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STUDY OF PAST AND FUTURE TRENDS
OF TRAVEL ACROSS
MACKINAC BRIDGE,
MACKINAC COUNTY

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STUDY OF PAST AND FUTURE TRENDS
OF TRAVEL ACROSS
MACKINAC BRIDGE,
MACKINAC COUNTY

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HENRIK E. STAFSETH, DIRECTOR

September 14, 1971

Mr. Sam F. Cryderman
Engineer of Transportation Planning
Transportation Planning Division

Dear Mr. Cryderman:

We are pleased to present the "Study of Past and Future Trends of Travel Across Mackinac Bridge, Mackinac County".

This document has been prepared from previous studies and past trends. Future travel across the Mackinac Bridge is estimated assuming a toll reduction 1/1/72 of approximately 50 percent.

This material was prepared by Transportation Analysts Phillip Lamb, Dwight Searcy, David Jewison, Student Assistant Irwin Samec and Student Highway Technician Philip Smith. Their Supervisor is Leo Farman.

Very truly yours,

A handwritten signature in black ink, appearing to read "Keith E. Bushnell".
Keith E. Bushnell
Engineer of Transportation
Survey & Analysis

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ACKNOWLEDGEMENTS

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Graphs Drawn by Irwin Samec, Student Assistant

September 2, 1971

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SUBJECT: Study of Past and Future Trends of Travel Across Mackinac Bridge, Mackinac County.

INTRODUCTION AND SUMMARY

After the Mackinac Bridge was completed and opened to traffic on November, 1957, traffic increased more than 48 percent in 1958. Traffic increased more than 21 percent in 1969 when fares were reduced 60 percent. The annual increase in the past has averaged 3-4 percent. The graph of "Trend of Traffic by Years, Mackinac Bridge, Mackinac County, 1951-1970" and trend of traffic by classification groups by years shows that years 1957-1959 must be discounted for true trends of classifications. From 1960 to 1970, classification group 2 (single-unit trucks) increased from 5.1 percent in 1960 to 10.6 percent in 1970 of the total vehicles crossing the bridge. Classification group 3 (trailer-combination trucks and buses) decreased from 6.4 percent in 1960 to 4.6 percent in 1970 of the total vehicles crossing the bridge. Group 1 (passenger cars, trucks-2 axle 4 tires and motorcycles) decreased from 88.5 percent in 1960 to 84.8 percent in 1970 of the total vehicles crossing the bridge. This trend should continue for the future (1971-2001).

Mississippi Valley Multiple Screen Line (M.V.M.S.L.) interviews were taken on Saturday, August 11, 1967 and Sunday, August 12, 1967; and Saturday, August 16, 1969 and Sunday, August 17, 1969. The 1967 study was taken

approximately one year and four months before the 60 percent reduction in tolls. The 1969 was taken approximately eight months after the 60 percent reduction in tolls. The 1967 study can be used as the "before" study and the 1969 study can be used as the "after" study.

During interview operation, vehicles were stopped and the drivers interviewed as to the trip's origin, destination and purpose. All interview information, classified as to vehicle type and direction of travel was recorded by hour periods. Manual vehicle classification counts were maintained for 24-hours. This information provided the basis for expansion of the sample interview data to a full 24-hour representation.

Total vehicles crossing the bridge increased from 12,008 (Sat., Aug. 11, 1967) and 9,353 (Sun., Aug. 12, 1967) to 17,059 (Sat., Aug. 16, 1969) and 14,093 (Sun., Aug. 1, 1969). Of those vehicles with an origin or destination north of the Mackinac Bridge, those vehicles coming from a greater distance than Chippewa and Mackinac Counties increased from 1967 to 1969 but at a smaller rate. The same was true south of the bridge. Cheboygan County trip terminals increased at a greater rate than all counties south of the bridge. The toll rate reduction had a greater effect on those trips with an origin or destination in Chippewa, Mackinac and Cheboygan Counties.

Mackinac Bridge, Mackinac Co.

Saturday, Aug. 16, 1969

Saturday, Aug. 11, 1967

Trip Terminals North

	<u>Trips</u>	Percent of <u>Total</u>	<u>Trips</u>	Percent of <u>Total</u>
Chippewa & Mackinac Counties	4,758	39.6	7,818	45.9
All Other U. P. Co.s	4,268	35.6	5,077	29.7
All Other (Out-State)	2,982	24.8	4,164	24.4
Total	12,008	100.0	17,059	100.0

Trip Terminals South

Wayne Co.	1,940	16.2	2,244	13.2
Cheboygan Co.	532	4.4	1,939	11.4
All Other L.P. Co.s	7,029	58.5	9,580	56.1
All Other (Out-State)	2,507	20.9	3,296	19.3
Total	12,008	100.0	17,059	100.0

Mackinac Bridge, Mackinac Co.

Sunday, Aug. 12, 1967

Sunday, Aug. 17, 1969

Trip Terminals North

	<u>Trips</u>	Percent of <u>Total</u>	<u>Trips</u>	Percent of <u>Total</u>
Chippewa & Mackinac Counties	3,943	42.1	7,097	50.3
All Other U. P. Co.s	3,337	36.1	4,261	30.3
All Other (Out-State)	2,037	21.8	2,735	19.4
Total	9,353	100.0	14,093	100.0

Trip Terminals South

Wayne Co.	1,600	17.1	1,650	11.7
Cheboygan Co.	490	5.2	2,062	14.6
All Other L. P. Co.s	5,891	63.0	8,663	61.5
All Other (Out-State)	1,372	14.7	1,718	12.2
Total	9,353	100.0	14,093	100.0

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The assumptions for future trends of travel across the Mackinac Bridge are a toll reduction Jan. 1, 1972 of approximately 50 percent of the following tolls of \$0.75 for Group 1, \$1.00 for Group 2, and \$2.75 for Group 3. The 1971 ADT should increase 5 percent. The 1972 ADT should increase 15 percent more than the 1971 ADT. When there is a toll reduction there is an initial surge of travel as in 1969. In 1969, there was a 60 percent reduction of tolls. Additional 50 percent reduction in tolls will cause a small surge of travel the first year. For 1968, the toll for passenger cars was \$3.75. For 1969, the toll for passenger cars was reduced to \$1.50. A reduction from \$1.50 to \$0.75 is approaching no toll at all. Without a change in tolls, there should not be a surge of travel. There should be an increase of 3 percent per year for the period 1972-2001. This growth rate was made independent of other estimates. Coverdale & Colpitts estimated an average of 3.0 percent per year for the 33 year period, 1959-1993. The Statewide Model estimated future growth at 2.8 percent per year for 1965-1995. The growth curves are similar for the Coverdale & Colpitts, Statewide Model and our estimates with following exceptions. Coverdale and Colpitts started with too great a base volume. They estimated 5,279 for 1958 ADT. The actual ADT was 3,809. The graph showing Coverdale & Colpitts estimate with actual ADT will show too great a base volume also. The Statewide Model estimate considered only two extremes. Traffic with 1965 toll in effect or no toll

in effect. With the 1965 toll in effect, estimated traffic for 1995 is 8,200. This is the volume we projected for 1980. With no tolls in effect after 1964, the 1995 traffic was estimated at 13,200 ADT by the Statewide Model. This volume that we estimate would take place shortly after 1996. If the tolls were reduced to no tolls at all in 1965, there would have been a surge of travel and average growth of 2.8 percent per year for 8 more years (1964-1972). When for our estimate, the 1965 tolls were only reduced 60 percent at year 1969 (four years after 1965).

If the toll was reduced to zero in year 1972, the initial surge of travel should be 22 percent increase in 1972. There should be an average of 3.0 per cent growth per year for the period 1973-2001.

With a toll reduction Jan. 1, 1972 of approximately 50 percent, the revenue by type should be 2.046 million dollars in 1972 and 4.836 million dollars in 2001.

<u>Year</u>	<u>No Toll</u>	<u>Approximately 50 Percent Reduction in Tolls</u>	<u>1970 Tolls</u>
1972	6,839	6,447	5,774 (Vehicles, ADT)
1981	8,923	8,412	7,534
1991	11,992	11,305	10,125
2001	16,116	15,193	13,607

Mackinac Bridge, Mackinac Co.

Estimated Traffic

<u>YEAR</u>	<u>ADT</u>	<u>YEAR</u>	<u>ADT</u>
1970	5339 (Actual)	1993	11993 (Est.) 3%
1971	5606 (Est.) 5%	4	12353 (Est.) 3%
* 2	6447 (Est.) 15%	1995	12724 (Est.) 3%
3	6640 (Est.) 3%	1996	13105 (Est.) 3%
4	6840 (Est.) 3%	7	13498 (Est.) 3%
1975	7046 (Est.) 3%	8	13903 (Est.) 3%
6	7256 (Est.) 3%	9	14320 (Est.) 3%
7	7474 (Est.) 3%	2000	14750 (Est.) 3%
8	7698 (Est.) 3%	2001	15193 (Est.) 3%
9	7929 (Est.) 3%		
1980	8167 (Est.) 3%		
1	8412 (Est.) 3%		
2	8664 (Est.) 3%		
3	8924 (Est.) 3%		
4	9192 (Est.) 3%		
1985	9468 (Est.) 3%		
6	9752 (Est.) 3%		
7	10044 (Est.) 3%		
8	10345 (Est.) 3%		
9	10656 (Est.) 3%		
1990	10976 (Est.) 3%		
1	11305 (Est.) 3%		
2	11644 (Est.) 3%		

*Assume a toll reduction
1/1/72 of approx. 50%.

Mackinac Bridge, Mackinac Co.

YEAR <u>1</u>	ADT	Percentage by Type			Revenue by Type (Millions)				<u>Total</u>
		<u>1</u>	<u>2</u>	<u>3</u>	(.75) <u>1</u>	(1.00) <u>2</u>	(2.75) <u>3</u>		
1972 *	6447	84.4	11.0	4.6	1.489	.259	.298		2.046
1973	6640	84.2	11.2	4.6	1.530	.271	.307		2.108
1974	6840	84.0	11.4	4.6	1.573	.285	.316		2.174
1975	7046	83.8	11.7	4.5	1.616	.301	.318		2.235
1976	7256	83.6	11.9	4.5	1.661	.315	.328		2.304
1977	7474	83.4	12.1	4.5	1.706	.330	.338		2.374
1978	7698	83.2	12.3	4.5	1.753	.346	.348		2.447
1979	7929	83.0	12.5	4.5	1.801	.362	.358		2.521
1980	8167	82.8	12.8	4.4	1.851	.382	.361		2.594
1981	8412	82.6	13.0	4.4	1.902	.399	.371		2.672
1982	8664	82.4	13.2	4.4	1.954	.417	.383		2.754
1983	8924	82.2	13.4	4.4	2.008	.436	.394		2.838
1984	9192	82.0	13.6	4.4	2.063	.456	.406		2.925
1985	9468	81.8	13.9	4.3	2.120	.480	.409		3.009
1986	9752	81.6	14.1	4.3	2.178	.502	.421		3.101
1987	10044	81.4	14.3	4.3	2.238	.524	.433		3.195
1988	10345	81.2	14.5	4.3	2.300	.547	.446		3.293
1989	10656	81.0	14.7	4.3	2.363	.572	.460		3.395
1990	10976	80.8	15.0	4.2	2.428	.601	.463		3.492
1991	11305	80.6	15.2	4.2	2.494	.627	.477		3.598
1992	11644	80.4	15.4	4.2	2.563	.655	.491		3.709
1993	11993	80.2	15.6	4.2	2.633	.683	.506		3.822

<u>YEAR</u>	<u>ADT</u>	Percentage by Type			Revenue by Type (Millions)				<u>TOTAL</u>
		<u>1</u>	<u>2</u>	<u>3</u>	<u>(.75)</u>	<u>(1.00)</u>	<u>(2.75)</u>		
1994	12353	80.0	15.8	4.2	2.705	.712	.521		3.938
1995	12724	79.8	16.1	4.1	2.780	.748	.524		4.052
1996	13105	79.6	16.3	4.1	2.856	.780	.539		4.175
1997	13498	79.4	16.5	4.1	2.934	.813	.555		4.302
1998	13903	79.2	16.7	4.1	3.014	.848	.572		4.432
1999	14320	79.0	16.9	4.1	3.089	.883	.589		4.561
2000	14750	78.8	17.2	4.0	3.174	.926	.592		4.692
2001	15193	78.6	17.4	4.0	3.261	.965	.610		4.836

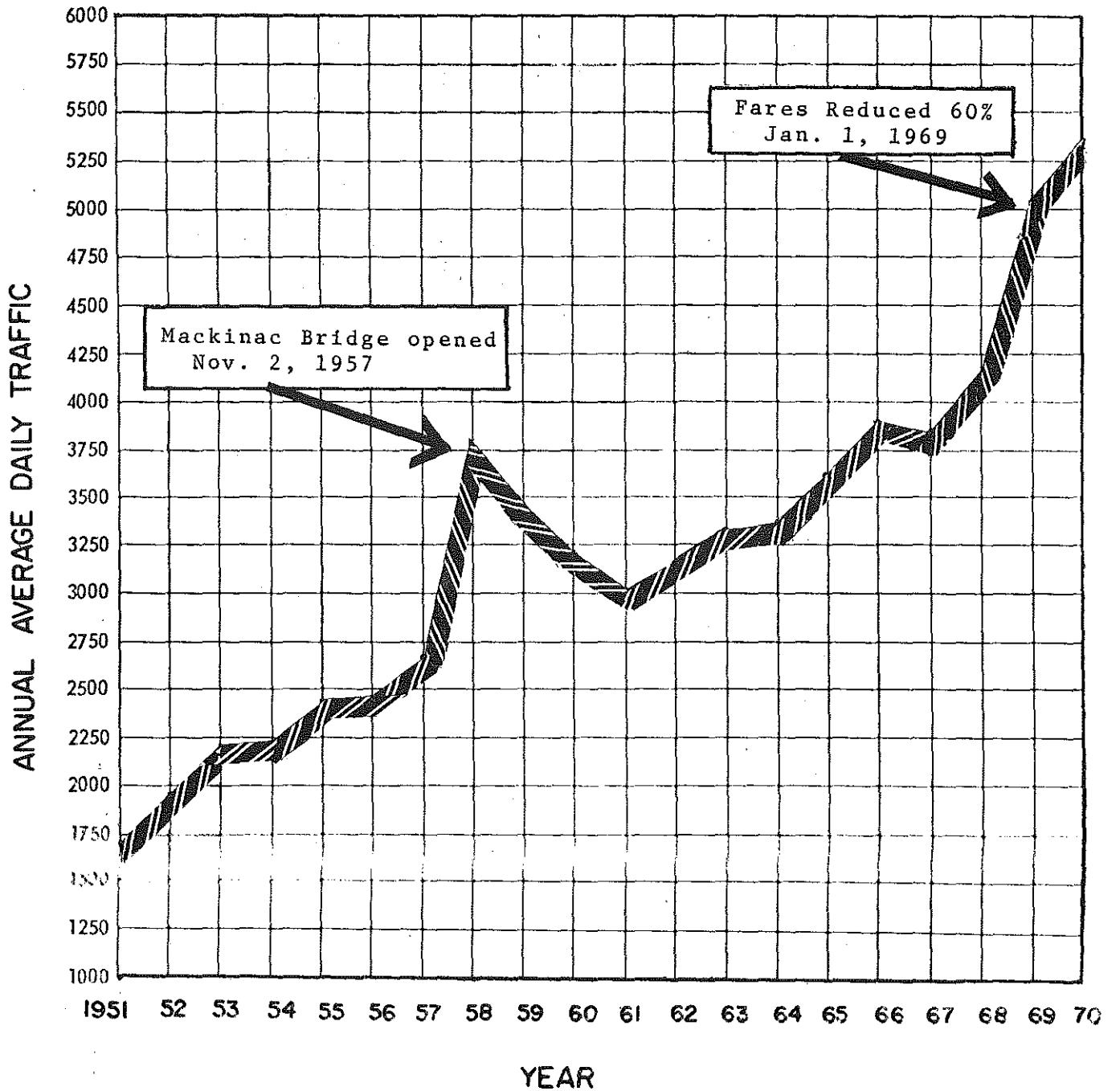
¹1971 Estimated ADT of 5606 at \$1.76 per vehicle will produce an estimated 1971 revenue of \$3,601,000.

* Assume a toll reduction 1/1/72 of approx. 50 percent.

TREND OF TRAFFIC BY YEARS

MACKINAC BRIDGE, MACKINAC COUNTY

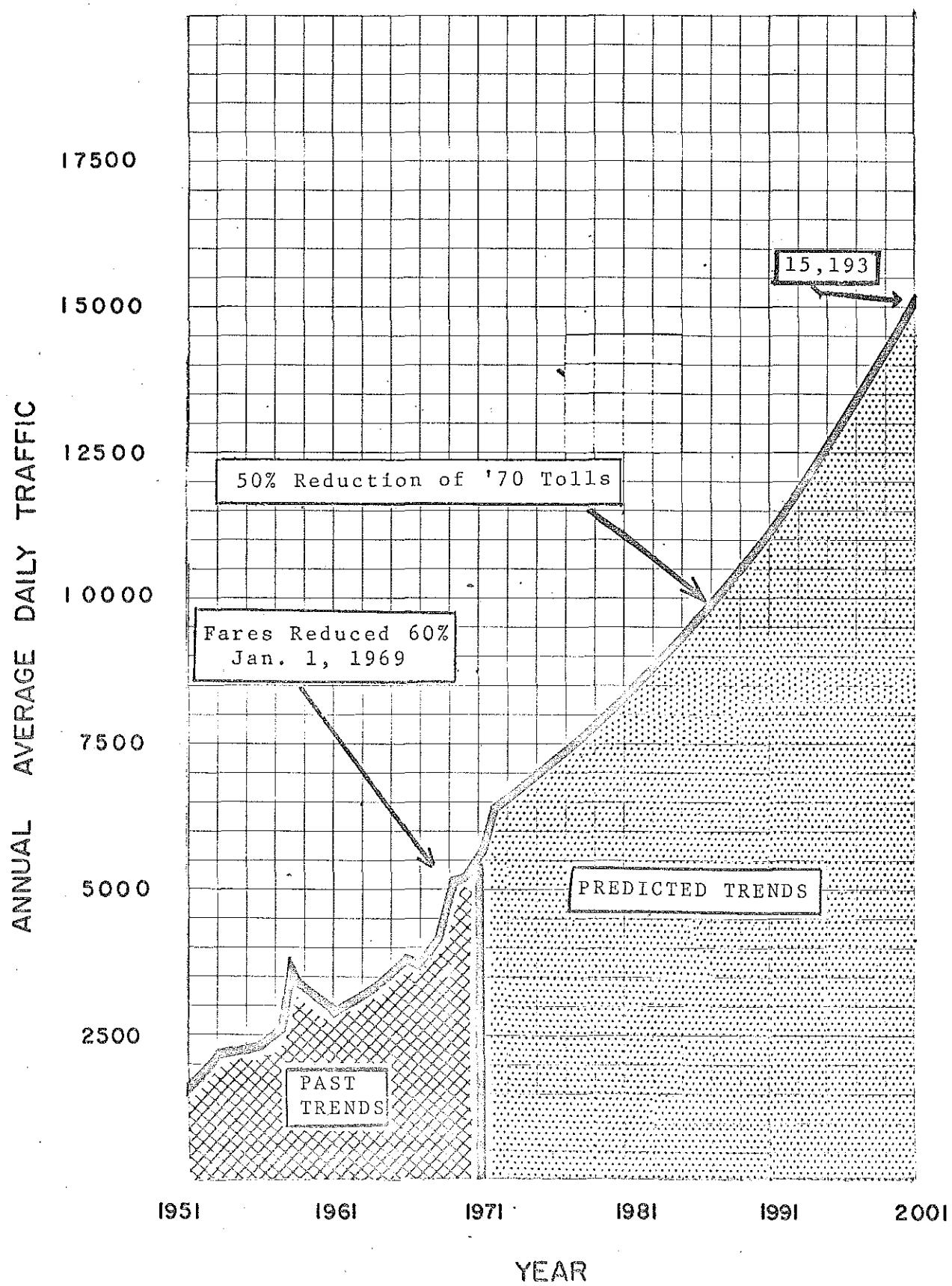
1951—1970



TREND OF TRAFFIC BY YEARS

MACKINAC BRIDGE, MACKINAC COUNTY

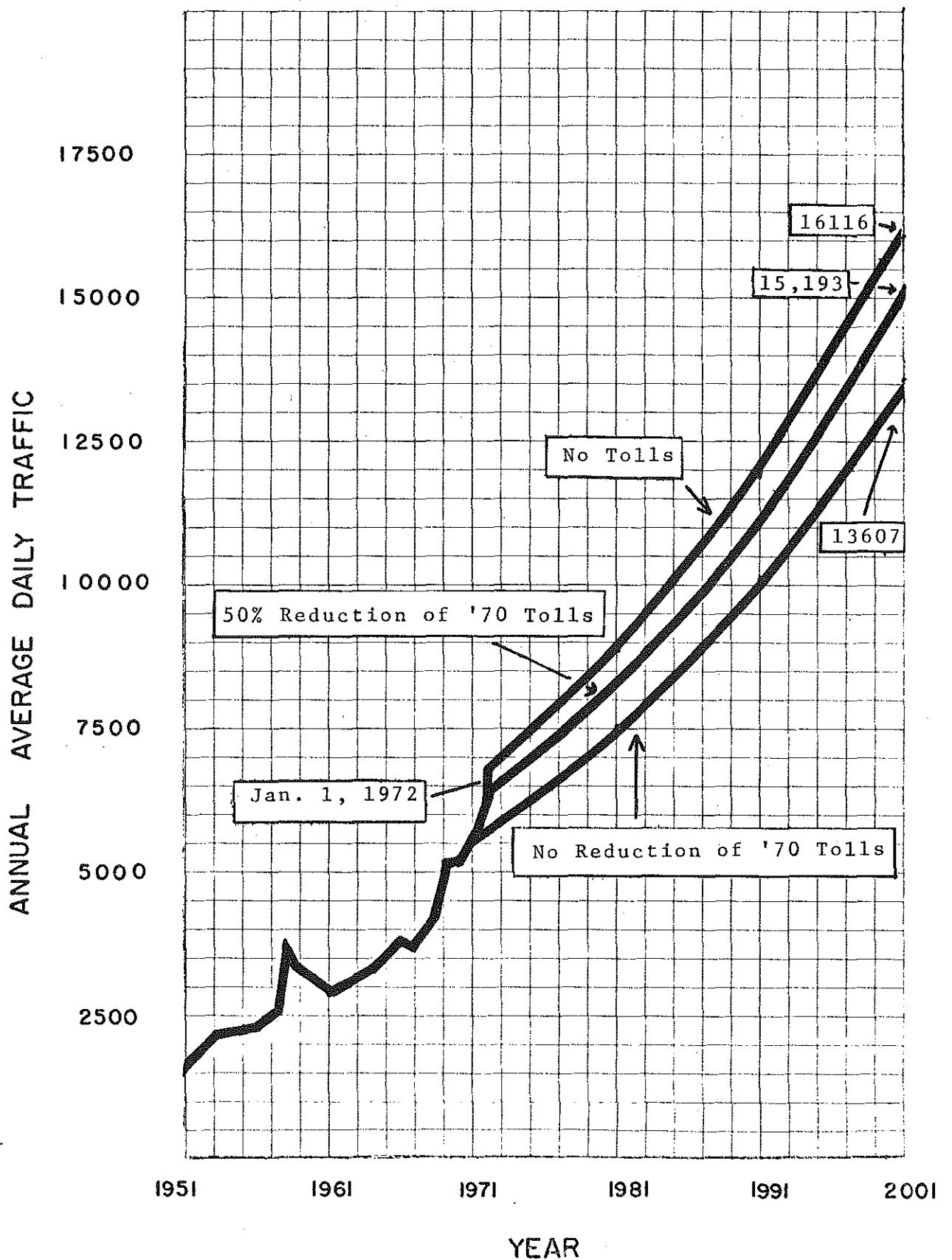
1951—2001



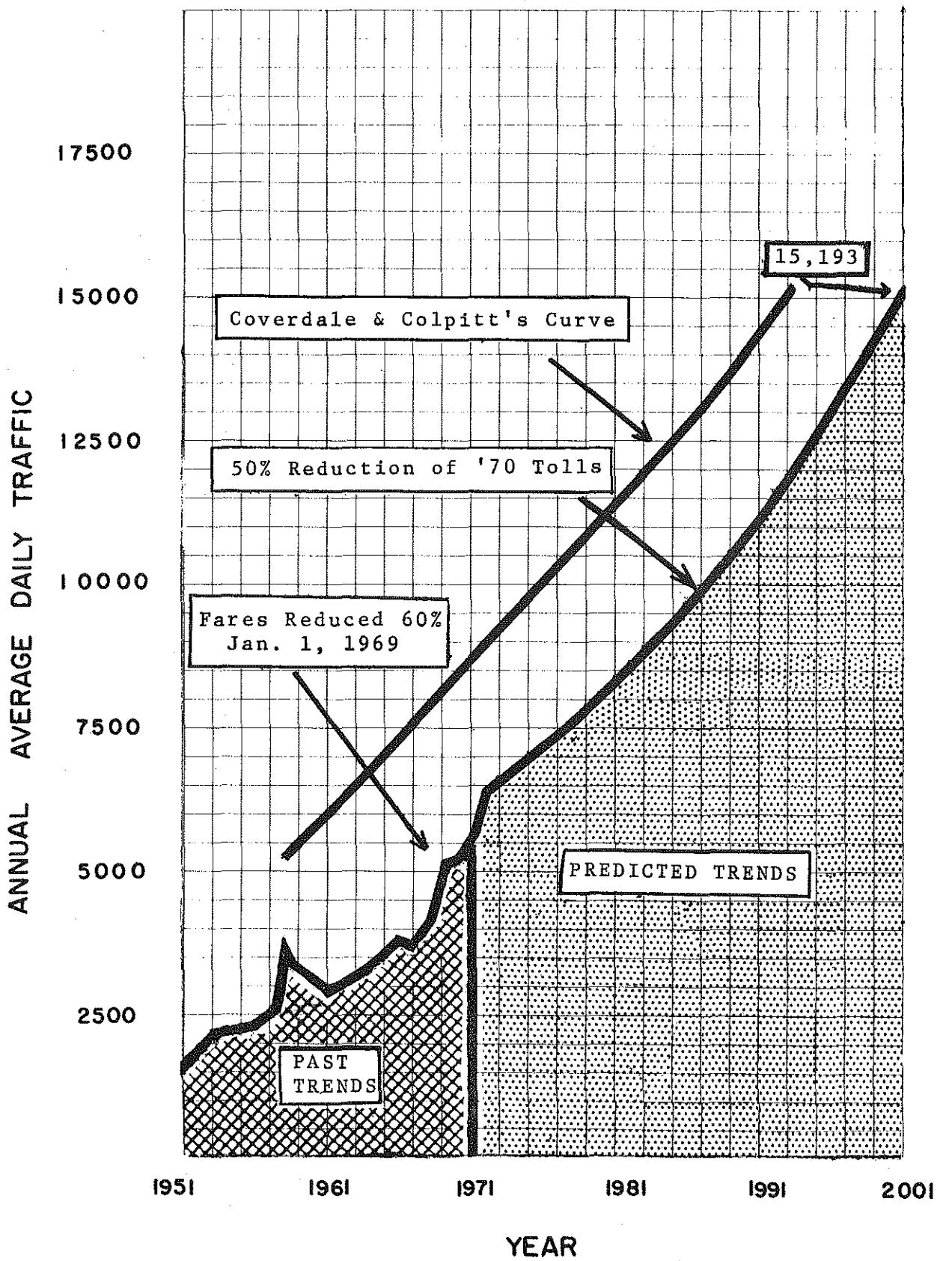
TREND OF TRAFFIC BY YEARS

MACKINAC BRIDGE, MACKINAC COUNTY

1951—2001



TREND OF TRAFFIC BY YEARS
MACKINAC BRIDGE, MACKINAC COUNTY
1951— 2001

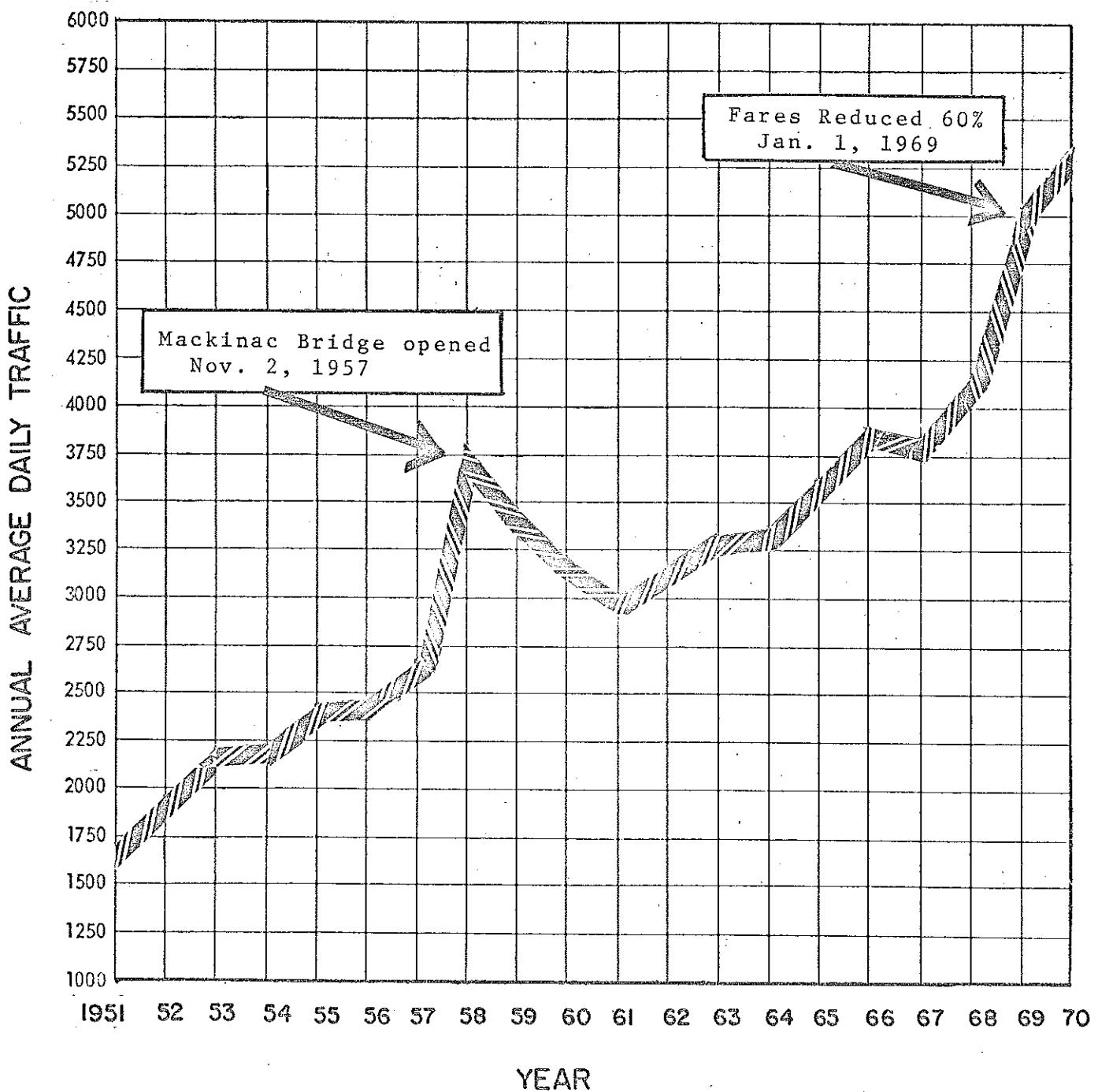


PAST
TRENDS

TREND OF TRAFFIC BY YEARS

MACKINAC BRIDGE, MACKINAC COUNTY

1951—1970



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Tend of Traffic on Route I-75, State Ferry and Mackinac Bridge,
Machinac County.

<u>YEAR</u>	<u>ADT</u>	<u>PERCENT OF YEARLY INCREASE</u>
1951	1,719	
1952	1,987	15.6
1953	2,225	12.0
1954	2,244	0.9
1955	2,389	6.5
1956	2,411	0.9
1957	2,571	6.6 (Mackinac Bridge opened Nov. 2, 1957)
1958	3,809	48.2
1959	3,413	-10.4
1960	3,212	-5.9
1961	3,010	-6.3
1962	3,133	4.1
1963	3,284	4.8
1964	3,421	4.2
1965	3,641	6.4
1966	3,883	6.6
1967	3,835	-1.2
1968	4,119	7.4
1969	5,032	22.2 (Fares reduced 60 percent Jan. 1, 1969)
1970	5,339	6.1
1971	-----	4.9 (Current 12 months yearly trend ADT for June, 1971).

MACKINAC BRIDGE AUTHORITY

Traffic and Fare Revenue
(\$3,500,000 appropriation not included)

January 1, 1971 to May 31, 1971 and prior periods

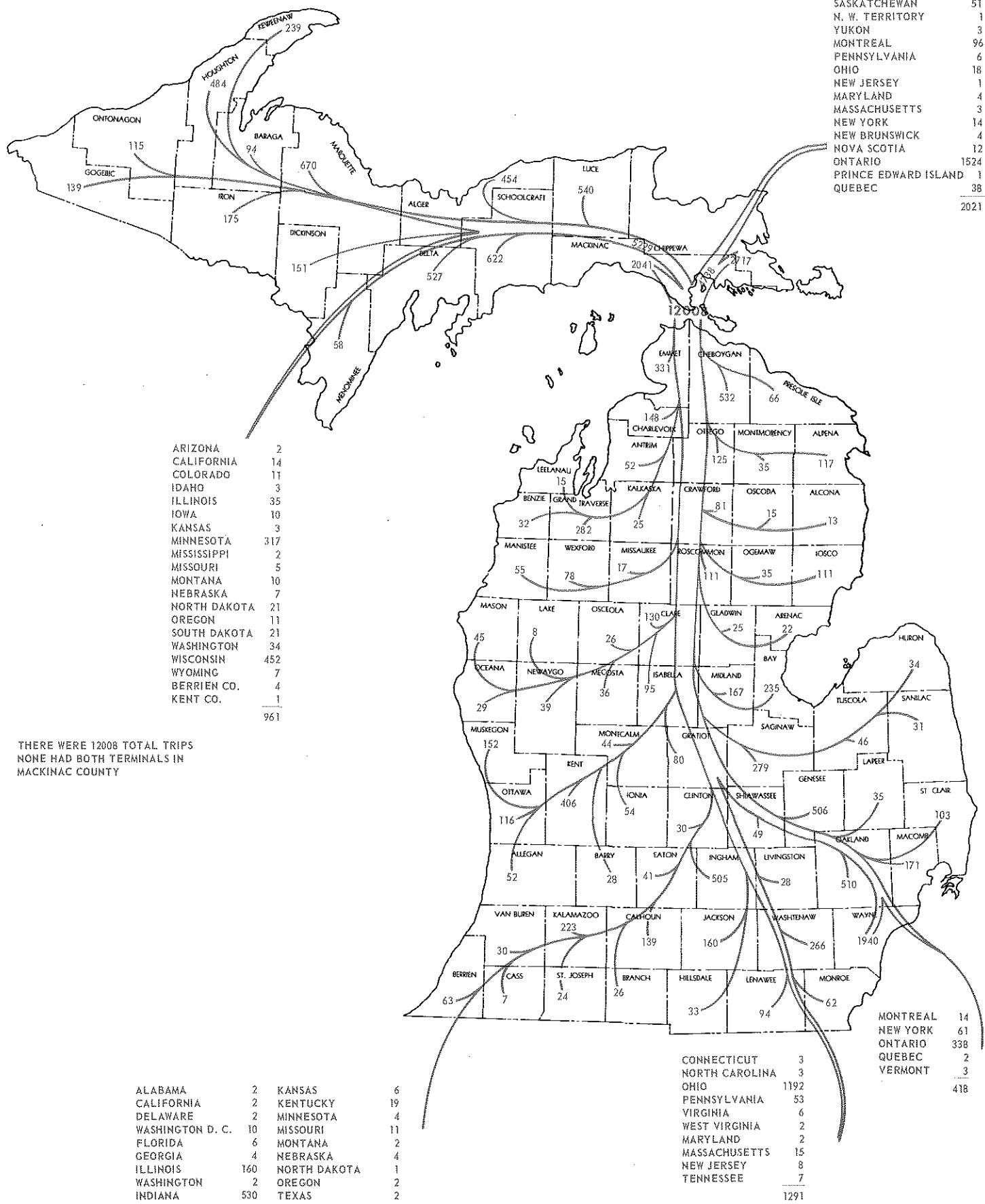
Classification	Car	Car with			Truck			Truck-combination			Bus	Motor-cycle	Total Vehicles	Revenue	Average Rate per Vehicle
		Trailer or Coach		3 axles	4 axles	2 axles	2 axles	3 axle	3 axles	4 axles					
		3 axles	4 axles	4 tires	6 tires	single unit									
1957- (Nov.-Dec.)	117,152	6,448	222	7,421	2,426	146	2,845	1,851	507	410	1,082	8	140,518	\$ 538,588.25	\$ 3.83
1958	1,240,824	52,886	1,675	25,202	14,859	1,438	16,024	19,555	7,487	3,410	5,644	1,386	1,390,390	\$5,132,958.00	\$3.69
1959	1,079,743	57,107	1,800	27,328	15,221	1,522	18,281	20,651	12,752	5,149	5,295	1,038	1,245,887	\$4,765,795.00	\$3.83
1960	1,010,828	58,560	1,805	31,151	15,069	1,842	16,756	16,892	14,638	5,510	5,186	846	1,179,083	\$4,537,886.75	\$3.85
1961	928,351	62,675	1,900	31,934	14,595	1,625	13,811	16,614	14,576	7,066	4,917	764	1,098,828	\$4,858,421.50	\$4.42
1962	966,877	69,506	2,374	35,595	14,322	2,505	10,822	15,434	14,404	5,298	5,305	759	1,143,201	\$5,026,085.50	\$4.40
1963	1,011,733	78,971	2,922	40,294	13,785	2,265	9,677	13,791	14,472	5,393	4,496	767	1,198,566	\$5,237,607.25	\$4.37
1964	1,049,993	87,343	2,971	47,019	13,797	1,828	9,060	13,528	15,116	5,082	4,989	917	1,251,643	\$5,462,263.25	\$4.36
1965	1,098,968	98,806	3,892	59,645	14,909	1,815	9,278	11,362	17,607	6,403	4,644	1,312	1,328,641	\$5,824,090.25	\$4.38
1966	1,155,132	114,323	5,481	73,904	14,694	1,961	8,520	11,182	20,619	5,465	4,956	1,965	1,418,202	\$6,203,909.50	\$4.37
1967	1,117,155	123,216	5,920	84,352	14,377	1,959	7,598	10,818	21,175	6,642	5,176	1,904	1,400,292	\$6,152,704.50	\$4.39
1968	1,181,536	137,510	7,932	104,206	15,247	1,977	7,683	10,230	24,670	8,163	5,338	2,297	1,506,789	\$6,658,724.75	\$4.42
1969	1,422,887	174,180	13,084	135,340	18,335	2,160	6,451	11,218	33,889	9,517	5,777	3,545	1,836,383	\$3,238,283.50	\$1.76
1970	1,489,135	191,154	15,909	155,190	19,120	2,148	6,033	11,452	32,471	11,953	5,938	7,359	1,947,862	\$3,433,767.50	\$1.76
May 1970	100,518	11,630	986	12,936	1,759	211	508	1,074	2,580	843	528	387	133,960	\$ 238,283.00	\$1.78
Jan.-May 1970	290,138	23,929	1,885	31,036	6,302	696	2,183	4,046	13,166	4,260	2,126	464	380,231	\$ 707,584.50	\$1.86
1971:															
January	39,653	2,948	200	4,074	1,075	62	345	671	2,250	814	404	0	52,496	\$ 101,090.00	\$1.93
February	33,523	5,222	416	4,343	1,090	110	350	638	2,282	1,168	375	2	49,519	101,187.50	\$2.04
March	46,526	3,353	282	4,754	1,197	139	405	931	2,828	1,364	451	4	62,234	122,847.00	\$1.97
April	70,121	2,950	407	7,256	1,534	181	421	995	2,857	1,091	398	105	88,316	161,273.00	\$1.83
May	110,491	12,846	1,279	16,453	1,985	229	478	1,172	3,048	1,242	507	826	150,556	269,212.50	\$1.79
Jan.-May 1971	300,314	27,319	2,584	36,880	6,881	721	1,999	4,407	13,265	5,679	2,135	937	403,121	\$ 755,610.00	\$1.87

Mackinac Bridge, Mackinac Co.

Date: Saturday, August 11, 1967 M.V.M.S.L. Station No. 4584-05

TRIP TERMINALS NORTH			TRIP TERMINALS SOUTH		
	Trips	Percent of Total		Trips	Percent of Total
1. Chippewa Co.	2717	22.6	1. Wayne Co.	1940	16.2
2. Mackinac Co.	2041	17.0	2. Cheboygan Co.	532	4.4
3. Marquette Co.	670	5.6	3. Oakland Co.	510	4.2
4. Schoolcraft Co.	622	5.2	4. Genesee	506	4.2
5. Luce Co.	540	4.5	5. Ingham Co.	505	4.2
6. Delta Co.	527	4.4	6. Kent Co.	406	3.4
7. Houghton Co.	484	4.0	7. Emmet Co.	331	2.8
8. Alger Co.	454	3.8	8. Grand Traverse Co.	282	2.3
9. Keweenaw Co.	239	2.0	9. Saginaw Co.	279	2.3
10. Iron Co.	175	1.4	10. Washtenaw Co.	266	2.2
11. Dickinson Co.	151	1.3	11. Bay Co.	235	2.0
12. Gogebic Co.	139	1.1	12. Kalamazoo Co.	223	1.9
13. Ontonagon Co.	115	1.0	13. Macomb Co.	171	1.4
14. Baraga Co.	94	.8	14. Midland Co.	167	1.4
15. Menominee Co.	58	.5	15. Jackson Co.	160	1.3
All Other	2982	24.8	16. Muskegon Co.	152	1.3
Total	12008	100.0	17. Charlevoix Co.	148	1.2
			18. Calhoun Co.	139	1.2
			19. Clare Co.	130	1.1
			All Other Michigan	2419	20.1
			All Other	2507	20.9
			Total	12008	100.0

**DISTRIBUTION OF TRUNKLINE TRAFFIC PASSING THROUGH M.V.M.S.L. STATION 4584-05
MACKINAC BRIDGE, MACKINAC COUNTY
1967 SUMMER WEEKEND, AUG. 11-13
DAY 1-SATURDAY**



Mackinac Bridge, Mackinac Co.

Date: Saturday, August 16, 1969 M.V.M.S.L. Station No. 4584-06

TRIP TERMINALS NORTH			TRIP TERMINALS SOUTH		
	Trips	Percent of Total		Trips	Percent of Total
1. Mackinac Co.	4224	24.8	1. Wayne Co.	2244	13.2
2. Chippewa Co.	3594	21.1	2. Cheboygan Co.	1939	11.4
3. Marquette Co.	816	4.8	3. Genesee Co.	645	3.8
4. Luce Co.	766	4.5	4. Oakland Co.	639	3.7
5. Schoolcraft Co.	705	4.1	5. Kent Co.	560	3.3
6. Delta Co.	614	3.6	6. Ingham Co.	540	3.2
7. Alger Co.	584	3.4	7. Grand Traverse Co.	410	2.4
8. Houghton Co.	439	2.6	8. Saginaw Co.	362	2.1
9. Dickinson Co.	228	1.3	9. Emmet Co.	333	2.0
10. Gogebic Co.	210	1.2	10. Washtenaw Co.	297	1.7
11. Keweenaw Co.	200	1.2	11. Otsego Co.	296	1.7
12. Iron Co.	164	1.0	12. Macomb Co.	284	1.7
13. Ontonagon Co.	148	.9	13. Bay Co.	263	1.5
14. Baraga Co.	109	.6	14. Charlevoix Co.	227	1.3
15. Menominee Co.	94	.5	15. Kalamazoo Co.	213	1.2
All Other	4164	24.4	16. Jackson Co.	202	1.2
Total	17059	100.0	17. Midland Co.	201	1.2
			18. Muskegon Co.	200	1.2
			19. Roscommon Co.	200	1.2
			All Other Michigan	3708	21.7
			All Other	3296	19.3
			Total	17059	100.0

DISTRIBUTION OF TRUNKLINE TRAFFIC PASSING THROUGH M.V.M.S.L. STATION 4584-06
ON MACKINAC BRIDGE, MACKINAC COUNTY
1969 SUMMER WEEKEND - SATURDAY, AUGUST 16
FILE NO. 357-C

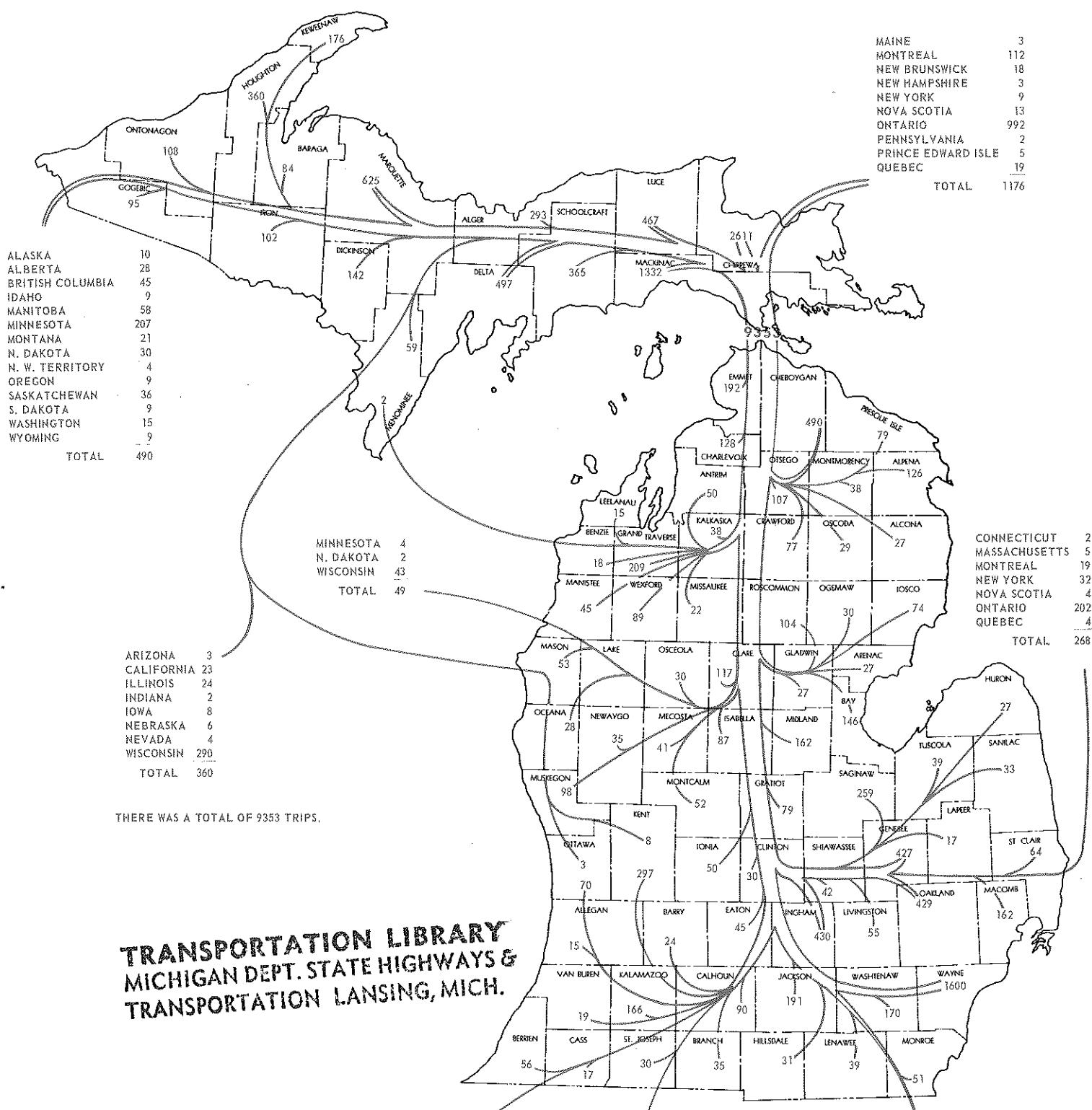


Mackinac Bridge, Mackinac Co.

Date: Sunday, Aug. 12, 1967 M.V.M.S.L. Station No. 4584-05

TRIP TERMINALS NORTH			TRIP TERMINAL SOUTH		
	Trips	Percent of Total		Trips	Percent of Total
1. Chippewa Co.	2611	27.9	1. Wayne Co.	1600	17.1
2. Mackinac Co.	1332	14.2	2. Cheboygan Co.	490	5.2
3. Marquette Co.	625	6.7	3. Ingham Co.	430	4.6
4. Delta Co.	497	5.3	4. Oakland Co.	429	4.6
5. Luce Co.	467	5.0	5. Genesee Co.	427	4.6
6. Schoolcraft Co.	365	3.9	6. Kent Co.	296	3.2
7. Houghton Co.	360	3.9	7. Saginaw Co.	259	2.8
8. Alger Co.	293	3.1	8. Grand Traverse Co.	209	2.2
9. Keweenaw Co.	176	1.9	9. Emmet Co.	192	2.1
10. Dickinson Co.	142	1.5	10. Jackson Co.	191	2.0
11. Ontonagon Co.	108	1.2	11. Washtenaw Co.	170	1.8
12. Iron Co.	102	1.1	12. Kalamazoo	166	1.8
13. Gogebic	95	1.0	13. Macomb Co.	162	1.7
14. Baraga Co.	84	.9	14. Midland Co.	162	1.7
15. Menominee Co.	59	.6	15. Bay Co.	146	1.6
All Other	2037	21.8	16. Charlevoix Co.	128	1.4
Total	9353	100.0	17. Alpena Co.	126	1.3
			18. Clare Co.	117	1.3
			19. Ostege Co.	107	1.1
			All Other Michigan	2174	23.2
			All Other	1372	14.7
			Total	9353	100.0

DISTRIBUTION OF TRUNKLINE TRAFFIC PASSING THROUGH M.V.M.S.L. STATION 4584-05
ON MACKINAC BRIDGE, MACKINAC COUNTY
1967 SUMMER WEEKEND, AUG. 11-13
DAY 2-SUNDAY



**TRANSPORTATION LIBRARY
MICHIGAN DEPT. STATE HIGHWAYS &
TRANSPORTATION LANSING, MICH.**

ARIZONA	3
CALIFORNIA	2
ILLINOIS	126
IOWA	2
KANSAS	4
MISSOURI	12
NEBRASKA	2
OKLAHOMA	3
TEXAS	6
TOTAL	160

ALABAMA	3
INDIANA	292
TENNESSEE	2
TOTAL	297

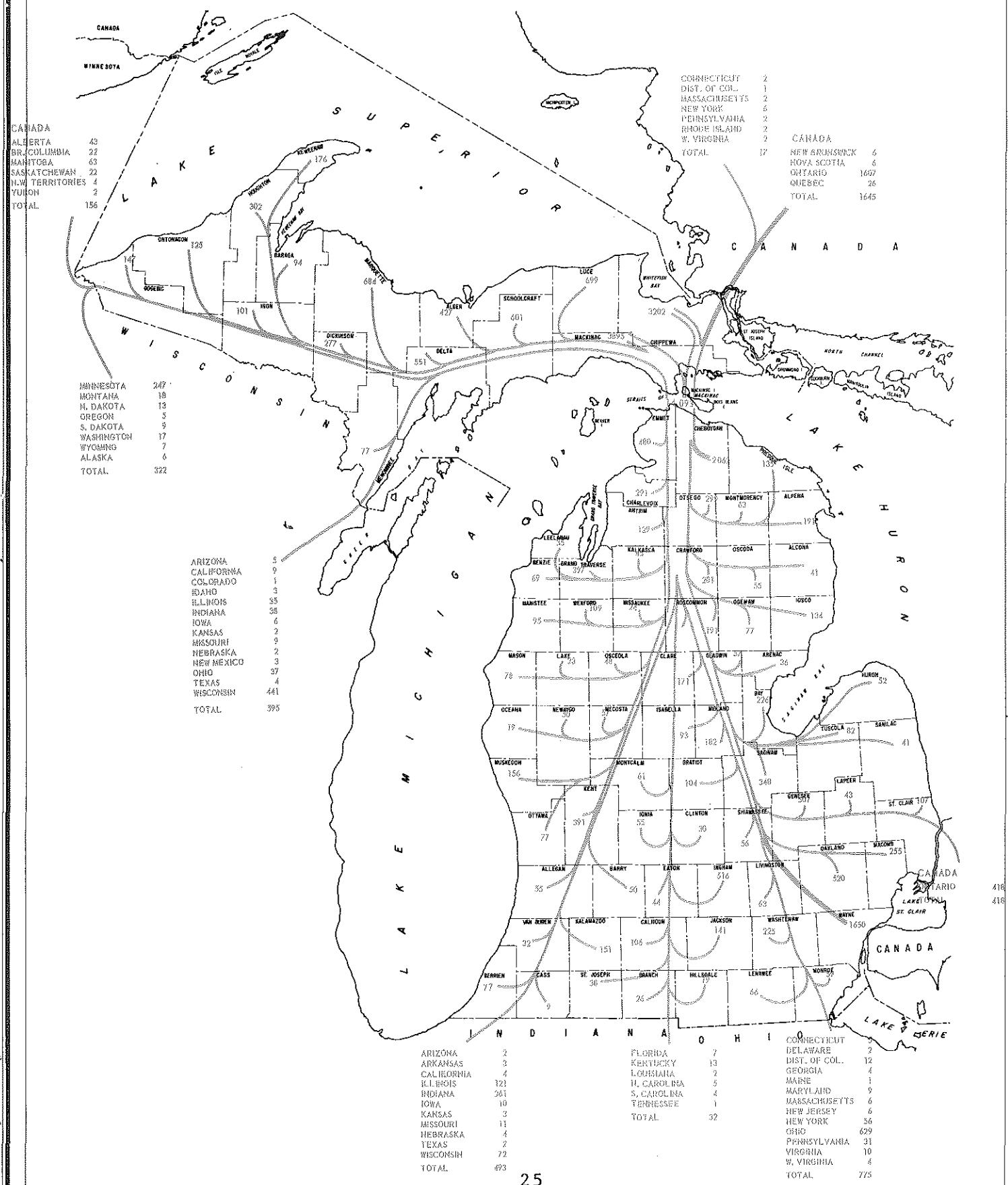
DIST. OF COLUMBIA	5
FLORIDA	5
GEORGIA	2
KENTUCKY	24
MARYLAND	10
NEW JERSEY	4
NORTH CAROLINA	8
OHIO	511
PENNSYLVANIA	24
VIRGINIA	5
TOTAL	608

Mackinac Bridge, Mackinac Co.

Date: Sunday, August 17, 1969 M.V.M.S.L. Station No. 4584-06

TRIP TERMINALS NORTH			TRIP TERMINALS SOUTH		
	Trips	Percent of Total		Trips	Percent of Total
1. Mackinac Co.	3895	27.6	1. Cheboygan Co.	2062	14.6
2. Chippewa Co.	3202	22.7	2. Wayne Co.	1650	11.7
3. Luce Co.	699	5.0	3. Oakland Co.	520	3.7
4. Marquette Co.	684	4.9	4. Ingham Co.	516	3.7
5. Schoolcraft Co.	601	4.3	5. Genesee Co.	507	3.6
6. Delta Co.	551	3.9	6. Emmet Co.	480	3.4
7. Alger Co.	427	3.0	7. Grand Traverse Co.	397	2.8
8. Houghton Co.	302	2.1	8. Kent Co.	391	2.8
9. Dickinson Co.	277	2.0	9. Saginaw Co.	348	2.5
10. Keweenaw Co.	176	1.3	10. Osteゴ Co.	299	2.1
11. Gogebic Co.	147	1.0	11. Charlevoix Co.	291	2.1
12. Ontonagon Co.	125	.9	12. Macomb Co.	255	1.8
13. Iron Co.	101	.7	13. Bay Co.	226	1.6
14. Baraga Co.	94	.7	14. Washtenaw Co.	225	1.6
15. Menominee Co.	77	.5	15. Crawford Co.	201	1.4
All Other	2735	19.4	16. Alpena Co.	191	1.4
Total	14093	100.0	17. Roscommon Co.	191	1.3
			18. Midland Co.	182	1.3
			19. Clare Co.	171	1.2
			All Other Michigan	3266	23.2
			All Other	1718	12.2
			Total	14093	100.0

DISTRIBUTION OF TRUNKLINE TRAFFIC PASSING THROUGH M.V.M.S.L. STATION 4584-06
ON MACKINAC BRIDGE, MACKINAC COUNTY
1969 SUMMER WEEKEND SUNDAY AUGUST 17
FILE NO. 357-D



Mackinac Bridge, Mackinac Co.

Percentage of Total by Year by Classification Group

	<u>% CLASS. 1</u>	<u>% CLASS. 2</u>	<u>% CLASS. 3</u>
1957 (Nov.-Dec.)	88.7	4.7	6.6
1958	91.2	3.9	4.9
1959	88.9	4.7	6.4
1960	88.5	5.1	6.4
1961	87.5	5.9	6.6
1962	87.8	6.2	6.0
1963	87.8	6.8	5.4
1964	87.7	7.2	5.1
1965	87.3	7.7	5.0
1966	86.8	8.4	4.8
1967	85.9	9.2	4.9
1968	85.5	9.6	4.9
1969	85.0	10.2	4.8
1970	84.8	10.6	4.6

Mackinac Bridge, Mackinac Co.

TOTAL VEHICLES

		<u>% OF YEARLY INCREASE</u>
1957 (Nov.-Dec.)	140,518	
1958	1,390,390	
1959	1,245,887	-11.6
1960	1,179,083	-5.7
1961	1,098,828	-7.3
1962	1,143,201	4.0
1963	1,198,566	4.8
1964	1,251,643	4.4
1965	1,328,641	6.2
1966	1,418,202	6.7
1967	1,400,292	-1.3
1968	1,506,789	7.6
1969	1,836,383	21.9
1970	1,947,862	6.1

Mackinac Bridge, Mackinac Co.

CLASSIFICATION (1)

	<u>SUBTOTALS</u>	<u>% OF YEARLY INCREASE</u>
1957 (Nov.-Dec.)	124,581	
1958	1,267,412	
1959	1,108,109	-14.4
1960	1,042,825	-6.3
1961	961,049	-8.5
1962	1,003,231	4.4
1963	1,052,794	4.9
1964	1,097,929	4.3
1965	1,159,925	5.6
1966	1,231,001	6.1
1967	1,203,411	-2.3
1968	1,288,039	7.0
1969	1,561,772	21.3
1970	1,651,684	5.8

Mackinac Bridge, Mackinac Co.

CLASSIFICATION (2)

	<u>SUBTOTALS</u>	<u>% OF YEARLY INCREASE</u>
1957 (Nov.-Dec.)	6,670	
1958	54,561	
1959	58,907	8.0
1960	60,365	2.5
1961	64,575	7.0
1962	71,880	11.3
1963	81,893	13.9
1964	90,314	10.3
1965	102,698	13.7
1966	119,804	16.7
1967	129,136	7.8
1968	145,442	12.6
1969	187,264	28.8
1970	207,063	10.8

Mackinac Bridge, Mackinac Co.

CLASSIFICATION (3)

	<u>SUBTOTALS</u>	<u>% OF YEARLY INCREASE</u>
1957 (Nov.-Dec.)	9,267	
1958	68,417	
1959	78,871	15.3
1960	75,893	-3.9
1961	73,204	-3.7
1962	68,090	-7.5
1963	63,879	-6.6
1964	63,400	-0.8
1965	66,018	4.1
1966	67,397	2.1
1967	67,745	0.5
1968	73,308	8.2
1969	87,347	19.2
1970	89,115	2.0

Mackinac Bridge Authority

Year: 1957 (Nov.-Dec.)

CLASSIFICATION

(1)

Car	117,152	
Truck 2 Axles 4 Tires	7,421	
Motorcycle	8	
Total	124,581	88.7%

(2)

Car with Trailer or Coach		
3 Axles	6,448	
4 Axles	222	
Total	6,670	4.7%

(3)

Truck		
2 Axles 6 Tires	2,426	
3 Axle Single Unit	146	
Truck Combination		
3 Axles	2,845	
4 Axles	1,851	
5 Axles	507	
More than 5 Axles	410	
Bus	1,082	
Total	9,267	6.6%
Total Vehicles	140,518	100.0%

Mackinac Bridge Authority

Year: 1958

CLASSIFICATION

(1)

Car	1,240,824	
Truck 2 Axles 4 Tires	25,202	
Motorcycle	1,386	
Total	1,267,412	91.2%

(2)

Car with Trailer or Coach		
3 Axles	52,886	
4 Axles	1,675	
Total	54,561	3.9%

(3)

Truck		
2 Axles 6 Tires	14,859	
3 Axle Single Unit	1,438	
Truck Combination		
3 Axles	16,024	
4 Axles	19,555	
5 Axles	7,487	
More than 5 Axles	3,410	
Bus	5,644	
Total	68,417	4.9%
Total Vehicles	1,390,390	100.0%

Mackinac Bridge Authority

Year: 1959

CLASSIFICATION

(1)

Car	1,079,743	
Truck 2 Axles 4 Tires	27,328	
Motorcycle	1,038	
Total	1,108,109	88.9%

(2)

Car with Trailer or Coach		
3 Axles	57,107	
4 Axles	1,800	
Total	58,907	4.7%

(3)

Truck		
2 Axles 6 Tires	15,221	
3 Axle Single Unit	1,522	
Truck Combination		
3 Axles	18,281	
4 Axles	20,651	
5 Axles	12,752	
More than 5 Axles	5,149	
Bus	5,295	
Total	78,871	6.4%
Total Vehicles	1,245,887	100.0%

Mackinac Bridge Authority

Year: 1960

CLASSIFICATION

(1)

Car	1,010,828	
Truck 2 Axles 4 Tires	31,151	
Motorcycle	846	
Total	1,042,825	88.5%

(2)

Car with Trailer or Coach		
3 Axles	58,560	
4 Axles	1,805	
Total	60,365	5.1%

(3)

Truck		
2 Axles 6 Tires	15,069	
3 Axle Single Unit	1,842	
Truck Combination		
3 Axles	16,756	
4 Axles	16,892	
5 Axles	14,638	
More than 5 Axles	5,510	
Bus	5,186	
Total	75,893	6.4%
Total Vehicles	1,179,083	100.0%

Mackinac Bridge Authority

Year: 1961

CLASSIFICATION

(1)

Car	928,351	
Truck 2 Axles 4 Tires	31,934	
Motorcycle	764	
Total	961,049	87.5%

(2)

Car with Trailer or Coach		
3 Axles	62,675	
4 Axles	1,900	
Total	64,575	5.9%

(3)

Truck		
2 Axles 6 Tires	14,595	
3 Axle Single Unit	1,625	
Truck Combination		
3 Axles	13,811	
4 Axles	16,614	
5 Axles	14,576	
More than 5 Axles	7,066	
Bus	4,917	
Total	73,204	6.6%
Total Vehicles	1,098,828	100.0%

Mackinac Bridge Authority

Year: 1962

CLASSIFICATION

(1)

Car	966,877	
Truck 2 Axles 4 Tires	35,595	
Motorcycle	759	
Total	1,003,231	87.8%

(2)

Car with Trailer or Coach		
3 Axles	69,506	
4 Axles	2,374	
Total	71,880	6.2%

(3)

Truck		
2 Axles 6 Tires	14,322	
3 Axle Single Unit	2,505	
Truck Combination		
3 Axles	10,822	
4 Axles	15,434	
5 Axles	14,404	
More than 5 Axles	5,298	
Bus	5,305	
Total	68,090	6.0%
Total Vehicles	1,143,201	100.0%

Mackinac Bridge Authority

Year: 1963

CLASSIFICATION

(1)

Car	1,011,733	
Truck 2 Axles 4 Tires	40,294	
Motorcycle	767	
Total	1,052,794	87.8%

(2)

Car with Trailer or Coach		
3 Axles	78,971	
4 Axles	2,922	
Total	81,893	6.8%

(3)

Truck		
2 Axles 6 Tires	13,785	
3 Axle Single Unit	2,265	
Truck Combination		
3 Axles	9,677	
4 Axles	13,791	
5 Axles	14,472	
More than 5 Axles	5,393	
Bus	4,496	
Total	63,879	5.4%
Total Vehicles	1,198,566	100.0%

Mackinac Bridge Authority

Year: 1964

CLASSIFICATION

(1)

Car	1,049,993	
Truck 2 Axles 4 Tires	47,019	
Motorcycle	917	
Total	1,097,929	87.7%

(2)

Car with Trailer or Coach		
3 Axles	87,343	
4 Axles	2,971	
Total	90,314	7.2%

(3)

Truck		
2 Axles 6 Tires	13,797	
3 Axle Single Unit	1,828	
Truck Combination		
3 Axles	9,060	
4 Axles	13,528	
5 Axles	15,116	
More than 5 Axles	5,082	
Bus	4,989	
Total	63,400	5.1%
Total Vehicles	1,251,643	100.0%

Mackinac Bridge Authority

Year: 1965

CLASSIFICATION

(1)

Car	1,098,968	
Truck 2 Axles 4 Tires	59,645	
Motorcycle	1,312	
Total	1,159,925	87.3%

(2)

Car with Trailer or Coach		
3 Axles	98,806	
4 Axles	3,892	
Total	102,698	7.7%

(3)

Truck		
2 Axles 6 Tires	14,909	
3 Axle Single Unit	1,815	
Truck Combination		
3 Axles	9,278	
4 Axles	11,362	
5 Axles	17,607	
More than 5 Axles	6,403	
Bus	4,644	
Total	66,018	5.0%
Total Vehicles	1,328,641	100.0%

Mackinac Bridge Authority

Year: 1966

CLASSIFICATION

(1)

Car	1,155,132	
Truck 2 Axles 4 Tires	73,904	
Motorcycle	1,965	
Total	1,231,001	86.8%

(2)

Car with Trailer or Coach		
3 Axles	114,323	
4 Axles	5,481	
Total	119,804	8.4%

(3)

Truck		
2 Axles 6 Tires	14,694	
3 Axle Single Unit	1,961	
Truck Combination		
3 Axles	8,520	
4 Axles	11,182	
5 Axles	20,619	
More than 5 Axles	5,465	
Bus	4,956	
Total	67,397	4.8%
Total Vehicles	1,418,202	100.0%

**TRANSPORTATION LIBRARY
MICHIGAN DEPT. STATE HIGHWAYS &
TRANSPORTATION LANSING, MICH.**

Mackinac Bridge Authority

Year: 1967

CLASSIFICATION

(1)

Car	1,117,155	
Truck 2 Axles 4 Tires	84,352	
Motorcycle	1,904	
Total	1,203,411	85.9%

(2)

Car with Trailer or Coach		
3 Axles	123,216	
4 Axles	5,920	
Total	129,136	9.2%

(3)

Truck		
2 Axles 6 Tires	14,377	
3 Axle Single Unit	1,959	
Truck Combination		
3 Axles	7,598	
4 Axles	10,818	
5 Axles	21,175	
More than 5 Axles	6,642	
Bus	5,176	
Total	67,745	4.9%
Total Vehicles	1,400,292	100.0%

Mackinac Bridge Authority

Year: 1968

CLASSIFICATION

(1)

Car	1,181,536	
Truck 2 Axles 4 Tires	104,206	
Motorcycle	2,297	
Total	1,288,039	85.5%

(2)

Car with Trailer or Coach		
3 Axles	137,510	
4 Axles	7,932	
Total	145,442	9.6%

(3)

Truck		
2 Axles 6 Tires	15,247	
3 Axle Single Unit	1,977	
Truck Combination		
3 Axles	7,683	
4 Axles	10,230	
5 Axles	24,670	
More than 5 Axles	8,163	
Bus	5,338	
Total	73,308	4.9%
Total Vehicles	1,506,789	100.0%

Mackinac Bridge Authority

Year: 1969

CLASSIFICATION

(1)

Car	1,422,887	
Truck 2 Axles 4 Tires	135,340	
Motorcycle	3,545	
Total	1,561,772	85.0%

(2)

Car with Trailer or Coach		
3 Axles	174,180	
4 Axles	13,084	
Total	187,264	10.2%

(3)

Truck		
2 Axles 6 Tires	18,335	
3 Axle Single Unit	2,160	
Truck Combination		
3 Axles	6,451	
4 Axles	11,218	
5 Axles	33,889	
More than 5 Axles	9,517	
Bus	5,777	
Total	87,347	4.8%
Total Vehicles	1,836,383	100.0%

Mackinac Bridge Authority

Year: 1970

CLASSIFICATION

(1)

Car	1,489,135	
Truck 2 Axles 4 Tires	155,190	
Motorcycle	7,359	
Total	1,651,684	84.8%

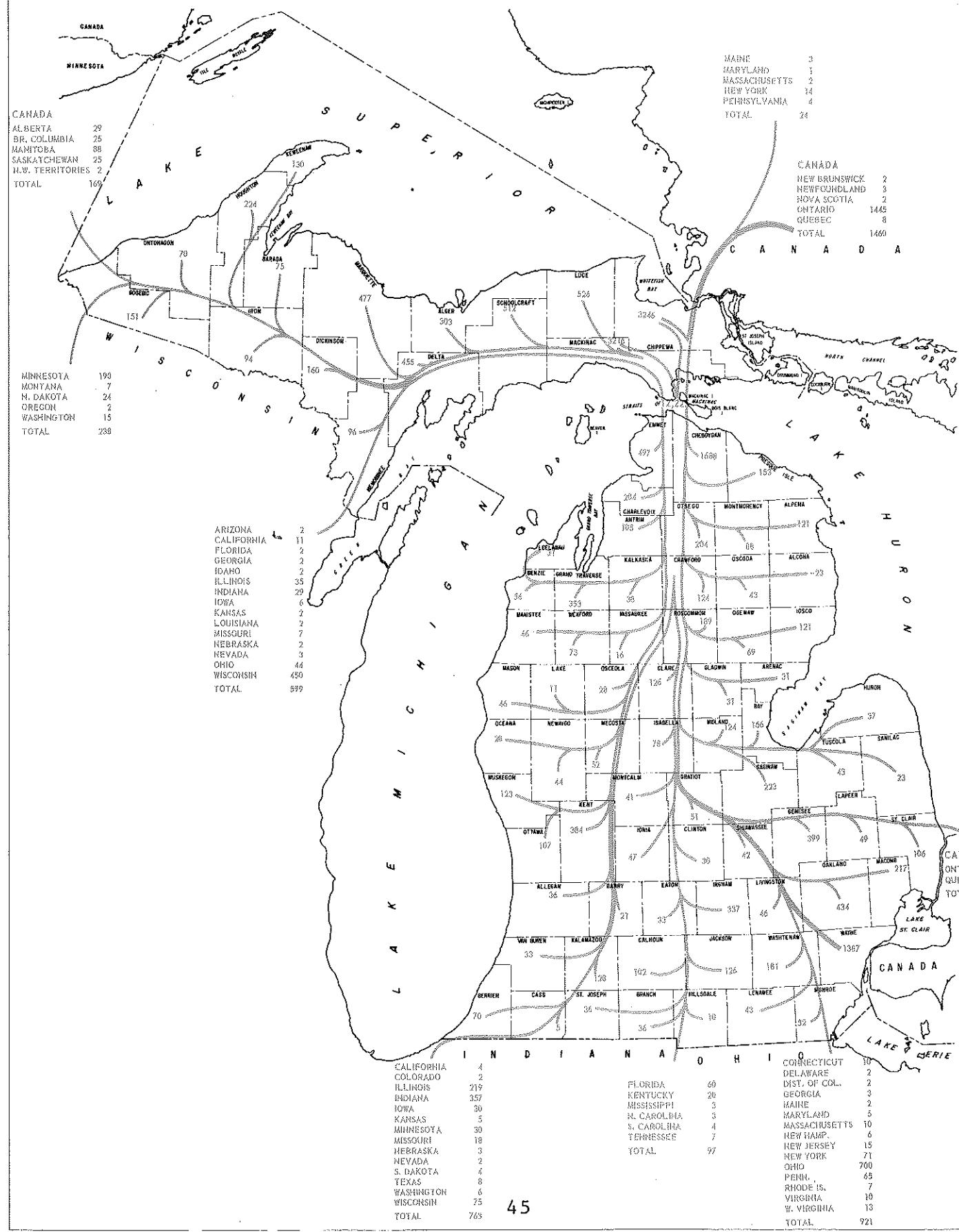
(2)

Car with Trailer or Coach		
3 Axles	191,154	
4 Axles	15,909	
Total	207,063	10.6%

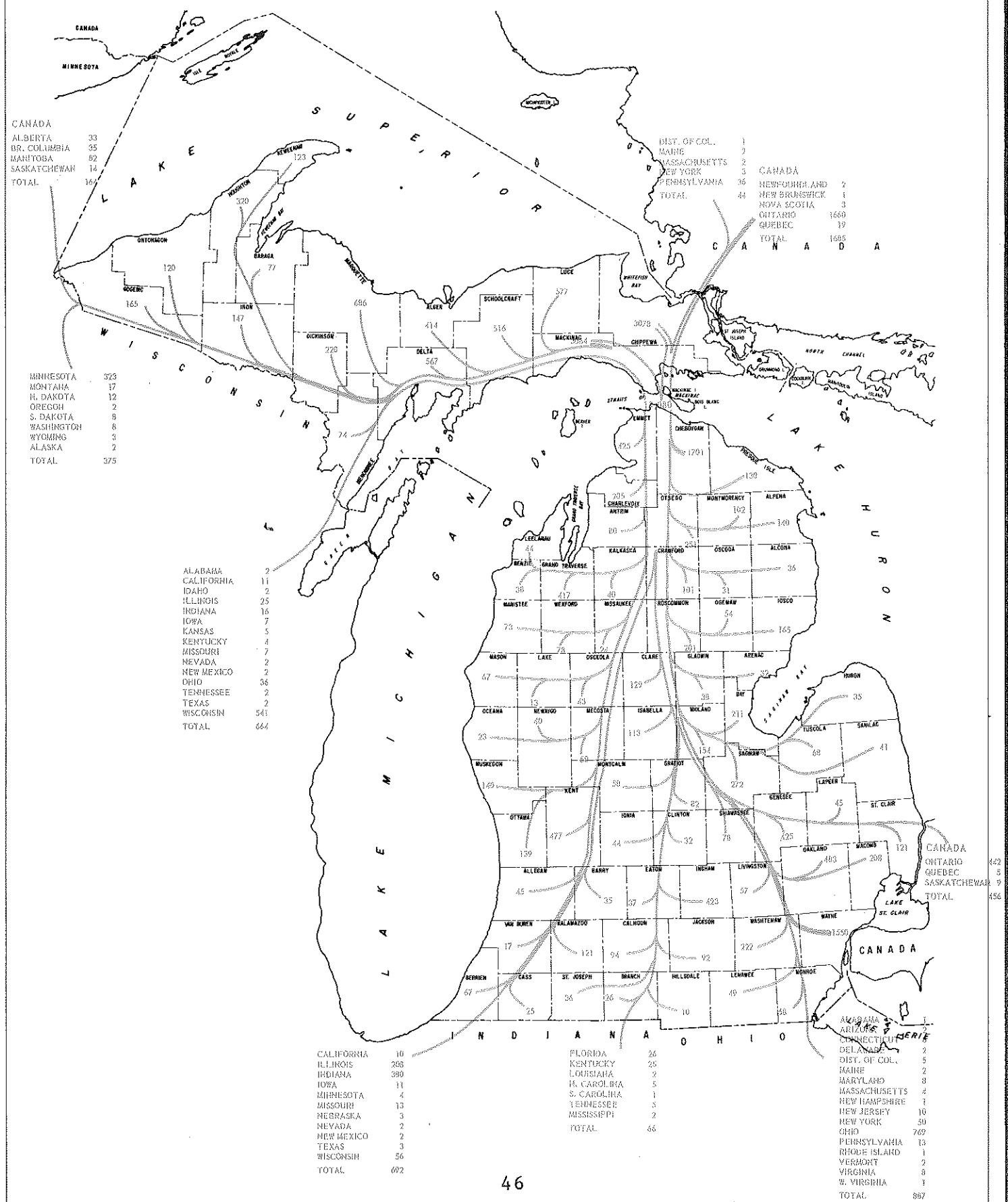
(3)

Truck		
2 Axles 6 Tires	19,120	
3 Axle Single Unit	2,148	
Truck Combination		
3 Axles	6,033	
4 Axles	11,452	
5 Axles	32,471	
More than 5 Axles	11,953	
Bus	5,938	
Total	89,115	4.6%
Total Vehicles	1,947,862	100.0%

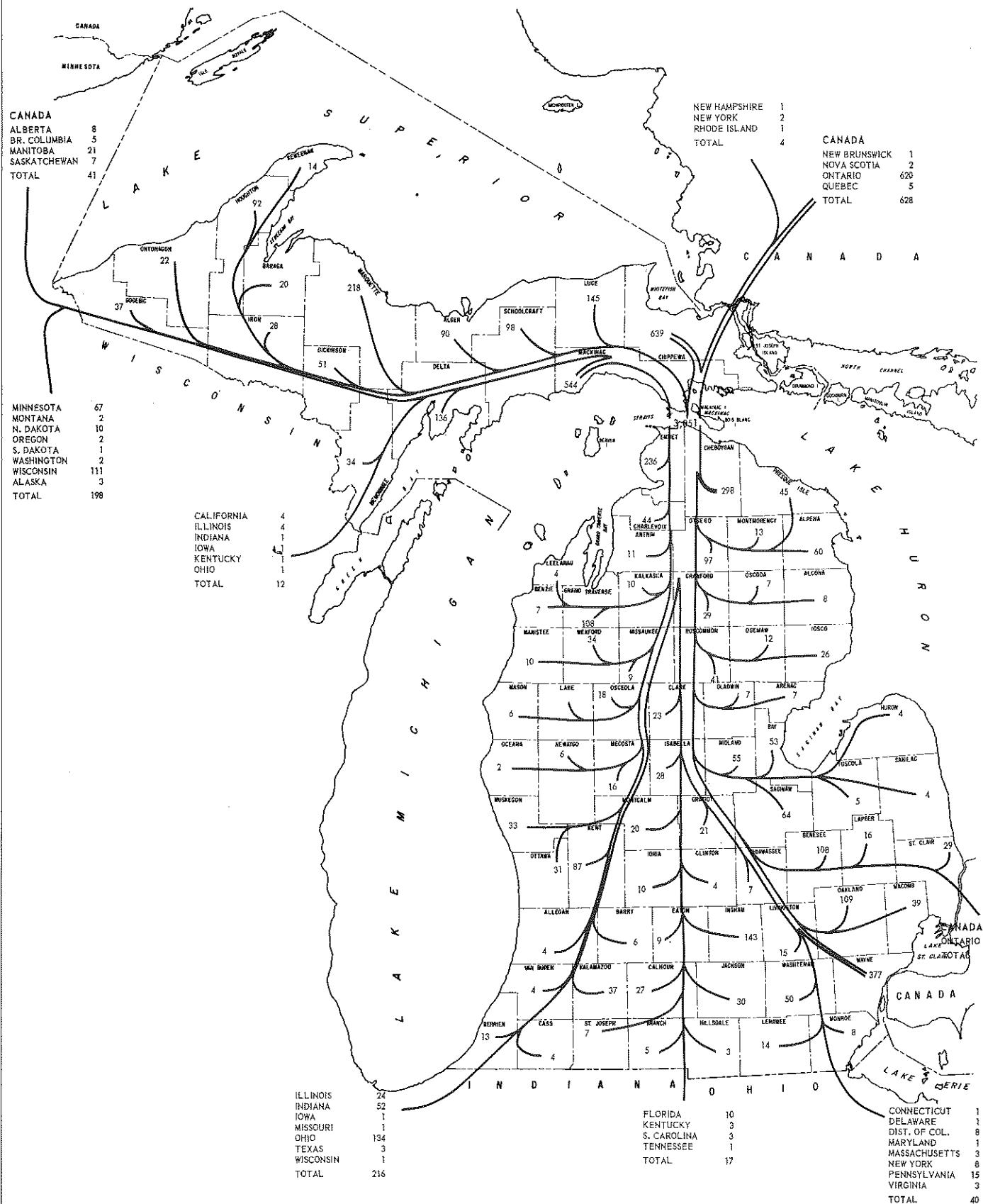
DISTRIBUTION OF TRUNKLINE TRAFFIC PASSING THROUGH M.V.M.S.L. STATION 4584-06
 ON MACKINAC BRIDGE, MACKINAC COUNTY
 1969 SUMMER WEEKDAY THURSDAY AUGUST 14
 FILE NUMBER 357-A



DISTRIBUTION OF TRUNKLINE TRAFFIC PASSING THROUGH M.V.M.S.L. STATION NO. 4584-06
ON MACKINAC BRIDGE, MACKINAC COUNTY
1969 SUMMER WEEKDAY - FRIDAY, AUGUST 15
FILE NO. 357-B



DISTRIBUTION OF TRUNKLINE TRAFFIC PASSING THROUGH M.V.M.S.L. STATION 4584-09
ON MACKINAC BRIDGE, MACKINAC COUNTY
1970 MAY WEEKDAY
FILE NO. 560



FUTURE

TRENDS

COVERDALE & COLPITTS

PROPOSED MACKINAC STRAITS BRIDGE

ESTIMATED TRAFFIC AND GROSS REVENUES

<u>YEAR</u>	<u>ACT.</u>	<u>ADT</u>	<u>ADT</u>	<u>ADT</u>	<u>ESTIMATED</u>	<u>ESTIMATED</u>	<u>ESTIMATED</u>	<u>ESTIMATED</u>
	<u>%</u>	<u>ACTUAL</u>	<u>EST.</u>	<u>VEHICLES</u> <u>(in 1,000)</u>	<u>RATE OF</u>	<u>RATE OF</u>	<u>AVERAGE</u>	<u>TOLL OF</u>
1957 (Last 2 mos)		2,571		234				721
1958	72.2	3,809	5,279	1,927				5,935
1959	61.6	3,413	5,542	2,023	5% (A)			6,231
1960	55.3	3,212	5,801	2,123				6,539
1961	49.4	3,010	6,090	2,223				6,847
1962	49.2	3,133	6,364	2,323				7,155
1963	49.5	3,285	6,638	2,423				7,463
1964	49.6	3,421	6,893	2,523				7,771
1965	50.7	3,641	7,186	2,623				8,079
1966	52.0	3,883	7,460	2,723				8,387
1967	49.6	3,835	7,734	2,823				8,695
1968	51.5	4,119	7,986	2,923				9,003
1969	60.7	5,032	8,282	3,023				9,311
1970	62.4	5,339	8,556	3,123				9,619
1971			8,830	3,223				9,927
1972			9,079	3,323				10,235
1973			9,378	3,423				10,543
1974			9,652	3,523				10,851
1975			9,926	3,623				11,159
1976			10,172	3,723				11,467

YEAR	ADT EST.	ESTIMATED VEHICLES (in 1,000)	ESTIMATED REVENUE AT AVERAGE TOLL OF \$3.08 PER VEHICLE
1977	10,474	3,823	11,775
1978	10,747	3,923	12,083
1979	11,022	4,023	12,391
1980	11,265	4,123	12,699
1981	11,570	4,223	13,007
1982	11,844	4,323	13,315
1983	12,118	4,423	13,623
1984	12,358	4,523	13,931
1985	12,666	4,623	14,239
1986	12,940	4,723	14,547
1987	13,214	4,823	14,855
1988	13,451	4,923	15,163
1989	13,762	5,023	15,471
1990	14,036	5,123	15,779
1991	14,310	5,223	16,087
1992	14,544	5,323	16,395
1993	14,858	5,423	16,703

(A) In 1960 and each year thereafter, annual traffic increase is estimated at 100,000 vehicles. This is equivalent to about 5 per cent of 1959 traffic and to lower percentages in subsequent years being 1.93 per cent for the last year 1993 and to an average of 3.0 per cent per year for the 33-year period, 1959-1993.

STATEWIDE MODEL TRAFFIC FORECAST

1965 Actual ADT 3,600

1965 Estimated ADT 5,800 with no tolls

1995 Estimated ADT 8,200 with 1965 tolls

1995 Estimated ADT 13,200 with no tolls

Traffic estimated to increase 61.1 percent if tolls were eliminated completely based on growth rates for the Statewide Model. For the thirty year period (1965-1995) traffic is estimated to increase 2.8 percent per year.

Mackinac Bridge, Mackinac Co.

Estimated Traffic

<u>YEAR</u>	<u>ADT</u>	<u>YEAR</u>	<u>ADT</u>
1970	5339 (Actual)	1993	11993 (Est.) 3%
1971	5606 (Est.) 5%	4	12353 (Est.) 3%
* 2	6447 (Est.) 15%	1995	12724 (Est.) 3%
3	6640 (Est.) 3%	6	13105 (Est.) 3%
4	6840 (Est.) 3%	7	13498 (Est.) 3%
1975	7046 (Est.) 3%	8	13903 (Est.) 3%
6	7256 (Est.) 3%	9	14320 (Est.) 3%
7	7474 (Est.) 3%	2000	14750 (Est.) 3%
8	7698 (Est.) 3%	2001	15193 (Est.) 3%
9	7929 (Est.) 3%		
1980	8167 (Est.) 3%		
1	8412 (Est.) 3%		
2	8664 (Est.) 3%		
3	8924 (Est.) 3%		
4	9192 (Est.) 3%	*Assume a toll reduction 1/1/72 of approx. 50%.	
1985	9468 (Est.) 3%		
6	9752 (Est.) 3%		
7	10044 (Est.) 3%		
8	10345 (Est.) 3%		
9	10656 (Est.) 3%		
1990	10976 (Est.) 3%		
1	11305 (Est.) 3%		
2	11644 (Est.) 3%		

Mackinac Bridge, Mackinac Co.

<u>YEAR</u>	<u>ADT</u>	Percentage by Type			Revenue by Type (Millions)				<u>TOTAL</u>
		<u>1</u>	<u>2</u>	<u>3</u>	(.75)	(1.00)	(2.75)		
		<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>		
1972*	6447	84.4	11.0	4.6	1.489	.259	.298	2.046	
1973	6640	84.2	11.2	4.6	1.530	.271	.307	2.108	
1974	6840	84.0	11.4	4.6	1.573	.285	.316	2.174	
1975	7046	83.8	11.7	4.5	1.616	.301	.318	2.235	
1976	7256	83.6	11.9	4.5	1.661	.315	.328	2.304	
1977	7474	83.4	12.1	4.5	1.706	.330	.338	2.374	
1978	7698	83.2	12.3	4.5	1.753	.346	.348	2.447	
1979	7929	83.0	12.5	4.5	1.801	.362	.358	2.521	
1980	8167	82.8	12.8	4.4	1.851	.382	.361	2.594	
1981	8412	8216	13.0	4.4	1.902	.399	.371	2.672	
1982	8664	82.4	13.2	4.4	1.954	.417	.383	2.754	
1983	8924	82.2	13.4	4.4	2.008	.436	.394	2.838	
1984	9192	82.0	13.6	4.4	2.063	.456	.406	2.925	
1985	9468	81.8	13.9	4.3	2.120	.480	.409	3.009	
1986	9752	81.6	14.1	4.3	2.178	.502	.421	3.101	
1987	10044	81.4	14.3	4.3	2.238	.524	.433	3.195	
1988	10345	81.2	14.5	4.3	2.300	.547	.446	3.293	
1989	10656	81.0	14.7	4.3	2.363	.572	.460	3.395	
1990	10976	80.8	15.0	4.2	2.428	.601	.463	3.492	
1991	11305	80.6	15.2	4.2	2.494	.627	.477	3.598	
1992	11644	80.4	15.4	4.2	2.563	.655	.491	3.709	
1993	11993	80.2	15.6	4.2	2.633	.683	.506	3.822	
1994	12353	80.0	15.8	4.2	2.705	.712	.521	3.938	

<u>YEAR</u>	<u>ADT</u>	Percentage by Type			Revenue by Type (Millions)			
		<u>1</u>	<u>2</u>	<u>3</u>	(.75)	(1.00)	(2.75)	<u>TOTAL</u>
1995	12724	79.8	16.1	4.1	2.780	.748	.524	4.052
1996	13105	79.6	16.3	4.1	2.856	.780	.539	4.175
1997	13498	79.4	16.5	4.1	2.934	.813	.555	4.302
1998	13903	79.2	16.7	4.1	3.014	.848	.572	4.432
1999	14320	79.0	16.9	4.1	3.089	.883	.589	4.561
2000	14750	78.8	17.2	4.0	3.174	.926	.592	4.692
2001	15193	78.6	17.4	4.0	3.261	.965	.610	4.836

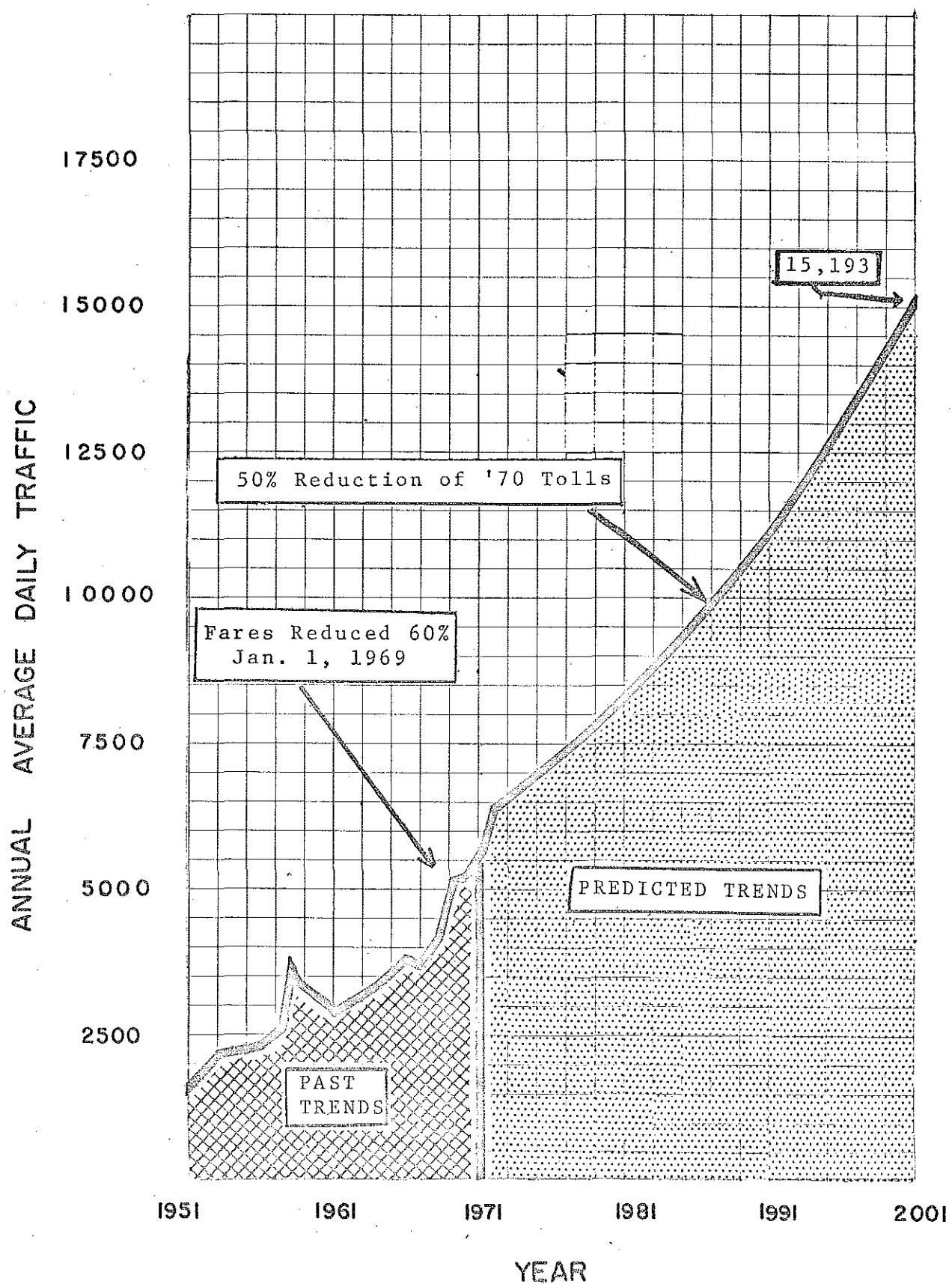
¹ 1971 Estimated ADT of 5606 at \$1.76 per vehicle will produce an estimated 1971 revenue of \$3,601,000.

*Assume a toll reduction 1/1/72 of approx. 50%.

TREND OF TRAFFIC BY YEARS

MACKINAC BRIDGE, MACKINAC COUNTY

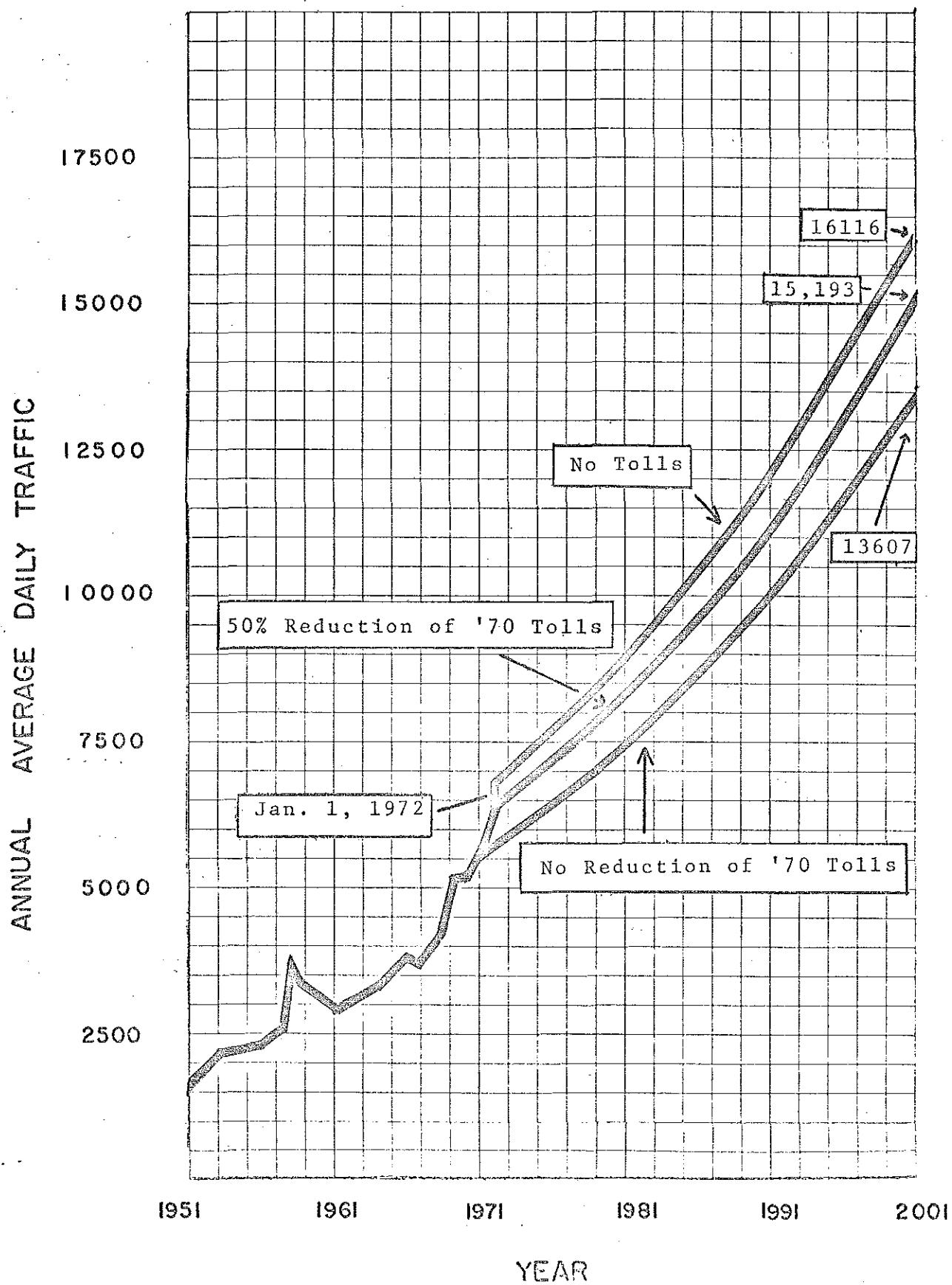
1951—2001



TREND OF TRAFFIC BY YEARS

MACKINAC BRIDGE, MACKINAC COUNTY

1951—2001



TREND OF TRAFFIC BY YEARS

MACKINAC BRIDGE, MACKINAC COUNTY

1951—2001

