemoor Dr., City of Kentwood. 73 accidents
- 5) M-11 from 150 ft E. of Riley Blvd. east to 100 ft E. of McKee Ave., City of Wyoming. 74 accidents
- 6) M-11 from a point 0.12 Mile E. of Penn. RR east to a point 300 ft E. of Buchanan Ave., City of Wyoming. 81 accidents
- 7) M-11 (28th St.) from 210 ft W. of Kalamazoo Ave. east through Kalamazoo Ave. to a point approx. 600 ft E. of the intersection, City of Grand Rapids. 97 accidents
- 8) M-44 (E. Beltline) from 390 ft S. of Burton Ridge S.E., north to 15 ft S. of Burton St., City of Grand Rapids. 69 accidents
- 9) US-31 from 100 ft N. of 7th St. north to the C & O RR, City of Grand Haven. 65 accidents

District #6

- 1) M-46 from 0.1 Mile E. of Colony Dr. northeast to a point 35 ft W. of Center Rd. 73 accidents
- 2) M-58, M-47 from 125 ft W. of Sullivan Dr. (S.), Anderson Rd. (N.), west to a point 50 ft W. of N. Center Rd. 63 accidents
- 3) M-58, M-47 from 200 ft W. of Coolidge Ave. W. to a point 40 ft E. of Hemmeter Rd. 64 accidents

District #7

- 1) BL-94, M-96 & M-43 (E. Bd. on Mich.), from 35 ft W. of Rose St. east to 85 ft E. of Portage St., City of Kalamazoo. 69 accidents
- 2) BL-94, M-96 & M-43 (E. Bd. on Mich. Ave.) from 185 ft E. of Portage St. east to 30 ft W. of the Penn. RR, City of Kalamazoo. 87 accidents
- 3) BL-94, M-96 & M-43 (E. Bd. on Mich. Ave.) from S. Bd. US-131BR (Westnedge @ Mich. Ave., City of Kalamazoo), east through Park & Church Sts. to just W. of Rose St. 114 accidents
- 4) I-94BL, US-131BR & M-43 from 65 ft S.W. of Academy St. northeast to a point 115 ft E. of Allen Blvd. @ Michigan, City of Kalamazoo. 64 accidents
- 5) I-94BL & M-43 (W. Bd. Kalamazoo St.) from 150 ft E. of Church St. east to a point 60 ft E. of Edward St., City of Kalamazoo. 67 accidents
- 6) I-94BL, US-131BR & M-43 from 55 ft N.E. of Eddies Lane to a point 165 ft S.W. of Academy, City of Kalamazoo. 75 accidents
- 7) US-31 & M-139 from 100 ft S. of Henry's Drive Inn or 300 ft S. of Napier Ave. (Co. Rd. #352) N. to a point 200 ft N. of the end of the divided pavement. 77 accidents

District #8

- 1) M-17, from Golfside Rd. (Ypsilanti Twp. Line) east to a point 150 ft W. of the N.Y.C. RR. 82 accidents

District #8

- 2) M-43 (Grand River Ave.) from 5 ft W. of Kedzie Dr., east to Milford St., City of East Lansing. 69 accidents
- 3) M-43 (Grand River Ave.) from a point 260 ft E. of Sparton Ave., east to 115 ft W. of Oakland Rd., City of East Lansing. 70 accidents
- 4) M-43 (Grand River) from 60 ft W. of Abbott Rd. east through M.A.C. Ave., the change in road width to a point 95 ft beyond this in the City of East Lansing. 105 accidents
- 5) M-52 from 20 ft S. of Front St., north to a point 150 ft N. of Hunt St., City of Adrian. 69 accidents
- 6) M-99 from 100 ft N. of Lenore St., north to Berten St., City of Lansing. 67 accidents
- 7) M-99 from 50 ft N. of Williams St. north to a point 30 ft S. of St. Joseph St., City of Lansing. 76 accidents
- 8) US-12, US-12BR from a point 50 ft E. of Grove St. east to 85 ft E. of Miles St., City of Ypsilanti. 85 accidents
- 9) US-12BR (Mich. Ave.) from 50 ft W. of Adams St. through Washington St. to 200 ft E. of Huron St.-Whittaker, M-17 N. Bd., City of Ypsilanti. 94 accidents

District #9

- 1) I-75BL (Perry) from 50 ft S.W. of Oliver St., northeast to a point 200 ft N.E. of E. Montcalm St., City of Pontiac. 71 accidents
- 2) I-96BS, (Grand River) from 150 ft N.W. of Tulane St., southeast to a point 100 ft N.W. of Roosevelt St. 79 accidents
- 3) M-1 (Woodward Ave.) from 100 ft N. of 12 Mile Rd., south to a point 30 ft N. of Beverly Blvd., Cities of Berkley & Royal Oak on boundary. 65 accidents
- 4) M-1 (Woodward Ave.) from 5 ft S. of Princeton Rd., south to a point 105 ft N. of Borgham Ave., Cities of Huntington Woods & Royal Oak on boundary. 65 accidents

District #9

- 5) M-1 (Woodward Ave.) from 50 ft N. of Worth St. Right Turn Channel, southeast to 130 ft S.E. of Humphrey St., City of Birmingham. 83 accidents
- 6) M-1 (Woodward) from 20 ft S. of Ford Ave. south through Davison Ave. (E.), Cities of Detroit & Highland Park. 98 accidents
- 7) M-1 from approx. 75 ft N.W. of 13 Mi. Rd. southeast through 13 Mi., Coolidge, Sagamore & Albert Sts., City of Royal Oak. 111 accidents
- 8) M-14 from Auburndale St., east to Merriman Rd., City of Livonia. 64 accidents
- 9) M-14 from 50 ft E. of Wayne Rd., east to a point 50 ft E. of Stark Rd., City of Livonia. 69 accidents
- 10) M-14 from 0.2 Mile W. of Farmington Rd., east to Farmington Rd., City of Livonia. 75 accidents
- 11) M-14 from Shopping Center Dr. (S. Side of road & W. of Middlebelt Rd.), east through Middlebelt to Haller Ave., City of Livonia. 115 accidents
- 12) M-39, from 130 ft S. of Dix-Toledo Hwy. N.W. to 60 ft N.W. of Riopelle (No Crossover), City of Lincoln Park. 87 accidents
- 13) M-39 from 60 ft S. of Allen Rd. (Also Park St.) north to 40 ft N. of Quandt St. (N.), City of Allen Park. 88 accidents
- 14) M-53 from 300 ft N. of Trembleton Rd., north to a point 0.126 mile N. of 14 Mile Rd. or 15 ft N. of the beginning of the divided highway, Cities of Warren & Sterling Heights. 68 accidents
- 15) M-53 from 12 Mile Road, north to a point 50 ft S. of Racine Rd., City of Warren. 77 accidents
- 16) M-53 from Konczal St., north to 50 ft N. of Weingartz St., City of Centerline. 79 accidents
- 17) M-53 (Van Dyke) from 50 ft N. of Dodge St., north to Republic St., City of Warren. 97 accidents

District #9

- 18) M-85 from 135 ft S. of Peach St., north to a point 50 ft S. of Cherry St., Cities of Southgate & Wyandotte on boundary. 66 accidents
- 19) M-85 from Cherry St. north to a point 130 ft N. of Eureka St., Cities of Southgate & Wyandotte. 75 accidents
- 20) M-85 from a point 85 ft N. of Detroit St. north to 50 ft N. of Farnham St., City of Lincoln Park. 85 accidents
- 21) M-97 from a point approx. 550 ft S. of Cole Rd. north to 12 Mile Rd., City of Roseville. 85 accidents
- 22) M-102 (8 Mile Rd.) from 10 ft W. of Wakendon Rd., east to 80 ft E. of Beech Daly Rd. along S. Limits of Southfield on boundary. 66 accidents
- 23) M-153 from 285 ft E. of Moeller Ave. east to 400 ft E. of Merriman Rd., City of Garden City. 91 accidents
- 24) M-153 from 30 ft W. of Centralia St. east to 5 ft W. of Evangeline St., City of Dearborn Heights. 92 accidents
- 25) M-153 (Ford Rd.) from approx. 300 ft E. of Middlebelt Rd. east to 55 ft E. of Garden Ave. including Central Ave., City of Garden City. 95 accidents
- 26) M-153 from 50 ft W. of Karle St. to 65 ft W. of Wayne (Yale) St. including Parent & Harvey Sts., City of Westland. 105 accidents
- 27) US-10 (Telegraph) from 160 ft S.E. of Humphrey St. southeast to a point 80 ft S.E. of Easy St. (Drive to Trailer Court). 64 accidents
- 28) US-10 (Telegraph), from 550 ft S. of 12 Mile Rd. north to 470 ft N. of 12 Mile Rd., City of Southfield. 92 accidents
- 29) US-10BR (Wide Track Drive) from a point 195 ft S.E. of Perry northwest to 200 ft W. of N. Saginaw St., City of Pontiac. 84 accidents
- 30) US-24 (Telegraph) from 0.1 Mile S. of Northline Rd., north to a point 200 ft N. of Thomas Court. 65 accidents

District #9

- 31) US-24 (Telegraph) from 190 ft S. of N. Rushmore Dr., north to a point 95 ft N. of Franklin Park Dr., Village of Bingham Farms. 68 accidents
- 32) US-24 (Telegraph) from 135 ft S. of Joy Rd. north to a point 50 ft N. of Dover St., City of Dearborn Heights & Redford Twp. 70 accidents
- 33) US-24 (Telegraph) from 100 ft S. of Doxtator St. E. & W. no Crossover, north to a point 185 ft N. of M-153 (Ford Rd.), Cities of Dearborn & Dearborn Heights. 71 accidents
- 34) US-24 (Telegraph) from M-102 (8 Mile Rd.) north to a point 0.125 Mile N. of the S. Bd. Exit Ramp to 8 Mile. 74 accidents
- 35) US-24 from a point 50 ft S. of Graham St., north to a point 200 ft N. of Fenkell Rd. (5 Mile Rd.). 78 accidents
- 36) US-24 (Telegraph), from 50 ft of Davison Rd. north to 250 ft N. of Schoolcraft Rd. (W. Bd.). 91 accidents
- 37) US-24 from 250 ft N. of Richardson St. north through Warren to a point 200 ft N. of Warren, City of Dearborn Heights. 109 accidents
- 38) US-24 from W. Bd. I-94 Entrance Ramp from S. Bd. US-24 (Telegraph), north through Van Born Rd. to the Ecorse River. 115 accidents
- 39) US-25 (Gratiot) from Galloway St., northeast to 12 Mile Rd., City of Roseville. 70 accidents
- 40) US-25 (Gratiot) from 50 ft N. of Lakeworth Ave., northeast to Nicke St., City of Roseville & Clinton Twp. 70 accidents
- 41) US-25 (Gratiot) from Shiell Dr. @ N. Bd. only - Lester Dr. @ S. Bd. only (N. C-0) north to the Crossover (N. of W. Bd. Metropolitan Parkway). 71 accidents
- 42) US-25 (Gratiot) from a point 100 ft N.E. of Eastgate Blvd. N. Exit, northeast to 0.1 Mile N.E. of Wildwood St., City of Roseville. 83 accidents
- 43) US-25 (Gratiot Ave.) from 50 ft S. of Mesle St. north to 300 ft N. of Martin Rd., City of Roseville. 94 accidents

District #9

- 44) US-25, from a point 310 ft S. of Mason Blvd. north to a point 0.160 Mi. S. of Waterbury Ave., City of Roseville. 94 accidents
- 45) US-25 from 25 ft N. of Chesterfield St. (E.), City of E. Detroit, north to Groveland (Roberts St.), City of Roseville. 98 accidents
- 46) US-25BR from 35 ft S. of Wall St. north to 130 ft N. of Water St., City of Port Huron. 80 accidents
- 47) US-25BR from a point 10 ft S. of the Black River, north to a point 65 ft S. of McMorrin Blvd. (Broad), City of Port Huron. 80 accidents

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ESTIMATING THE COST OF ACCIDENTS

The National Safety Council Traffic Safety Memo no. 113 dated July, 1973 gives the following costs of traffic accidents:

| | |
|--|----------|
| 1) each death | \$82,000 |
| 2) each nonfatal disabling injury | 3,400 |
| 3) each property damage accident (including minor injuries) | 480 |

"The cost per death for all accidents - fatal, nonfatal and property damage - differs for urban and rural accidents, due to differences in the ratios of nonfatal injuries and property damage accidents per death, as indicated below."

| | <u>All</u> | <u>Urban</u> | <u>Rural</u> |
|---|------------|--------------|--------------|
| 1) Nonfatal injuries per death | 35 | 70 | 20 |
| 2) Property damage accidents per death | 280 | 620 | 110 |

All costs should be rounded as follows:

- 1) Less than \$3 million to nearest \$100,000
- 2) \$3 - \$10 million to nearest \$500,000
- 3) \$10 - \$30 million round to nearest \$1 million
- 4) Greater than \$30 million round to nearest \$5 million

"NOTE: Cost estimates for 1972 are not comparable to those of previous years due to changes in cost estimating procedures."

"If a city had only one or two deaths in the course of a year, it will be more satisfactory to use the following unit costs for each death:"

| | |
|-----------------------------|-----------|
| 1) Boy under 15 years | \$ 70,800 |
| 2) Man 15 to 54 years | 118,000 |
| 3) Man 55 years and older | 16,500 |
| 4) Girl under 15 years | 44,800 |
| 5) Woman 15 to 54 years | 70,000 |
| 6) Woman 55 years and older | 12,800 |

PROPOSED DISTRIBUTION

We will assume approximately 62 copies will be required.

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