

April 27, 1973

S. F. Cryderman
 Engineer of Transportation Planning
 Max N. Clyde

LTO	RECEIVED RESEARCH LABORATORY APR 30 1973 M.D.S.H. TESTING AND RESEARCH DIVISION	MGB
GRC		FJB
AJP		CIA
PM		LFH
RCM		JBA
MHJ		ELS

1974 National Transportation Study
 Research Project 73 TI-145, Research Report No. R-860 (EV-24)

Transmitted herewith are the 15 completed forms showing the vehicle emission data for the 1972 inventory of the subject study. This material was prepared in accordance with your January 22, 1973 request. We understand that the vehicle mile and average speed data supplied with your request were the best available for 1968. In addition, preparation of the pollution data shown on these forms depended upon certain assumptions which were necessary to calculate the emission levels in each of the geographic classes (urbanized areas, small urban aggregates and rural) required by the study. The assumptions are as follows:

1. Heavy duty trucks travel 14 percent of the mileage in urbanized areas, 17 percent in the small urban aggregates and 19 percent in the rural areas. This assumption was based on information from the "1972 Automobile Facts and Figures" published by the Motor Vehicle Manufacturers Association of the U. S., Inc. The data showed that truck population was lowest in rural areas where the total truck miles travelled was highest.
2. No heavy duty trucks travel local streets. This was based on reference to local ordinances forbidding truck traffic on local streets.
3. Diesel trucks comprise 5.5 percent of the total heavy duty truck population, therefore, it was assumed that they travel 5.5 percent of the truck mileage. This was based on information from the Michigan Trucking Association and the Michigan Department of State's 1972 final passenger and commercial vehicle file.

The vehicle emission factors used for the calculations, except for diesel trucks, are based on a recent and unpublished report prepared by D. S. Kircher and D. P. Armstrong of EPA. Kircher's emission factor for a given model year vehicle were combined with vehicle deterioration factors. The resultant factor was modified to account for the various average vehicle speeds and the vehicle mix (vehicles per model year). Vehicle mix data were obtained from the Department of State's 1972 final passenger vehicle file. Diesel truck emission factors are from AP-42, "Compilation of Air Pollutant Emission Factors", an EPA publication. Use of the emission factors from the Kircher report resulted in lower vehicle emission levels of carbon monoxide and hydrocarbons than would have been obtained if the emission factors in Tables III-1 and III-2 of the Department of Transportation's Completion Instructions had been used. Nitrogen oxides emission levels were approximately the same for either set of emission factors.

- 2 -

One copy of the forms has been forwarded to Frank DeRose, Jr., of your Advanced Planning Section.

TESTING AND RESEARCH DIVISION

Max N. Clyde
Engineer of Testing and Research

MNC:JTE:cgc

cc: L. T. Oehler ✓
J. T. Ellis

STATE: MICHIGAN
 ANN ARBOR
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
 2 0 0 1 0 1 0

(H-1) Form H-1

1972 INVENTORY
 OMB No. 045 72024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)			
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES	
1. TOTAL MILES	01									
2. VEHICLE MILES (annual - in millions) (x.x)	02	191.2	397.4	116.7	56.7	80.3	842.3	289.8	210.3	261.9
3. VEHICLE HOURS (annual - in millions) (x.x)	03									
4. CAPACITY MILES in thousands	04									

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars): 1971	
LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES			38. MAINT. ADMIN, OTHER MISC	05
POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)			39. BOND INTEREST	
FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
FREEWAY VEH MILES/CAPITA (x.xx)						
VEH MILES/VEH HOURS						
FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
CAR OCCUPANCY - AVERAGE DAILY (x.x)						
7. ARTERIAL VMT ON FWAYS		POLLUTANTS				
AVERAGE VEH TRIP LENGTH	MILES (x.x) MINUTES (x.x)	ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	08 73,930			
AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	12,290			
		31. HC	8,660			

STATE: MICHIGAN
 BAY CITY
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
 H 2 0 0 2 1 1 0

(H-1) Form H-1

1972 INVENTORY
 OMB No. 04S 72024

HIGHWAYS - IN URBAN AREAS

STATE AREA SYSTEM
 CODE CODE

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES	01								
2. VEHICLE MILES (annual - in millions) (x.x)	02	49.3	122.4	82.2	31.2	40.5	325.6	57.7	51.1
3. VEHICLE HOURS (annual - in millions) (x.x)	03								
4. CAPACITY MILES in thousands	04								

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
7. LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES		38. MAINT. ADMIN, OTHER MISC	09	
8. POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)		39. BOND INTEREST		
9. FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
10. FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
11. FREEWAY VEH MILES/CAPITA (x.xx)						
12. VEH MILES/VEH HOURS						
13. FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
14. CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
15. CAR OCCUPANCY - AVERAGE DAILY (x.x)						
16. % ARTERIAL VMT ON FWAYS						
17. AVERAGE VEH TRIP LENGTH } MILES (x.x)		POLLUTANTS				
18. AVERAGE VEH TRIP LENGTH } MINUTES (x.x)		ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
19. AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	08 29,478			
20. AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	4,629			
		31. HC	3,453			

MICHIGAN
 INVENTORY
 HIGHWAYS IN URBAN AREAS
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(H-1) Form H-1

1972 INVENTORY
 OMB No. 04S 72024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
TOTAL MILES	01								
VEHICLE MILES (annual - in millions) (x.x)	02	3087.6	8544.5	4890.4	1595.4	1735.2	19853.1	4310.0	8504.0
VEHICLE HOURS (annual - in millions) (x.x)	03								
CAPACITY MILES in thousands	04								

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
ROAD AREA (sq. miles)	06	21. ANNUAL FATALITIES			38. MAINT. ADMIN, OTHER MISC	09
POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)			39. BOND INTEREST	
FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
FREEWAY VEH MILES/CAPITA (x.xx)						
VEH MILES/VEH HOURS						
VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
OCCUPANCY - AVERAGE DAILY (x.x)						
ARTERIAL VMT ON FWAYS		POLLUTANTS				
TRAVEL TIME PER VEHICLE TRIP LENGTH			ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxxx)	POUNDS/PMT (3) (x.xxxxx)	
AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	08 1,776,981			
AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	283,563			
		31. HC	210,713			

STATE: MICHIGAN
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
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(H-1) Form H-1

1972 INVENTORY
 OMB No. 04S 72024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)			
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES	
1. TOTAL MILES	01									
2. VEHICLE MILES (annual - in millions) (x.x)	02	180.1	636.9	546.0	181.1	258.4	1802.5	246.3	684.0	613.8
3. VEHICLE HOURS (annual - in millions) (x.x)	03									
4. CAPACITY MILES in thousands	04									

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
7. LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES		38. MAINT. ADMIN, OTHER MISC	08	
8. POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)		39. BOND INTEREST		
9. FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
10. FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
11. FREEWAY VEH MILES/CAPITA (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
12. VEH MILES/VEH HOURS		28. RESERVED ROW (sq mi)				
13. FWY VEH MILES/FWY CAP. MILES (x.xx)		POLLUTANTS				
14. CAR OCCUPANCY - A.M. PEAK HR (x.x)			ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)	
15. CAR OCCUPANCY - AVERAGE DAILY (x.x)		29. CO	08 165,919			
16. % ARTERIAL VMT ON FWAYS		30. NO _x	25,190			
17. AVERAGE VEH } MILES (x.x)		31. HC	19,426			
18. TRIP LENGTH } MINUTES (x.x)						
19. AVERAGE DAILY TAXI PASSENGER TRIPS	07					
20. AVERAGE DAILY AUTO PERSON TRIPS						

STATE: MICHIGAN
 GRAND RAPIDS
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
 H 2 0 0 8 1 1 0

(H-1) Form H-1

1972 INVENTORY

OMB No. 045 72024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)			
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES	
1. TOTAL MILES	01									
2. VEHICLE MILES (annual - in millions) (x.x)	02	201.1	766.7	320.3	110.2	210.6	1608.0	399.5	553.2	445.6
3. VEHICLE HOURS (annual - in millions) (x.x)	03									
4. CAPACITY MILES in thousands	04									

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
7. LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES		38. MAINT. ADMIN, OTHER MISC	09	
8. POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)		39. BOND INTEREST		
9. FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
10. FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
11. FREEWAY VEH MILES/CAPITA (x.xx)						
12. VEH MILES/VEH HOURS						
13. FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
14. CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
15. CAR OCCUPANCY - AVERAGE DAILY (x.x)						
16. % ARTERIAL VMT ON FWAYS		POLLUTANTS				
17. AVERAGE VEH } MILES (x.x)		ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/FMT (3) (x.xxxx)		
18. TRIP LENGTH } MINUTES (x.x)						
19. AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	08 145,466			
20. AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	22,806			
		31. HC	17,012			

STATE: MICHIGAN
 JACKSON
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
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(H-1) Form H-1

1972 INVENTORY
 OMB No. 04S-2024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)			
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES	
1. TOTAL MILES	01									
2. VEHICLE MILES (annual - in millions) (x.x)	02	11.8	147.1	82.1	37.1	60.6	338.7	40.2	86.4	151.5
3. VEHICLE HOURS (annual - in millions) (x.x)	03									
4. CAPACITY MILES in thousands	04									

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES		38. MAINT. ADMIN, OTHER MISC	09	
POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)		39. BOND INTEREST		
FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
FREEWAY VEH MILES/CAPITA (x.xx)						
VEH MILES/VEH HOURS						
FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
CAR OCCUPANCY - AVERAGE DAILY (x.x)						
% ARTERIAL VMT ON FWAYS		POLLUTANTS				
AVERAGE VEH TRIP LENGTH	MILES (x.x) MINUTES (x.x)	ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	00 31,751			
AVERAGE DAILY AUTO PERSON TRIPS		30. NOx	4,639			
		31. HC	3,696			

STATE: MICHIGAN
 KALAMAZOO
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
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(H-1) Form H-1

1972 INVENTORY

OMB No. 045-2024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES	01								
2. VEHICLE MILES (annual - in millions) (x.x)	02 85.2	214.4	218.9	80.5	90.5	719.5	126.3	227.3	275.4
3. VEHICLE HOURS (annual - in millions) (x.x)	03								
4. CAPACITY MILES in thousands	04								

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
7. LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES		38. MAINT. ADMIN, OTHER MISC	09	
8. POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)		39. BOND INTEREST		
9. FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
10. FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
11. FREEWAY VEH MILES/CAPITA (x.xx)						
12. VEH MILES/VEH HOURS						
13. FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
14. CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
15. CAR OCCUPANCY - AVERAGE DAILY (x.x)						
16. % ARTERIAL VMT ON FWAYS		POLLUTANTS				
17. AVERAGE VEH TRIP LENGTH	MILES (x.x) MINUTES (x.x)	ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
18. AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO 08 65,844				
19. AVERAGE DAILY AUTO PERSON TRIPS		30. NOx 10,139				
		31. HC 7,731				

STATE: MICHIGAN
 LANSING
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
 H 2 0 1 1 0 1 0

(H-1) Form H-1

1972 INVENTORY

OMB No. 045 12024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES	01								
2. VEHICLE MILES (annual - in millions) (x.x)	02	126.0	509.3	320.9	104.4	144.5	1205.1	136.8	636.7
3. VEHICLE HOURS (annual - in millions) (x.x)	03								
4. CAPACITY MILES in thousands	04								

PERFORMANCE MEASURES	PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971
7. LAND AREA (sq. miles)	06			
8. POPULATION - 1972 (thousands)				
9. FREEWAY CAPACITY MILES/CAPITA (x.xx)				
10. FREEWAY CAPACITY MILES/SQ MILE				
11. FREEWAY VEH MILES/CAPITA (x.xx)				
12. VEH MILES/VEH HOURS				
13. FWY VEH MILES/FWY CAP. MILES (x.xx)				
14. CAR OCCUPANCY - A.M. PEAK HR (x.x)				
15. CAR OCCUPANCY - AVERAGE DAILY (x.x)				
16. % ARTERIAL VMT ON FWAYS				
17. AVERAGE VEH } MILES (x.x)				
18. TRIP LENGTH } MINUTES (x.x)				
19. AVERAGE DAILY TAXI PASSENGER TRIPS	07			
20. AVERAGE DAILY AUTO PERSON TRIPS				
		21. ANNUAL FATALITIES		38. MAINT. ADMIN, OTHER MISC
		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)		39. BOND INTEREST
		23. ANNUAL INJURIES		
		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)		
		27. TOTAL LAND IN HWAYS (sq mi)		
		28. RESERVED ROW (sq mi)		
		POLLUTANTS		
			ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)
				POUNDS/PMT (3) (x.xxxx)
		29. CO	08 109,677	
		30. NO _x	17,019	
		31. HC	12,887	

STATE: MICHIGAN
 MUSKEGON-MUSKEGON HEIGHTS
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
 2 0 1 4 2 1 0

(H-1)

Form H-1

1972 INVENTORY

OMB No. 045 72024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES	01								
2. VEHICLE MILES (annual - in millions) (x.x)	02	16.9	230.6	146.7	54.3	92.7	541.2	85.2	157.8
3. VEHICLE HOURS (annual - in millions) (x.x)	03								
4. CAPACITY MILES in thousands	04								

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollar:):1971	
LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES			38. MAINT. ADMIN, OTHER MISC	05
POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)			39. BOND INTEREST	
FREWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
FREWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
FREWAY VEH MILES/CAPITA (x.xx)						
VEH MILES/VEH HOURS						
FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
CAR OCCUPANCY - AVERAGE DAILY (x.x)						
ARTERIAL VMT ON FWAYS						
AVERAGE VEH TRIP LENGTH	MILES (x.x)	POLLUTANTS				
	MINUTES (x.x)	ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
9. AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	08 50,655			
10. AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	7,425			
		31. HC	5,910			

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES									
2. VEHICLE MILES (annual - in millions) (x.x)	63.9	267.1	125.6	53.6	86.1	596.3	63.9	175.4	270.9
3. VEHICLE HOURS (annual - in millions) (x.x)									
4. CAPACITY MILES in thousands									

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars): 1971	
LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES			38. MAINT. ADMIN, OTHER MISC	05
POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)			39. BOND INTEREST	
FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
FREEWAY VEH MILES/CAPITA (x.xx)						
VEH MILES/VEH HOURS						
FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
CAR OCCUPANCY - AVERAGE DAILY (x.x)						
% ARTERIAL VMT ON FWAYS		POLLUTANTS				
AVERAGE VEH TRIP LENGTH	MILES (x.x) MINUTES (x.x)	ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	08 54,455			
AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	8,378			
		31. HC	6,364			

STATE: MICHIGAN
 SOUTH BEND
 1972 INVENTORY
 PT. OF MULTI-ST URBANIZED AREA
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1972 INVENTOR
 OMB No. 04S 72024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES	01								
2. VEHICLE MILES (annual - in millions) (x.x)	02	-	45.3	17.7	13.6	21.5	98.1	-	39.5
3. VEHICLE HOURS (annual - in millions) (x.x)	03								
4. CAPACITY MILES in thousands	04								

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
7. LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES		38. MAINT. ADMIN, OTHER MISC	09	
8. POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)		39. BOND INTEREST		
9. FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
10. FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
11. FREEWAY VEH MILES/CAPITA (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
12. VEH MILES/VEH HOURS		28. RESERVED ROW (sq mi)				
13. FWY VEH MILES/FWY CAP. MILES (x.xx)		POLLUTANTS				
14. CAR OCCUPANCY - A.M. PEAK HR (x.x)		ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
15. CAR OCCUPANCY - AVERAGE DAILY (x.x)		29. CO	08 9,365			
16. % ARTERIAL VMT ON FWAYS		30. NO _x	1,318			
17. AVERAGE VEH } MILES (x.x)		31. HC	1,081			
18. TRIP LENGTH } MINUTES (x.x)						
19. AVERAGE DAILY TAXI PASSENGER TRIPS	07					
20. AVERAGE DAILY AUTO PERSON TRIPS						

STATE: MICHIGAN

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1972 INVENTORY

OMB No. 045 72024

TOLEDO

1972 INVENTORY

PT. OF MULTI-ST URBANIZED AREA

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HIGHWAYS - IN URBAN AREAS

STATE AREA SYSTEM
CODE CODE

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES	01								
2. VEHICLE MILES (annual - in millions) (x.x)	02	27.4	25.8	14.9	20.1	88.2	-	3.1	65.0
3. VEHICLE HOURS (annual - in millions) (x.x)	03								
4. CAPACITY MILES in thousands	04								

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
LAND AREA (sq. miles)	06	21. ANNUAL FATALITIES			38. MAINT. ADMIN, OTHER MISC	09
POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)			39. BOND INTEREST	
FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
FREEWAY VEH MILES/CAPITA (x.xx)						
VEH MILES/VEH HOURS						
FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
CAR OCCUPANCY - AVERAGE DAILY (x.x)						
2. ARTERIAL VMT ON FWAYS		POLLUTANTS				
AVERAGE VEH TRIP LENGTH	MILES (x.x) MINUTES (x.x)	ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	08 8,717			
AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	1,199			
		31. HC	1,006			

STATE: MICHIGAN
 SMALL URBAN AGG. 5-25,000 POP
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
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1972 INVENTORY

OMB No. 045 72024

HIGHWAYS - IN URBAN AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES									
2. VEHICLE MILES (annual - in millions) (x.x)	5.9	545.6	196.4	287.2	317.2	1352.3	14.4	355.3	665.4
3. VEHICLE HOURS (annual - in millions) (x.x)									
4. CAPACITY MILES in thousands									

PERFORMANCE MEASURES	PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971
LAND AREA (sq. miles)	06			
POPULATION - 1972 (thousands)		21. ANNUAL FATALITIES		38. MAINT. ADMIN, OTHER MISC
FREEWAY CAPACITY MILES/CAPITA (x.xx)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)		39. BOND INTEREST
FREEWAY CAPACITY MILES/SQ MILE		23. ANNUAL INJURIES		
FREEWAY VEH MILES/CAPITA (x.xx)		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)		
VEH MILES/VEH HOURS				
FWY VEH MILES/FWY CAP. MILES (x.xx)				
CAR OCCUPANCY - A.M. PEAK HR (x.x)		27. TOTAL LAND IN HWAYS (sq mi)		
CAR OCCUPANCY - AVERAGE DAILY (x.x)		28. RESERVED ROW (sq mi)		
7. ARTERIAL VMT ON FWAYS				
AVERAGE VEH TRIP LENGTH } MILES (x.x)		POLLUTANTS		
MINUTES (x.x)		ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)
AVERAGE DAILY TAXI PASSENGER TRIPS	07	29. CO	08 130,742	
AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	18,747	
		31. HC	15,212	

STATE: MICHIGAN
 SMALL URBAN AGG. 25-50,000 POP
 1972 INVENTORY
 HIGHWAYS IN URBAN AREAS
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1972 INVENTORY

OMB No. 048-12024

HIGHWAYS - IN URBAN AREAS

STATE AREA SYSTEM
 CODE CODE

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)		
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES
1. TOTAL MILES	⁰¹								
2. VEHICLE MILES (annual - in millions) (x.x)	⁰² 188.0	454.0	455.8	146.2	233.9	1477.9	231.8	319.0	693.2
3. VEHICLE HOURS (annual - in millions) (x.x)	⁰³								
4. CAPACITY MILES in thousands	⁰⁴								

PERFORMANCE MEASURES		PERFORMANCE MEASURES (Continued)			ANNUAL COSTS (Thousands of dollars):1971	
7. LAND AREA (sq. miles)	⁰⁶	21. ANNUAL FATALITIES			38. MAINT. ADMIN, OTHER MISC	⁰⁹
8. POPULATION - 1972 (thousands)		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)			39. BOND INTEREST	
9. FREEWAY CAPACITY MILES/CAPITA (x.xx)		23. ANNUAL INJURIES				
10. FREEWAY CAPACITY MILES/SQ MILE		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)				
11. FREEWAY VEH MILES/CAPITA (x.xx)						
12. VEH MILES/VEH HOURS						
13. FWY VEH MILES/FWY CAP. MILES (x.xx)		27. TOTAL LAND IN HWAYS (sq mi)				
14. CAR OCCUPANCY - A.M. PEAK HR (x.x)		28. RESERVED ROW (sq mi)				
15. CAR OCCUPANCY - AVERAGE DAILY (x.x)						
16. ARTERIAL VMT ON FWAYS		POLLUTANTS				
AVERAGE VEH TRIP LENGTH } MILES (x.x)		ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)		
AVERAGE DAILY TAXI PASSENGER TRIPS	⁰⁷	29. CO	⁰⁸ 136,220			
AVERAGE DAILY AUTO PERSON TRIPS		30. NO _x	21,619			
		31. HC	16,042			

HIGHWAYS - IN RURAL AREAS

PHYSICAL STATE	1990 FUNCTIONAL CLASSIFICATION						DESIGN TYPE - 1972 (non locals)			
	(1) INTERSTATE	(2) OTHER PRIN ARTERIALS	(3) MINOR ARTERIALS	(4) COLLECTORS Major & Minor	(5) LOCAL	(6) TOTAL	(7) FREEWAYS (INCL INTERSTATE)	(8) OTHER 4 OR MORE LANES	(9) LESS THAN 4 LANES	
1. TOTAL MILES	01									
2. VEHICLE MILES (annual - in millions) (x.x)	02	2426.9	1888.2	3956.4	6231.6	3228.1	17731.2	3583.4	917.8	10001.9
3. VEHICLE HOURS (annual - in millions) (x.x)	03									
4. CAPACITY MILES in thousands	04									

PERFORMANCE MEASURES		PERFORMANCE MEASURES (continued)			ANNUAL COSTS (Thousands of dollars): 1971		
7. LAND AREA (sq miles)	06					38. MAINT, ADMIN, OTHER MISC	09
8. POPULATION - 1972 (thousands)						39. BOND INTEREST	
9. FREEWAY CAPACITY MILES/CAPITA (x.xx)		21. ANNUAL FATALITIES			07		
10. FREEWAY CAPACITY MILES/SQ MILE		22. ANNUAL FATALITIES/100 MILLION VMT (x.xx)					
11. VEH MILES/VEH HOURS		23. ANNUAL INJURIES					
12. FWY VEH MILES/FWY CAP. MILES (x.xx)		24. ANNUAL INJURIES/100 MILLION VMT (x.xx)					
13. CAR OCCUPANCY, AVERAGE DAILY (x.x)		27. TOTAL LAND IN HWAYS (sq mi)					
14. ARTERIAL VMT ON FREEWAYS		28. RESERVED ROW (sq mi)					
AVERAGE VEHICLE TRIP LENGTH } MILES (x.x) MINUTES (x.x)		POLLUTANTS					
		29. CO	08	ANNUAL LBS (1) IN THOUSANDS	POUNDS/VMT (2) (x.xxxx)	POUNDS/PMT (3) (x.xxxx)	
		30. NO _x		1,578,282			
		31. HC		277,004			
				184,487			