

Michigan Department of TRANSPORTATION

PROJECT JUSTIFICATION - M-43
BETWEEN RIVERVIEW AND 25TH STREET

CITY OF KALAMAZOO
KALAMAZOO COUNTY

APRIL 1980

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BUREAU OF TRANSPORTATION PLANNING
Multi-Regional Planning Division



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This report represents the findings and/or professional opinions of the Michigan Department of Transportation and not an official opinion of the State Transportation Commission.

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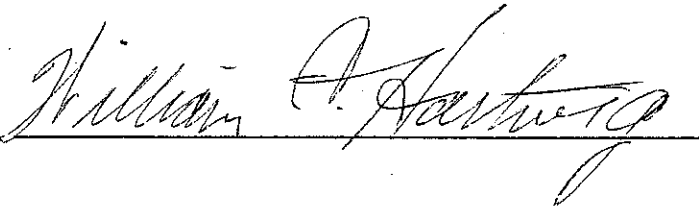
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INTRODUCTION

M-43 is a state trunkline traversing the southwestern portion of the state. It begins near South Haven and extends eastward to Kalamazoo, then northeasterly to north of Hastings, and finally eastward again to its termination east of Lansing, near Webberville (See Exhibit 1). This arterial provides all-season service between a number of small cities and villages and the larger cities of Kalamazoo and Lansing.

This report is concerned with the portion of M-43 between Riverview Drive and 26th Street on the eastern limits of the city of Kalamazoo.

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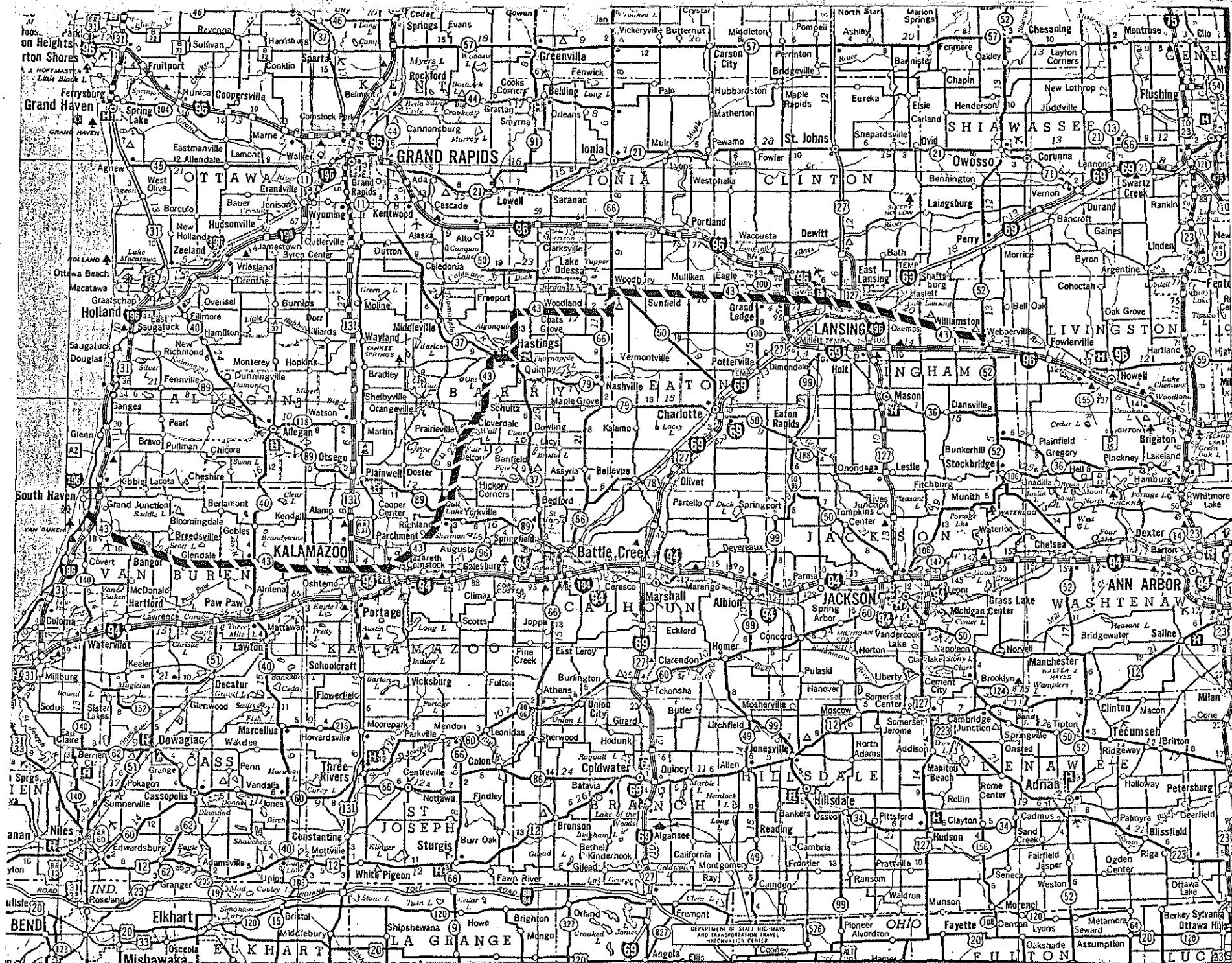


EXHIBIT 1

GENERAL DISCUSSION

The limits of this M-43 study section, as shown in Exhibit 2, are from Riverview Drive in the City of Kalamazoo northeasterly to 26th Street in Kalamazoo County. Locally, this section of highway is known as Gull Road, and serves many trips between Kalamazoo and Richland.

Land use fronting M-43 between Riverview Drive and 26th Street is predominantly commercial and multiple housing, with scattered single residential mix. Between 26th Street and Sprinkle Road, the south side of M-43 has Meijer Thrifty Acres, Meijers Gas Station, and a bank occupying most of the land. The north side of M-43 is in agricultural use. The roadway at this point is five lanes; two in each direction with a center turn lane. South of Sprinkle Road to Normandy Street M-43 is also five lanes. At this point the north side of M-43 is light residential and vacant land. This vacant land is for sale and zoned multiple residential (apartments). The south side of M-43 has a large shopping center. From Normandy Street to H-Avenue M-43 is two lane roadway with vacant land to the north and community business to the south. H-Avenue to Nazareth Road M-43 is also two lanes, with vacant residential and commercial zoned land to the north and south. Continuing southwest from Nazareth to Brook Street, M-43 is still two lanes, with Nazareth College and some residential housing on the north side, and mixed residential, commercial, school, and a church to the south. M-43 from Brook Street to Shaffer is two lanes with mixed commercial and residential properties. From Shaffer to Riverview M-43 widens to four lanes with a

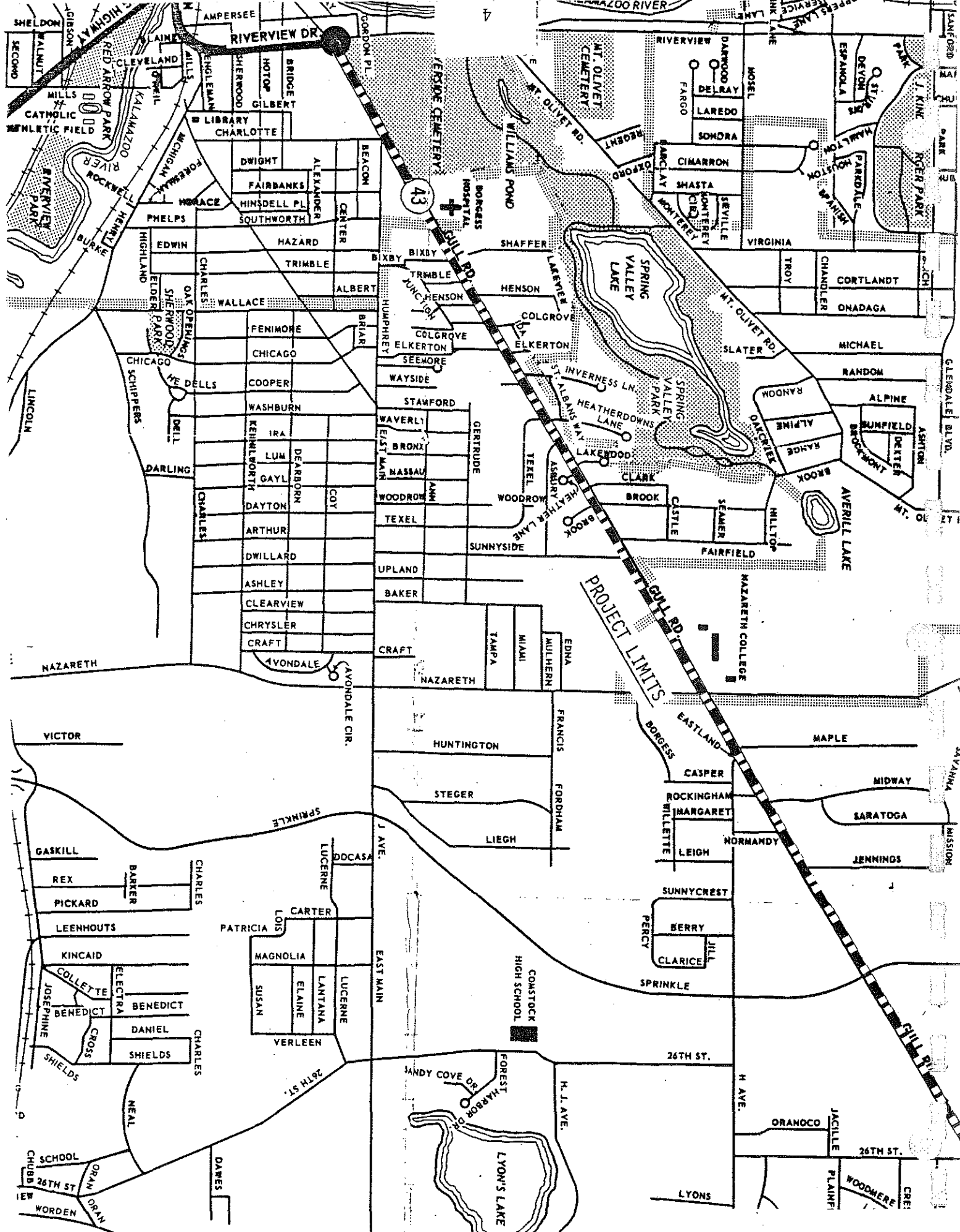


EXHIBIT 2

CC

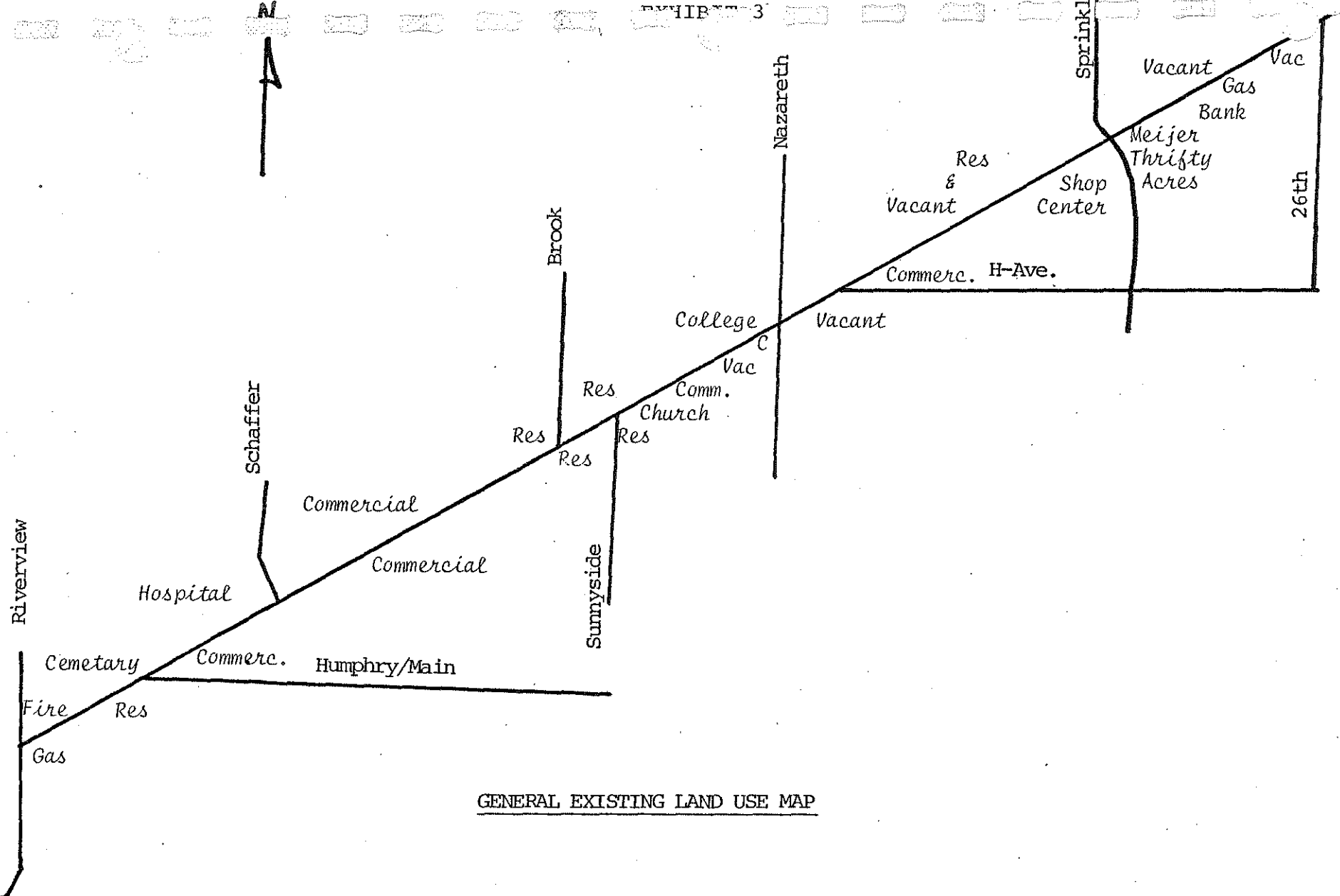
hospital, cemetery, and fire station to the north, and mixed commercial, residential, and vacant land to the south. A general existing land use map shown in Exhibit 3.

Any future development or redevelopment along this section of M-43 will be multiple residential and commercial due to the zoning of adjacent land and nature of present development patterns. A zoning map is shown in Exhibit 4.

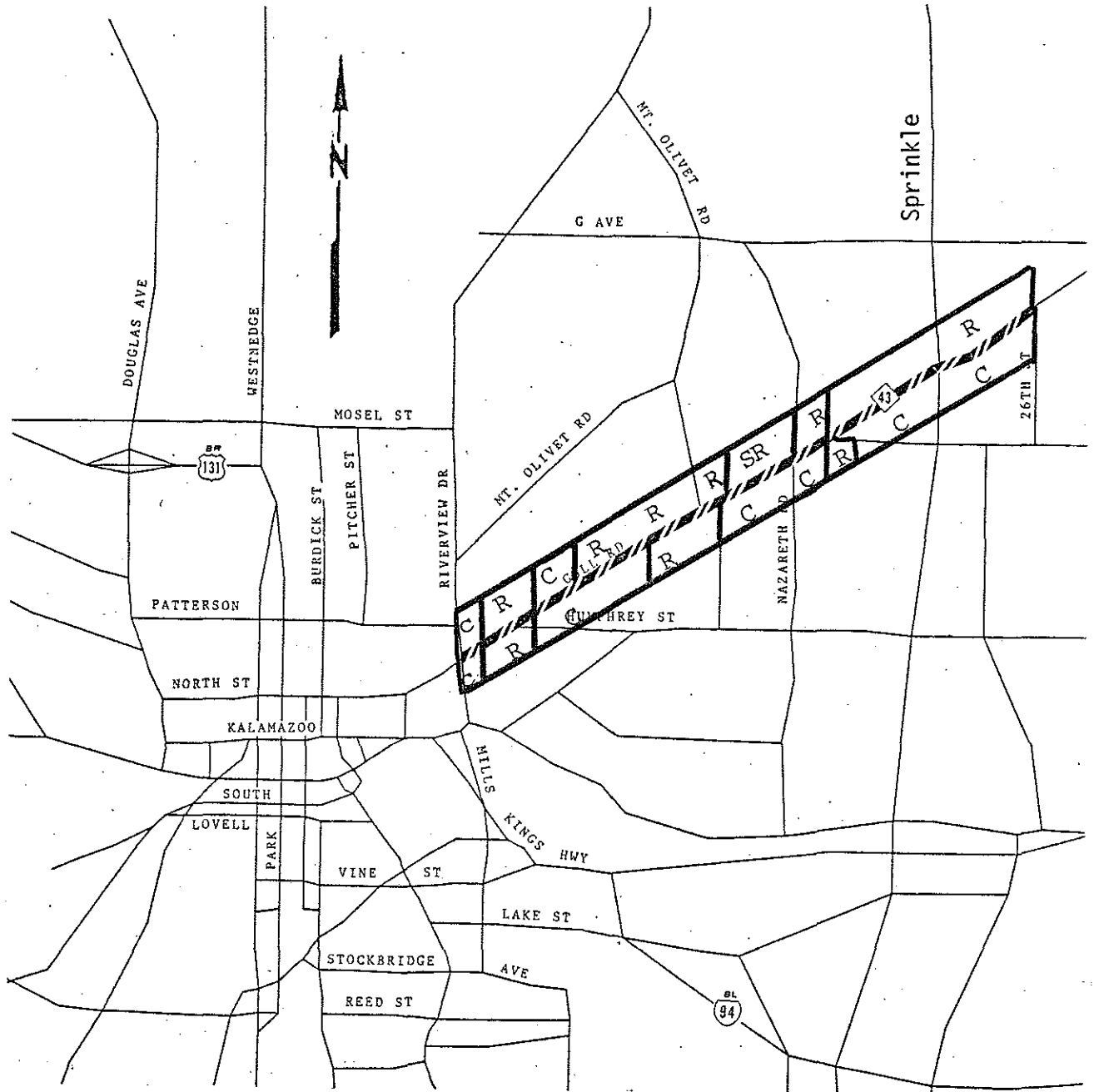
Vertical and horizontal alignment of M-43 does not pose any visibility problems along this study section. Most intersections are at other than right angles and cause sight problems for traffic entering onto M-43.

The general existing roadway capacity for M-43 is shown in Exhibit 5. The existing capacity of M-43 is 23,200 ADT for approximately 1/4 of the study section on the southwest end. The center half of the section has an existing capacity of 10,000, and the northeast section 21,700. Comparing these capacities with the 1978 Average Daily Traffic (Exhibit 6) shows that M-43 is slightly over capacity on more than half the study section, 17,600 ADT falling within the section with a capacity of 23,200, and an ADT of 13,000 throughout the remainder of the section. The center half of the section is presently over capacity by 3,000 vehicles per day. 2000 traffic projections (Exhibit 7) show the roadway to be well over capacity in that year. Projections show 38,150 as the ADT for the southwest 1/3 of the study section, and 28,900 as the ADT for the remaining 2/3's of the section.

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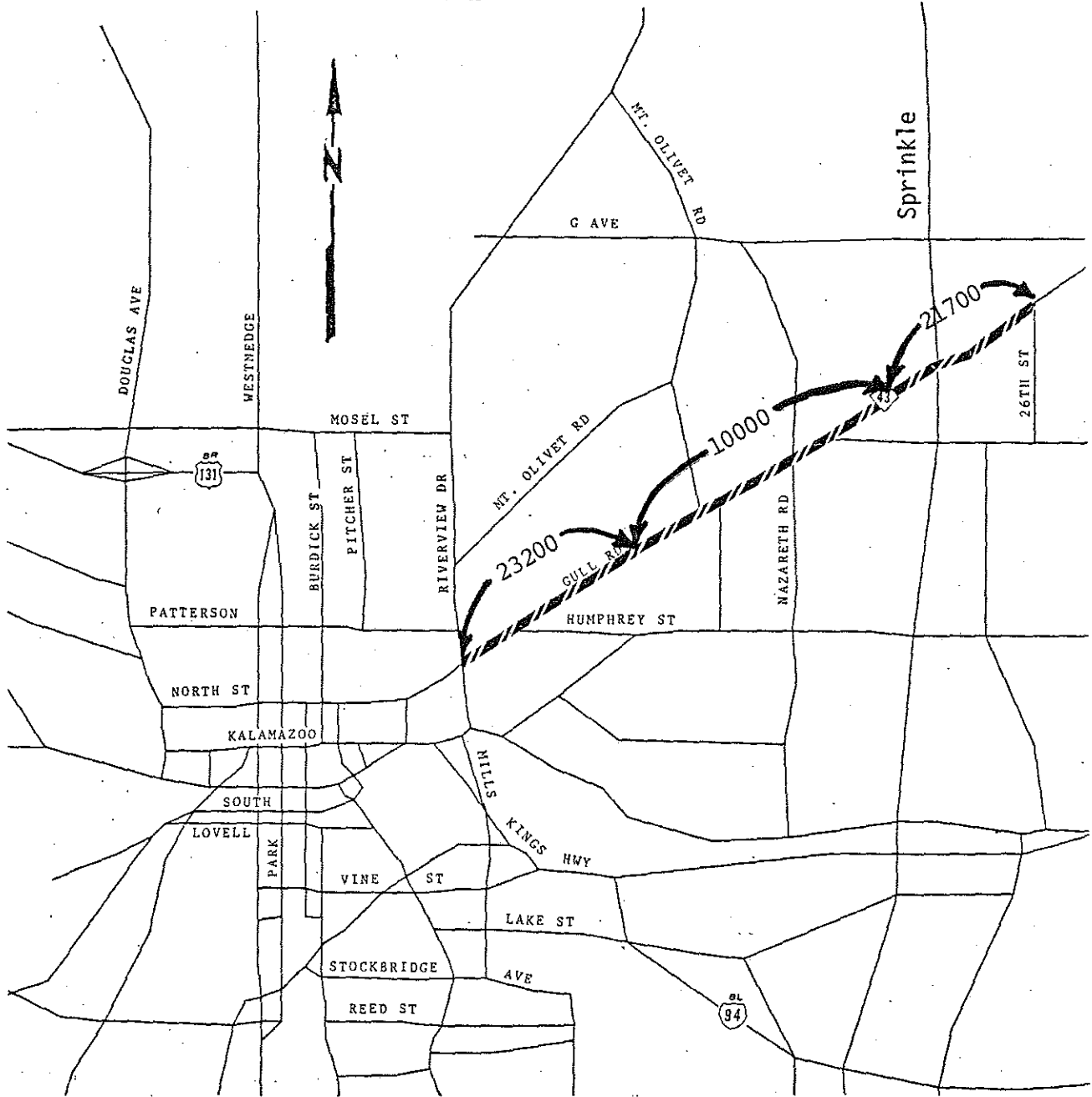
GENERAL EXISTING LAND USE MAP



GENERAL ZONING DATA MAP

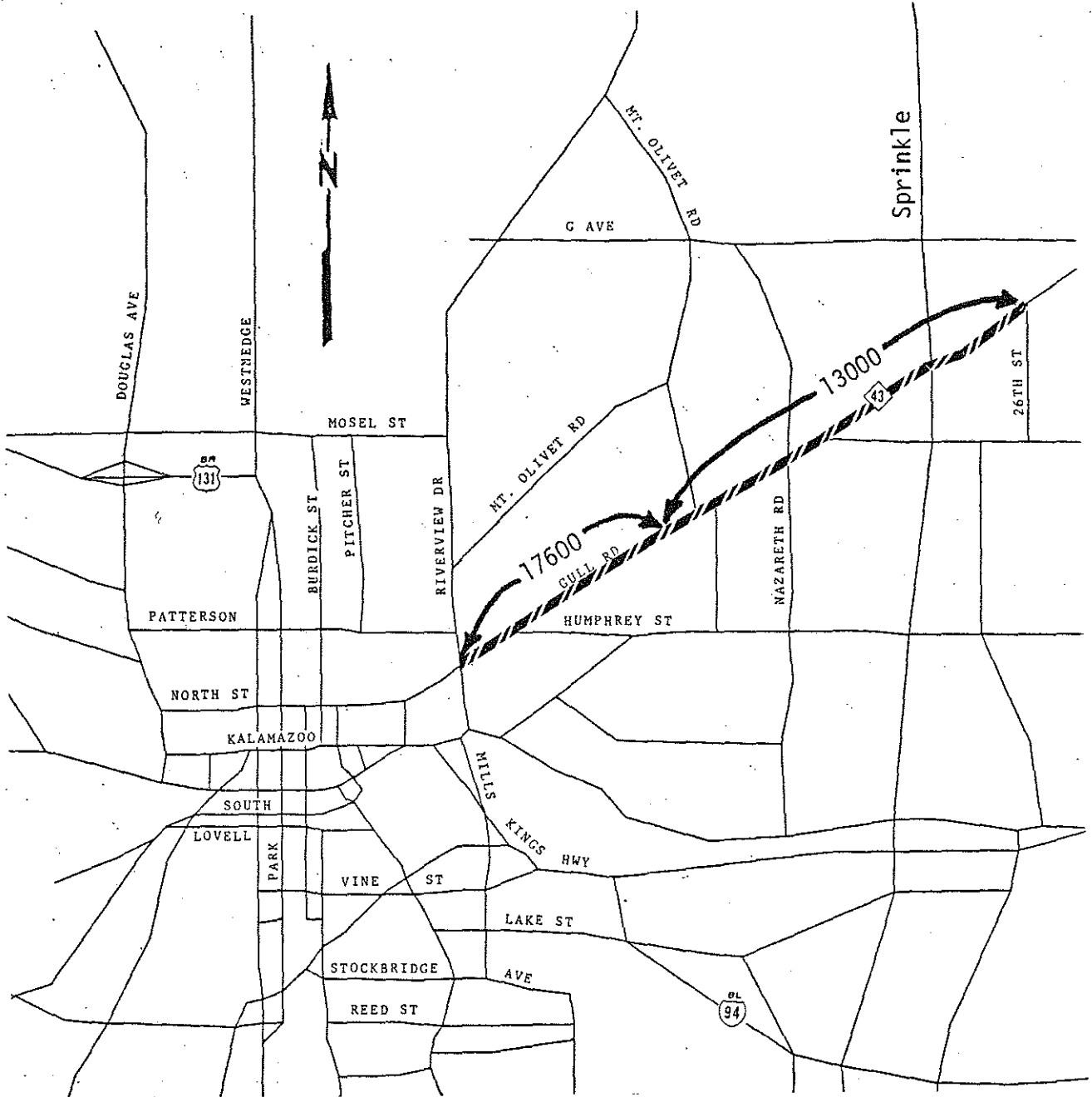
- R = Residential (single, multiple, apts)
- S = School or College
- C = Commercial (Business, retail, office, etc.)

EXHIBIT 5

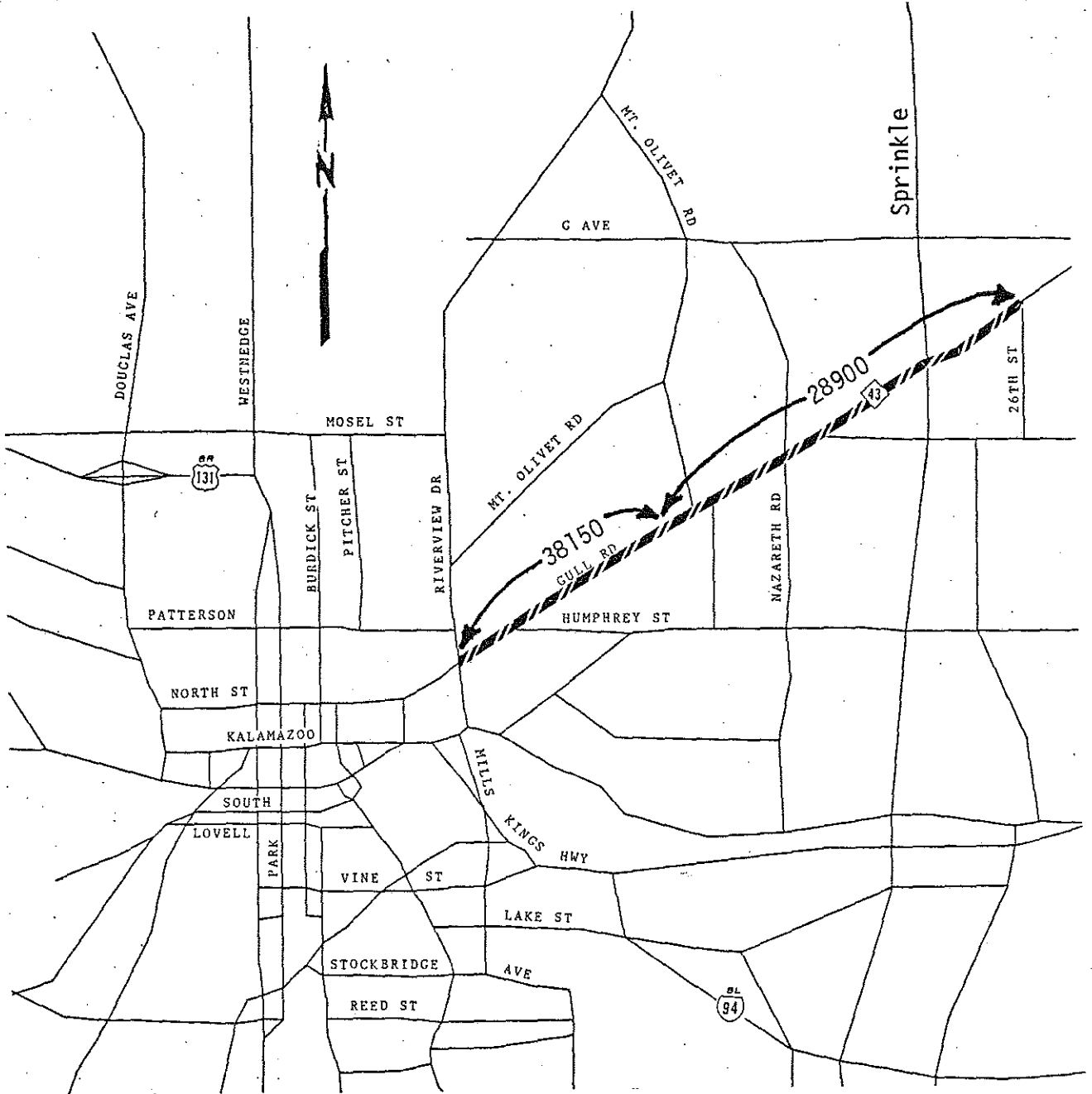


EXISTING CAPACITIES
(ADT)

EXHIBIT 6



1978 Average Daily Traffic



2000 Projected ADT

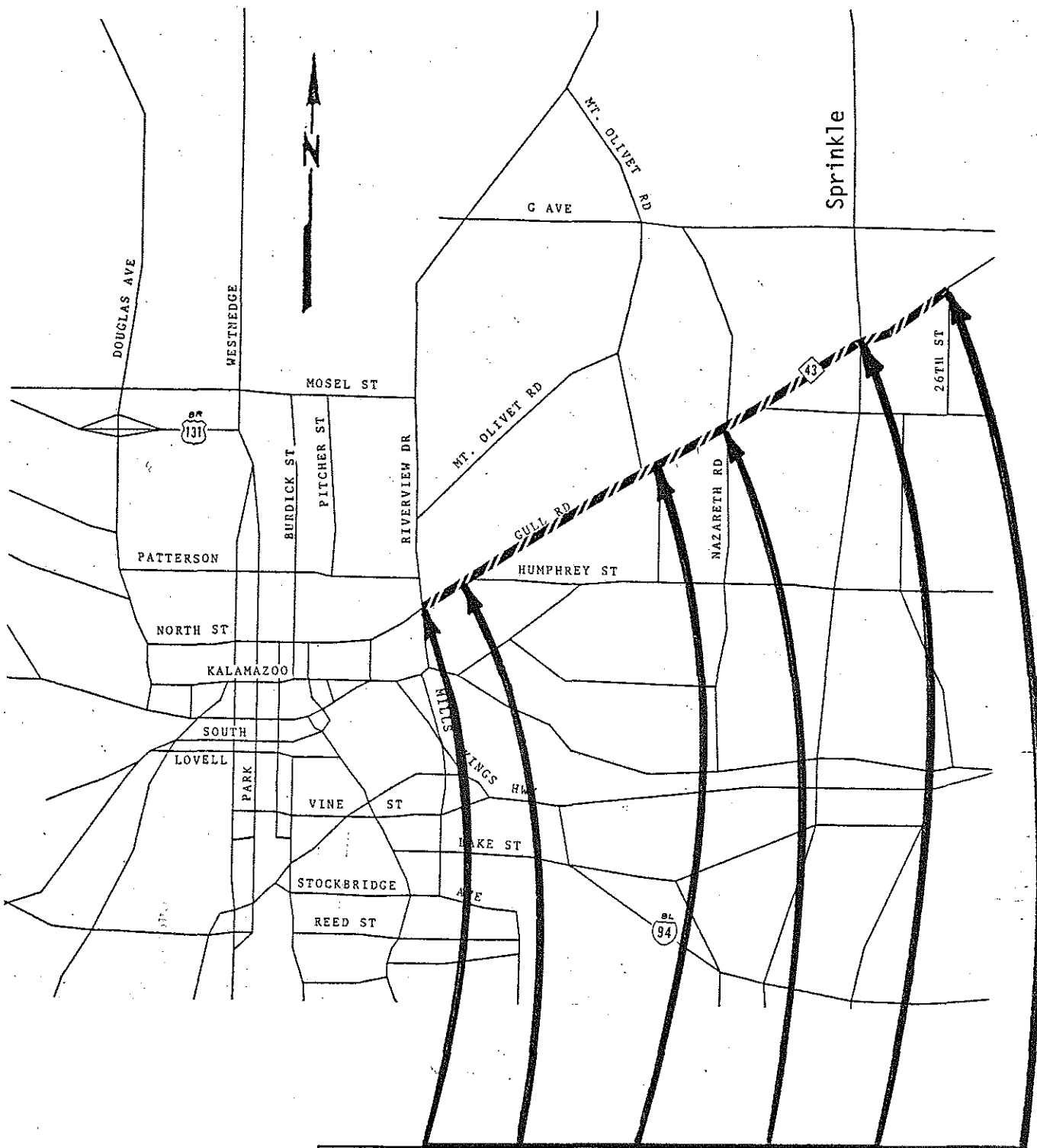
Details of future land use and traffic analysis and forecasting are available in Supplement #1, TAR 195, September 1976, MDOT which related to a study of M-43 from Riverview Drive in Kalamazoo to the village of Richland.

Every 2 years the Michigan Department of Transportation issues a Sufficiency Rating Report for state trunklines. Under this system of ratings, a completely adequate section of roadway rates "100". All road sections that have deficiencies of any kind in their structural condition, effectiveness in serving traffic or safety are marked down from 100 according to specific formulae and procedures. The 1978 Sufficiency Ratings on this section of M-43 illustrates the critically poor condition of the highway (see Exhibit 8). Capacity is critically deficient throughout the section, except for approximately one mile between Nazareth Road and Sprinkle Road, where it was recently widened to 5 lanes. The surface of M-43 is critically deficient along most of the study section except again between Nazareth Road and Sprinkle Road where it was recently improved, and just north of Riverview Avenue. Safety is critically deficient along the total length of this study section. The projected increase in traffic is expected to increase the total deficiency on M-43.

Exhibit 9 details accident information on this section, and the rates are high when compared to other district and statewide rates. A comparative accident rate chart is shown as Exhibit 10, and shows the accident rates for District 7 and the state. Rates are included for 2, 4, and 5 lane roads, such as what exists on M-43 in the study section.

Accident rates are per 100 Million vehicle miles for urban and rural roads of different laneage.

EXHIBIT 8



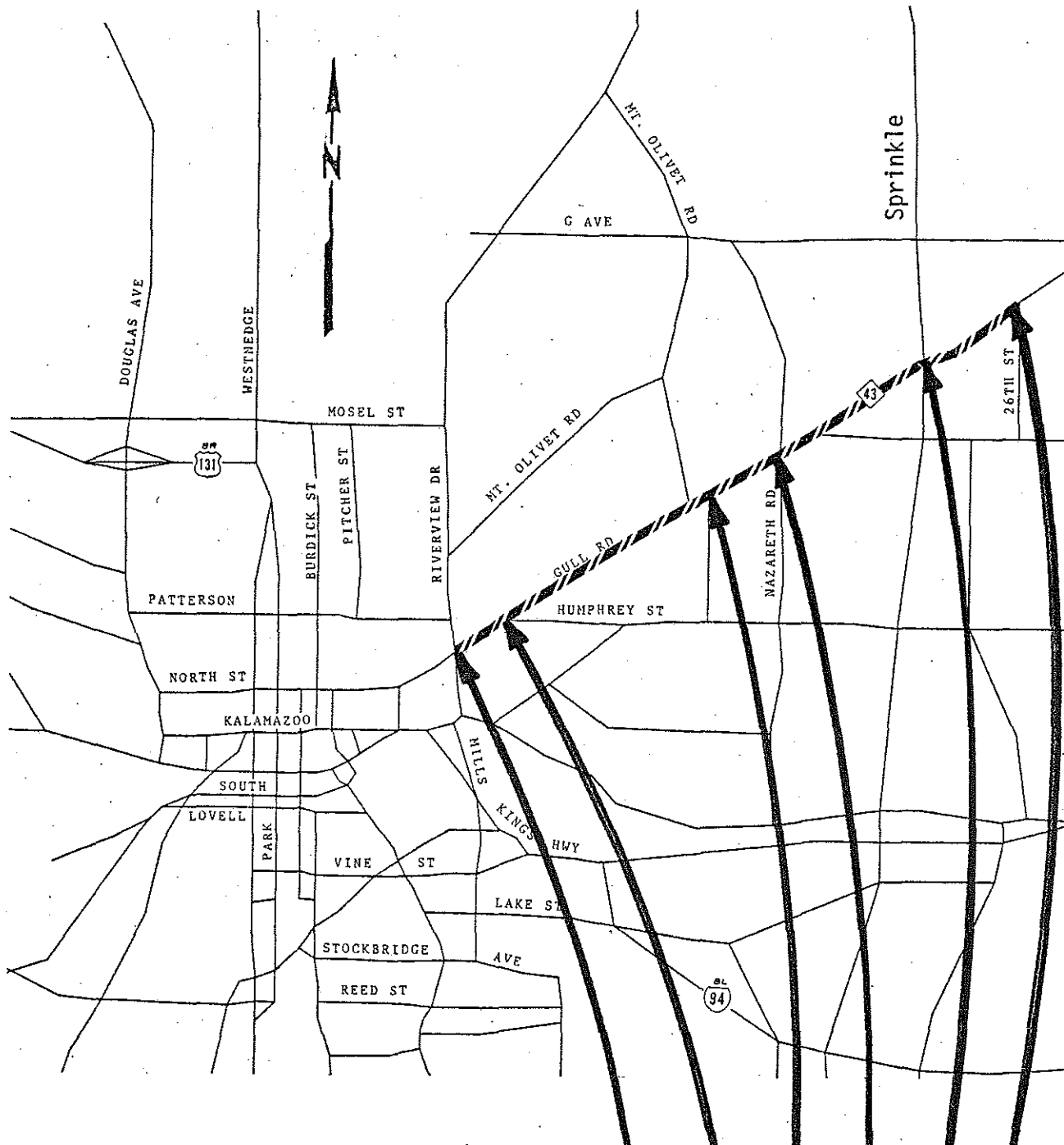
DATA BASE:

1976 Traffic Counts
 1977 Accident Counts
 1977 Field Review

LENGTH	0-0.6	0.6-1.7	1.7-2.1	2.1-3.1	3.1-3.6
CAPACITY	**1**	**1**	**1**	8	**2**
SURFACE	23	**5**	**5**	15	**3**
BASE	8	8	8	20	17
SAFETY	**1**	**1**	**1**	**2**	**6**
TOTAL	33	15	15	45	28

** Denotes Critical Deficiency

1978 Sufficiency Rating - M-43 (Gull Road)



Predominant Width	44	22	22	64	64
Accidents per 10 ⁶ Veh. Mt.	2822	1205	1164	1845	377
Parking *	0	0	0	0	0
Percent Commercial **	.8	8	10	10	9

GENERAL LINK DATA DURING TIME OF 1978 SUFFICIENCY RATING

- * 0 = No parking permitted
- ** Percent of total traffic

EXHIBIT 10

MICHIGAN TRUNKLINE RELATED ACCIDENT DATA

Comparative Accident Rates*

	<u>URBAN</u>	<u>RURAL</u>	<u>TOTAL</u>
District 7 2-Lane	896.4	331.9	614.1
State 2-Lane	780.7	311.0	545.8
M-43** 2-Lane	1787.0	---	1787.0
District 7 4-Lane	1204.6	882.5	1043.5
State 4-Lane	1031.4	659.4	845.4
M-43** 4-Lane	2622.0	-----	2622.0
District 7 5-Lane (Center L-Turn)	821.9	464.4	643.1
State 5-Lane (Center L-Turn)	1075.4	776.3	925.8
M-43** 5-Lane (Center L-Turn)	-----	2222.0	2222.0

* 5-Year Average (1973-77) Accidents per 10⁸ Vehicle Miles

** 1978 Rates

AAU Job # 3207
2-28-80

Prepared by

Accident Analysis Unit
Traffic & Safety Division
M.D.O.T.

Statewide accident rates for urban 2-lane roads averaged 780.7 per 10^8 vehicle miles. The District 7 rate for the same type road is 896.4, and M-43's rate is 1787.0. For rural 2-lane roads the rate is 311.0 and 331.9 for the state and District 7, respectively. The urban rate for 2-lane M-43 is 1787.0.

There is no rural 2-lane section along this part of M-43.

For 4-lane roadways the urban rates are 1031.4 for the state, 1204.6 for the District, and 2622.0 for M-43. There is no rural 4-lane section along this part of M-43.

Rural 5-lane accident rates also show M-43 to be much higher than average. The statewide rural rate is 776.3, the District 7 rate is 464.4, and M-43 much higher at 2222.0 accidents per 100 million vehicle miles. There is no urban 5-lane section along this part of M-43.

State and District 7 rates are 5 year averages (1973-1977) and the M-43 accident rates are from 1978 records.

A study of this section of M-43 should focus attention on the following major deficiencies, either existing or projected. The problems as discussed in this report are summarized below:

1. Volumes on M-43 are exceeding capacity on major portions of the roadway at this date, and are expected to exceed capacity along the entire study section by year 2000 or earlier. This is attributable to a large section of 2 lane road dominating much of this portion of M-43.

2. A critical number of accidents are occurring along M-43 from Riverview to 26th Street. High traffic volume and low capacity contribute to this problem as does the lack of turn lanes on the 2 lane section.

3. The general physical condition of base and surface of the road is critically poor. Shoulders along the section are in poor condition and are of varying widths.

Strip commercial development and multiple housing zoning along M-43 will further accent the need for general upgrading of the roadway. Alternate modes of transportation, such as mass transit, though being used in the area, will not remove the need for a road capable of handling existing and future automobile traffic.

CONCLUSION

The condition of M-43 warrants the reconstruction and improvements necessary to upgrade it to present day standards and enable it to handle present and future traffic efficiently and safely. Existing traffic volumes are greater than roadway capacity over most of this section, and future traffic will bring it well over capacity throughout its' length. Surface condition and general safety along M-43 is insufficient by todays standards and will degrade as traffic increases. The high accident rate is expected to increase as traffic volumes increase unless safety improvements are implemented.

For the purpose of this study it is assumed there will be no change in the trunkline system in the general area. Improvements to connecting systems, such as Sprinkle Road and Riverview/Ampersee will increase access and attract traffic to businesses along M-43. Long range plans for the Kalamazoo Area will cause attractions for through traffic along M-43 and into the city. In general, the efficient future operation of M-43, now operating in a critical state, depends on improvements in safety, and widening of the roadway to handle increased traffic volumes. Turn lanes should be provided for the length of the study section, and general resurfacing initiated.

This section of M-43 is included in the Kalamazoo Area Transportation Study Long Range Plan as an area in need of improvement. Proposed improvements are widening from 2 to 4 lanes and 4 to 5 lanes, as appropriate. It ranks in the highest priority group and 7th in a total of 50 proposed projects in the Plan.