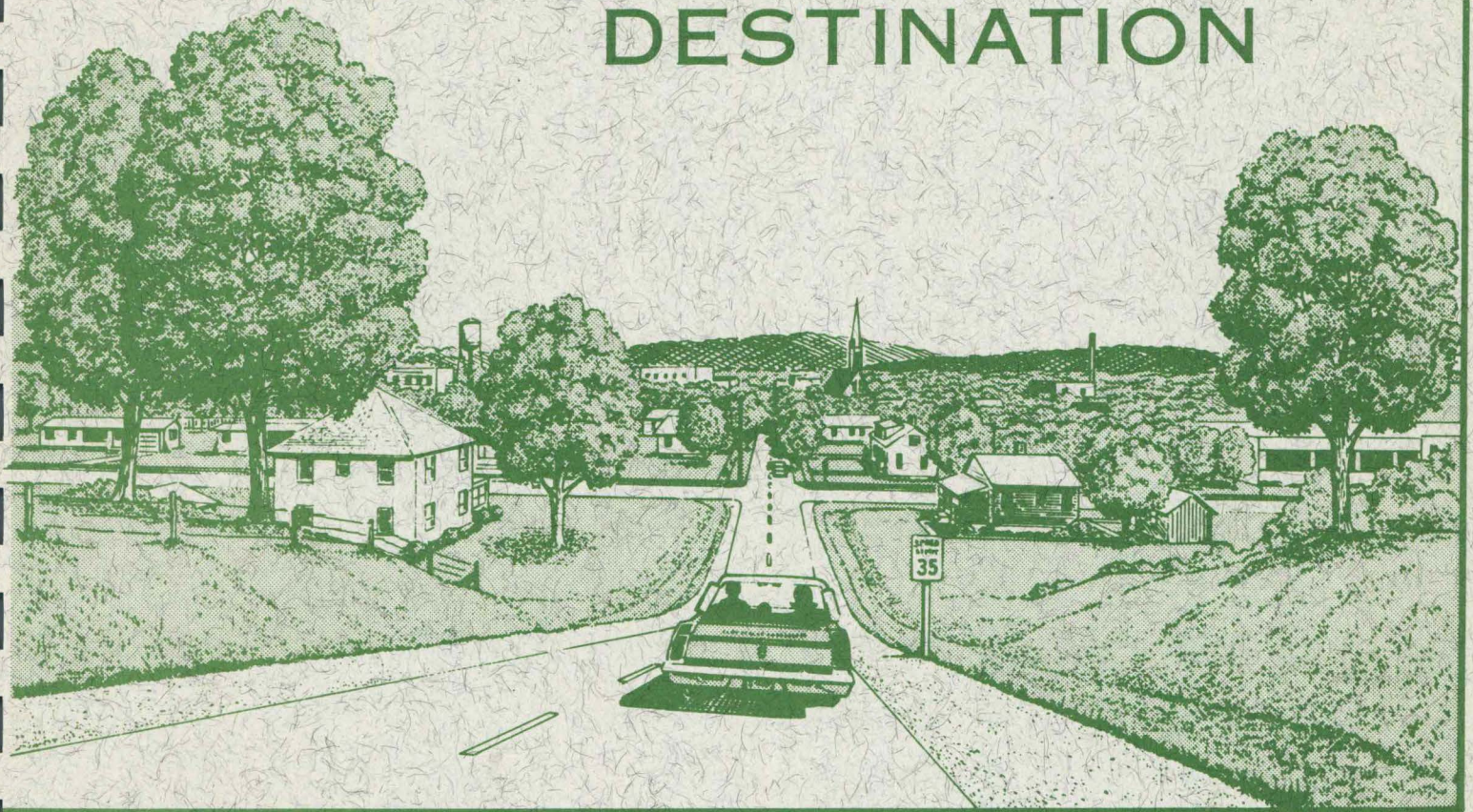


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MAQUOKETA

ORIGIN AND
DESTINATION



TRAFFIC REPORT

IOWA

JUNE OF 1969

STATE OF IOWA

MAQUOKETA

ORIGIN AND DESTINATION
TRAFFIC REPORT

DATA GATHERED JUNE 1969

PUBLISHED MAY 1970

PREPARED BY

HIGHWAY PLANNING SURVEYS DEPARTMENT
DIVISION OF PLANNING
IOWA STATE HIGHWAY COMMISSION

IN COOPERATION WITH THE

UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

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INTRODUCTION

This report is based on an external origin and destination traffic survey that was made in Maquoketa in June of 1969. The survey was conducted in cooperation with the United States Bureau of Public Roads and was made to determine the total number and type of vehicles entering or leaving the study area, along with specific origin-destination data from a representative sample of vehicle operators.

The purpose of this report is to summarize the data gathered in Maquoketa and to present this data in a manner which will implement the determination of traffic needs and thereby provide a sound basis for street and highway planning.

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DEFINITIONS OF TECHNICAL TERMS

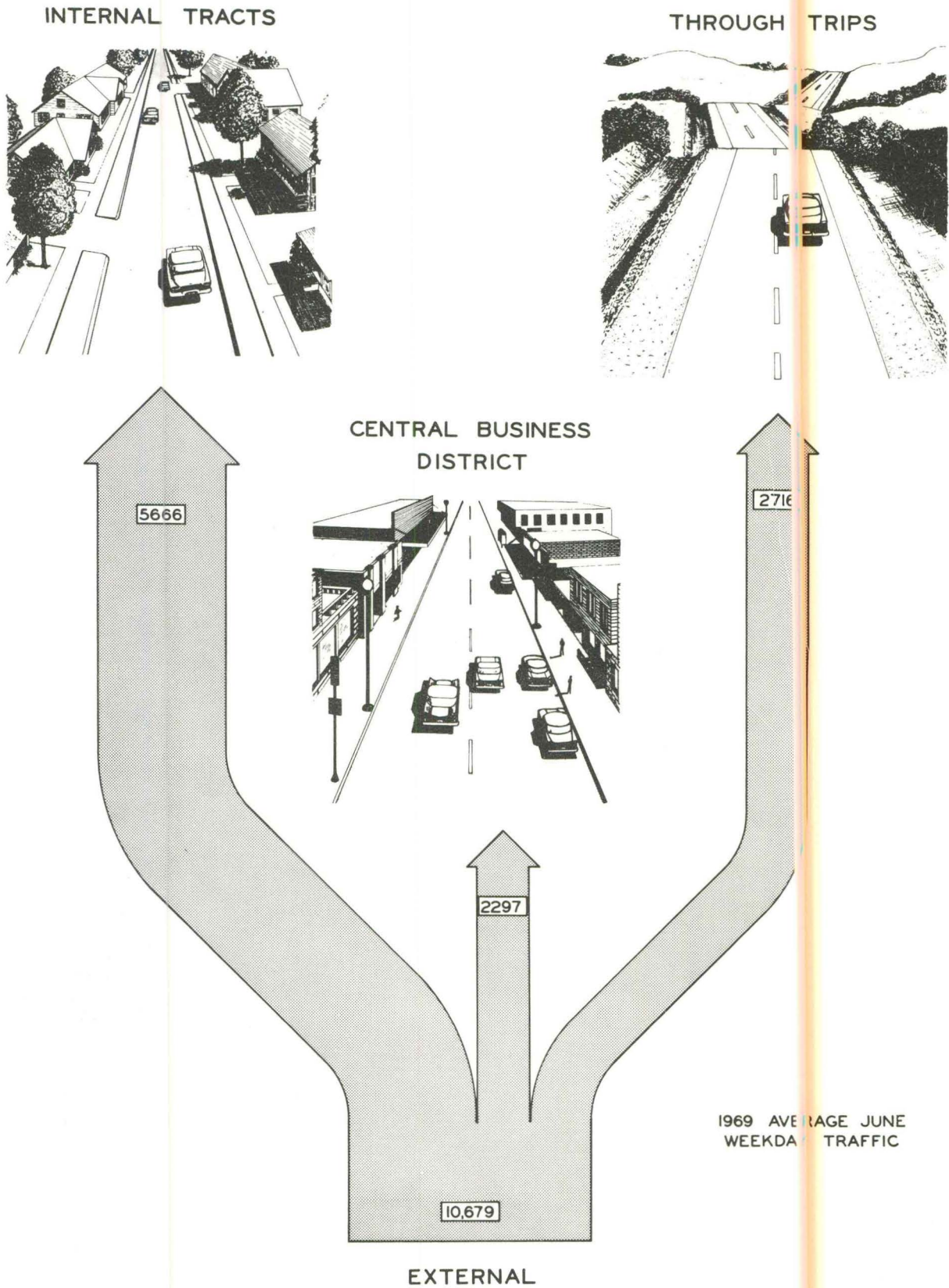
Study Area	The area enclosed by a cordon line of interview stations
Cordon Line	A hypothetical line determined by the location of traffic interview stations and used to delimit the area under study
Interview Station	A location at which vehicle drivers are stopped and interviewed
Code Station	A location on a street or highway at the point where it crosses the cordon line and at which traffic is counted but not interviewed
Central Business District	The major business district of a city
Origin	The location from which a driver started a trip
Destination	The location at which a trip was ended
Trip	The one-way travel between a point of origin and a point of destination
Internal Trip	A trip having both origin and destination within the study area
External Local Trip	A trip having either origin or destination within the study area and which passed through only one interview station in the cordon line enroute to its destination
External Through Trip	A trip having neither origin nor destination within the study area but which passed through it enroute to its destination
Traffic	The total number of vehicles passing a given point
Desire Line	A straight line between the point of origin and point of destination without regard to routes of travel



Significant Facts



FIGURE 1-1
DISTRIBUTION OF TRIPS
MAQUOKETA STUDY AREA



SUMMARY

The chart at left graphically illustrates some of the more significant traffic volumes derived from the Maquoketa origin and destination traffic survey. An average of 10,679 trips per day passed through the external cordon line of interview stations surrounding the study area during the survey period.

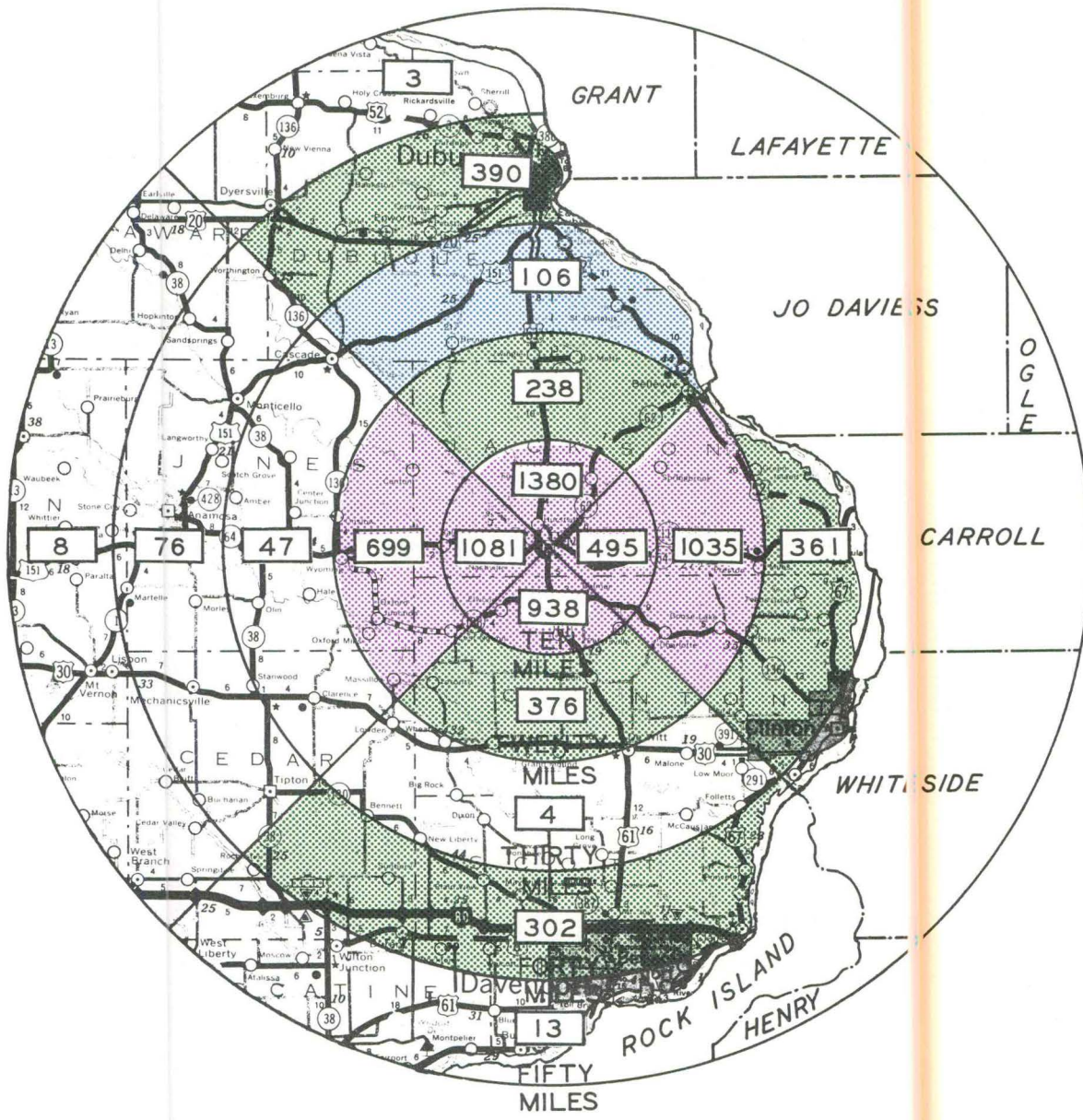
2,297 trips or 21.51 percent of the total number of trips were between external areas and the central business district.

5,666 trips or 53.06 percent of the total number of trips were between external and internal areas exclusive of the central business district.

2,716 trips or 25.43 percent of the total number of trips were through trips which passed through Maquoketa enroute to another destination.

Of the total number of trips which passed through interview stations, 17.40 percent began or ended at work, 25.52 percent were for social or recreational purposes, 22.31 percent were during work, 9.55 percent were for personal business, 16.94 percent were for shopping, and the remaining 8.28 percent were for other purposes.

FIGURE 1-2
 REGIONAL INFLUENCE OF THE
 MAQUOKETA STUDY AREA
 IN IOWA



-  0 TO 100 TRIPS
-  100 TO 200 TRIPS
-  200 TO 400 TRIPS
-  400 TRIPS AND OVER

1969 AVERAGE JUNE
 WEEKDAY TRAFFIC

Table 1-1
Regional Influence of the Maquoketa Study Area

1969 Average June Weekday Traffic

Miles From Study Area		Number of Trips	Percent of Total Trips Within a Fifty-Mile Radius
North	0 - 10	1,380	18.27
	10 - 20	238	3.15
	20 - 30	106	1.40
	30 - 40	390	5.17
	40 - 50	3	.04
North Total		2,117	28.03
East	0 - 10	495	6.55
	10 - 20	1,035	13.71
	20 - 30	361	4.78
	30 - 40	--	--
	40 - 50	--	--
East Total		1,891	25.04
West	0 - 10	1,081	14.31
	10 - 20	699	9.26
	20 - 30	47	.62
	30 - 40	76	1.01
	40 - 50	8	.11
West Total		1,911	25.31
South	0 - 10	938	12.42
	10 - 20	376	4.98
	20 - 30	4	.05
	30 - 40	302	4.00
	40 - 50	13	.17
South Total		1,633	21.62
Grand Total		7,552	100.00

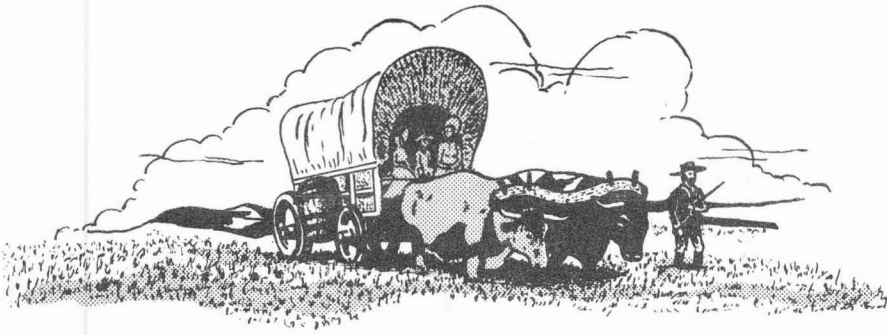
Table 1-2

Vehicle Type Summary
Maquoketa Study Area

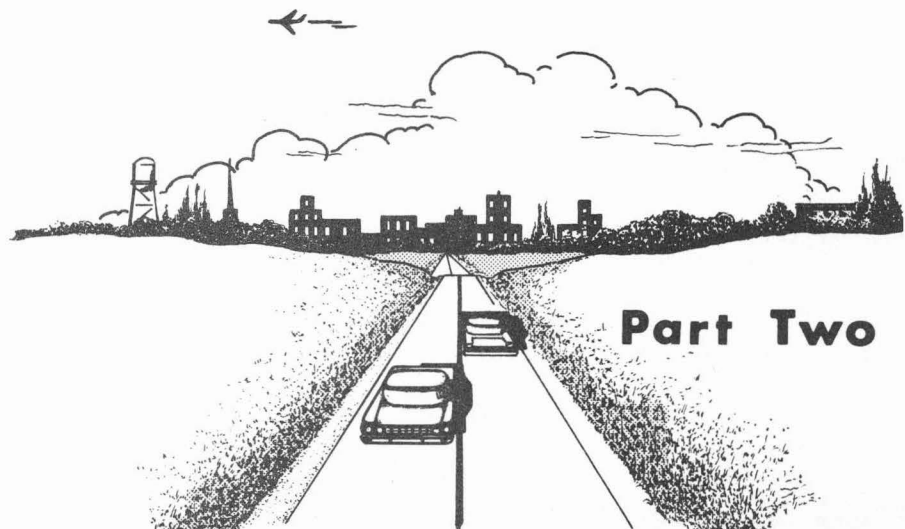
1969 Average June Weekday Traffic

Station	Location	Passenger Cars	Pickups and Panels	Single Unit Trucks	Truck Combi- nations	Total
701	U.S. 61 North	1,736	190	118	325	2,369
702	Old U.S. 61 North	773	172	59	23	1,027
704	Ia. 62 N.E.	1,192	269	126	16	1,603
706	Ia. 64 East	1,088	200	86	46	1,420
709	U.S. 61 South	3,334	459	234	361	4,388
713	Ia. 64 West	1,385	252	140	56	1,833
716	County Road Y-31 West	479	119	46	1	645
Grand Total		9,987	1,661	809	828	13,285

The totals shown above include the duplication of those trips which passed entirely through the study area and were, therefore, interviewed twice.



History and Development



Part Two

History

Maquoketa is the county seat of Jackson County. The county, organized in 1838, is named after Andrew Jackson. Bellevue was the first county seat, which for a time was moved to Andrew.

The first settler in the Maquoketa area was John Goodenow who arrived in 1838. From 1838 to 1845 Maquoketa was known as Springfield. In 1845, Goodenow, who was postmaster for the village was told to choose a more distinctive name in order to avoid confusion with a multitude of other Springfields. He chose the Indian name for the river running past the settlement Ma-Ko-Kee-Ta, meaning Bear River. The name was transposed into English as Maquoketa.

Maquoketa incorporated as a town in 1853. The Iowa General Assembly approved Maquoketa's incorporation as a city four years later. In 1870 citizens of Maquoketa subscribed and built a building and offered it for use as a courthouse. The county accepted and in 1873 Maquoketa became the county seat.

Maquoketa's first city services were organized in 1882. A fire which nearly wiped out the business district resulted in the organization of the municipal water works and a volunteer fire department.

The water department is still municipally owned and operated. Several wells supply abundant water for all residential, commercial, and industrial needs. A sewage treatment plant provides adequate treatment of wastes.

A municipal power plant was constructed in 1920. The municipal plant still supplies most of the electricity for normal needs with an Iowa Electric Light and Power Company franchise supplying power for industrial and other heavy loads. Natural gas service is provided to Maquoketa residents by Peoples Natural Gas Co.

Fire protection is provided by a volunteer force equipped with three fire trucks. Police protection is supplied by a well organized local police unit in cooperation with the Jackson County Sheriff's Office and the Highway Patrol.

Two weekly newspapers are published in Maquoketa, the Maquoketa Community Press and the Jackson Sentinel. Radio KMAQ provides broadcast news and entertainment.

The Maquoketa school system consists of four elementary schools, a junior high school, a senior high and one parochial elementary school. The system is fully accredited and offers a full curriculum and many extra curricular activities.

Medical facilities are provided by the Jackson County Hospital. In addition several private practitioners offer their specialized services to citizens of Maquoketa.

Though primarily a retail trade center, Maquoketa has several small industries. Products manufactured include small gasoline engines, dairy products, soft drinks and printed items.

Maquoketa is served by U.S. Highway 61 and Iowa Highways 62 and 64. Several trucklines provide both interstate and intrastate freight service. The Chicago, Milwaukee, St. Paul and Pacific Railroad also provides freight service. Daily interstate bus service is also available.

Population Trends
Maquoketa Population

Table 2-1

Census Year	Maquoketa Population	Volume Increase or Decrease	Percent Change 10-Year Period
1900	3,777	--	--
1910	3,570	-207	-5.48
1920	3,626	56	1.57
1930	3,595	-31	-.85
1940	4,076	481	13.38
1950	4,307	231	5.67
1960	5,909	1,602	37.20

Jackson County Population

Table 2-2

Census Year	Jackson Co. Population	Volume Increase or Decrease	Percent Change 10-Year Period
1850	7,210	--	--
1860	18,493	11,283	156.49
1870	22,619	4,126	22.31
1880	23,751	1,132	5.00
1890	22,771	-980	-4.13
1900	23,615	844	3.71
1910	21,258	-2,357	-9.98
1920	19,931	-1,327	-6.24
1930	18,481	-1,450	-7.28
1940	19,181	700	3.79
1950	18,622	-559	-2.91
1960	20,754	2,132	11.45

Population Trends

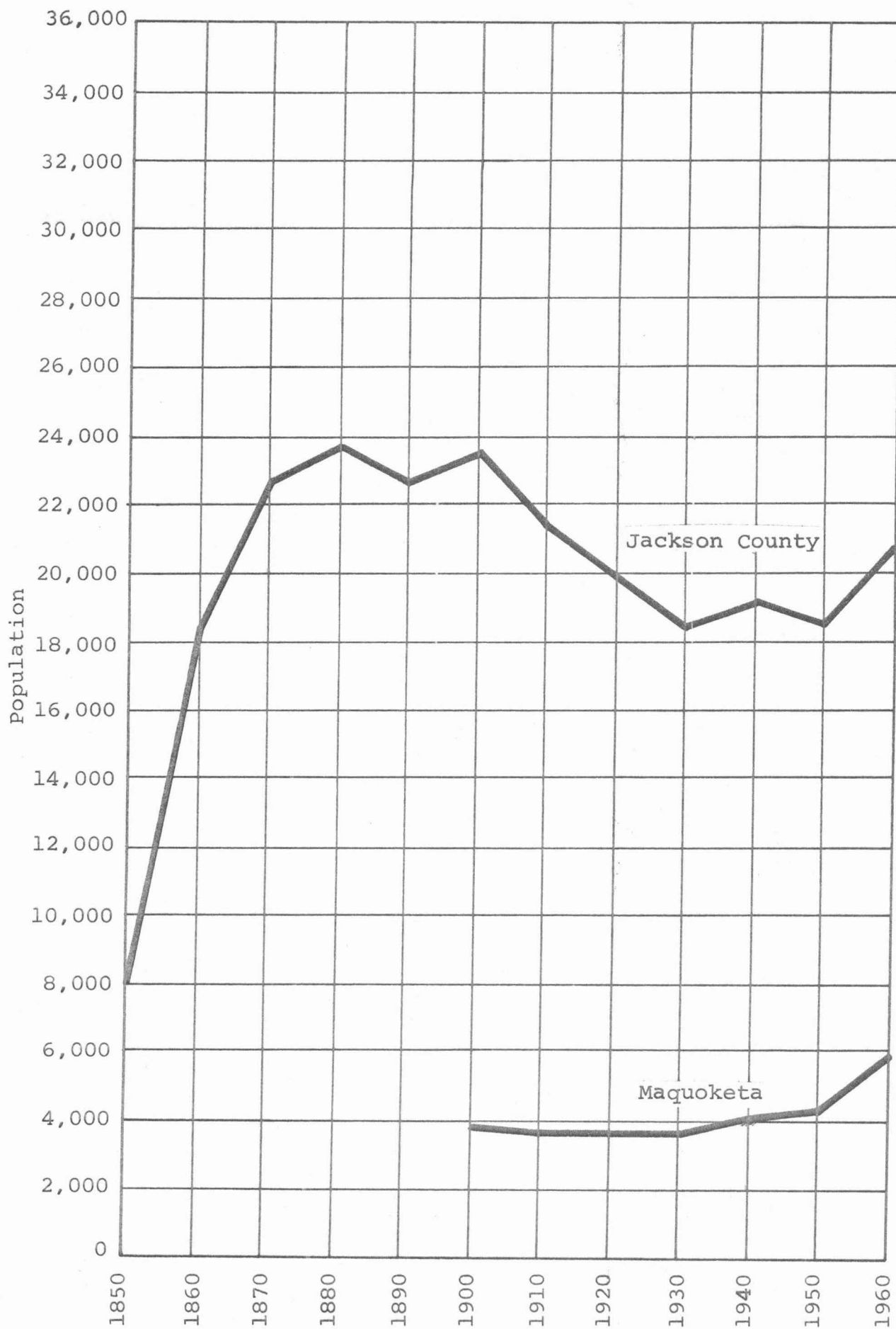


Table 2-3
 Motor Vehicle Registration
 In Jackson County From 1939 Through 1969

Year	Autos	Trucks	Motorcycles	Total	Percent Change
1939	5,205	790	33	6,028	
1940	5,288	836	22	6,146	1.96
1941	5,337	924	19	6,280	2.18
1942	4,947	898	20	5,865	-6.61
1943	4,731	869	10	5,610	-4.35
1944	4,634	859	11	5,504	-1.89
1945	4,573	890	15	5,478	-.47
1946	4,682	976	23	5,681	3.71
1947	4,972	1,139	35	6,146	8.19
1948	5,398	1,296	54	6,748	9.79
1949	5,869	1,521	50	7,440	10.25
1950	6,243	1,605	53	7,901	6.20
1951	6,327	1,696	55	8,078	2.24
1952	6,453	1,706	51	8,210	1.63
1953	6,548	1,823	45	8,416	2.51
1954	6,625	1,911	36	8,572	1.85
1955	7,026	1,933	37	8,996	4.95
1956	7,138	1,994	39	9,171	1.95
1957	7,149	2,046	55	9,250	.86
1958	7,460	2,116	66	9,642	4.24
1959	7,768	2,198	62	10,028	4.00
1960	7,781	2,226	50	10,057	.29
1961	7,692	2,266	55	10,013	-.44
1962	7,800	2,298	58	10,156	1.43
1963	8,006	2,344	83	10,433	2.73
1964	8,137	2,404	134	10,675	2.32
1965	8,412	2,476	154	11,042	3.44
1966	8,713	2,654	185	11,552	4.62
1967	8,742	2,751	230	11,723	1.48
1968	8,875	2,802	266	11,943	1.88
1969	9,022	2,974	303	12,299	2.98

Figure 2-2

Motor Vehicle Registration in Jackson County
From 1939 Through 1969

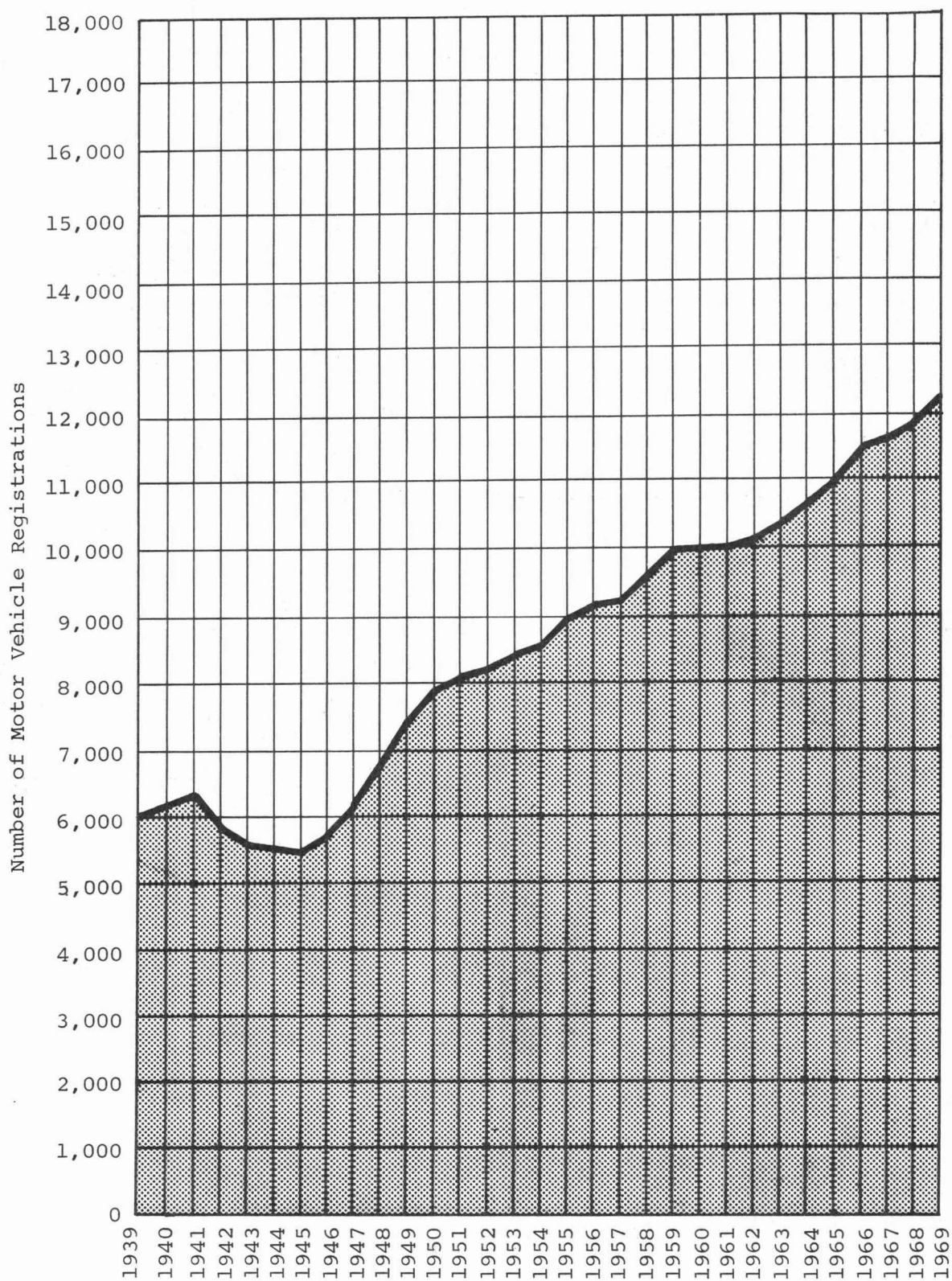
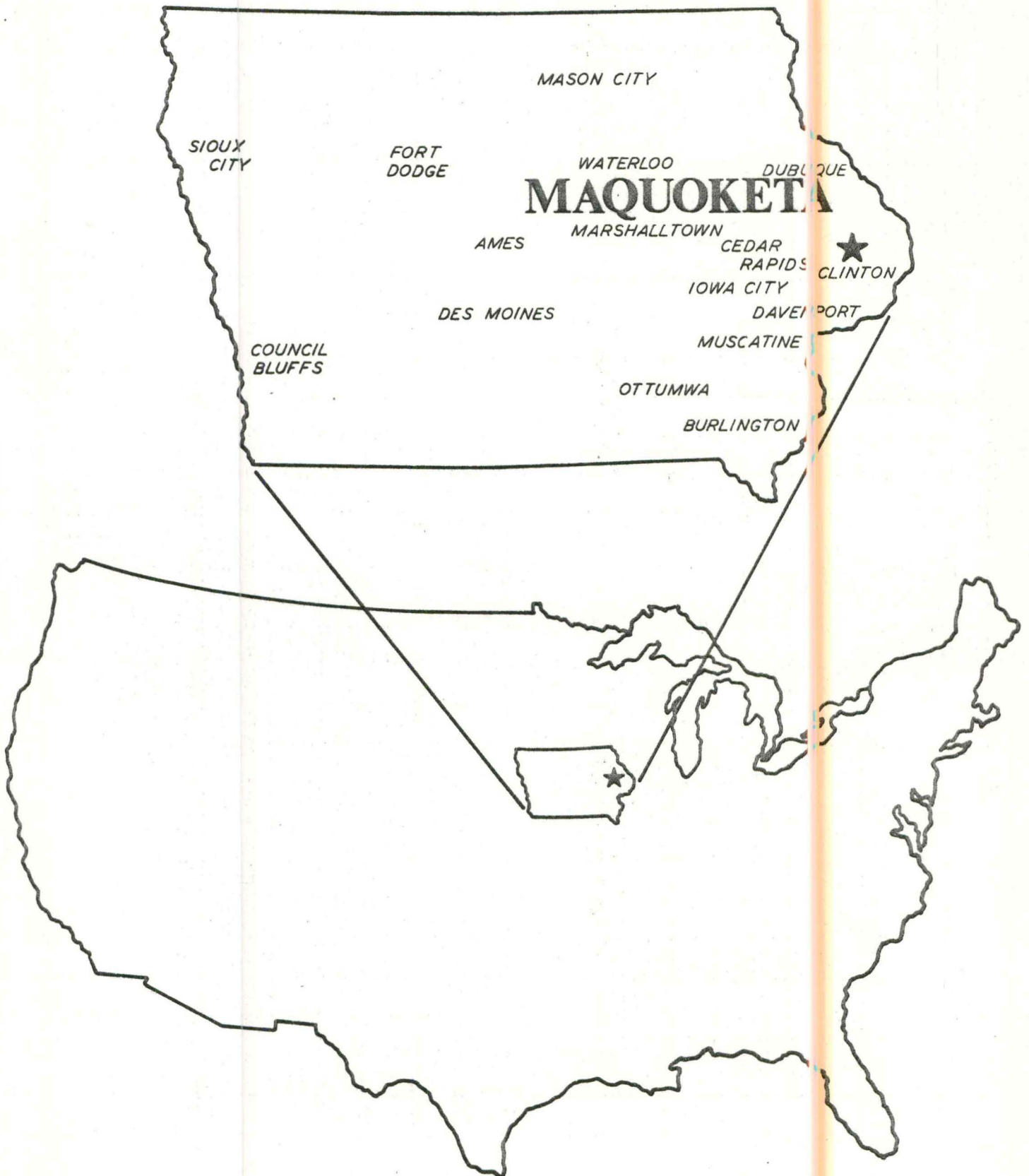
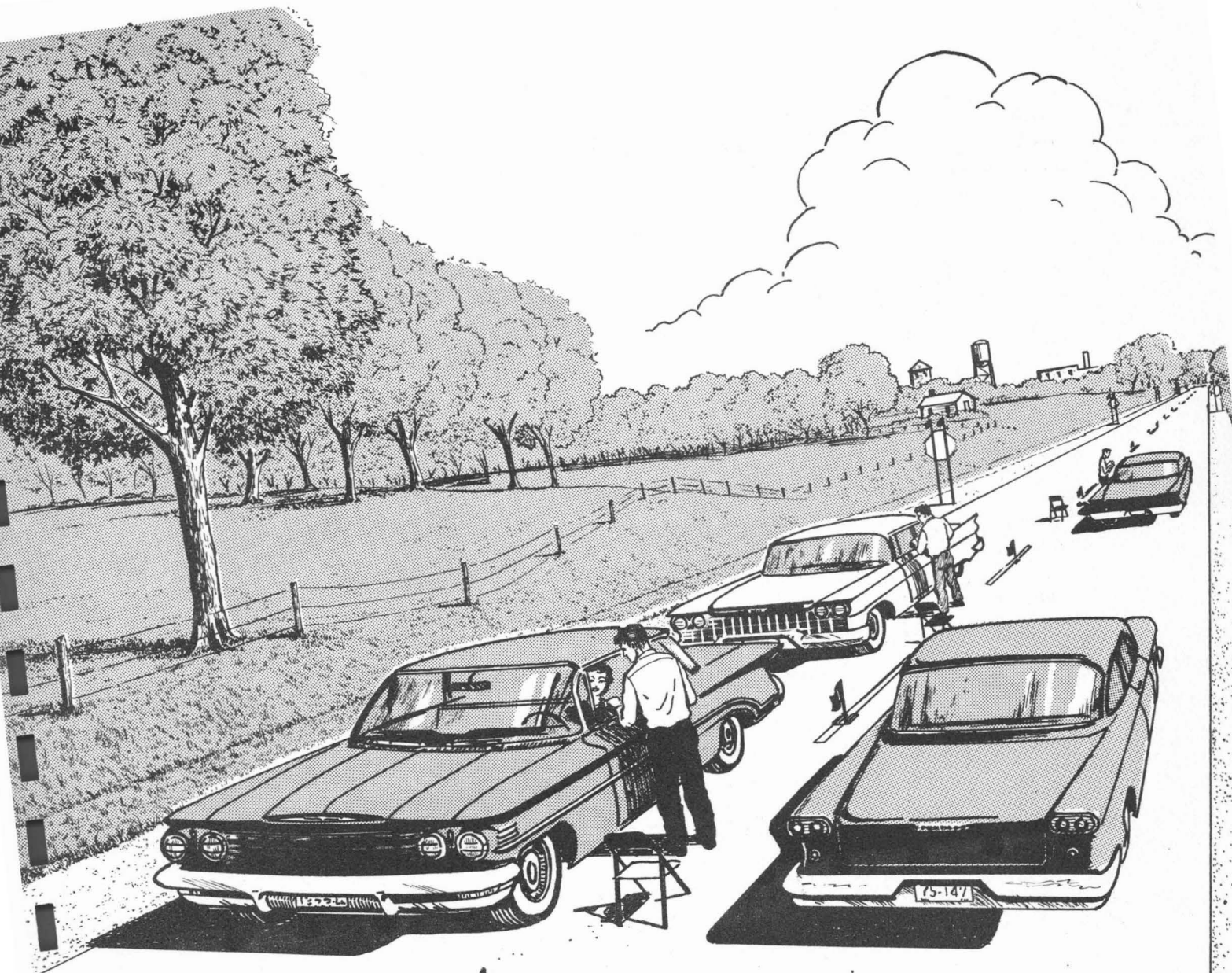


FIGURE 2-3
STUDY AREA POSITION





Survey

Procedures

Part Three

THE SURVEY

An external origin and destination traffic survey, of the type conducted in Maquoketa, is designed primarily to determine the origin, destination and purpose of travel, along with the number and type of all vehicles entering or leaving the study area in a given period of time.

It has been demonstrated that travel is an expression of behavior and as such, tends to be repetitive. It is this repetition which enables the statistician and the highway planner to expand and project current data for the prediction of future needs.

In order to obtain accurate information upon which to base an analysis, it is necessary to interview vehicle drivers at strategically located interview stations. A cordon line composed of interview stations and code stations was located around the perimeter of the study area. Interview stations were located on all major roads entering the study area and all other roads were assigned station code numbers to facilitate the organization of interview data for those through trips which passed through only one interview station. The study area was divided into 18 tracts, and all trips which had either their origin or their destination within the study area were traced to one of these tracts.

Interviewing for the Maquoketa survey was done between the 23rd and 27th of June 1969. All vehicles passing through interview stations during a 15-hour period from 6 a.m. to 9 p.m. were stopped briefly for interviews in which vehicle operators were questioned concerning the origin, destination, and purpose of the trip in progress. In addition, the vehicle type was recorded along with the location where it was normally parked or garaged, the place of registration, direction of travel, and number of occupants.

Mechanical traffic recorders were placed at the location of each interview station and were operated continuously for a period of five weekdays, including the day on which the interviewing was done. Manual vehicle classification counts were also taken and, together with the data provided by the mechanical recorders, were used to expand the interview data to 24-hour average June weekday traffic for 1969.

At the conclusion of the field work, the data pertaining to each trip were coded and punched on tabulating cards. These cards were then sorted and tabulated by machine according to the tract of origin or destination and the station or stations through which each trip passed.

In an external survey of this type, all trips are placed in two main categories composed of "external local trips" and "external through trips." External local trips have only one terminal (which may be either the origin or destination) within the study area and, therefore, pass through only one interview station while enroute to their destination. Trips which have neither origin nor destination within the study area, but must pass through it enroute to another destination, are classified as external through trips. Trips in this category must cross the cordon line at least twice while enroute to their destination.

Traffic flow charts indicating trip termini by tract of origin or destination are included in this report along with a series of desire line charts showing desired routes of travel in straight lines between interview stations and internal tracts.

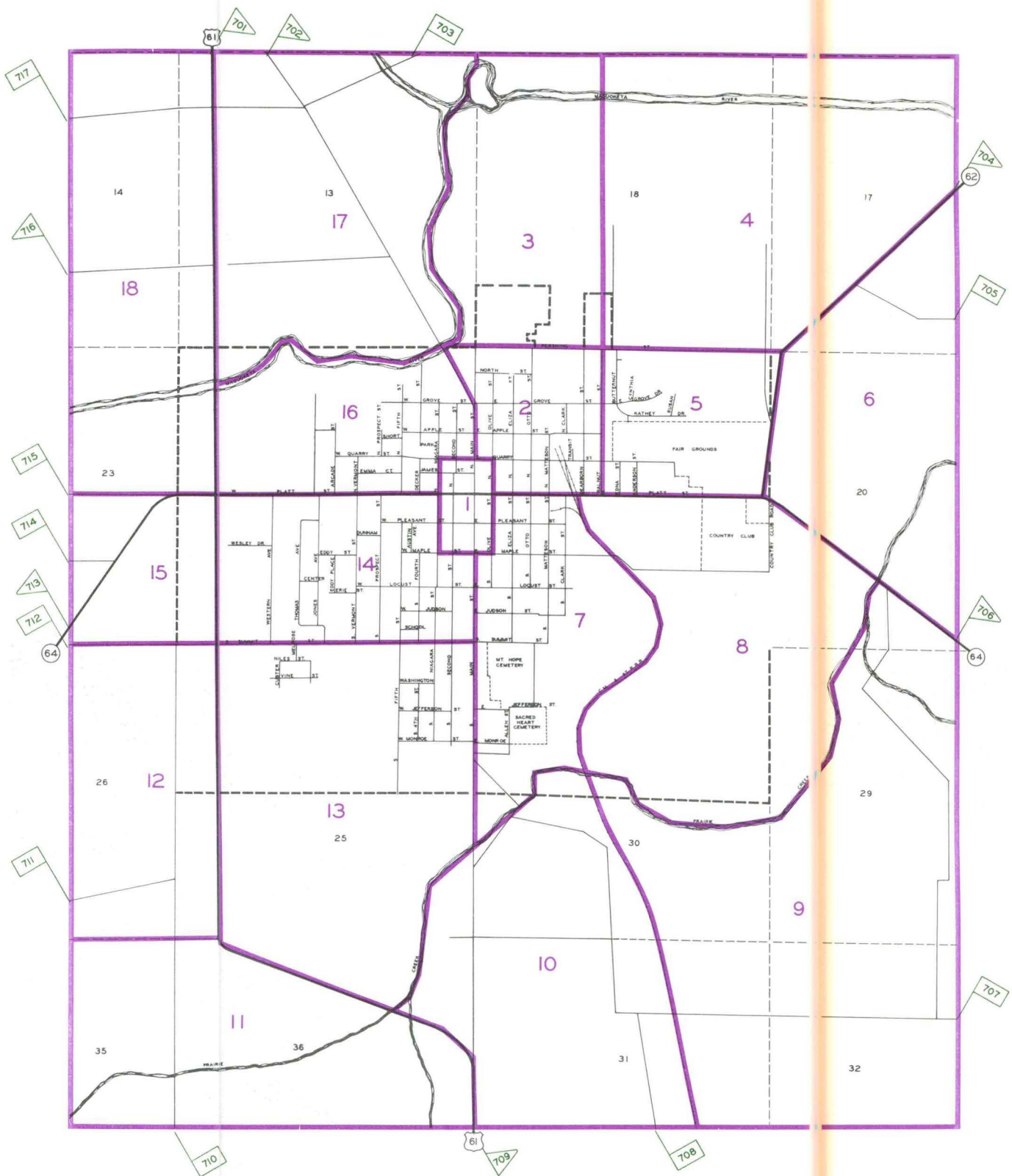
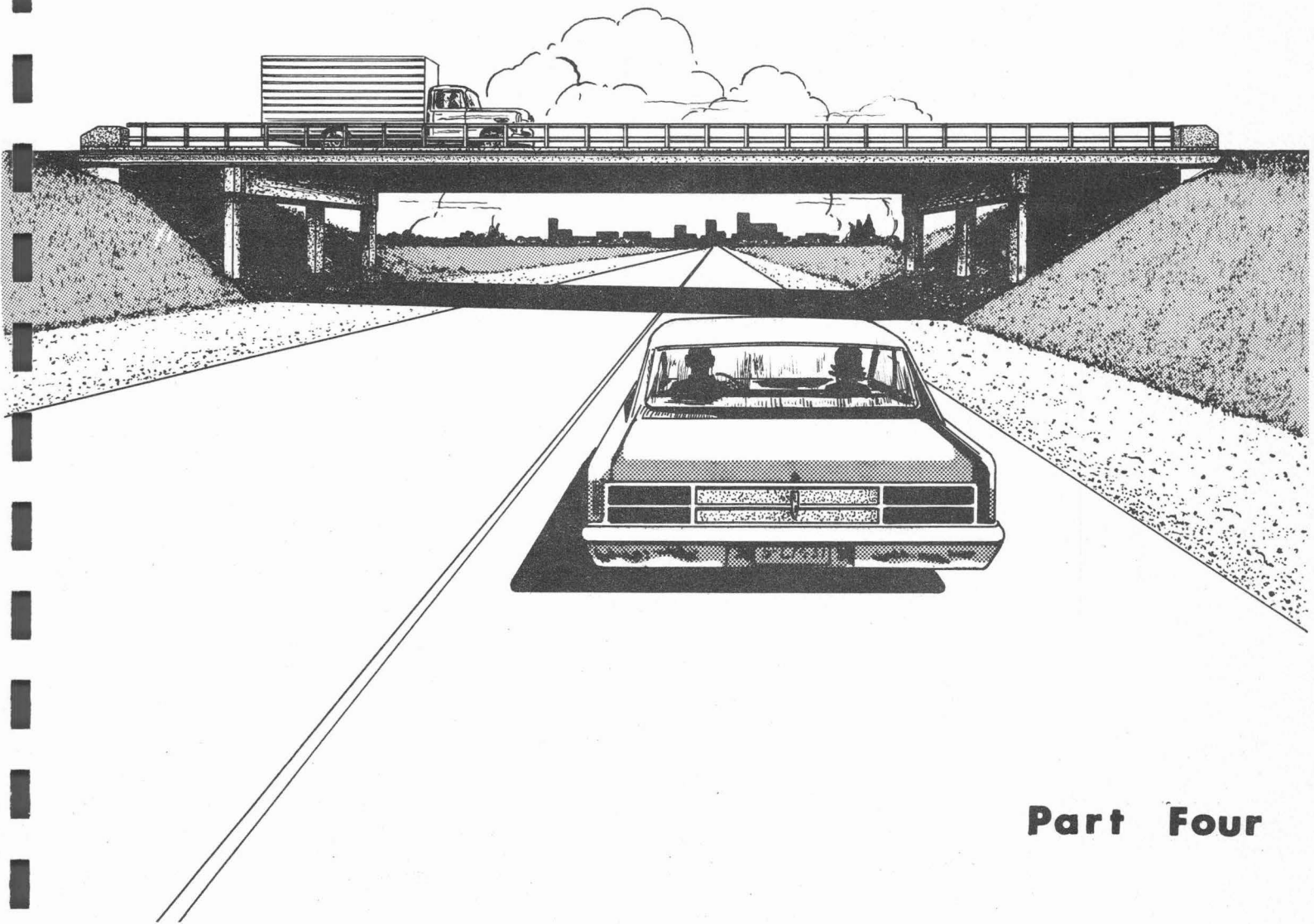


FIGURE 3-1
TRACT MAP OF THE
MAQUOKETA STUDY AREA

JUNE 1969

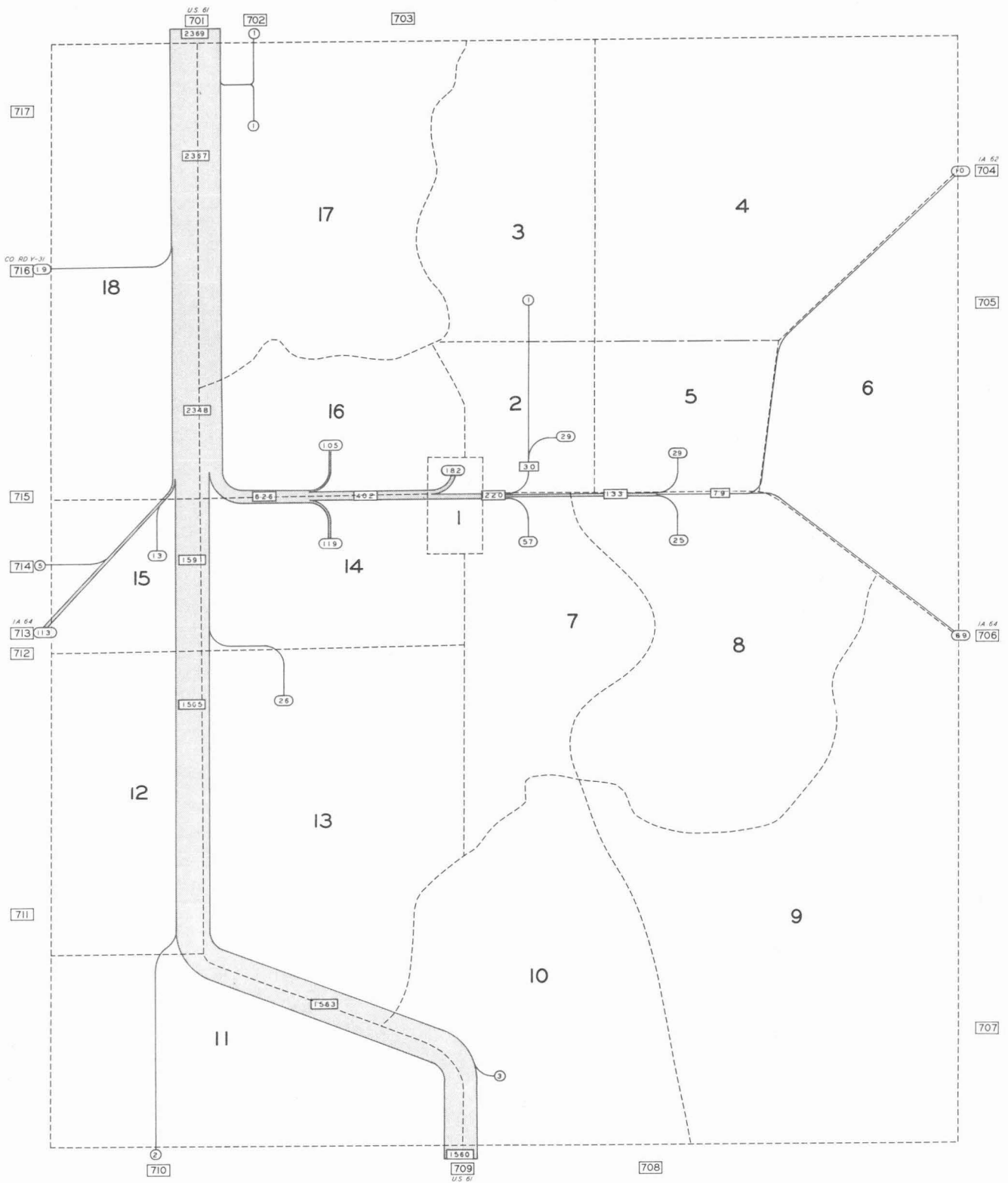
Traffic Movements



Part Four

TRAFFIC FLOW CHARTS

The following traffic flow charts illustrate the internal dispersion of trips between points of origin and/or destination through the stations indicated. These charts are not intended to show exact routes, but rather to show trip volume by tract of origin or destination and the number of trips passing through each external interview station. Trip origins and destinations are not differentiated and the tract or station totals shown include both origins and destinations.



LEGEND
 TRACT BOUNDARY LINE - - - - -
 CORPORATION LINE - - - - -

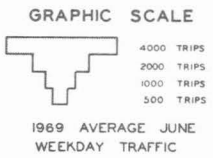
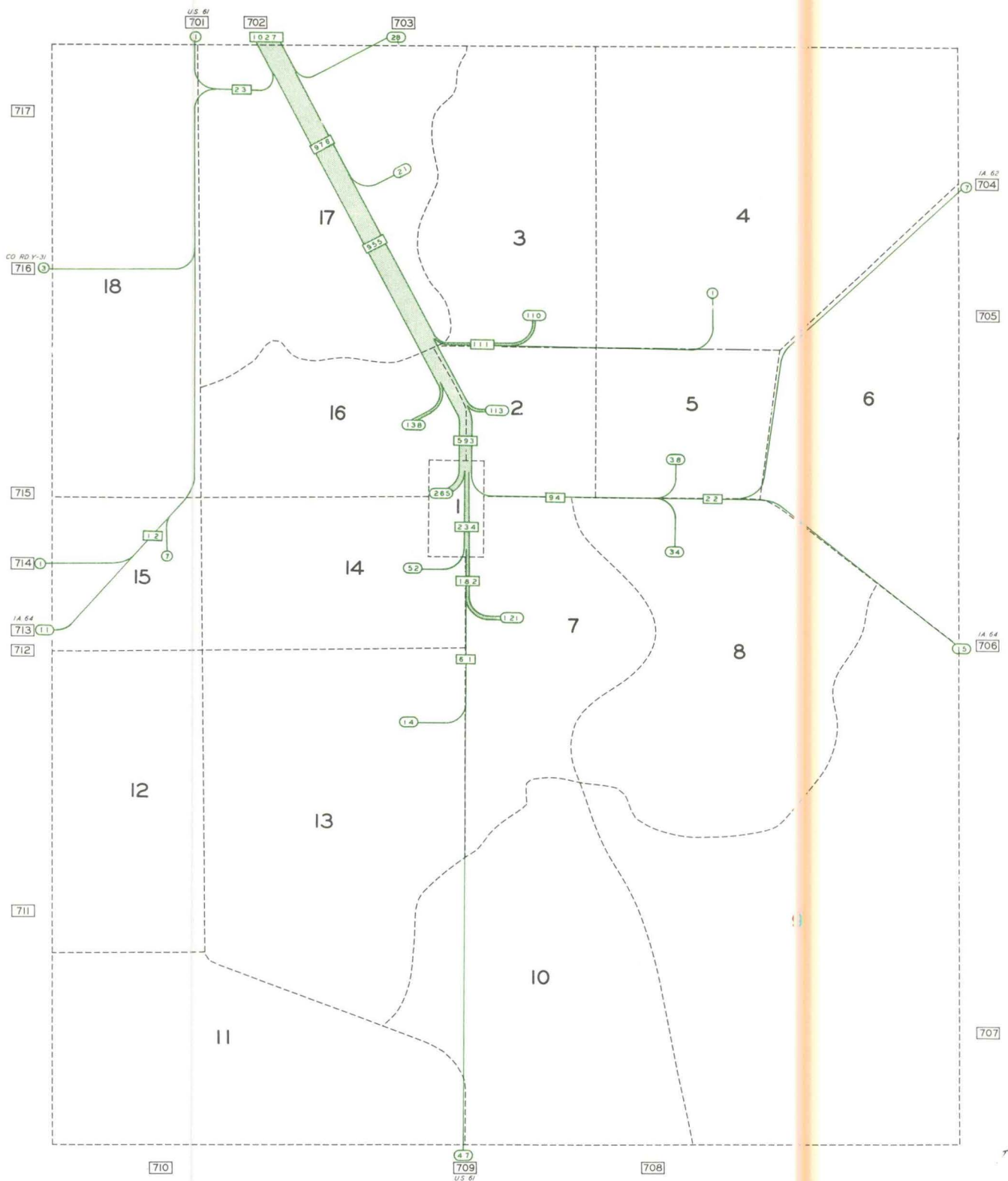


FIGURE 4-1
 INTERNAL DISPERSION OF
 ALL VEHICULAR TRIPS PASSING THROUGH
 STATION 701 - U.S. 61 NORTH
 OF THE
MAQUOKETA STUDY AREA
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)



LEGEND
 TRACT BOUNDARY LINE - - - - -
 CORPORATION LINE - - - - -

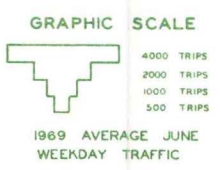
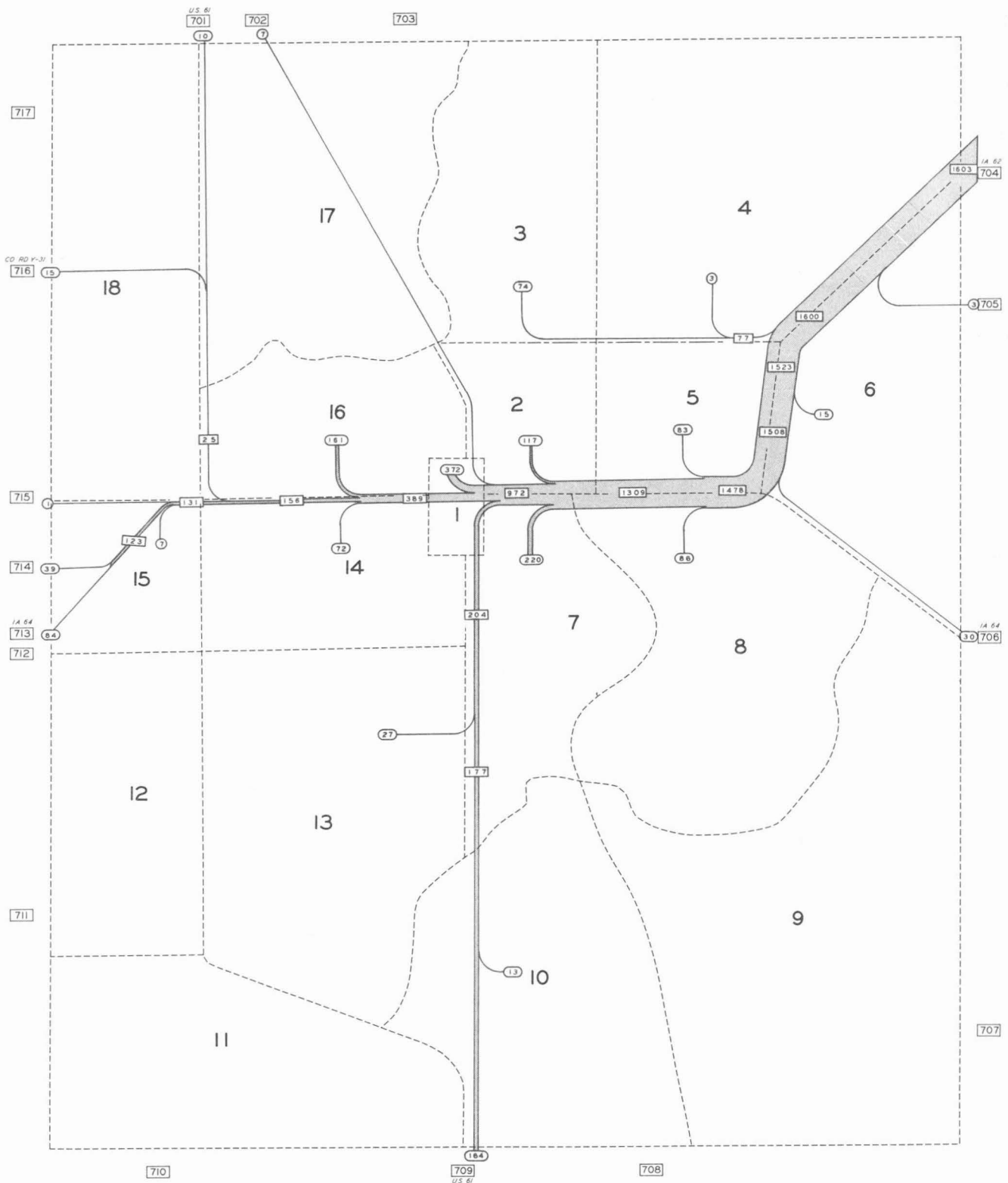


FIGURE 4-2
 INTERNAL DISPERSION OF
 ALL VEHICULAR TRIPS PASSING THROUGH
 STATION 702 - OLD U.S. 61 NORTH
 OF THE
MAQUOKETA STUDY AREA
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)



LEGEND
 TRACT BOUNDARY LINE - - - - -
 CORPORATION LINE - - - - -

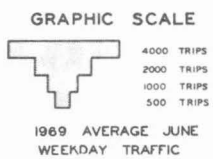


FIGURE 4-3
 INTERNAL DISPERSION OF
 ALL VEHICULAR TRIPS PASSING THROUGH
 STATION 704-IOWA 62 NORTHEAST
 OF THE
 MAQUOKETA STUDY AREA
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)



LEGEND
 TRACT BOUNDARY LINE - - - - -
 CORPORATION LINE - - - - -

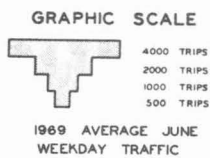


FIGURE 4-7
 INTERNAL DISPERSION OF
 ALL VEHICULAR TRIPS PASSING THROUGH
 STATION 716-COUNTY ROAD Y-31 WEST
 OF THE
MAQUOKETA STUDY AREA
 (ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES)

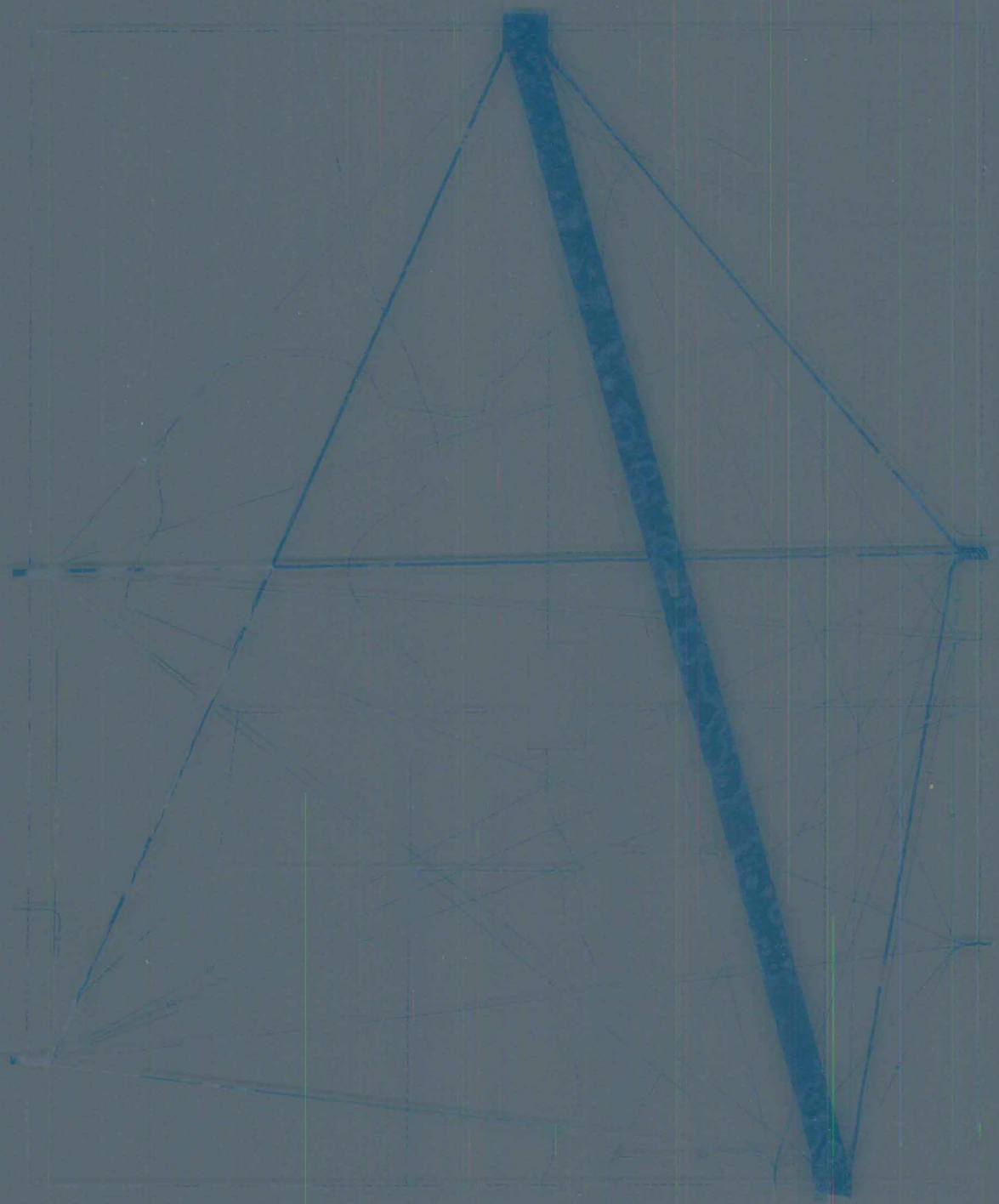


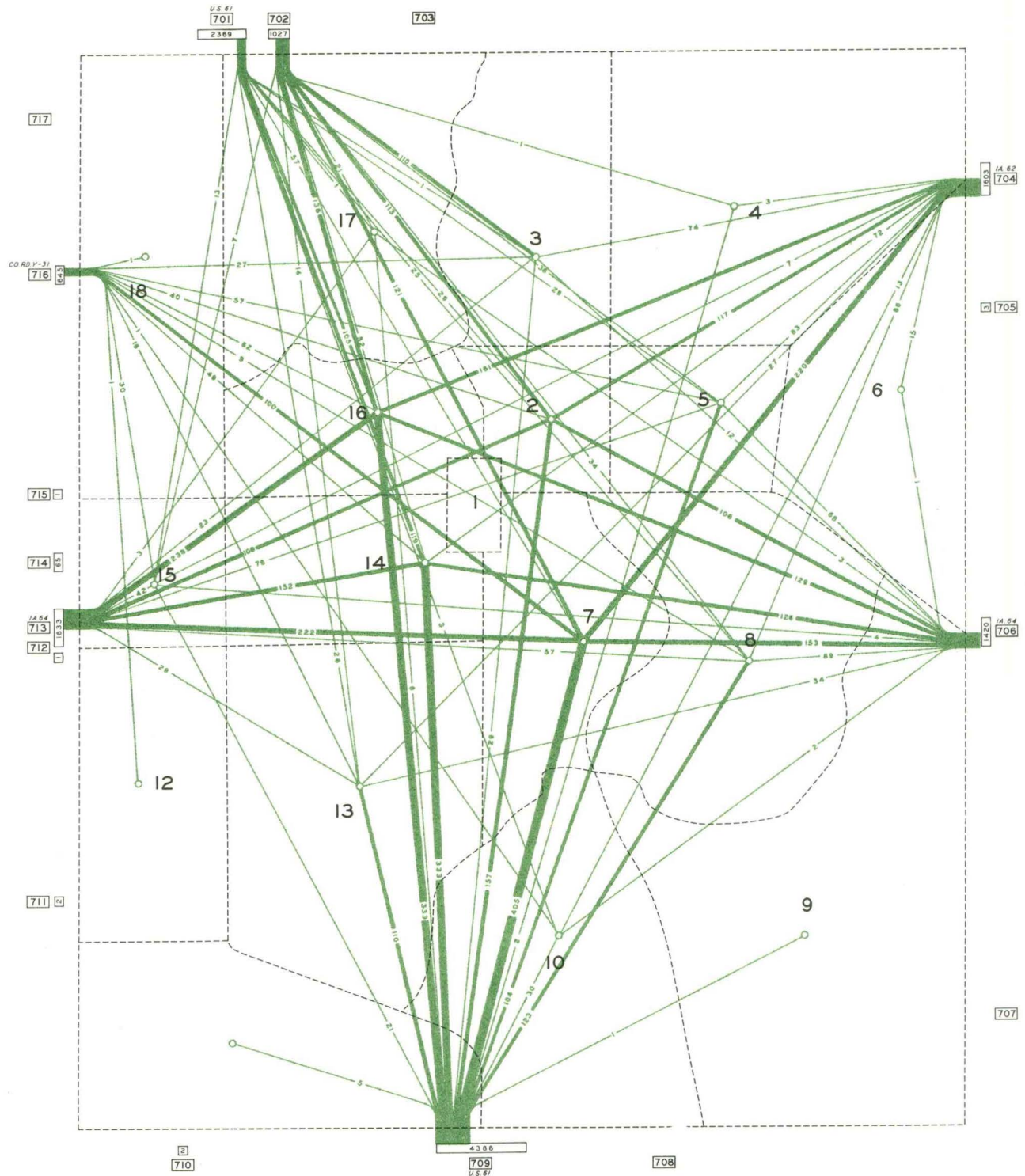
FIGURE 4-8

FIGURE 4-9

THE CENTRAL BUSINESS DISTRICT

FIGURE 4-9





LEGEND
TRACT BOUNDARY LINE - - - - -



FIGURE 4-10
DESIRE LINES OF TRAVEL OF TRIPS
TO OR FROM
EXTERNAL ENTRANCES OF THE
MAQUOKETA STUDY AREA
AND
INTERNAL TRACTS

EXTERNAL TRIP TERMINI

Table 4-1 on the adjoining page shows a tabulation of the number and percent of those trips which had termini in Jackson County, rural areas adjacent to the study area, other counties in Iowa, and other states.

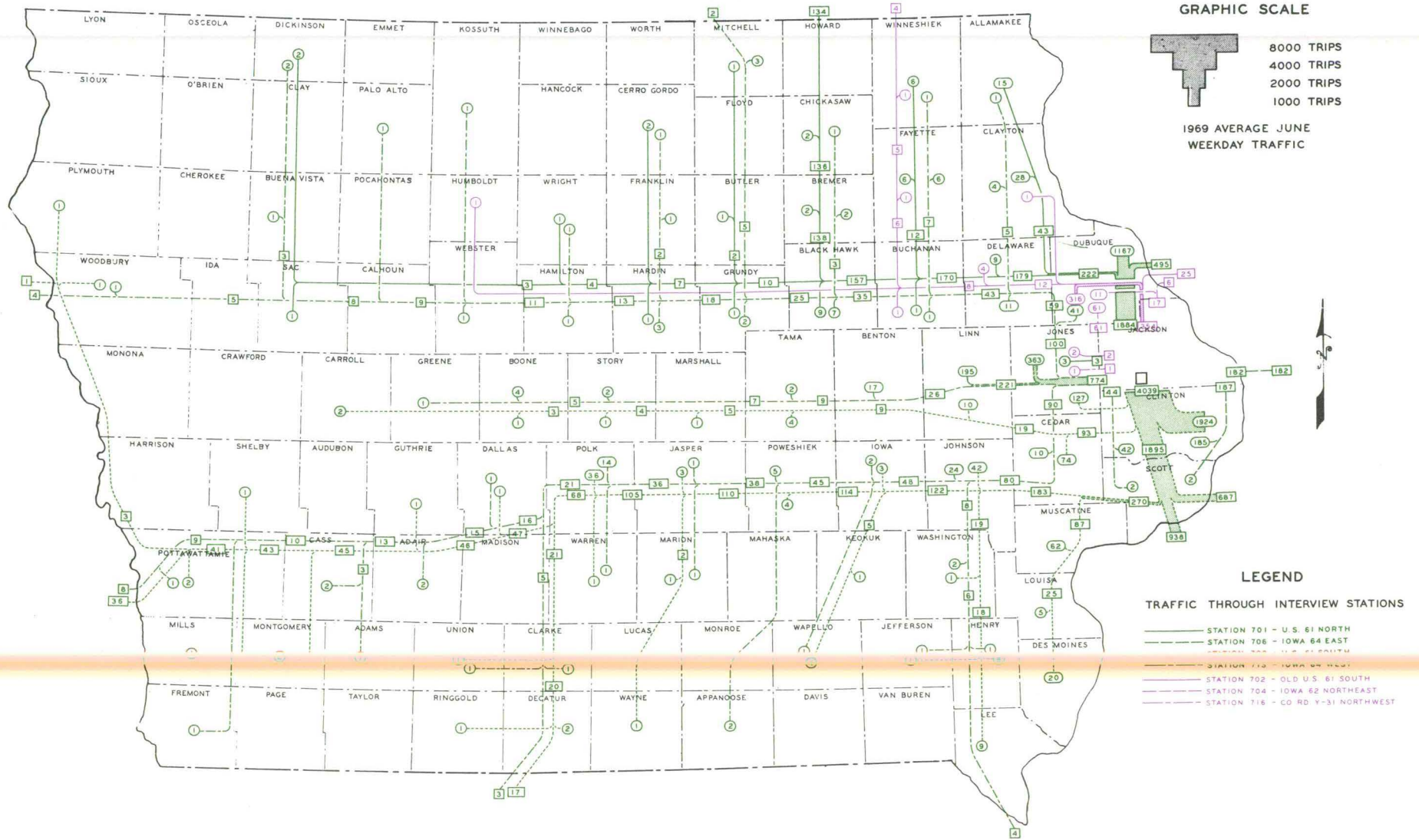
The following traffic flow charts illustrate the data shown in Table 4-1 and point out the Iowa termini of all trips which passed through the Maquoketa study area at the time of the survey. Figure 4-11 shows the external termini of all trips which originated or terminated beyond Jackson County. Those trips which had termini in other states are shown entering or leaving Iowa on routes which appear to be most direct to the study area. Figure 4-12 is a continuation of Figure 4-11 and shows the external termini of those trips which originated or terminated in Jackson County beyond the cordon line surrounding the study area. All routes shown are approximate and should be interpreted as such.

Table 4-1
 Summary of Trips Entering or Leaving the Maquoketa Study Area
 1969 Average June Weekday Traffic

Station Location Origin or Destination	U.S. 61 North		Old U.S. 61 North		Iowa 62 North		Iowa 64 East		U.S. 61 South		Iowa 64 West		County Road Y-31 West	
	Station 701		Station 702		Station 704		Station 706		Station 709		Station 713		Station 716	
	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%
Andrew	17	.72	7	.68	696	43.42								
Baldwin											294	16.04	2	.31
Bellevue	1	.04	1	.10	487	30.38	2	.14						
Fulton	166	7.01	150	14.61	1	.06								
Green Island					13	.81	15	1.06						
Hurstville	86	3.63	173	16.85	9	.56								
La Motte	44	1.86	29	2.82	51	3.18								
Miles							88	6.20						
Monmouth											241	13.15	22	3.41
Preston							475	33.45						
Sabula							78	5.49						
Saint Donatus	4	.17	2	.19	7	.44								
Spragueville					11	.69	42	2.96						
Springbrook					74	4.62	5	.35						
Maquoketa Caves														
State Park	4	.17	4	.39							1	.05	82	12.71
Total to Towns	322	13.60	366	35.64	1,349	84.16	705	49.65			536	29.24	106	16.43
Rural Jackson County	160	6.75	305	29.70	237	14.78	346	24.36	349	7.95	479	26.13	477	73.96
Other Counties	1,258	53.10	327	31.84	11	.69	187	13.17	3,298	75.16	797	43.48	62	9.61
Out-of-State	629	26.55	29	2.82	6	.37	182	12.82	741	16.89	21	1.15		
Grand Total	2,369	100.00	1,027	100.00	1,603	100.00	1,420	100.00	4,388	100.00	1,833	100.00	645	100.00

FIGURE 4-11
DISPERSION OF EXTERNAL TRIPS
BETWEEN THE MAQUOKETA STUDY AREA
AND POINTS IN IOWA BEYOND JACKSON COUNTY

ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES



DISPERSION OF EXTERNAL TRIPS
BETWEEN THE MAQUOKETA STUDY AREA
AND POINTS WITHIN JACKSON COUNTY

FIGURE 4-12

ALL TRIPS BY DRIVERS OF AUTOS, TAXIS, TRUCKS, AND BUSES.

- STATION 701 - U.S. 61 NORTH
- STATION 706 - IA. 64 EAST
- STATION 709 - U.S. 61 SOUTH
- STATION 713 - IA. 64 WEST
- STATION 702 - OLD U.S. 61 SOUTH
- STATION 704 - IA. 62 NORTHEAST
- STATION 716 - CO. RD. Y-31 NORTHWEST
- CORPORATION LINE
- CORPON LINE
- COUNTY LINE
- STATE LINE

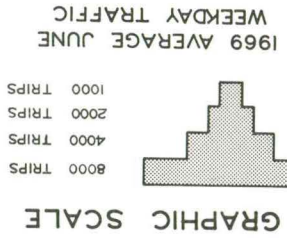
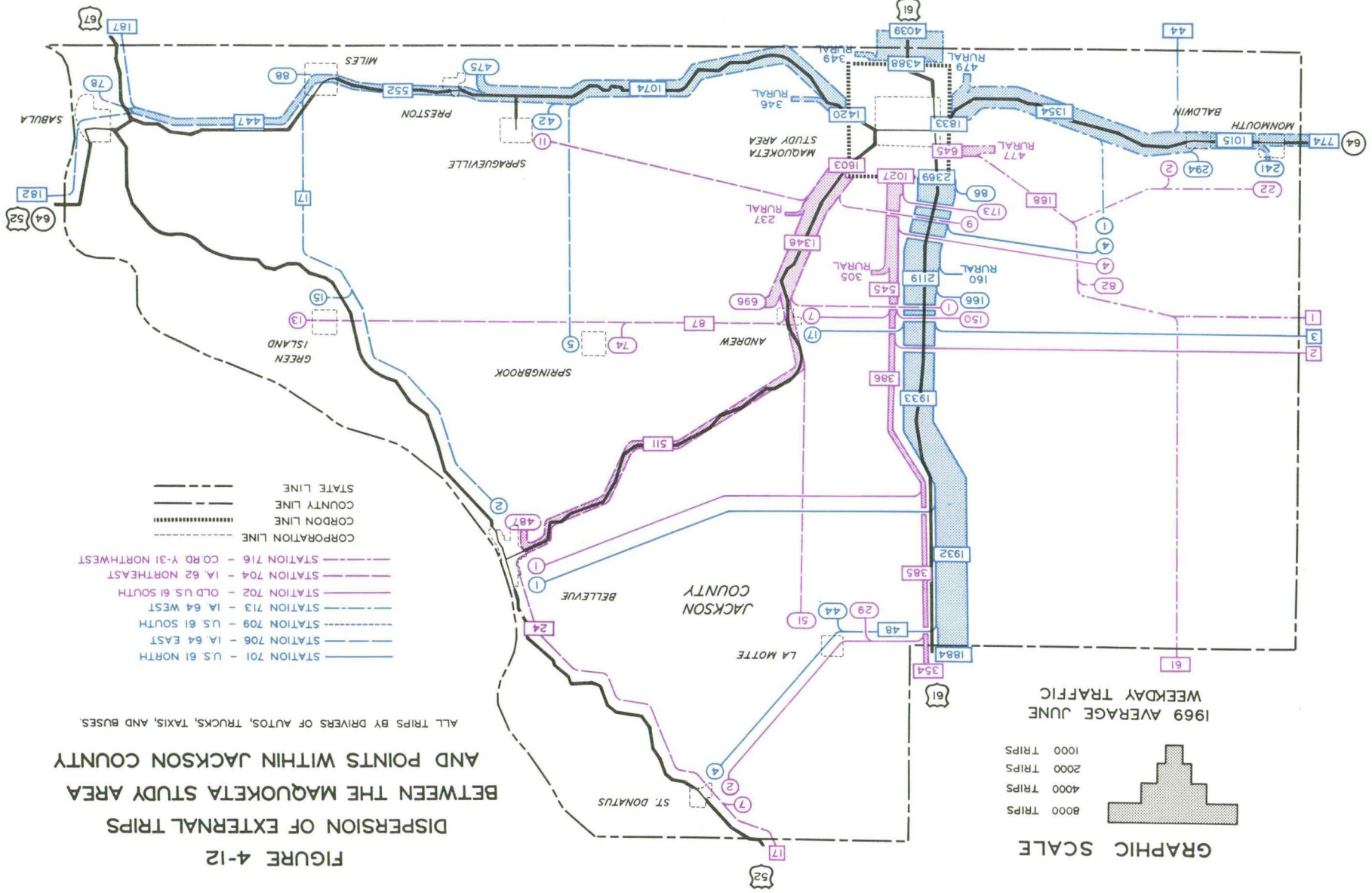
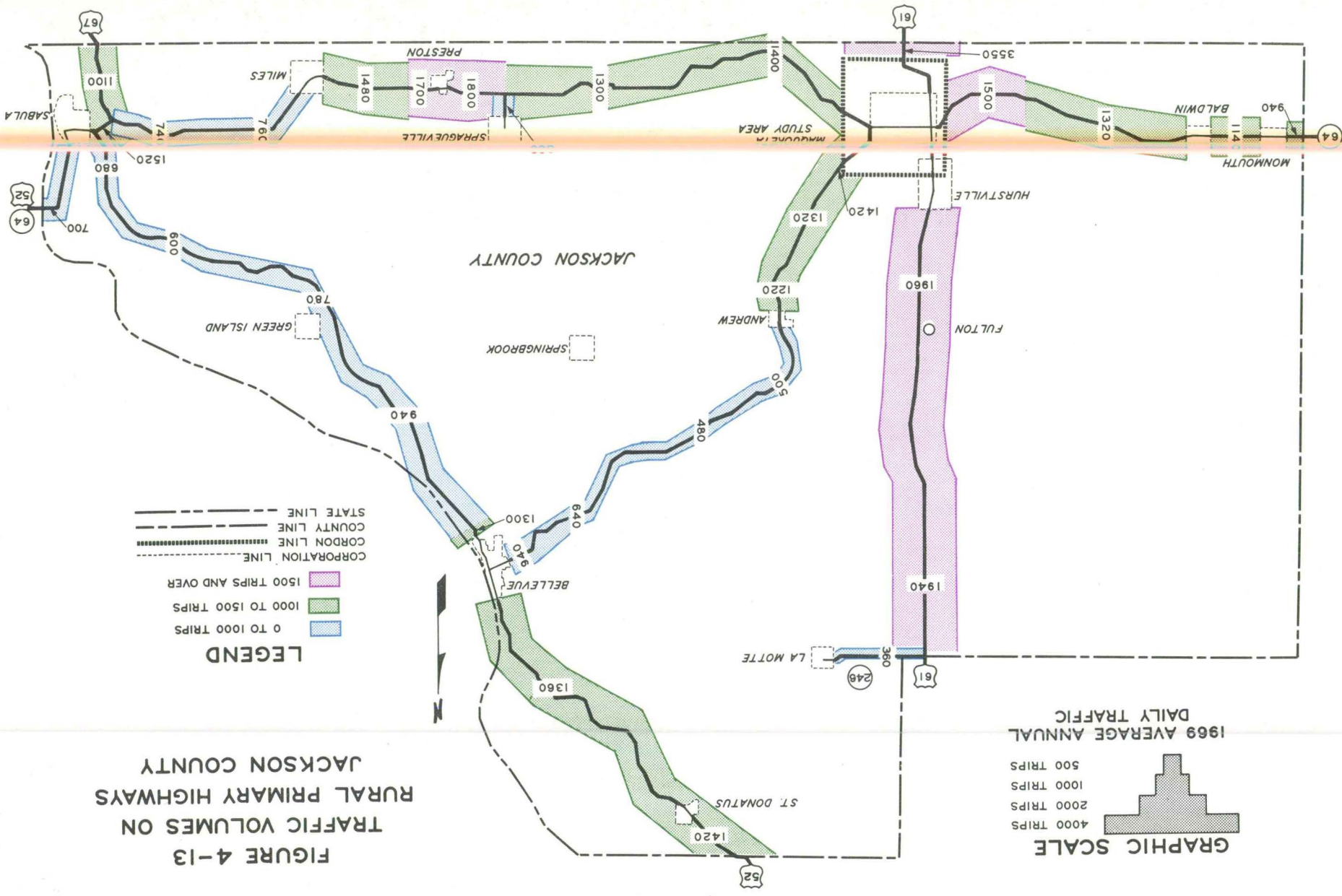
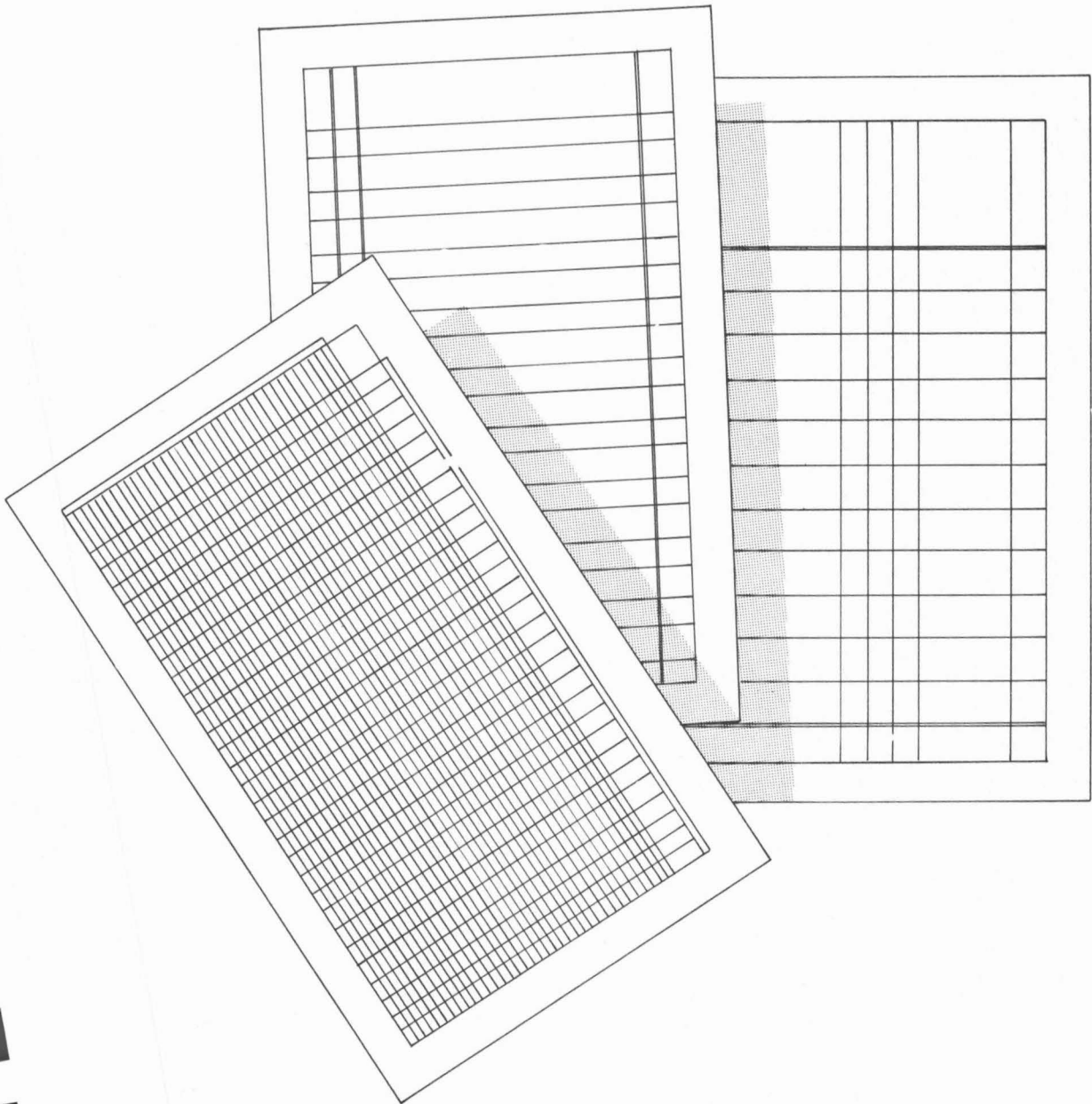


FIGURE 4-13
 TRAFFIC VOLUMES ON
 RURAL PRIMARY HIGHWAYS
 JACKSON COUNTY



Appendix



Part Five

MAQUOKETA STUDY AREA
TRIP PURPOSE OF EXTERNAL TRIPS
(ALL VEHICLE TYPES)
1969 AVERAGE JUNE WEEKDAY TRAFFIC

External Local Trips

Table B-2a(1)

Station \ Trip Purpose	701	702	704	706	709	713	716	Total Traffic
	U.S. 61 North	Old U.S. 61 North	Iowa 62 North	Iowa 64 East	U.S. 61 South	Iowa 64 West	County Road Y-31 West	
Work	66	173	213	232	533	275	117	1,609
Personal Business	43	91	163	155	201	147	67	867
During Work	94	154	204	172	405	260	64	1,353
Medical or Dental	21	12	56	42	103	38	22	294
School	8	7	2	3	15	5	8	48
Social or Recreation	158	196	216	211	451	235	124	1,591
Eat	34	26	58	39	71	51	20	299
Shop	153	225	317	183	531	230	95	1,734
Serve Passengers	13	30	21	31	32	29	12	168
Total Traffic	590	914	1,250	1,068	2,342	1,270	529	7,963

External Through Trips

Table B-2a(2)

Station \ Trip Purpose	701	702	704	706	709	713	716	Total Traffic
	U.S. 61 North	Old U.S. 61 North	Iowa 62 North	Iowa 64 East	U.S. 61 South	Iowa 64 West	County Road Y-31 West	
Work	115	24	64	29	188	53	15	488
Personal Business	92	7	25	17	109	40	9	299
During Work	708	32	124	137	778	221	18	2,018
Medical or Dental	12		2	3	12	4		33
School	20	2	2	4	23	7	2	60
Social or Recreation	783	37	120	146	865	207	65	2,223
Eat	2	4	1	1	3	3	1	15
Shop	32	6	14	12	53	25	6	148
Serve Passengers	15	1	1	3	15	3		38
Total Traffic	1,779	113	353	352	2,046	563	116	5,322

Summary - All External Trips

Table B-2a(3)

Station \ Trip Purpose	701	702	704	706	709	713	716	Total Traffic
	U.S. 61 North	Old U.S. 61 North	Iowa 62 North	Iowa 64 East	U.S. 61 South	Iowa 64 West	County Road Y-31 West	
Work	181	197	277	261	721	328	132	2,097
Personal Business	135	98	188	172	310	187	76	1,166
During Work	802	186	328	309	1,183	481	82	3,371
Medical or Dental	13	12	58	42	103	38	22	294
School	28	9	4	7	38	12	10	108
Social or Recreation	941	233	336	357	1,316	442	189	3,814
Eat	36	30	59	40	74	54	21	314
Shop	185	231	331	195	584	255	101	1,882
Serve Passengers	28	31	22	34	47	32	12	206
Total Traffic	2,369	1,027	1,603	1,420	4,388	1,833	645	13,285

MAQUOKETA STUDY AREA
AVERAGE CAR OCCUPANCY BY TRIP PURPOSE
 1969 AVERAGE JUNE WEEKDAY TRAFFIC

External Local Trips

Table B-3a(1)

Trip Purpose Origin	Trip Purpose - Destination										Average Occupancy
	Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	
Work	1.000	1.730				2.123	1.337	2.311	3.020	1.442	1.494
Personal Business	1.000	1.712	2.000	2.000		2.706		2.437	2.524	1.783	1.818
During Work			1.232		3.000	1.000	1.196	1.000		1.214	1.234
Medical or Dental	1.000	2.000				1.547				2.188	2.159
School		4.000			4.447	6.000		1.000		2.047	3.144
Social or Recreation	1.365	2.357				2.779	2.327	2.540	3.765	2.308	2.377
Eat	1.213	1.685	1.000			3.140		2.307	2.000	2.699	2.531
Shop	1.299	1.798	1.364	2.000		2.708	1.000	2.815	4.000	2.075	2.126
Serve Passengers	1.710					2.702		1.474	1.000	2.011	2.038
Home	1.408	1.863	1.115	2.423	2.017	2.265	2.443	2.092	2.361		1.975
Average Occupancy	1.402	1.866	1.228	2.418	2.626	2.373	2.131	2.123	2.485	1.959	1.931

External Through Trips

Table B-3a(2)

Trip Purpose Origin	Trip Purpose - Destination										Average Occupancy
	Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	
Work	2.000	1.000	1.000			1.000	3.412	1.000		1.578	1.603
Personal Business		2.767				1.698	2.000			1.868	1.942
During Work			1.275				4.000			1.074	1.274
Medical or Dental				2.000						1.885	1.897
School	4.000					2.000				1.321	1.441
Social or Recreation		2.210		2.000		2.593			8.000	2.587	2.591
Eat						1.435				3.390	2.309
Shop		3.500				3.066		1.993		2.408	2.527
Serve Passengers	4.000					2.514	2.000			1.816	2.087
Home	1.502	1.876	1.867	2.088	1.597	2.768	2.513	2.304	3.334		2.463
Average Occupancy	1.536	1.957	1.296	2.076	1.597	2.723	2.914	2.258	3.552	2.272	2.183

Summary - All External Trips

Table B-3a(3)

Trip Purpose Origin	Trip Purpose - Destination										Average Occupancy
	Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	
Work	1.497	1.718	1.000			2.045	1.479	2.171	3.020	1.461	1.508
Personal Business	1.000	2.087	2.000	2.000		2.493	2.000	2.437	2.524	1.795	1.837
During Work			1.249		3.000	1.000	1.428	1.000		1.176	1.250
Medical or Dental	1.000	2.000		2.000		1.547				2.174	2.146
School	4.000	4.000			4.447	4.694		1.000		1.615	2.416
Social or Recreation	1.365	2.326		2.000		2.666	2.327	2.540	4.585	2.423	2.471
Eat	1.213	1.685	1.000			3.073		2.307	2.000	2.706	2.528
Shop	1.299	2.084	1.364	2.000		2.735	1.000	2.758	4.000	2.086	2.142
Serve Passengers	2.006					2.680	2.000	1.474	1.000	1.995	2.043
Home	1.420	1.865	1.523	2.407	1.857	2.464	2.444	2.102	2.511		2.079
Average Occupancy	1.418	1.880	1.255	2.399	2.307	2.513	2.160	2.129	2.624	2.017	1.989

TABLE E-1

MAQUOKETA STUDY AREA
DIRECTIONAL TRIPS BETWEEN STATIONS AND TRACTS
1969 AVERAGE JUNE WEEKDAY TRAFFIC

VEHICLE TRIPS							VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	From	To	Auto	Pickup and Panel	Singl Unit Bus	Semi Truck	Total
001	701	71	9	2		82	001	709	268	46	15		329
002	701	9	1			10	002	709	61	14	5	2	82
005	701	11	2	1		14	003	709	4	1	6	2	13
007	701	23	3	1		27	004	709	1				1
008	701	3	6	1	3	13	005	709	46	7	1		54
010	701	1				1	007	709	186	29	6		221
013	701	12		1		13	008	709	33	13	7	2	55
014	701	67	5	1		73	010	709	5	4	3		12
015	701	4			1	5	011	709	1		1		2
016	701	40	9	1	3	53	013	709	47	1	4		52
Cl.2	Total	241	35	8	7	291	014	709	135	21	2	1	159
							015	709	5	3	1		9
							016	709	137	15	4	7	163
							017	709	1	1			2
							Cl.2	Total	930	155	55	14	1,154
001	702	108	17	4	1	130	001	713	143	15	4	3	165
002	702	45	22	5		72	002	713	46	6	8		60
003	702	23	16	8	8	55	003	713	5	6	5		16
005	702	20		1		21	005	713	24	6	1		31
007	702	46	11	1		58	007	713	96	5	3	2	106
008	702	9	8			17	008	713	16	6	1	2	25
013	702	7				7	013	713	9	1	2		12
014	702	31	3	1		35	014	713	73	13	5		91
015	702	3				3	015	713	18	4	4		26
016	702	59	4	4	1	68	016	713	89	16	9	1	115
017	702	9	1			10	017	713	1	1			2
Cl.2	Total	360	82	24	10	476	Cl.2	Total	520	79	42	8	649
							001	716	43	6	8		57
001	704	156	22	7		185	002	716	10	8	2		20
002	704	33	13	8	3	57	003	716	7	1			8
003	704	21	11	5		37	005	716	17	6			23
005	704	32	9	2		43	007	716	34	12	1		47
006	704	8				8	008	716	1	1			2
007	704	87	21	5		113	010	716			1		1
008	704	29	10	3		42	013	716	1	5			6
010	704	2	1	4		7	014	716	17	6	3		26
013	704	11	1			12	015	716	15	7	1		23
014	704	30	8			38	016	716	28	4	2		34
015	704	3	1			4	Cl.2	Total	173	56	18		247
016	704	65	11	2		78	001	001	83	14	2	1	100
Cl.2	Total	477	108	36	3	624	002	002	15	3		1	19
							003	003	1				1
001	706	139	19	4		162	005	005	12	3			15
002	706	41	11	3	2	57	007	007	25	4	1		30
003	706	1	2	1	2	6	008	008	6	2	1	3	12
005	706	28	4		1	33	010	010	1	1			2
006	706	1				1	013	013	12	1			13
007	706	67	9	4	3	83	014	014	45		1		46
008	706	22	10	8	4	44	015	015	6	2			8
010	706		2			2	016	016	46	5	1		52
013	706	16				16	017	017	1				1
014	706	54	10			64	Cl.3	Total	253	35	6	5	299
015	706	1				1							
016	706	52	10	1		63							
017	706	2				2							
Cl.2	Total	424	77	21	12	534							

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
702	001	107	21	6	1	135
702	002	29	9	1	2	41
702	003	21	16	12	6	55
702	004	1				1
702	005	13	4			17
702	007	49	11	3		63
702	008	11	5	1		17
702	013	7				7
702	014	16	1			17
702	015	4				4
702	016	56	10	4		70
702	017	9	1	1		11
Cl.3	Total	323	78	28	9	438
704	001	158	27	2		187
704	002	43	10	7		60
704	003	17	14	6		37
704	004	1		2		3
704	005	33	6	1		40
704	006	7				7
704	007	88	17	2		107
704	008	33	8	3		44
704	010	3		3		6
704	013	14	1			15
704	014	27	7			34
704	015	3				3
704	016	70	8	5		83
Cl.3	Total	497	98	31		626
706	001	154	20	1	2	177
706	002	30	12	9		51
706	003	1	2	1	2	6
706	005	25	8	2		35
706	007	56	10	2	2	70
706	008	33	5	6	1	45
706	013	18				18
706	014	50	12			62
706	015	3				3
706	016	59	6	1		66
706	017	1				1
Cl.3	Total	430	75	22	7	534

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
709	001	299	38	14	3	354
709	002	44	15	7	9	75
709	003	9	2	5		16
709	004	1				1
709	005	37	11	2		50
709	007	144	24	11	5	184
709	008	39	14	9	6	68
709	009	1				1
709	010	7	3	6	2	18
709	011	1		2		3
709	013	51	3	3	1	58
709	014	145	19	7	3	174
709	015	8	3	1		12
709	016	148	16	3	3	170
709	017	4				4
Cl.3	Total	938	148	70	32	1,188
713	001	132	17	5	1	155
713	002	35	4	7	2	48
713	003	3	4			7
713	005	35	9	1		45
713	007	93	18	5		116
713	008	20	3	9		32
713	013	11	3	3		17
713	014	52	6	3		61
713	015	8	5	3		16
713	016	90	21	12		123
713	017	1				1
Cl.3	Total	480	90	48	3	621
716	001	66	11	2		79
716	002	13	7			20
716	003	9	9	1		19
716	005	30	2	2		34
716	007	42	10	1		53
716	008	4	2	1		7
716	012	1				1
716	013	8	2			10
716	014	20	1	2		23
716	015	5	2			7
716	016	20	5	3		28
716	018	1				1
Cl.3	Total	219	51	12		282
701	702			1		1
701	704	2	1	1		4
701	706	13	3	7	4	27
701	709	531	44	38	157	770
701	710	1				1
701	713	28	6	4	4	42
701	714	1				1
701	716	8	1	2		11
704	701	4	2			6
706	701	26	4	8	4	42
709	701	564	51	39	136	790
710	701	1				1
713	701	54	7	2	8	71
714	701	3		1		4
716	701	6	1	1		8
Cl.4	Total	1,242	120	104	313	1,779

VEHICLE TRIPS							VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
702	703	13		1		14	709	701	564	51	39	136	790
702	704	2	1			3	709	702	24	1	1	1	27
702	706	6	1	1		8	709	704	67	11	8	2	88
702	709	14	4	1	1	20	709	706	26	2	3	2	33
702	713	1				1	709	711	1				1
702	716	1		1		2	709	712		1			1
701	702			1		1	709	713	51	5	4	9	69
703	702	13		1		14	709	714	1				1
704	702	2	2			4	709	716	21	2	1		24
706	702	6	1			7	701	709	531	44	38	157	770
709	702	24	1	1	1	27	702	709	14	4	1	1	20
713	702	7	1		2	10	704	709	56	11	6	3	76
714	702		1			1	706	709	18	6	3	2	29
716	702	1				1	713	709	68	15	3	2	88
Cl.4	Total	90	12	7	4	113	716	709	24	3	2		29
704	701	4	2			6	Cl.4	Total	1,466	156	109	315	2,046
704	702	2	2			4	713	701	54	7	2	8	71
704	706	8	2	3	1	14	713	702	7	1	2	2	10
704	709	56	11	6	3	76	713	703	3		1		4
704	713	27	11	8	6	52	713	704	22	5	4	1	32
704	714	3	5	11		19	713	706	52	10	4	8	74
704	715	1				1	713	709	68	15	3	2	88
704	716	5	1	1		7	713	714	5	4			9
701	704	2	1	1		4	713	716	5		2		7
702	704	2	1			3	701	713	28	6	4	4	42
705	704	1	1	1		3	702	713	1				1
706	704	11	4	1		16	703	713			10		10
709	704	67	11	8	2	88	704	713	27	11	8	6	52
713	704	22	5	4	1	32	706	713	58	13	7	5	83
714	704	1	5	14		20	709	713	51	5	4	9	69
716	704	6	1	1		8	714	713	3	5	1		9
Cl.4	Total	218	63	59	13	353	716	713	1	1			2
706	701	26	4	8	4	42	Cl.4	Total	385	83	50	45	563
706	702	6	1			7	716	701	6	1	1		8
706	704	11	4	1		16	716	702	1				1
706	709	18	6	3	2	29	716	704	6	1	1		8
709	711			1		1	716	706	3	1	3	1	8
706	713	58	13	7	5	83	716	709	24	3	2		29
706	714	1				1	716	713	1	1			2
706	716	6	1	2		9	701	716	8	1	2		11
701	706	13	3	7	4	27	702	716	1		1		2
702	706	6	1	1		8	704	716	5	1	1		7
704	706	8	2	3	1	14	706	716	6	1	2		9
709	706	26	2	3	2	33	709	716	21	2	1		24
713	706	52	10	4	8	74	713	716	5		2		7
716	706	3	1	3	1	8	Cl.4	Total	87	12	16	1	116
Cl.4	Total	234	48	43	27	352							

TABLE E-2

MAQUOKETA STUDY AREA
NONDIRECTIONAL TRIPS BETWEEN STATIONS AND TRACTS
1969 AVERAGE JUNE WEEKDAY TRAFFIC

VEHICLE TRIPS						VEHICLE TRIPS							
Between		Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	Between		Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
701	001	154	23	4	1	182	709	001	567	84	29	3	683
701	002	24	4		1	29	709	002	105	29	12	11	157
701	003	1				1	709	003	13	3	11	2	29
701	005	23	5	1		29	709	004	2				2
701	007	48	7	2		57	709	005	83	18	3		104
701	008	9	8	2	6	25	709	007	330	53	17	5	405
701	010	2	1			3	709	008	72	27	16	8	123
701	013	24	1	1		26	709	009	1				1
701	014	112	5	2		119	709	010	12	7	9	2	30
701	015	10	2		1	13	709	011	2		3		5
701	016	86	14	2	3	105	709	013	98	4	7	1	110
701	017	1				1	709	014	280	40	9	4	333
Cl.2&3	Total	494	70	14	12	590	709	015	13	6	2		21
							709	016	285	31	7	10	333
							709	017	5	1			6
							Cl.2&3	Total	1,868	303	125	46	2,342
702	001	215	38	10	2	265							
702	002	74	31	6	2	113	713	001	275	32	9	4	320
712	003	44	32	20	14	110	713	002	81	10	15	2	108
702	004	1				1	713	003	8	10	5		23
702	005	33	4	1		38	713	005	59	15	2		76
702	007	95	22	4		121	713	007	189	23	8	2	222
702	008	20	13	1		34	713	008	36	9	10	2	57
702	013	14				14	713	013	20	4	5		29
702	014	47	4	1		52	713	014	125	19	8		152
702	015	7				7	713	015	26	9	7		42
702	016	115	14	8	1	138	713	016	179	37	21	1	238
702	017	18	2	1		21	713	017	2	1			3
Cl.2&3	Total	683	160	52	19	914	Cl.2&3	Total	1,000	169	90	11	1,270
704	001	314	49	9		372							
704	002	76	23	15	3	117	716	001	109	17	10		136
704	003	38	25	11		74	716	002	23	15	2		40
704	004	1		2		3	716	003	16	10	1		27
704	005	65	15	3		83	715	005	47	8	2		57
704	006	15				15	716	007	76	22	2		100
704	007	175	38	7		220	716	008	5	3	1		9
704	008	62	18	6		86	716	010			1		1
704	010	5	1	7		13	716	012	1				1
704	013	25	2			27	716	013	9	7			16
704	014	57	15			72	716	014	37	7	5		49
704	015	6	1			7	716	015	20	9	1		30
704	016	135	19	7		161	716	016	48	9	5		62
Cl.2&3	Total	974	206	67	3	1,250	716	018	1				1
							Cl.2&3	Total	392	107	30		529
706	001	293	39	5	2	339							
706	002	71	23	12	2	108	701	702			1		1
706	003	2	4	2	4	12	701	704	6	3	1		10
706	005	53	12	2	1	68	701	706	39	7	15	8	69
706	006	1				1	701	709	1,095	95	77	293	1,560
706	007	123	19	6	5	153	701	710	2				2
706	008	55	15	14	5	89	701	713	82	13	6	12	113
706	010		2			2	701	714	4		1		5
706	013	34				34	701	716	14	2	3		19
706	014	104	22			126	Cl.4	Total	1,242	120	104	313	1,779
706	015	4				4	Cl.2&3	Total	494	70	14	12	590
706	016	111	16	2		129	701	Total	1,736	190	118	325	2,369
706	017	3				3							
Cl.2&3	Total	854	152	43	19	1,068							

VEHICLE TRIPS						
Between	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	
702	701			1		1
702	703	26		2		28
702	704	4	3			7
702	706	12	2	1		15
702	709	38	5	2	2	47
702	713	8	1		2	11
702	714		1			1
702	716	2		1		3
Cl.4	Total	90	12	7	4	113
Cl.2&3	Total	683	160	52	19	914
702	Total	773	172	59	23	1,027
704	701	6	3	1		10
704	702	4	3			7
704	705	1	1	1		3
704	706	19	6	4	1	30
704	709	123	22	14	5	164
704	713	49	16	12	7	84
704	714	4	10	25		39
704	715	1				1
704	716	11	2	2		15
Cl.4	Total	218	63	59	13	353
Cl.2&3	Total	974	206	67	3	1,250
704	Total	1,192	269	126	16	1,603
706	701	39	7	15	8	69
706	702	12	2	1		15
706	704	19	6	4	1	30
706	709	44	8	6	4	62
706	711			1		1
706	713	110	23	11	13	157
706	714	1				1
706	716	9	2	5	1	17
Cl.4	Total	234	48	43	27	352
Cl.2&3	Total	854	152	43	19	1,068
706	Total	1,088	200	86	46	1,420

VEHICLE TRIPS						
Between	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total	
709	701	1,095	95	77		293
709	702	38	5	2		47
709	704	123	22	14		164
709	706	44	8	6		62
709	711	1				1
709	712		1			1
709	713	119	20			11
709	714	1				1
709	716	45	5			53
Cl.4	Total	1,466	156	109		315
Cl.2&3	Total	1,868	303	125		46
709	Total	3,334	459	234		361
713	701	82	13	6		12
713	702	8	1			2
713	703	3		11		14
713	704	49	16	12		7
713	706	110	23	11		13
713	709	119	20	7		11
713	714	8	9			18
713	716	6	1			9
Cl.4	Total	385	83	56		45
Cl.2&3	Total	1,000	169	90		11
713	Total	1,385	252	146		56
716	701	14	2			19
716	702	2				3
716	704	11	2			15
716	706	9	2			1
716	709	45	5			53
716	713	6	1			9
Cl.4	Total	87	12	16		1
Cl.2&3	Total	392	107	30		529
716	Total	479	119	46		1

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