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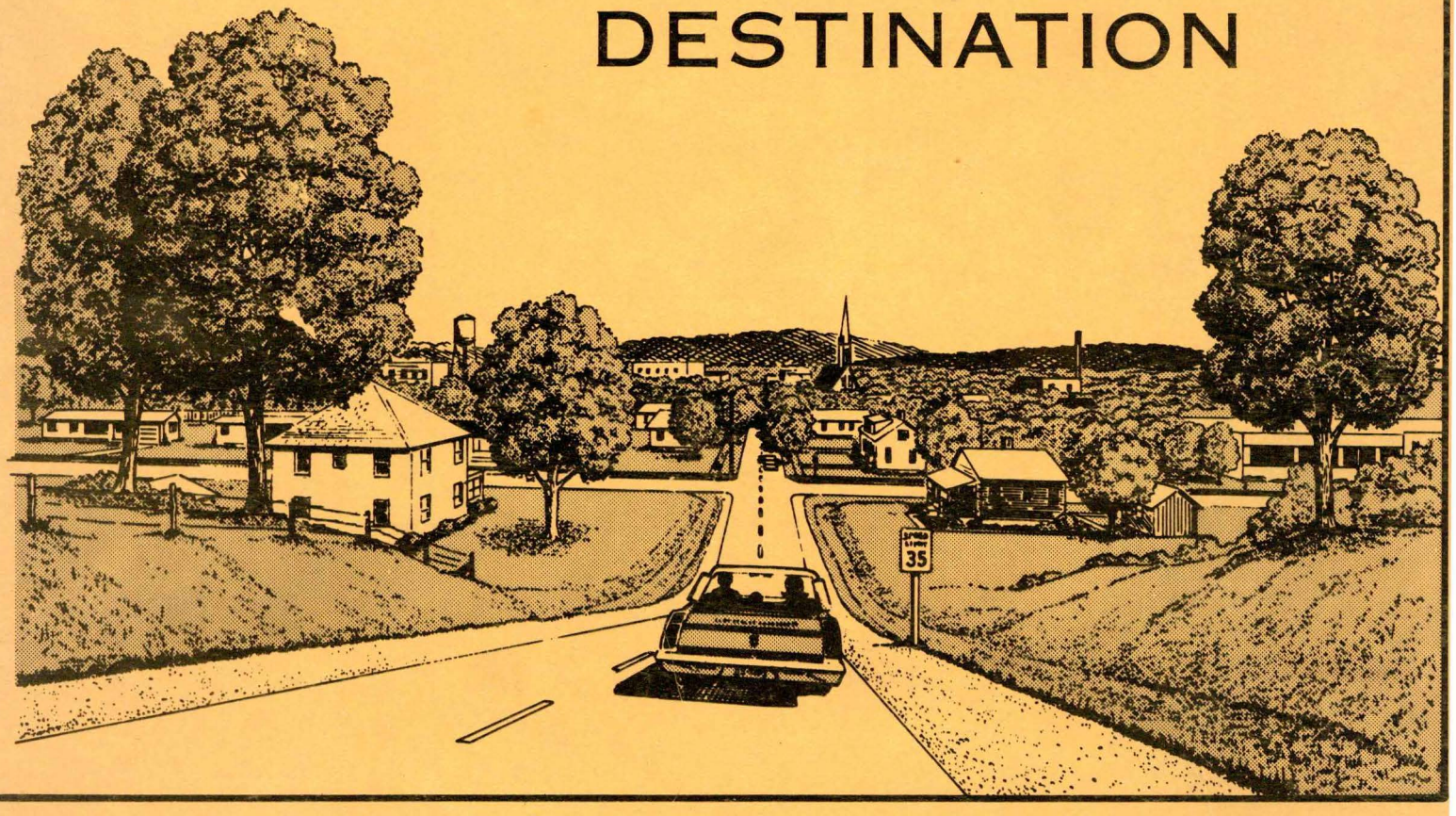
VINTON

ORIGIN AND DESTINATION



TRAFFIC REPORT

IOWA

JUNE OF 1969

STATE OF IOWA

VINTON

ORIGIN AND DESTINATION TRAFFIC REPORT

DATA GATHERED JUNE 1969

PUBLISHED MARCH 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 Vinton 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 Vinton 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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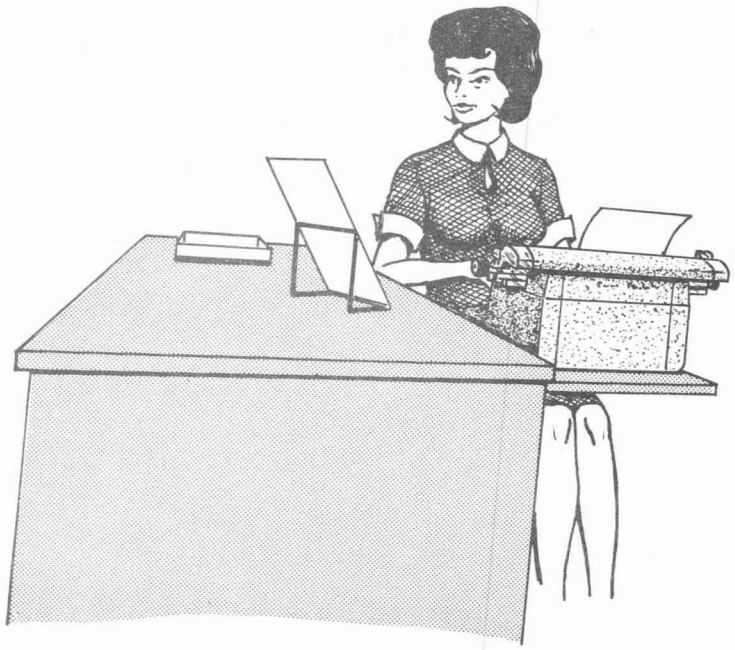
DEFINITIONS OF TECHNICAL TERMS

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 passes 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

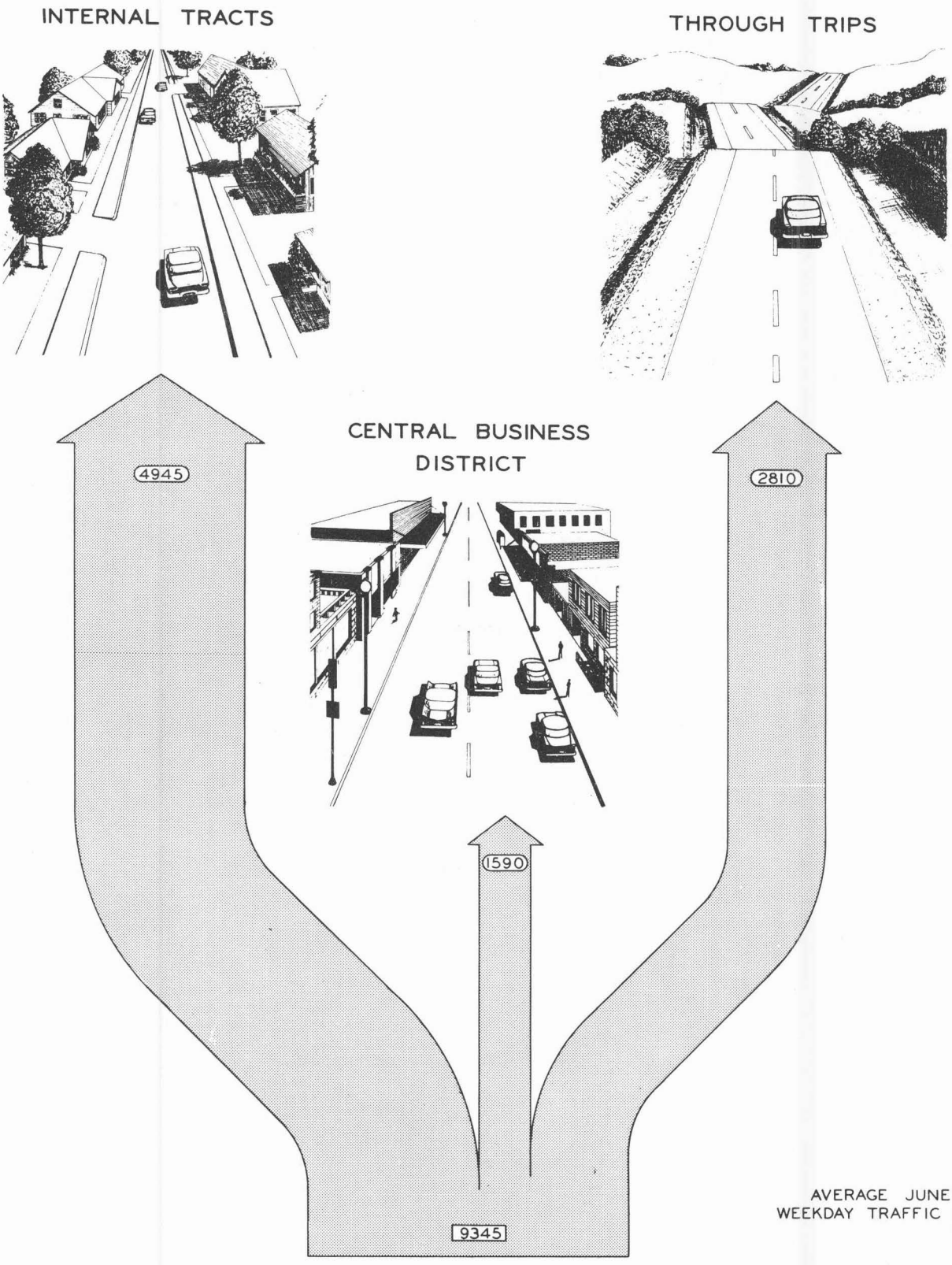


Part One

FIGURE I-1

DISTRIBUTION OF TRIPS

VINTON STUDY AREA



AVERAGE JUNE
WEEKDAY TRAFFIC 1969

SUMMARY

The chart at left graphically illustrates some of the more significant traffic volumes derived from the Vinton origin and destination traffic survey. An average of 9,345 trips per day passed through the external cordon line of interview stations surrounding the study area during the survey period.

1,590 trips or 17.01 percent of the total number of trips were between external areas and the central business district.

4,945 trips or 52.92 percent of the total number of trips were between external and internal areas exclusive of the central business district.

2,810 trips or 30.07 percent of the total number of trips were through trips which passed through Vinton enroute to another destination.

Of the total number of trips which passed through interview stations, 17.38 percent began or ended at work, 28.02 percent were for social or recreational purposes, 26.67 percent were during work, 8.08 percent were for personal business, 12.42 percent were for shopping, and the remaining 7.43 percent were for other purposes.

FIGURE 1-2
REGIONAL INFLUENCE OF THE VINTON STUDY AREA

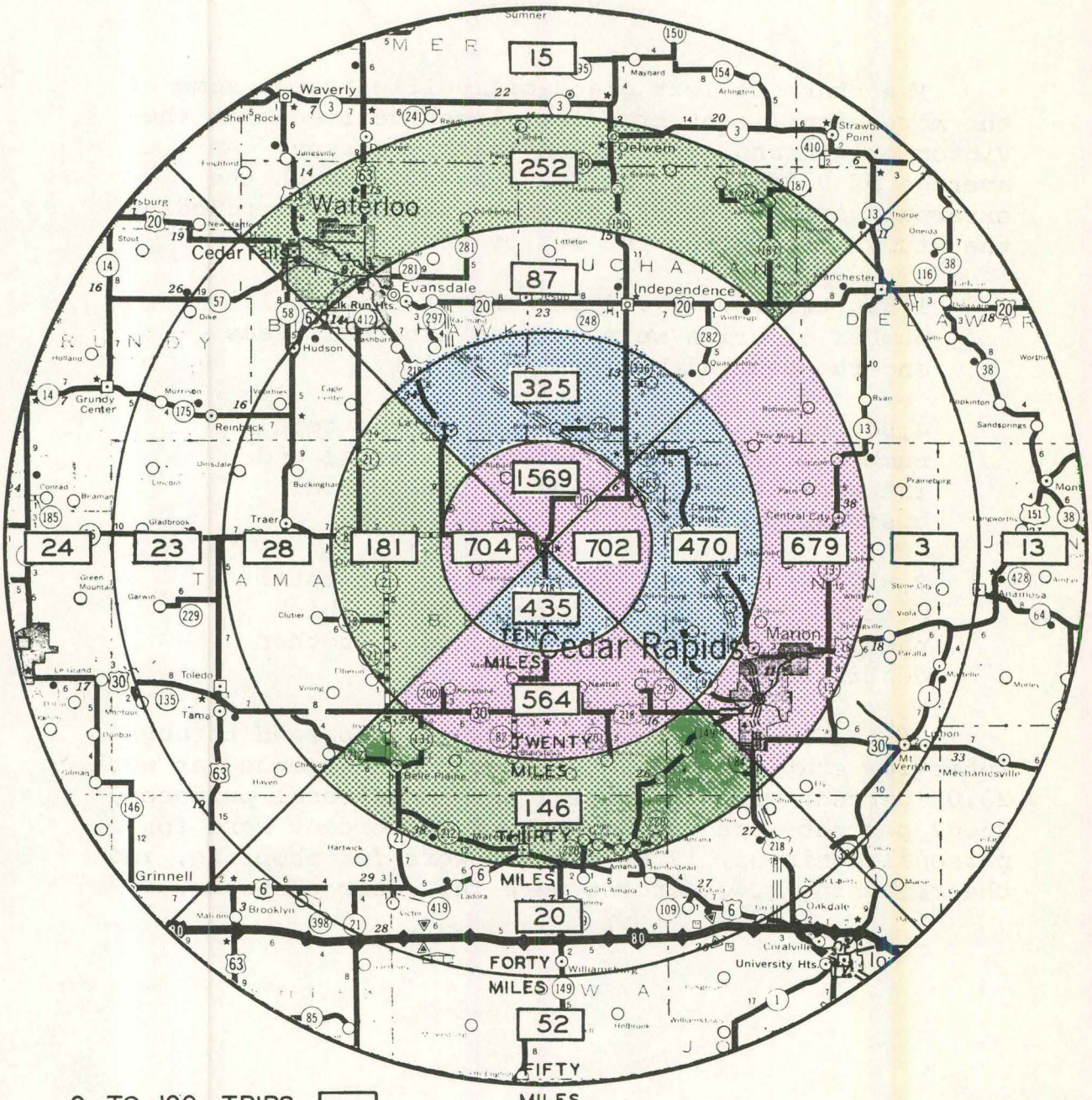

15
252
87
325
1569
24
23
28
181
704
702
470
679
3
13
435
564
146
20
52
TEN MILES
TWENTY MILES
THIRTY MILES
FORTY MILES
FIFTY MILES
Cedar Rapids
Waterloo
Cedar Falls
Evansdale
Independence
Waverly
Oelwein
Grundy Center
Reinbeck
Hudson
Traer
Tama
Toledo
Grinnell
Brooklyn
Marion
Mt Vernon
Mechanicsville
Oakdale
Coralville
University Hts
Shell Rock
Janesville
Denver
Littleton
Manchester
Strawberry Point
Sumner
Maynard
Arlington
Thorpe
Oneida
Sandsprings
Prairieburg
Central City
Stone City
Viola
Paralta
Lisbon
Amana
Homestead
South Amana
Ladora
Victor
Williamsburg
Hartwick
Malcom
Gilman
Garwin
Clutier
Buckingham
Dysart
Vining
Elberon
Belle Plaine
Haven
Chelsea
Le Grand
Green Mountain
Conrad
Beaman
Gladbrook
Dike
Holland
Morrison
Wellsburg
Stout
New Hartford
Shell Rock
Janesville
Denver
Readlyn
Parkersburg
Aplington
Dumont
Hazleton
Littleton
Jesup
Wapsie
Fairbank
Oelwein
Strawberry Point
Thorpe
Oneida
Manchester
Lamont
Delaware
Worthington
Ryan
Hopkinton
Sandsprings
Monmouth
Amanda
Anamosa
Mechanicsville
Mt Vernon
Lisbon
Marion
Cedar Rapids
Central City
Prairieburg
Longworth
Monticello
Oakdale
Coralville
University Hts
Iowa City
Williamsburg
Brooklyn
Grinnell
Malcom
Hartwick

Table 1-1

REGIONAL INFLUENCE OF THE VINTON 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	1,569	24.94
	10 - 20	325	5.17
	20 - 30	87	1.38
	30 - 40	252	4.00
	40 - 50	15	.24
North Total		2,248	35.73
East	0 - 10	702	11.16
	10 - 20	470	7.47
	20 - 30	679	10.78
	30 - 40	3	.05
	40 - 50	13	.21
East Total		1,867	29.67
West	0 - 10	704	11.19
	10 - 20	181	2.87
	20 - 30	28	.45
	30 - 40	23	.37
	40 - 50	24	.38
West Total		960	15.26
South	0 - 10	435	6.91
	10 - 20	564	8.96
	20 - 30	146	2.32
	30 - 40	20	.32
	40 - 50	52	.83
South Total		1,217	19.34
Grand Total		6,292	100.00

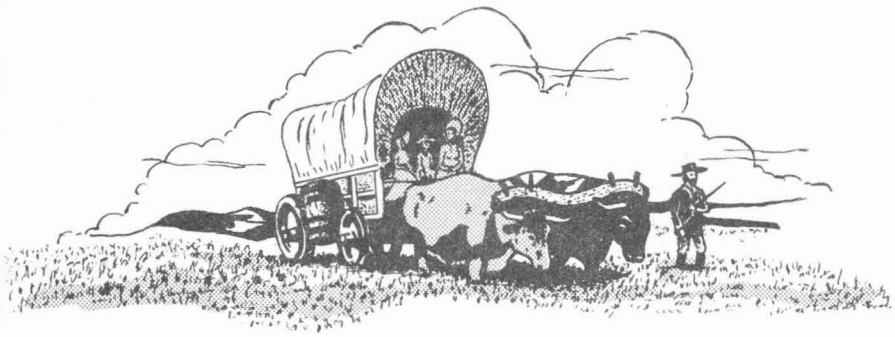
TABLE I-2

VEHICLE TYPE SUMMARY
VINTON STUDY AREA

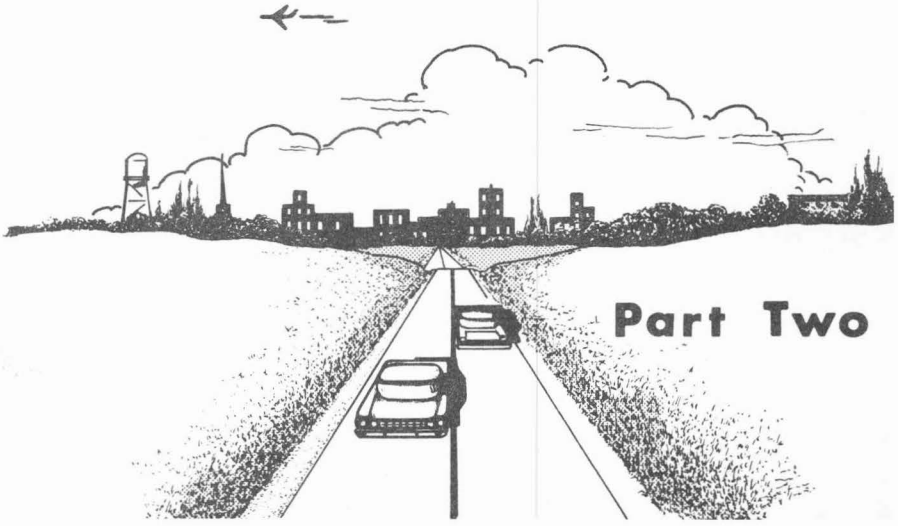
1969 AVERAGE JUNE WEEKDAY

Station	Location	Passenger Cars	Pickups and Panels	Single Unit Trucks	Truck Combi-nations	Total
701	Iowa 101 North	2,078	427	225	73	2,803
703	County Road E-24 East	598	129	47	1	775
706	U.S. 218 South	3,232	389	319	597	4,537
709	Local Road West	138	44	7	--	189
711	U.S. 218 West	2,314	282	172	509	3,277
712	County Road E-12 Northwest	445	71	42	3	561
Grand Total		8,805	1,342	812	1,183	12,142

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

Vinton is the county seat of Benton County. The county was first created in 1837 by the Wisconsin Legislature, as Iowa was at that time part of Wisconsin. The county received its present boundaries in 1846, the same year Iowa was admitted as a state.

After organization of the county, a town named Fremont was selected as county seat. The town name was changed to Vinton after Flynn Vinton, an Ohio Congressman who paid $50 for the honor.

All Vinton utilities except natural gas are municipally owned and operated. Water is supplied by three wells with a pumping capacity in excess of 1½ million gallons per day. Sewage is treated in a three step plant; primary treatment, filtration, and secondary treatment. Electric power is supplied by a city plant with a generator capacity of 9,785 kilowatts. Natural gas service is provided by a private franchise.

The Vinton-Garrison Public School system consists of three grade schools, a junior high, and senior high. The system is fully accredited and offers a full curriculum and athletic, music and speech program. The School for the Blind, established by the Iowa General Assembly in 1858 is also located at Vinton.

Fire protection is provided by a volunteer fire fighting force. Equipment consists of four completely equipped fire trucks.

Seven full time officers plus five standby officers provide police protection. A radio equipped squad car is used for patrol duty within the city.

The Vinton Municipal Airport, located north of the city, has north-south and east-west hard surfaced runways. Mechanical service, flight instructions and charter and air ambulance service are provided.

Vinton is served by U.S. Highway 218 and Iowa Highway 101. Bus transportation is provided six times daily north and south. Five Vinton area based trucking firms make use of the highway connections with other cities. In addition to the highway transportation facilities, the Rock Island Railroad also provides freight service to the area.

POPULATION TRENDS

Vinton Population

Table 2-1

Census Year	Vinton Population	Volume Increase or Decrease	Percent Change 10-Year Period
1900	3,499	--	--
1910	3,336	-163	-4.66
1920	3,381	45	1.35
1930	3,372	- 9	- .27
1940	4,163	791	23.46
1950	4,307	144	3.46
1960	4,781	474	11.01
* 1966	4,899	118	2.47

* Special Census

Benton County Population

Table 2-2

Census Year	Benton Co. Population	Volume Increase or Decrease	Percent Change 10-Year Period
1850	672	--	--
1860	8,496	7,824	1,164.29
1870	22,454	13,958	164.33
1880	24,885	2,431	10.83
1890	24,177	- 708	-2.85
1900	25,177	1,000	4.14
1910	23,156	-2,021	-8.03
1920	24,080	924	3.99
1930	22,851	-1,229	-5.10
1940	22,879	28	.12
1950	22,656	- 223	- .97
1960	23,422	766	3.38

Figure 2-1

POPULATION TRENDS

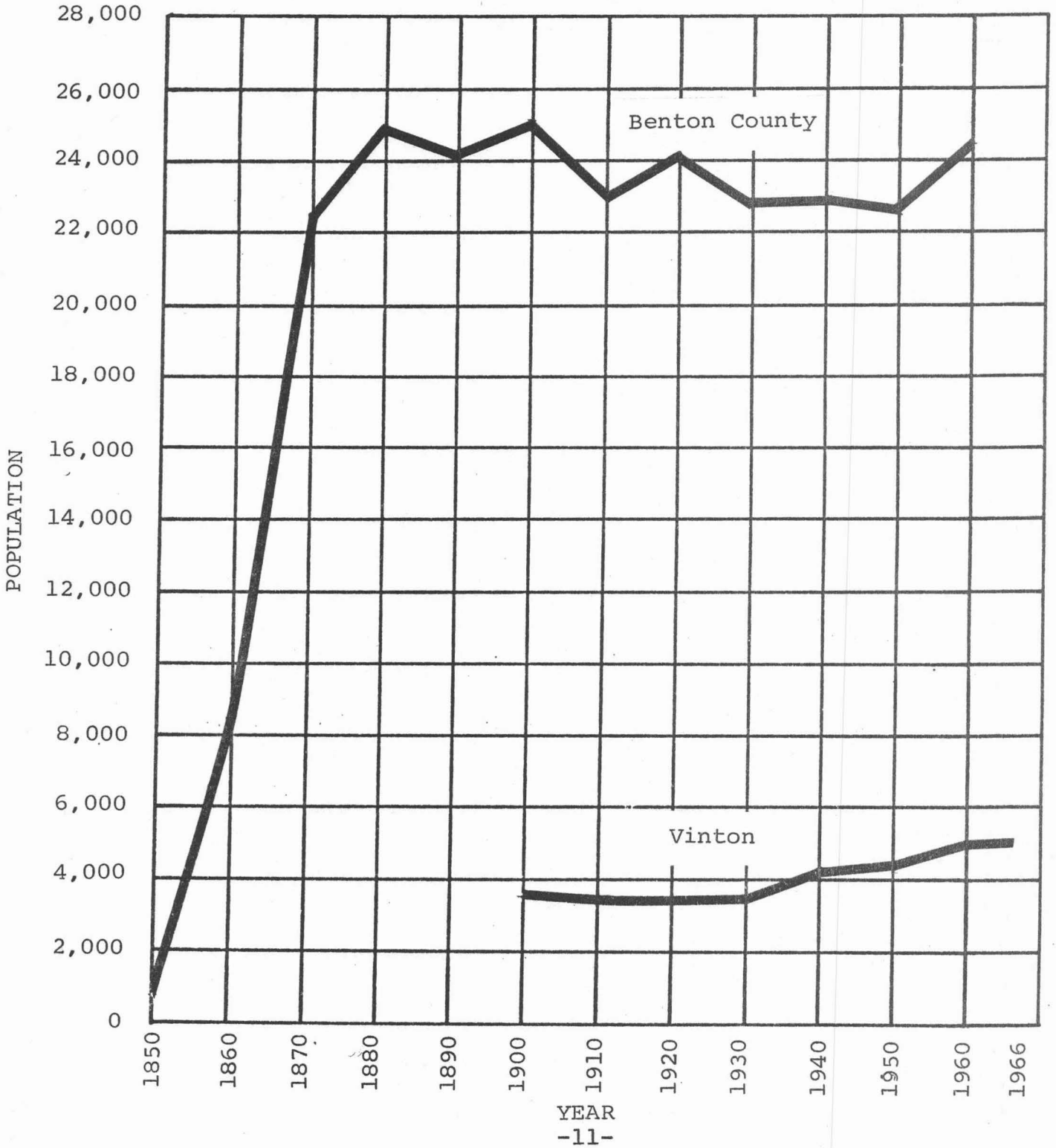


Table 2-3

MOTOR VEHICLE REGISTRATION IN BENTON COUNTY
FROM 1939 THROUGH 1969

Year	Autos	Trucks	Motorcycles	Total	Percent Increase
1939	6,561	1,039	18	7,618	--
1940	6,723	1,113	30	7,866	3.26
1941	6,850	1,232	38	8,120	3.23
1942	6,241	1,178	31	7,450	-8.25
1943	5,875	1,151	27	7,053	-5.33
1944	5,835	1,152	22	7,009	- .62
1945	5,792	1,172	22	6,986	- .33
1946	6,038	1,309	25	7,372	5.53
1947	6,440	1,467	51	7,958	7.95
1948	6,869	1,639	64	8,572	7.72
1949	7,562	1,826	74	9,462	10.38
1950	8,033	1,937	81	10,051	6.22
1951	8,090	2,052	84	10,226	1.74
1952	7,952	2,123	98	10,173	- .52
1953	8,105	2,201	87	10,393	2.16
1954	8,160	2,291	81	10,532	1.34
1955	8,470	2,336	73	10,879	3.29
1956	8,422	2,400	68	10,890	.10
1957	8,593	2,433	84	11,110	2.02
1958	8,742	2,559	95	11,396	2.57
1959	8,985	2,641	90	11,716	2.81
1960	9,105	2,622	94	11,821	.90
1961	9,029	2,656	90	11,775	- .39
1962	9,383	2,720	91	12,194	3.56
1963	9,631	2,814	95	12,540	2.84
1964	9,907	2,865	108	12,880	2.71
1965	10,163	3,020	146	13,329	3.49
1966	10,547	3,253	161	13,961	4.74
1967	10,579	3,345	208	14,132	1.22
1968	10,722	3,498	228	14,448	2.24
1969	10,746	3,651	285	14,682	1.62

Figure 2-2

MOTOR VEHICLE REGISTRATION IN BENTON COUNTY
FROM 1939 THROUGH 1969

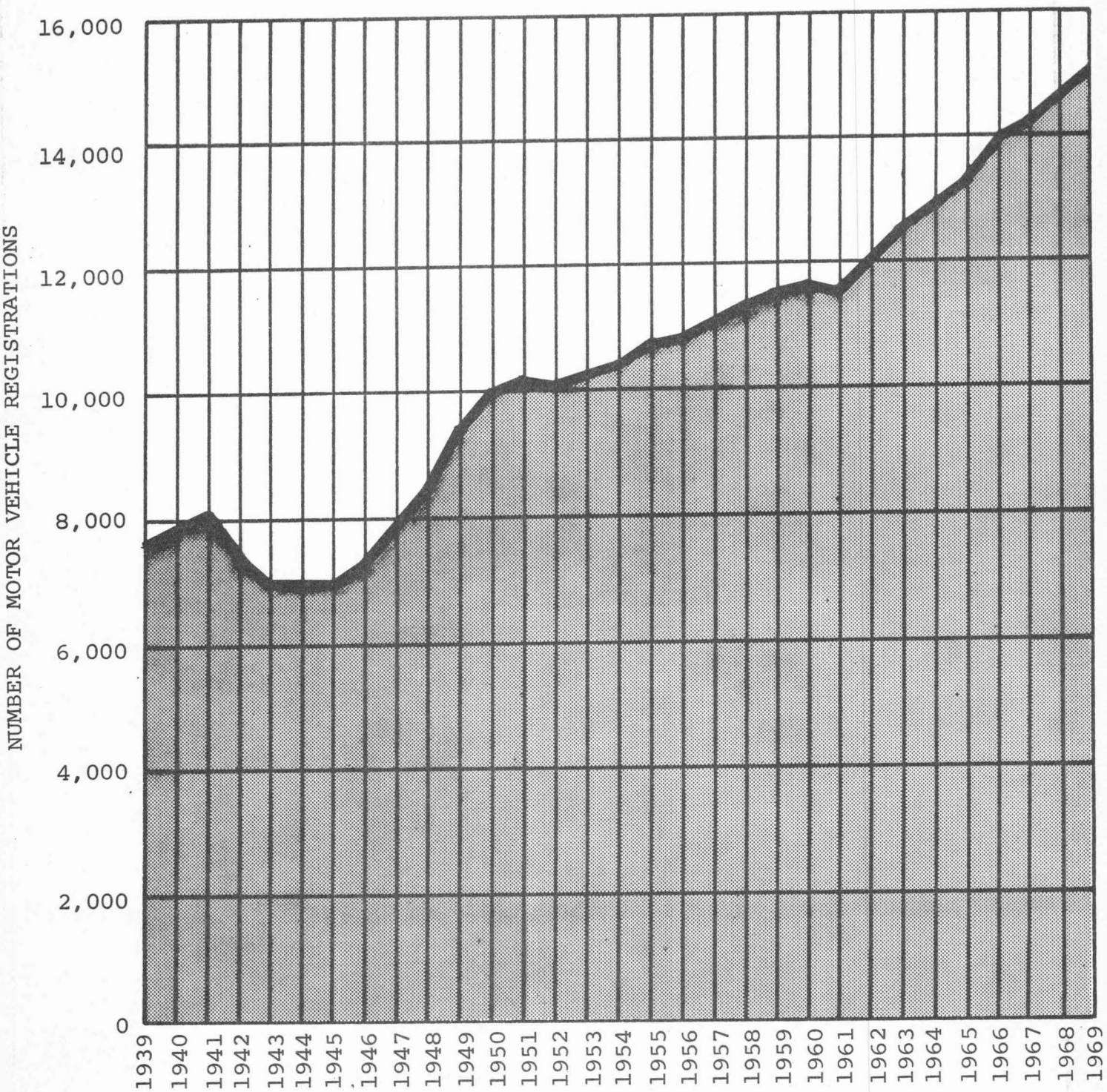
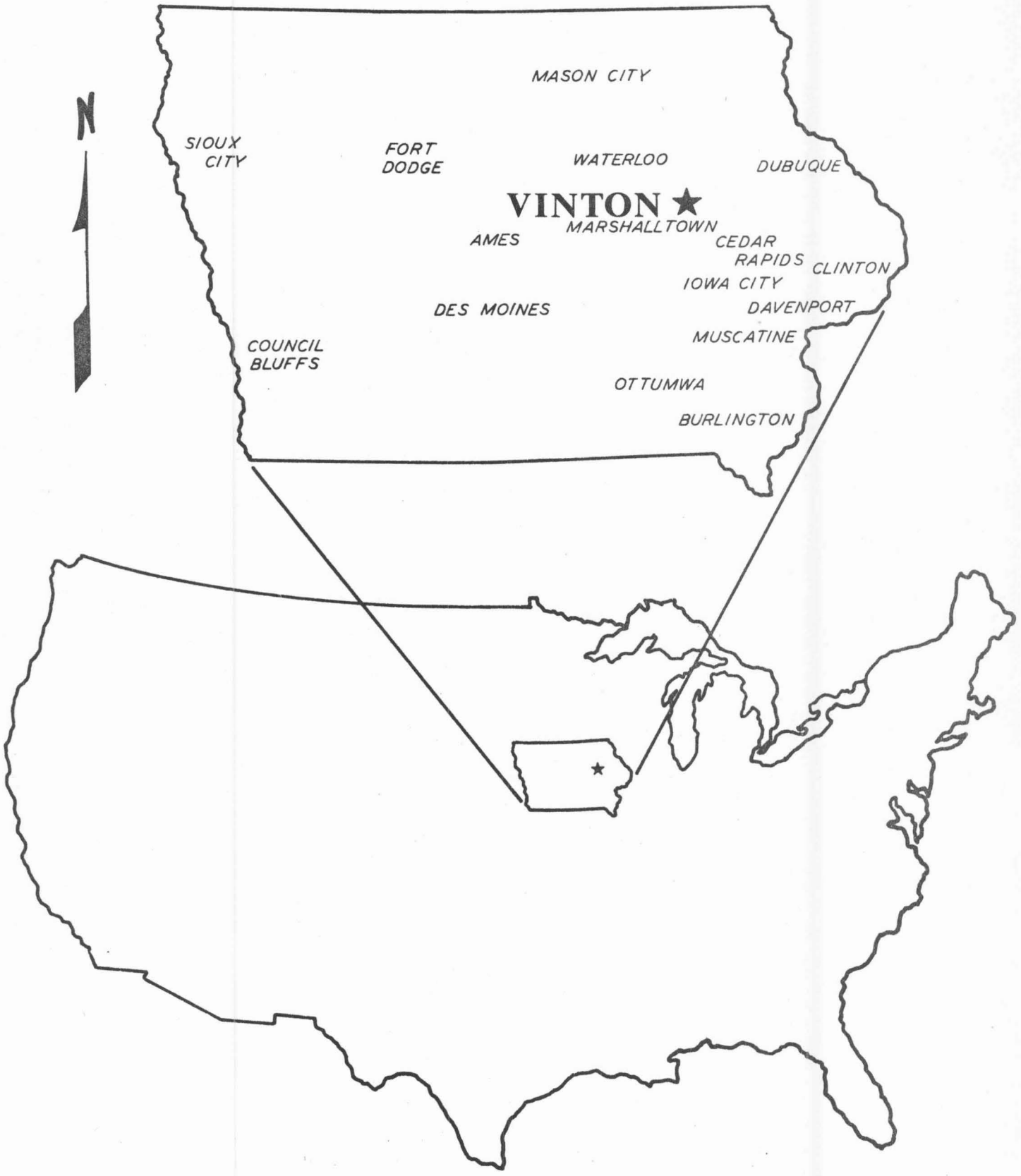
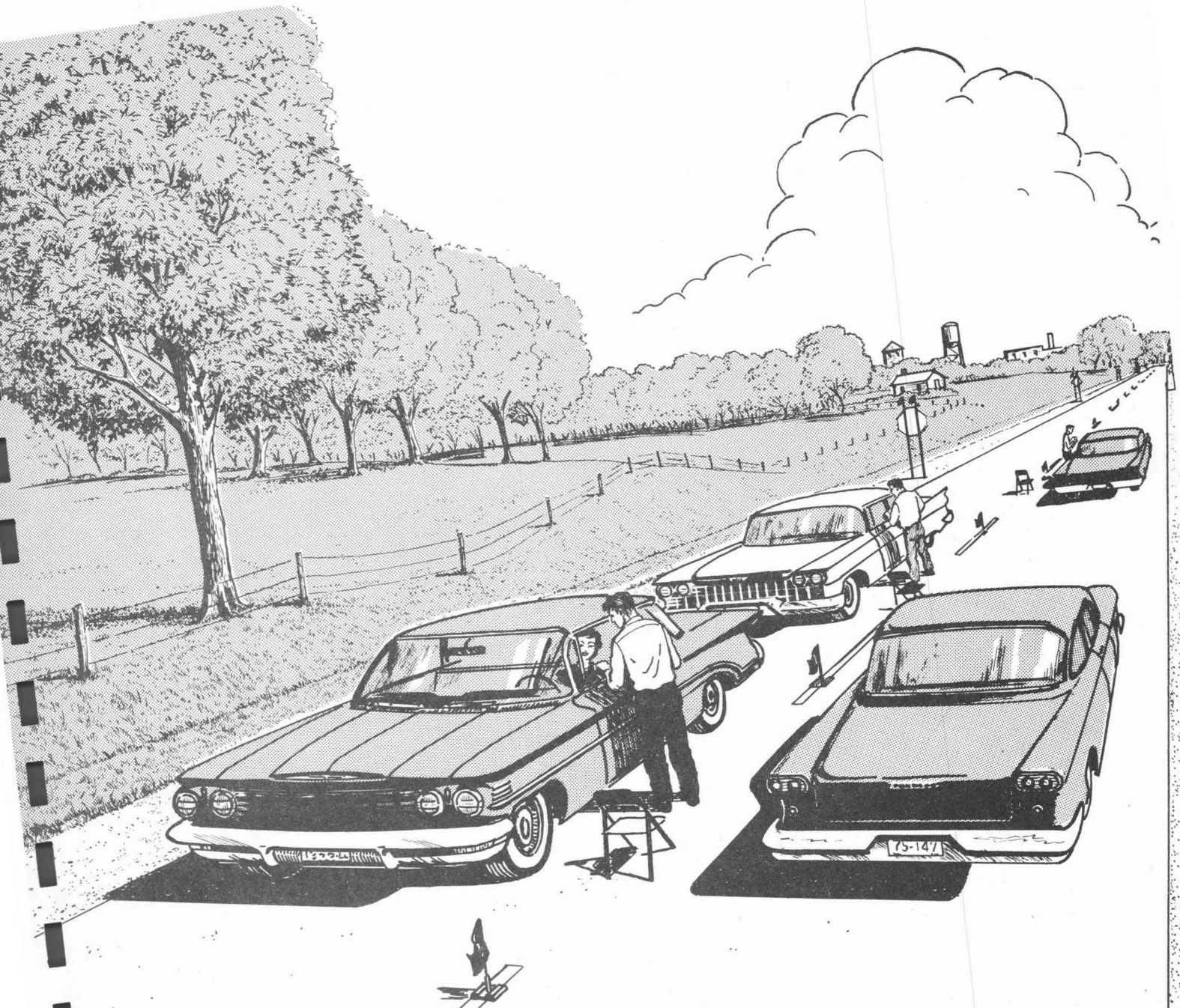


FIGURE 2-3

STUDY AREA POSITION





Survey Procedures

Part Thr

THE SURVEY

An external origin and destination traffic survey, of the type conducted in Vinton, 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 17 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 Vinton survey was done between June 16th and 20th in 1969. All vehicles passing through interview stations during a 15-hour period form 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.

Because U.S. 218 was closed at its junction with Iowa 8 during the time of this study a portion of the trips that would normally be routed through station 711 were intercepted at stations 712 and 713.

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 mechical 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.

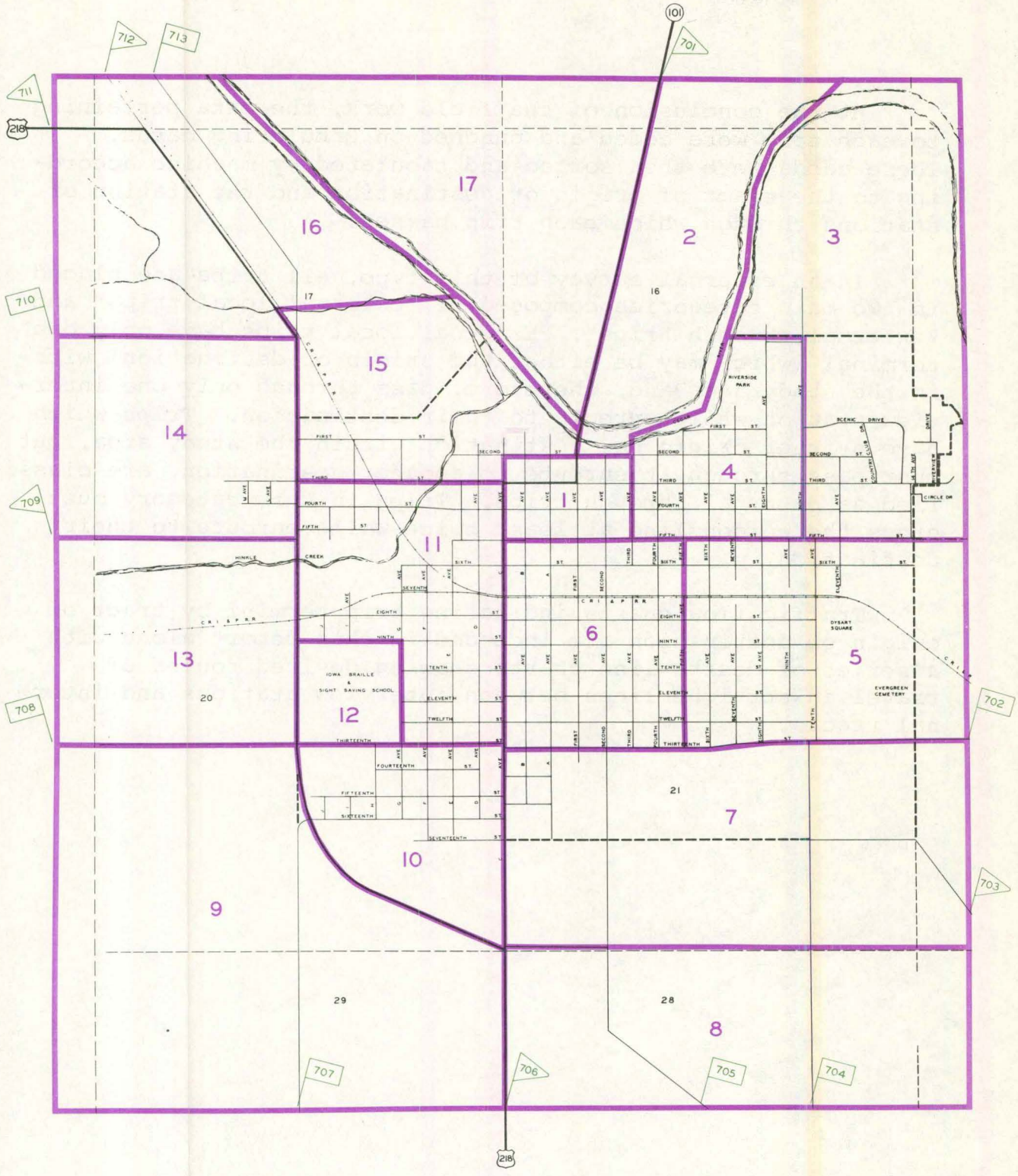


FIGURE 3-1

TRACT MAP OF THE

VINTON STUDY AREA

JUNE 1969

LEGEND

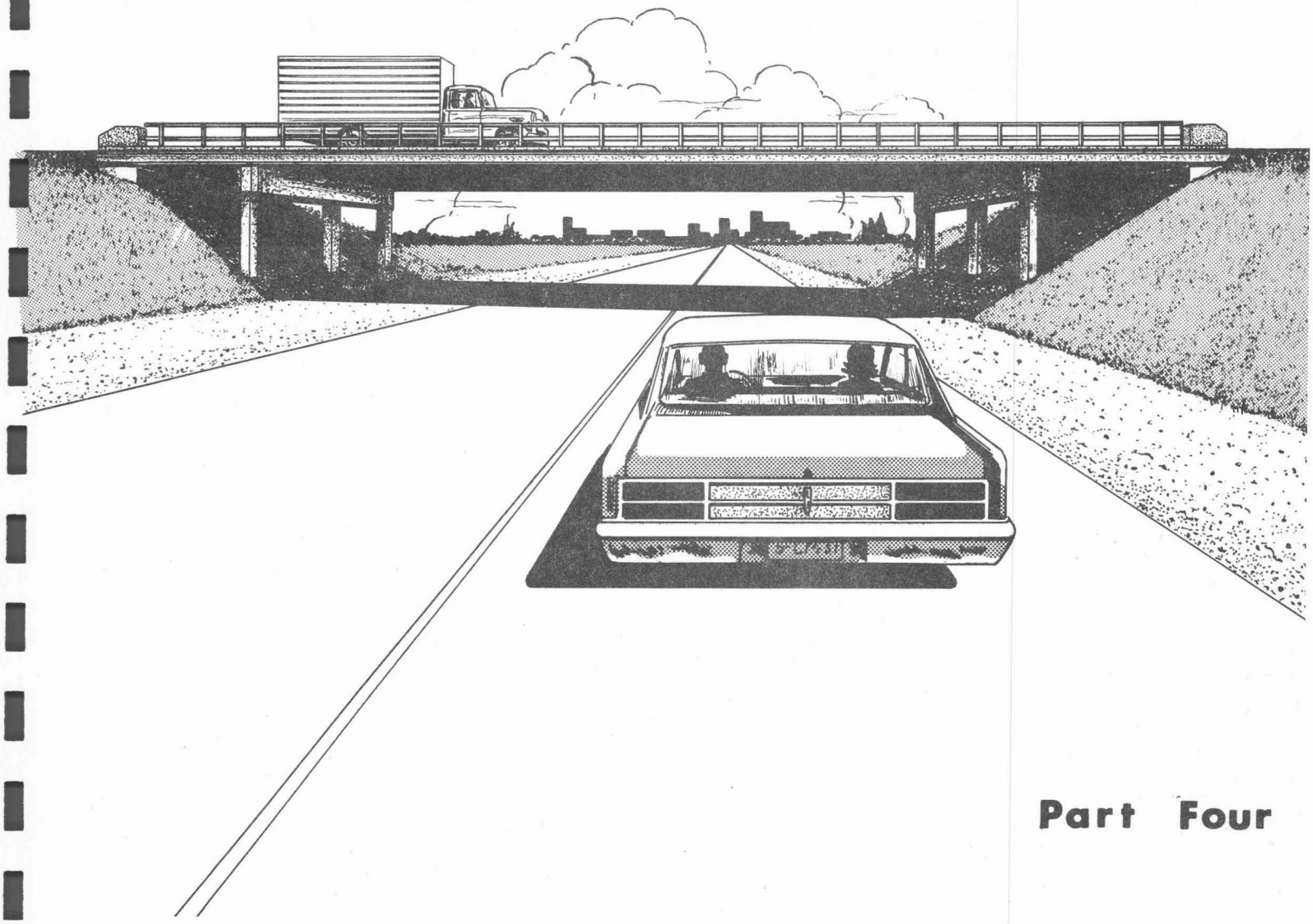
TRACT NUMBER 2

TRACT BOUNDARY LINE 702

CODE STATION LOCATION---

INTERVIEW STATION LOCATION 701

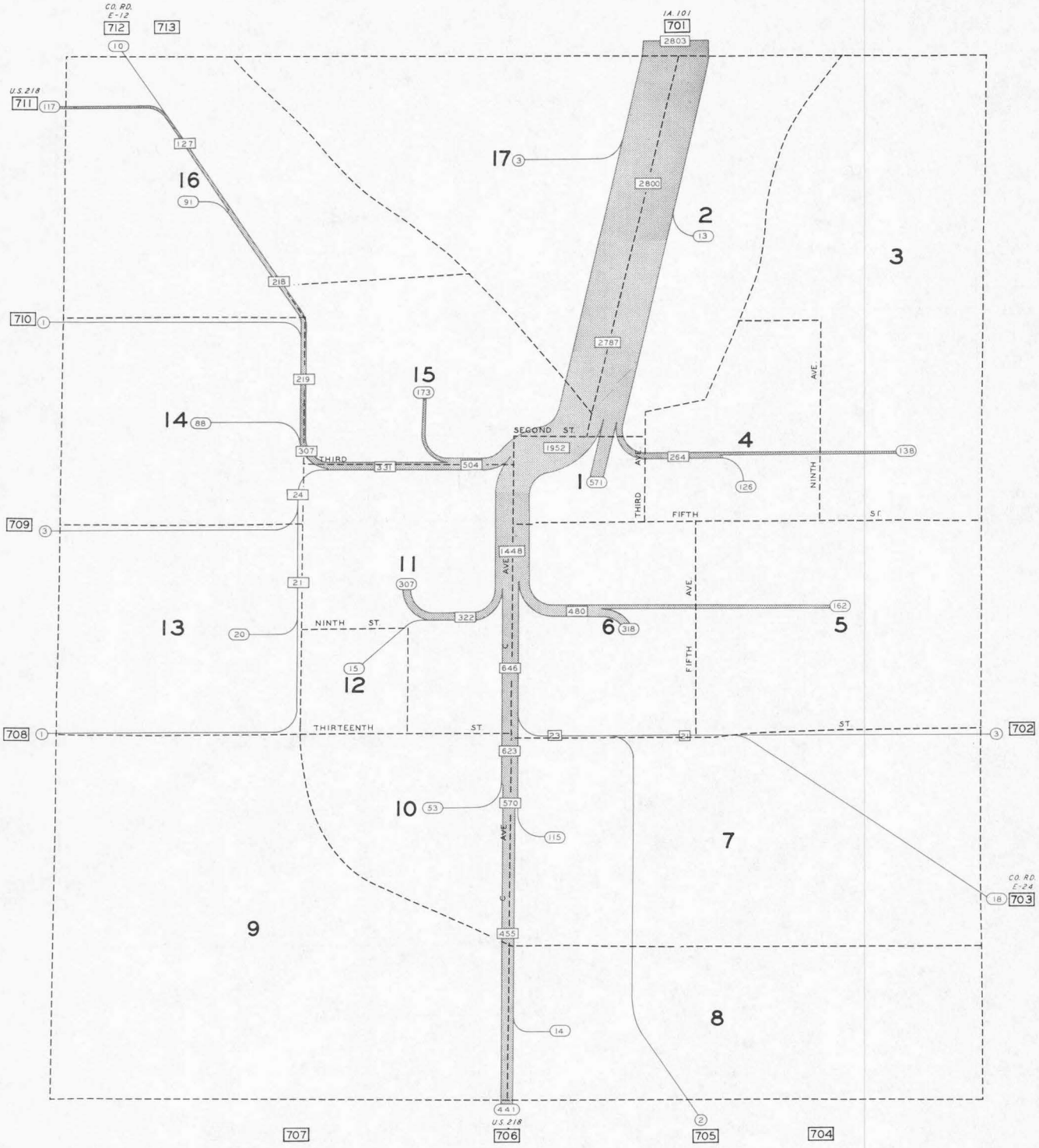
Traffic Movements



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 _____

GRAPHIC SCALE

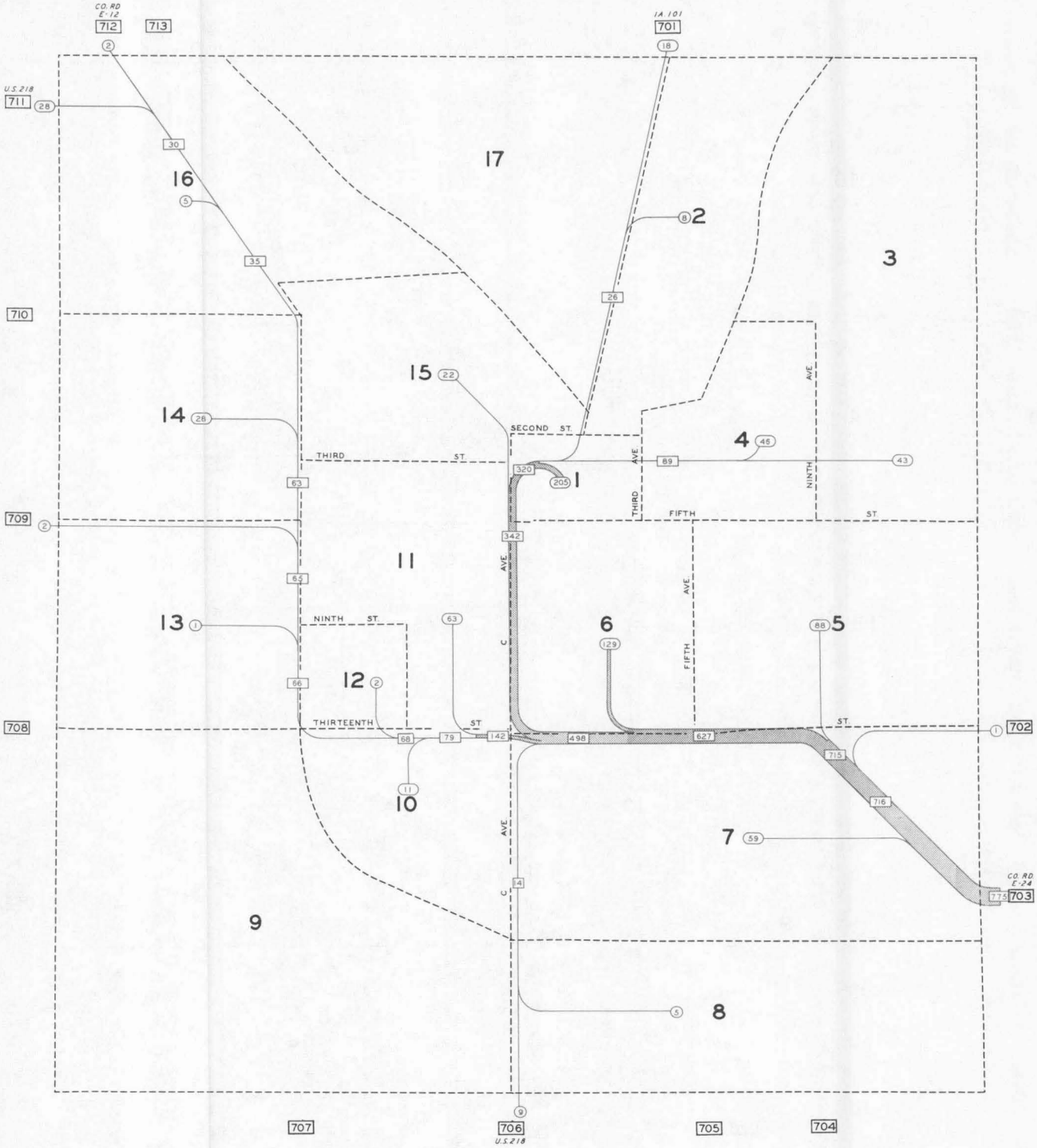
4000 TRIPS
2000 TRIPS
1000 TRIPS
500 TRIPS

1969 AVERAGE JUNE WEEKDAY TRAFFIC

FIGURE 4-1

INTERNAL DISPERSION OF ALL VEHICULAR TRIPS PASSING THROUGH STATION 701 - IA. 101 NORTH OF THE

VINTON STUDY AREA



LEGEND

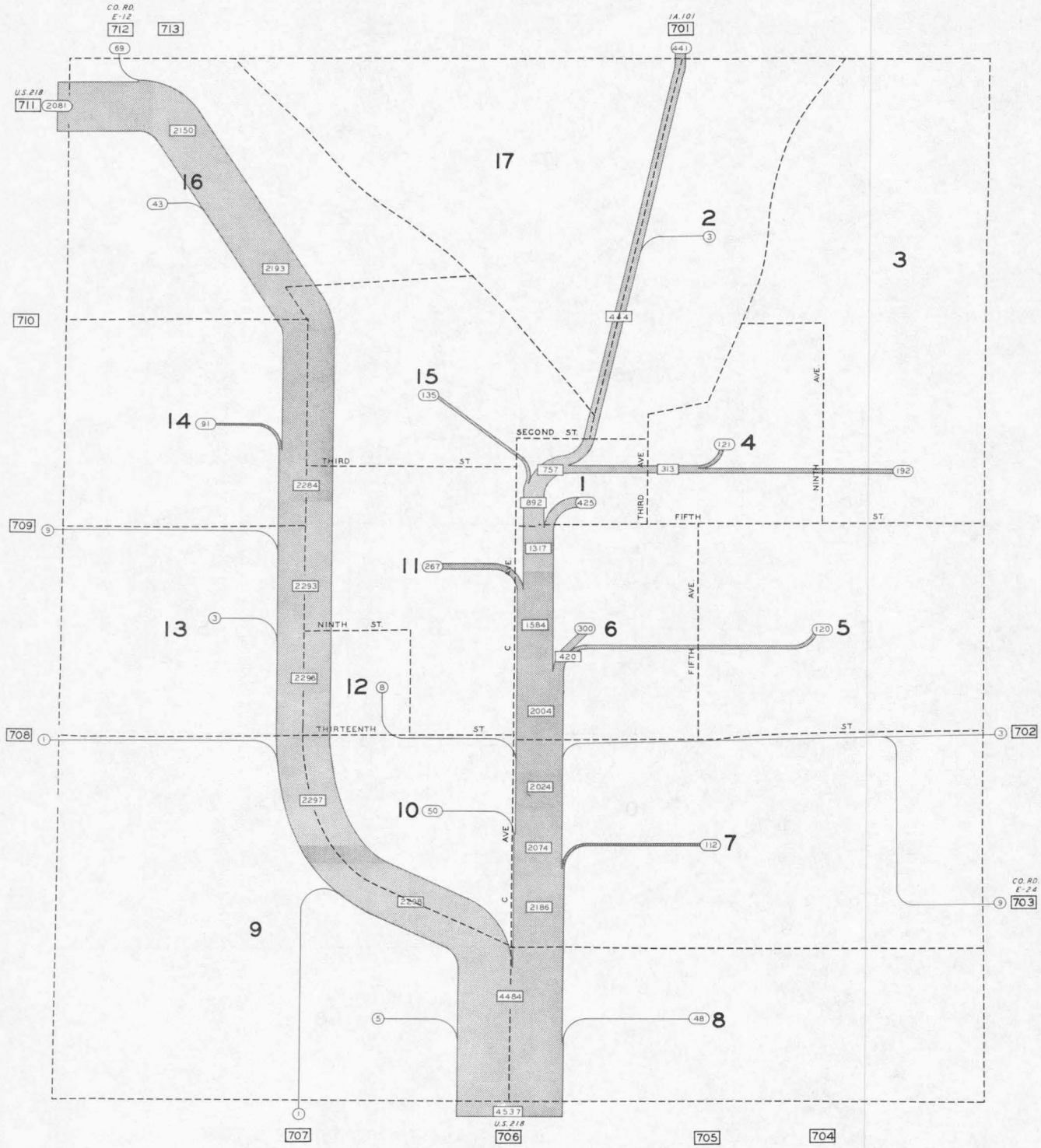
TRACT BOUNDARY LINE _____

GRAPHIC SCALE

4000 TRIPS
2000 TRIPS
1000 TRIPS
500 TRIPS

1969 AVERAGE JUNE WEEKDAY TRAFFIC

FIGURE 4-2
INTERNAL DISPERSION OF
ALL VEHICULAR TRIPS PASSING THROUGH
STATION 703-CO. RD. E-24 SOUTHEAST
OF THE
VINTON STUDY AREA



LEGEND

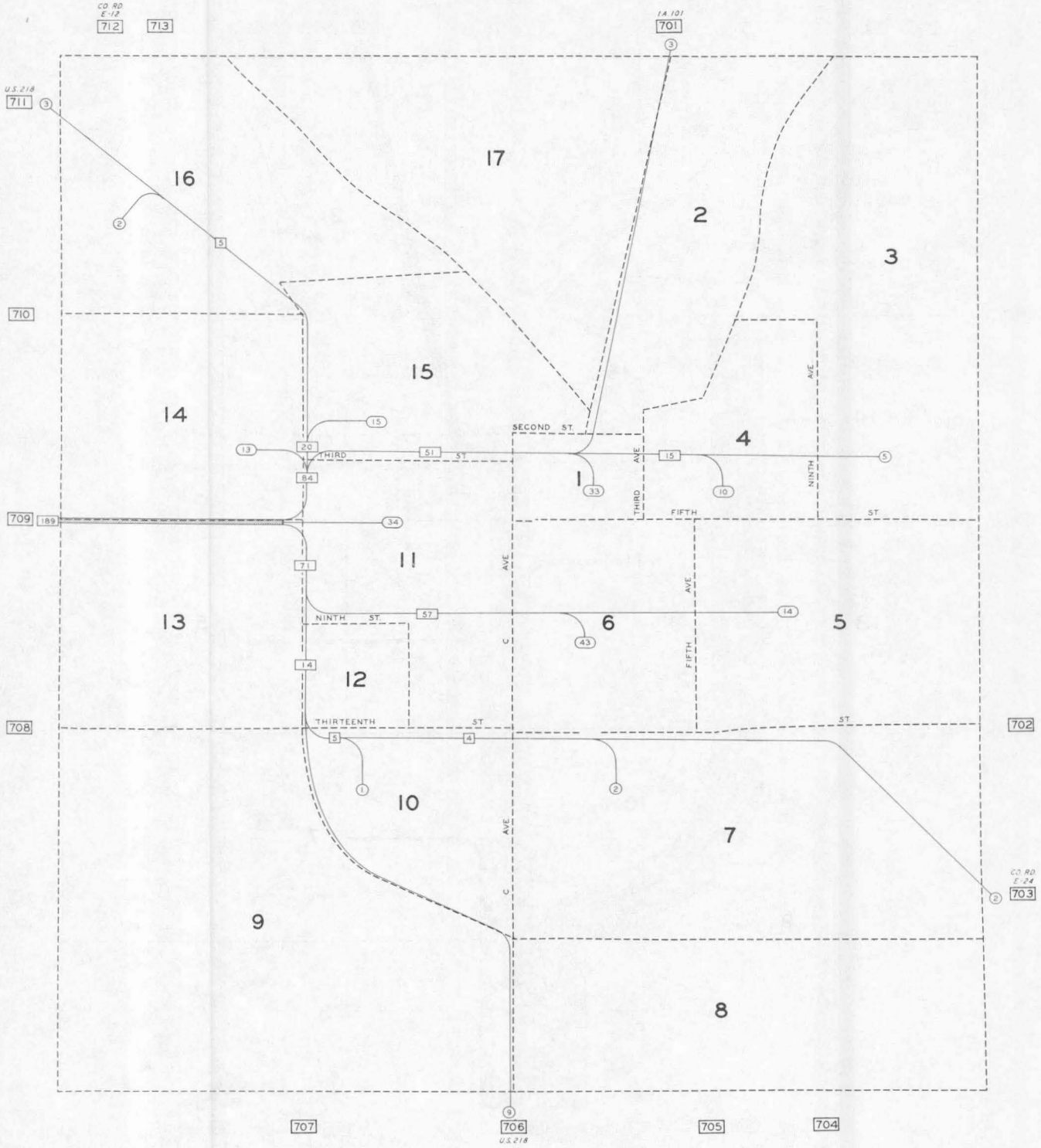
TRACT BOUNDARY LINE _____

GRAPHIC SCALE

4000 TRIPS
2000 TRIPS
1000 TRIPS
500 TRIPS

1969 AVERAGE JUNE WEEKDAY TRAFFIC

FIGURE 4 – 3
INTERNAL DISPERSION OF
ALL VEHICULAR TRIPS PASSING THROUGH
STATION 706 – U.S. 218 SOUTH
OF THE
VINTON STUDY AREA



LEGEND

TRACT BOUNDARY LINE _____

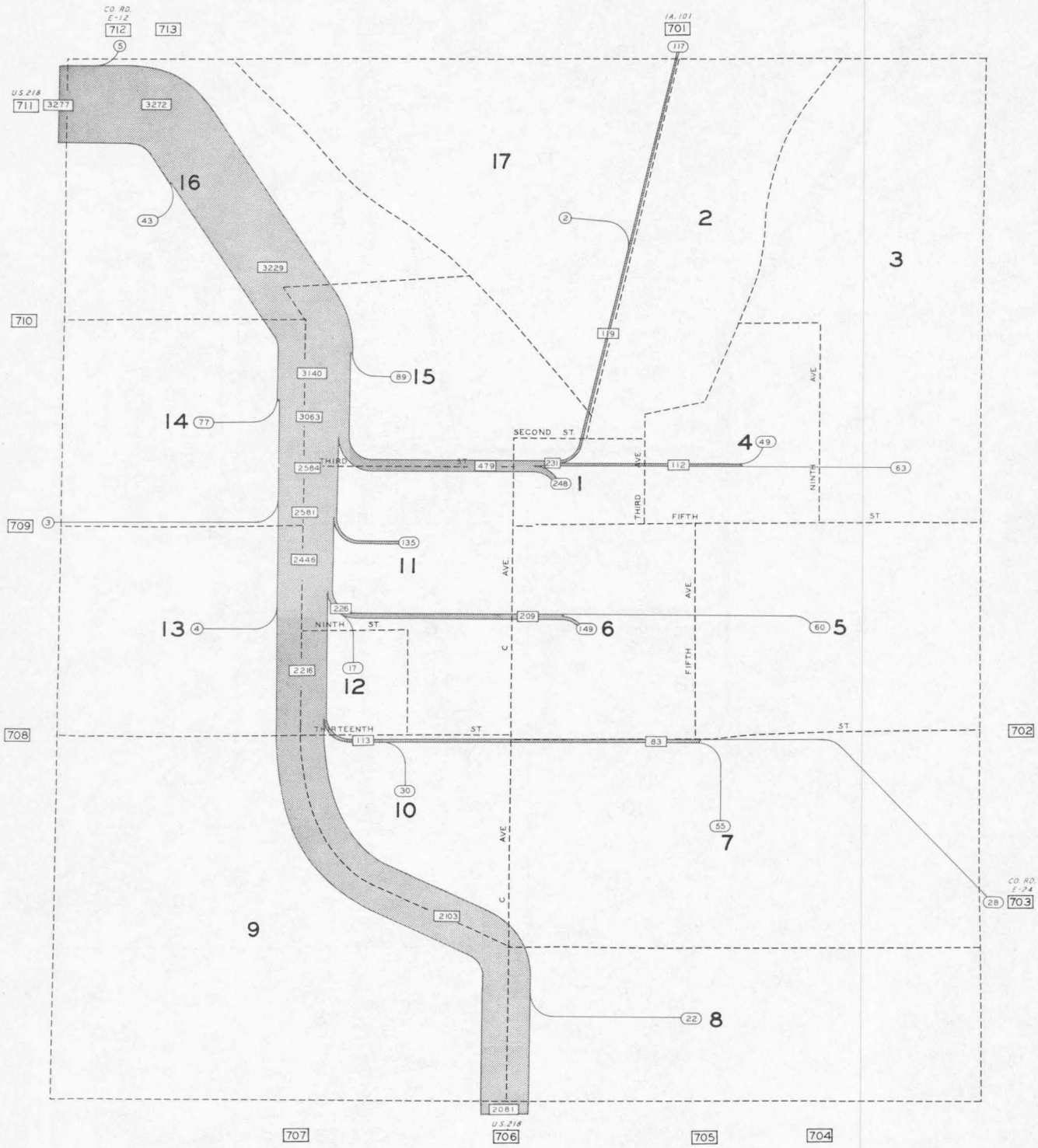
GRAPHIC SCALE

1969 AVERAGE JUNE WEEKDAY TRAFFIC

FIGURE 4-4

INTERNAL DISPERSION OF ALL VEHICULAR TRIPS PASSING THROUGH STATION 709-LOCAL RD. WEST OF THE

VINTON STUDY AREA



LEGEND

TRACT BOUNDARY LINE _____

GRAPHIC SCALE

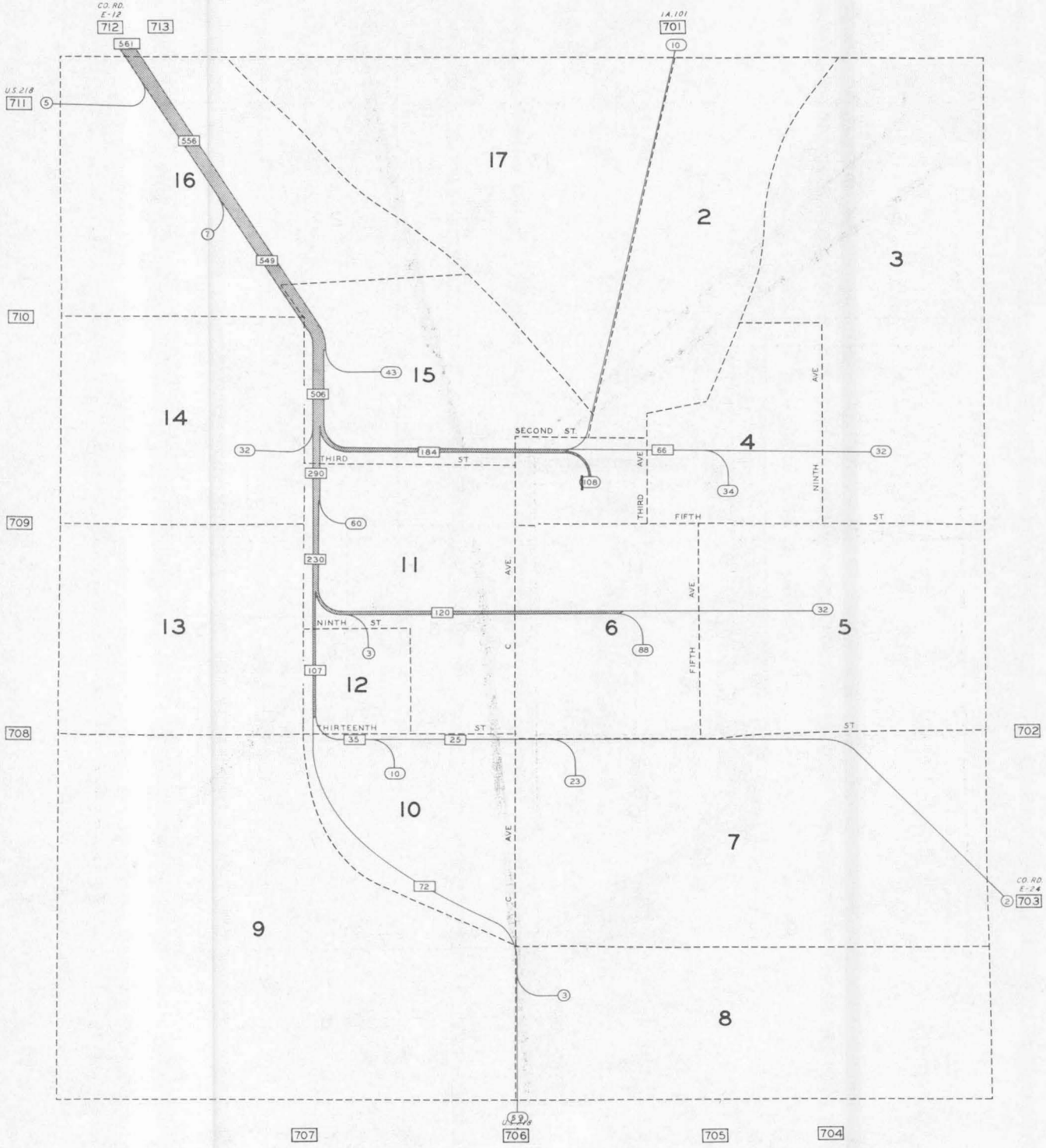
4000 TRIPS
2000 TRIPS
1000 TRIPS
500 TRIPS

1969 AVERAGE JUNE WEEKDAY TRAFFIC

FIGURE 4-5

INTERNAL DISPERSION OF ALL VEHICULAR TRIPS PASSING THROUGH STATION 711-U.S. 218 WEST OF THE

VINTON STUDY AREA



LEGEND

TRACT BOUNDARY LINE _____

GRAPHIC SCALE

4000 TRIPS
2000 TRIPS
1000 TRIPS
500 TRIPS

1969 AVERAGE JUNE WEEKDAY TRAFFIC

FIGURE 4-6

INTERNAL DISPERSION OF ALL VEHICULAR TRIPS PASSING THROUGH STATION 712-CO. RD. E-12 NORTHWEST OF THE

VINTON STUDY AREA

FIGURE 4-7

THE CENTRAL BUSINESS DISTRICT

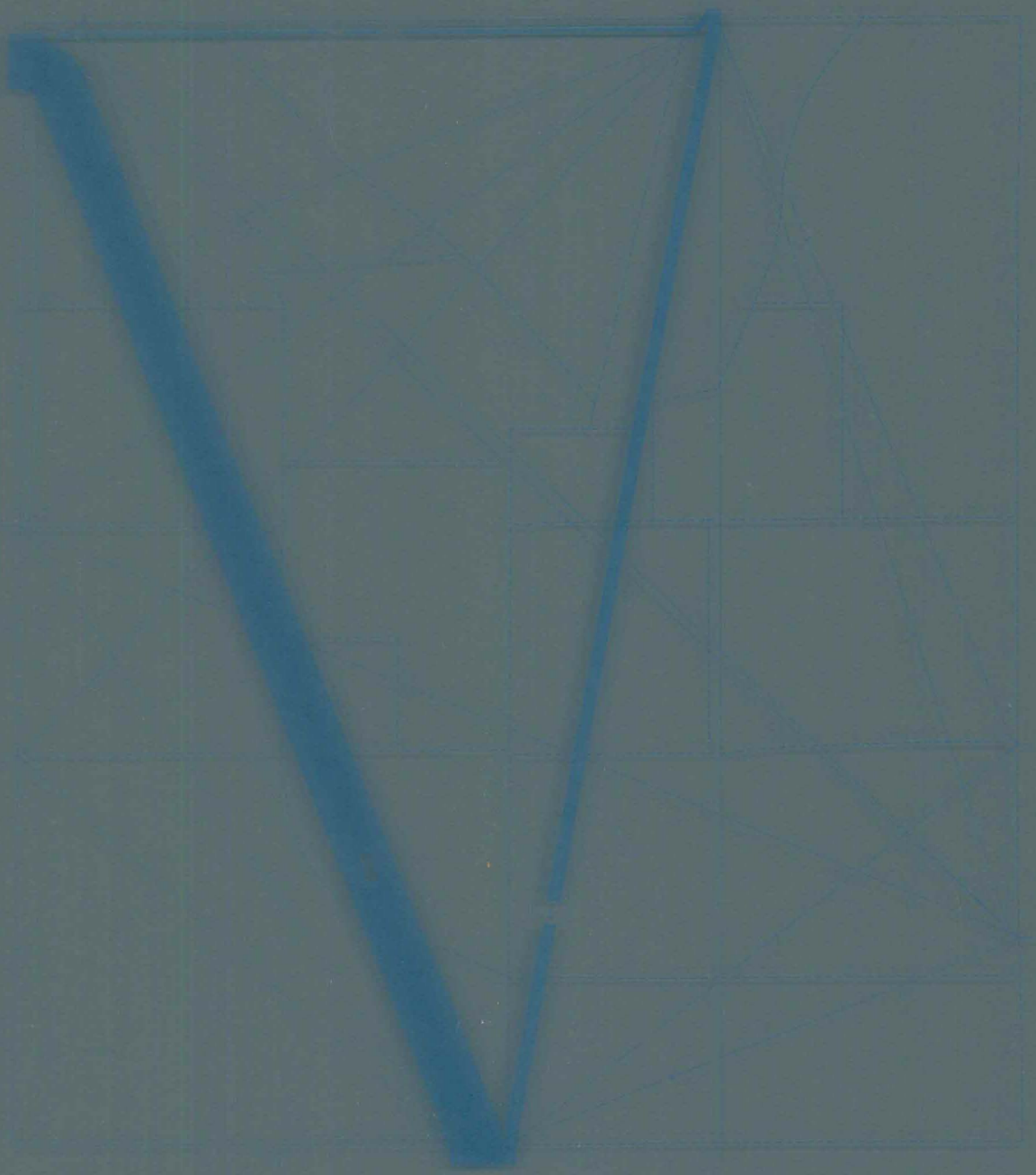
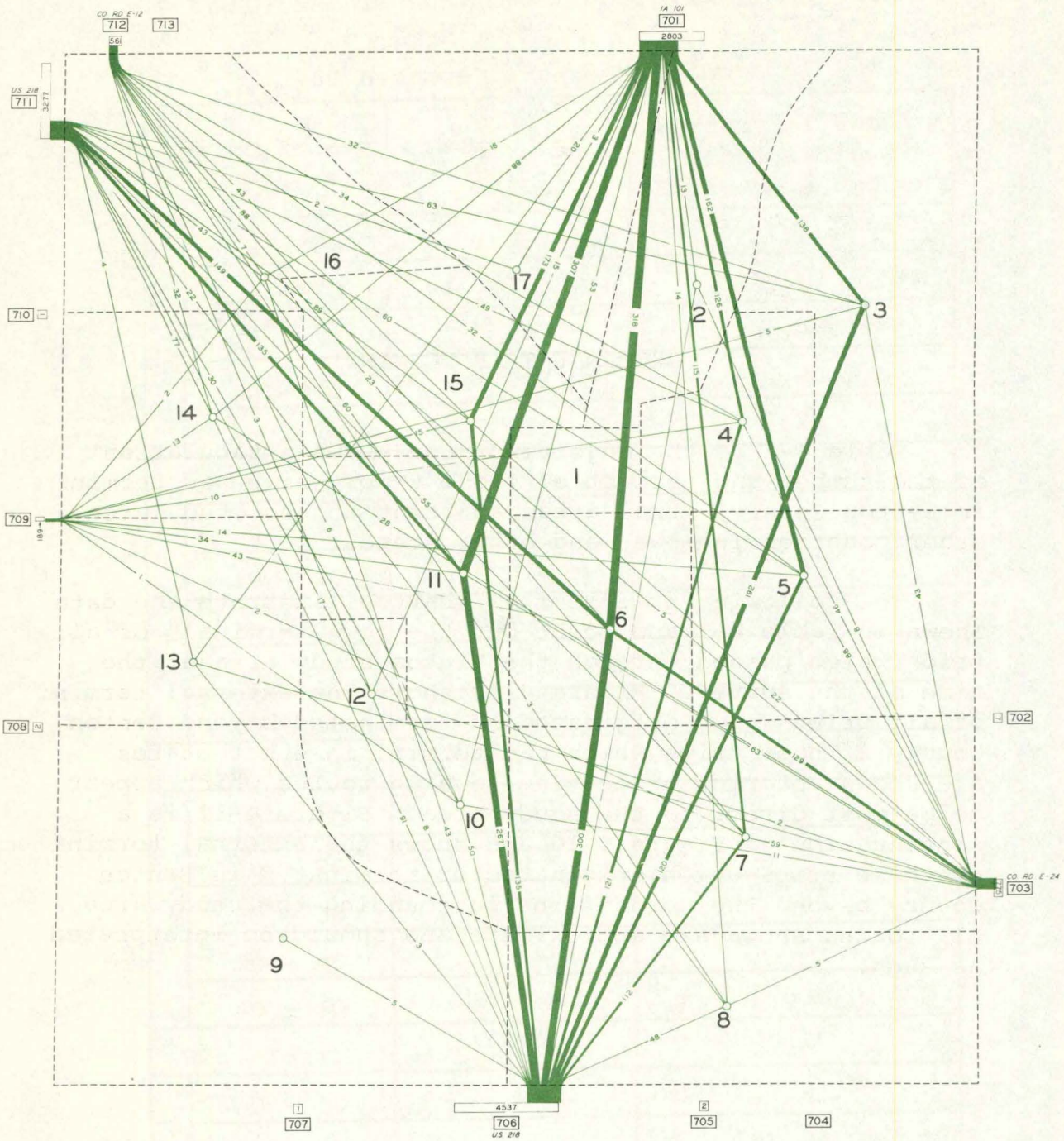


FIGURE 4-8

OTHER EXTERNAL STATIONS



LEGEND

TRACT BOUNDARY LINE ----------

GRAPHIC SCALE

4000 TRIPS
2000 TRIPS
1000 TRIPS
500 TRIPS

1969 AVERAGE JUNE WEEKDAY TRAFFIC

FIGURE 4-9

DESIRE LINES OF TRAVEL OF TRIPS TO OR FROM EXTERNAL ENTRANCES OF THE VINTON 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 Benton 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 terminals of all trips which passed through the Vinton study area at the time of the survey. Figure 4-10 shows the external termini of all trips which originated or terminated beyond Benton 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 4-11 is a continuation of Figure 4-10 and shows the external termini of those trips which originated or terminated in Benton 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 VINTON STUDY AREA

1969 AVERAGE JUNE WEEKDAY TRAFFIC

Station Location / Origin or Destination	Iowa 101 North		County Road E-24 East		U.S. 218 South		Local Road West		U.S. 218 West		County Road E-12 North	
	Station 701		Station 703		Station 706		Station 709		Station 711		Station 712	
	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%	Vol.	%
Atkins			13	1.68	35	.77						
Belle Plaine					83	1.83			4	.12		
Blairstown					122	2.69						
Garrison					61	1.34	48	25.40	344	10.50		
Keystone					82	1.81			9	.28		
Luzerne					7	.15			1	.03		
Mount Auburn							1	.53	7	.21	244	43.49
Newhall			22	2.84	137	3.02						
Norway			1	.13	23	.51						
Shellsburg			175	22.58	155	3.42						
Urbana	371	13.24	31	4.00								
Van Horne					285	6.28	1	.53				
Walford			1	.13	4	.09						
Watkins					12	.26						
Total to Towns	371	13.24	243	31.36	1,006	22.17	50	26.46	365	11.14	244	43.49
Rural Benton County	1,390	49.59	367	47.35	518	11.42	131	69.31	280	8.54	153	27.27
Other Counties	992	35.39	163	21.03	2,405	53.01	8	4.23	2,138	65.24	163	29.06
Out-of-State	50	1.78	2	.26	608	13.40			494	15.08	1	.18
Grand Total	2,803	100.00	775	100.00	4,537	100.00	189	100.00	3,277	100.00	561	100.00

FIGURE 4-10
DISPERSION OF EXTERNAL TRIPS
BETWEEN THE VINTON STUDY AREA
AND POINTS IN IOWA BEYOND BENTON COUNTY

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

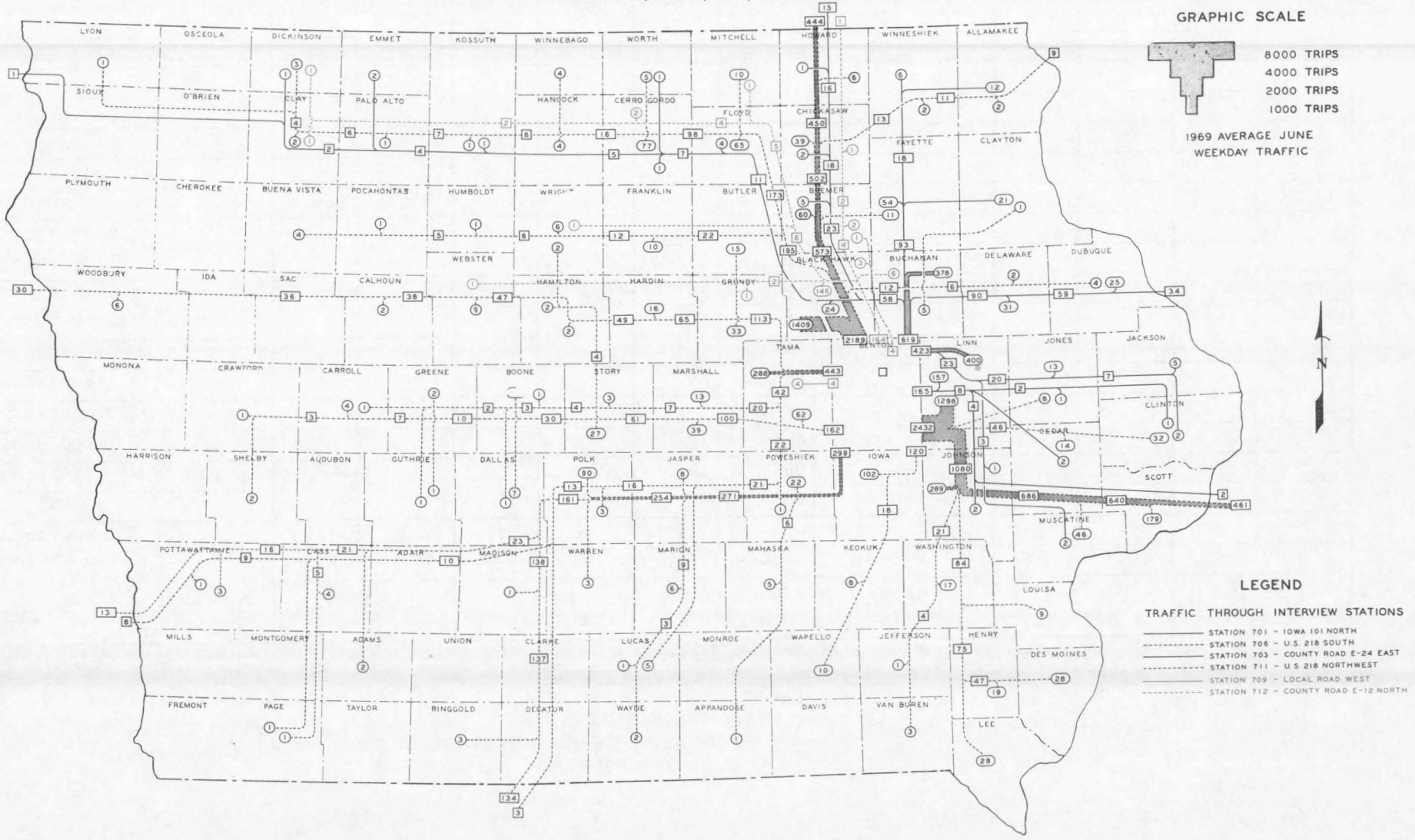


FIGURE 4-11
DISPERSION OF EXTERNAL TRIPS BETWEEN THE VINTON STUDY AREA AND POINTS WITHIN BENTON COUNTY
ALL TRIPS BY DRIVERS OF AUTOS, TRUCKS, TAXIS, AND BUSES

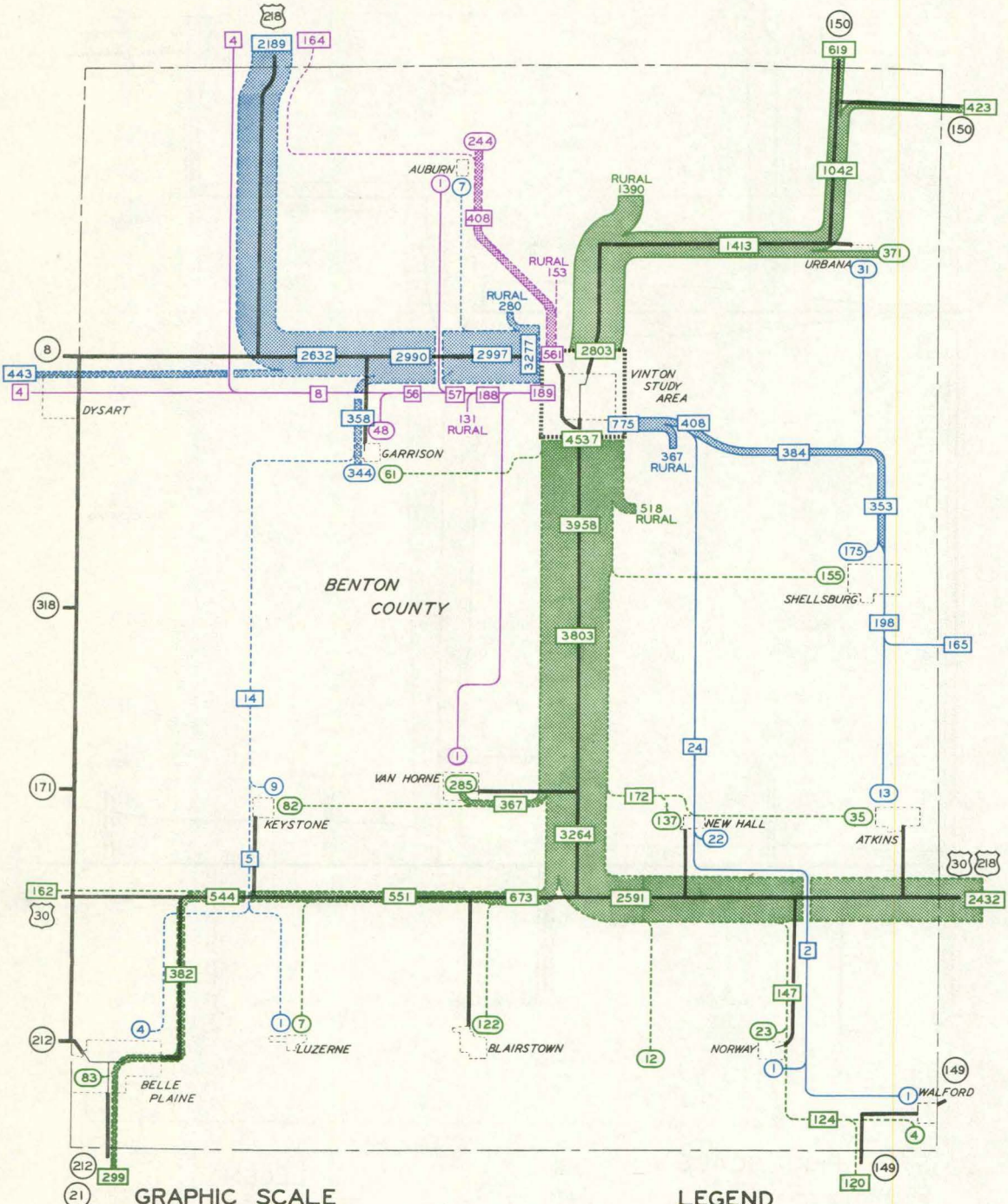
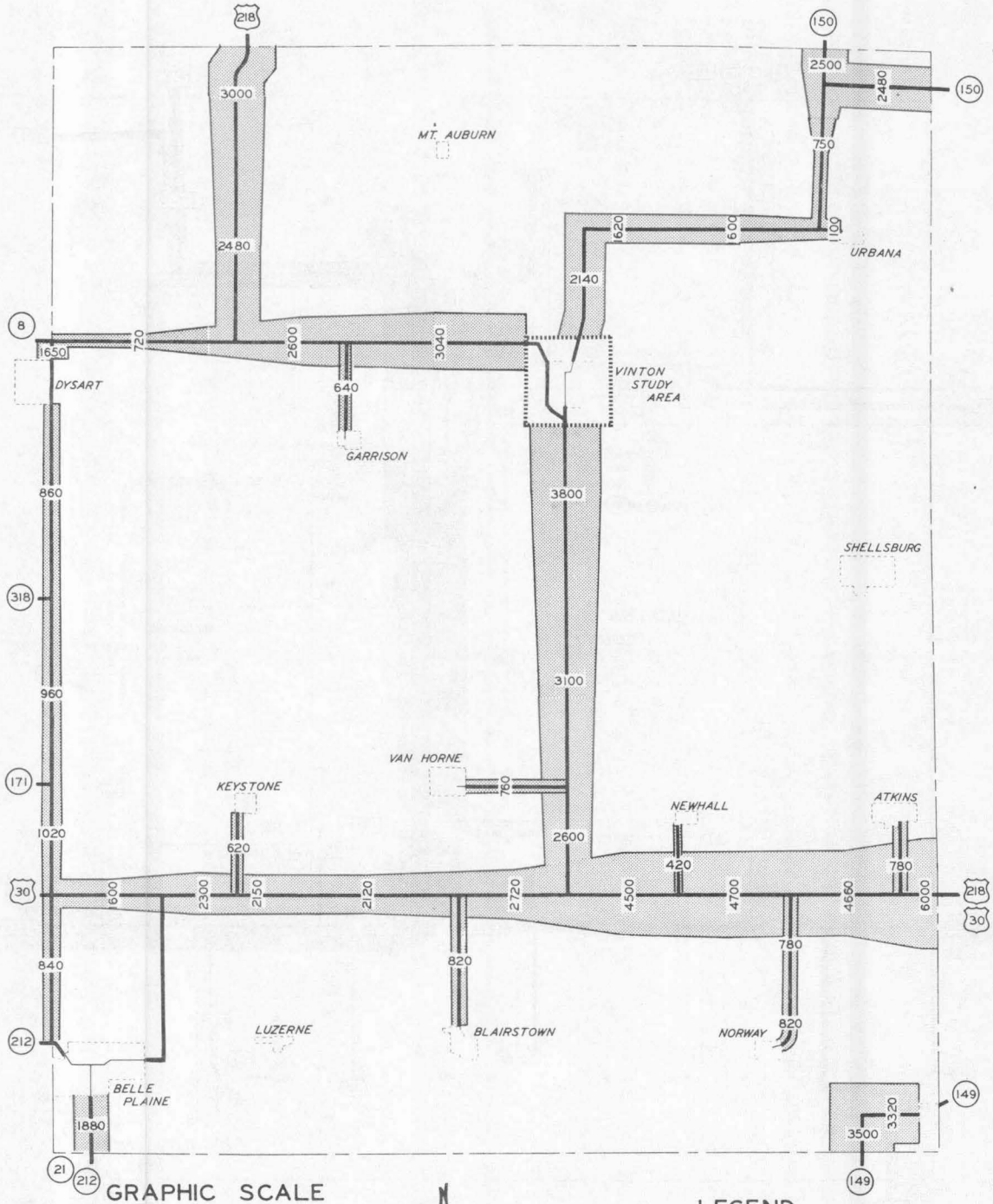
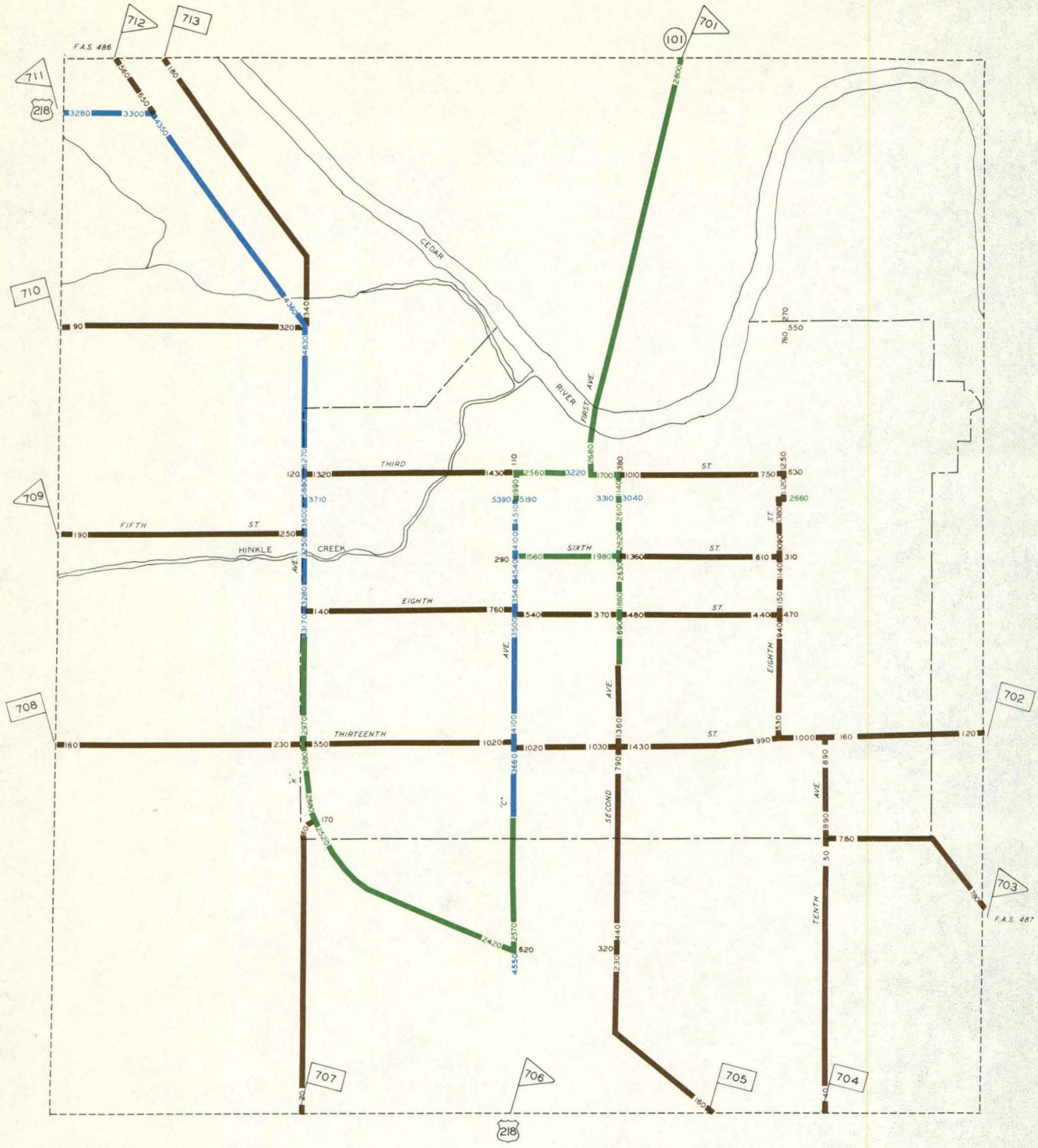


FIGURE 4-12
TRAFFIC VOLUMES ON
RURAL PRIMARY HIGHWAYS
IN BENTON COUNTY





LEGEND

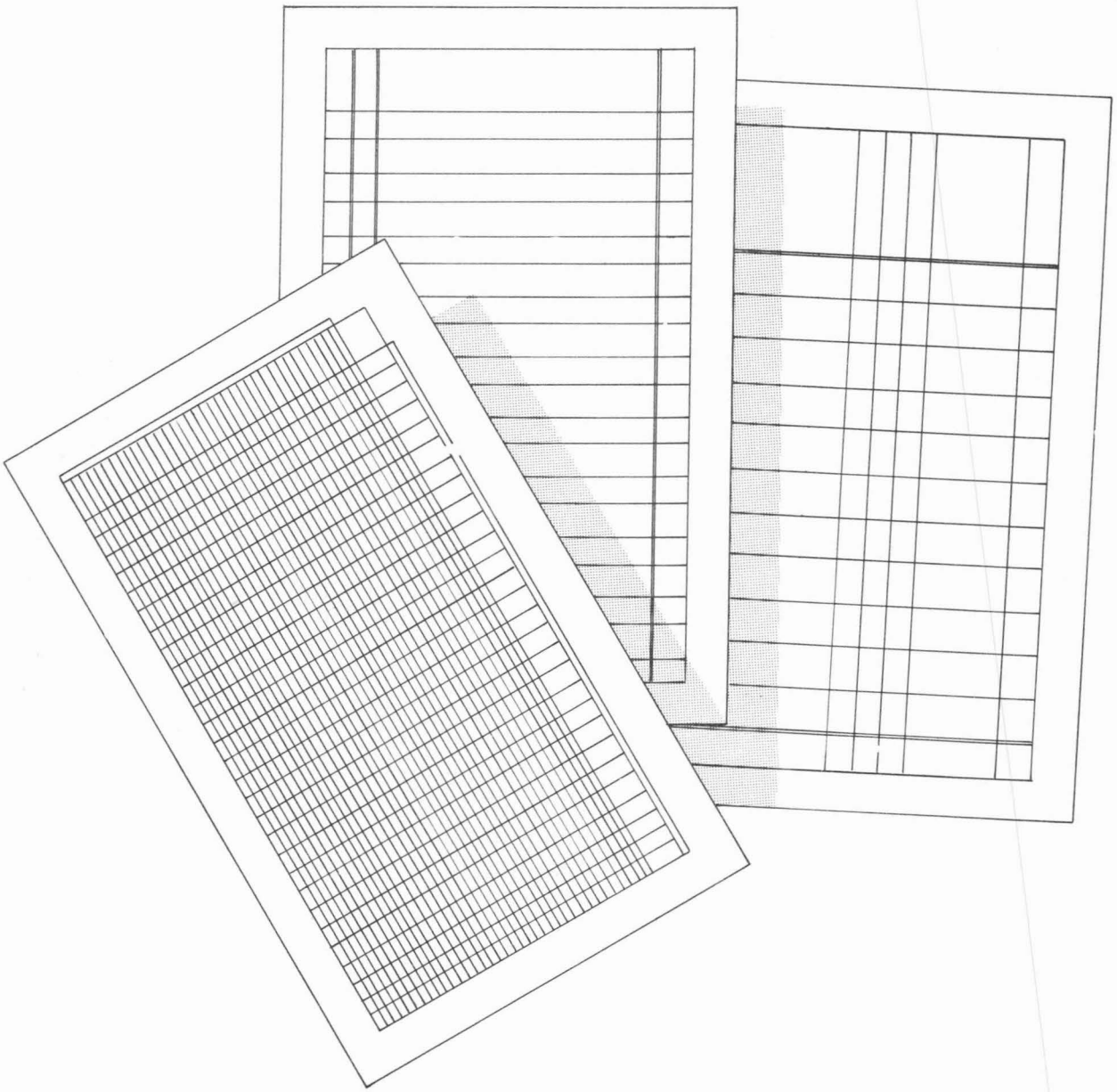
- 0 TO 1500 TRIPS
- 1500 TO 3000 TRIPS
- 3000 TRIPS AND OVER
- INTERVIEW STATION LOCATIONS
- CODE STATION LOCATIONS
- CORPORATION LINE
- CORDON LINE

FIGURE 4-13

TRAFFIC VOLUMES ON PRIMARY ROAD EXTENTIONS AND MAJOR STREETS IN THE VINTON STUDY AREA

1969 AVERAGE JUNE WEEKDAY TRAFFIC

Appendix



Part Five

VINTON STUDY AREA

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

Table B-2a (1) EXTERNAL LOCAL TRIPS

Trip Purpose \ Station	701 Iowa 101 North	703 County Road E-24 East	706 U.S. 218 South	709 Local Road West	711 U.S. 218 West	712 County Road E-12 North	Total Traffic
Work	494	138	340	29	273	102	1,376
Personal Business	184	60	191	15	101	43	594
During Work	392	76	430	21	232	73	1,224
Medical or Dental	43	17	65	2	40	9	176
School	22	13	13	1	22	13	84
Social or Recreation	616	173	499	45	179	133	1,645
Eat	35	13	50	7	28	12	145
Shop	361	200	293	49	139	82	1,124
Serve Passengers	60	25	42	3	29	8	167
Total Traffic	2,207	715	1,923	172	1,043	475	6,535

Table B-2a (2) EXTERNAL THROUGH TRIPS

Trip Purpose \ Station	701 Iowa 101 North	703 County Road E-24 East	706 U.S. 218 South	709 Local Road West	711 U.S. 218 West	712 County Road E-12 North	Total Traffic
Work	83	12	208	1	175	16	495
Personal Business	38	3	149	1	123	7	321
During Work	225	11	1,221	5	1,038	30	2,530
Medical or Dental	11	1	61		52		125
School	7	1	37		34		79
Social or Recreation	215	28	892	8	770	28	1,941
Eat			6		5	1	12
Shop	14	3	27	1	26	3	74
Serve Passengers	3	1	13	1	11	1	30
Total Traffic	596	60	2,614	17	2,234	86	5,607

Table B-2a (3) SUMMARY - ALL EXTERNAL TRIPS

Trip Purpose \ Station	701 Iowa 101 North	703 County Road E-24 East	706 U.S. 218 South	709 Local Road West	711 U.S. 218 West	712 County Road E-12 North	Total Traffic
Work	577	150	548	30	448	118	1,871
Personal Business	222	63	340	16	224	50	915
During Work	617	87	1,651	26	1,270	103	3,754
Medical or Dental	54	18	126	2	92	9	301
School	29	14	50	1	56	13	163
Social or Recreation	831	201	1,391	53	949	161	3,586
Eat	35	13	56	7	33	13	157
Shop	375	203	320	50	165	85	1,198
Serve Passengers	63	26	55	4	40	9	197
Total Traffic	2,803	775	4,537	189	3,277	561	12,142

VINTON 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: Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	Average Occupancy
Work	1.000	1.960	1.000			1.743	1.260	1.997	2.000	1.359	1.378
Personal Business	1.000	2.051	1.534		1.000	2.355		1.406		1.753	1.769
During Work		1.265	1.235				1.000	1.000		1.000	1.224
Medical or Dental						1.000			2.000	2.183	2.158
School		4.000			3.481	2.707				1.894	2.545
Social or Recreation	1.782	2.490	1.000		2.716	2.853	1.931	2.248	2.000	2.310	2.379
Eat	1.262	1.000	1.252	3.000		2.880		3.000		2.317	2.240
Shop	1.835		1.000	1.982		2.176	1.000	1.000	2.714	1.969	1.972
Serve Passengers	2.045			2.000		5.746			4.004	2.271	2.476
Home	1.367	1.703	1.122	2.082	1.976	2.304	1.803	2.004	2.907		1.935
Average Occupancy	1.370	1.736	1.229	2.088	2.351	2.381	1.630	1.997	2.895	1.907	1.894

EXTERNAL THROUGH TRIPS

Table B-3a(2)

Trip Purpose Origin	Trip Purpose - Destination: Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	Average Occupancy
Work			1.496			1.843			4.000	1.655	1.681
Personal Business	1.748	1.593			1.000	2.008			2.000	1.900	1.864
During Work	1.000		1.301		1.000					1.421	1.303
Medical or Dental				3.000		1.981				2.316	2.350
School		4.533			5.000	2.500				1.570	2.004
Social or Recreation	1.286	3.509	2.000	2.773	1.000	2.593	2.509	5.127		2.587	2.584
Eat			1.000			1.527				2.612	2.159
Shop						2.483	2.000			2.184	2.200
Serve Passengers					2.000					1.815	1.844
Home	1.382	1.757	1.389	2.952	1.468	2.671	1.516	2.222	3.022		2.296
Average Occupancy	1.385	1.814	1.308	2.943	1.491	2.632	2.008	2.541	3.017	2.294	2.084

SUMMARY - ALL EXTERNAL TRIPS

Table B-3a(3)

Trip Purpose Origin	Trip Purpose - Destination: Work	Personal Business	During Work	Medical or Dental	School	Social or Recreation	Eat	Shop	Serve Pass.	Home	Average Occupancy
Work	1.000	1.960	1.162			1.767	1.260	1.997	2.439	1.399	1.419
Personal Business	1.255	1.878	1.534		1.000	2.301		1.406	2.000	1.791	1.793
During Work	1.000	1.265	1.269		1.000		1.000	1.000		1.195	1.264
Medical or Dental				3.000		1.494			2.000	2.217	2.210
School		4.277			3.541	2.674				1.779	2.403
Social or Recreation	1.575	2.612	1.144	2.773	2.342	2.691	2.052	2.548	2.000	2.409	2.463
Eat	1.262	1.000	1.226	3.000		2.822		3.000		2.336	2.236
Shop	1.835		1.000	1.982		2.190	1.176	1.000	2.714	1.976	1.979
Serve Passengers	2.045			2.000	2.000	5.746			4.004	2.247	2.442
Home	1.369	1.714	1.275	2.311	1.795	2.430	1.795	2.011	2.915		1.975
Average Occupancy	1.372	1.752	1.269	2.325	2.088	2.477	1.646	2.015	2.904	1.990	1.945

TABLE E-1

VINTON STUDY AREA

DIRECTIONAL TRIPS BETWEEN STATIONS AND TRACTS

1969 AVERAGE JUNE WEEKDAY TRAFFIC

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
1	701	214	55	16		285
2	701	4	1			5
3	701	64	5			69
4	701	52	4	2		58
5	701	66	15	6		87
6	701	138	23	4		165
7	701	43	1	2		46
8	701	5	4			9
10	701	24		2		26
11	701	133	21	4		158
12	701	6	1			7
13	701	1		8		9
14	701	30	8	4	1	43
15	701	47	23	17	1	88
16	701	14	12	5		31
17	701	2				2
Cl.2	Total	843	173	70	2	1,088
1	703	74	11	3		88
2	703	4				4
3	703	19	1			20
4	703	20	1	2		23
5	703	32	10	10		52
6	703	58	11	1		70
7	703	23	2			25
8	703	4				4
10	703	2	3			5
11	703	19	6	4		29
12	703	1	1			2
13	703			1		1
14	703	7	5	1		13
15	703	6	3	1		10
16	703		1			1
Cl.2	Total	269	55	23		347
1	706	171	20	5	5	201
2	706	1	1	1		3
3	706	82	5			87
4	706	47	4	6	2	59
5	706	37	12	15		46
6	706	134	12	9		155
7	706	37	7			44
8	706	20				20
10	706	23	4	1	2	30
11	706	101	13	15	9	138
12	706		1	1		2
13	706	1		1		2
14	706	35	7		13	55
15	706	53	15	12	4	84
16	706	4	5	5	7	21
Cl.2	Total	746	106	71	42	965

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
1	709	9	4			13
3	709	1				1
4	709	6				6
5	709	5	2	1		8
6	709	17	4			21
7	709	1				1
11	709	12	4			16
14	709	3	3			6
15	709	2	2			4
16	709			1		1
Cl.2	Total	56	19	2		77
1	711	97	14	5	2	118
3	711	25	4	2		31
4	711	21			2	23
5	711	18	5	5	5	33
6	711	64	11	4		79
7	711	27	6	1		34
8	711	14				14
10	711	13	2	1		16
11	711	60	16			76
12	711	6				6
13	711	3				3
14	711	25	10	1	9	45
15	711	30	7	10	2	49
16	711	18	5			23
Cl.2	Total	421	80	29	20	229
1	712	49	8	1		58
3	712	14	1			15
4	712	16	1	1		18
5	712	15	4	2		21
6	712	44	4	1		49
7	712	7	2	1		10
8	712	1				1
10	712	9				9
11	712	27	6	2		35
12	712	1				1
14	712	14	2	1		17
15	712	12	4	7		23
16	712	3	1			4
Cl.2	Total	212	33	16		261
701	1	222	51	13		286
701	2	5	1	2		8
701	3	62	7			69
701	4	60	7	1		68
701	5	48	15	9	3	75
701	6	130	19	4		153
701	7	60	7	1	1	69
701	8	5				5
701	10	22	3	2		27
701	11	120	22	6	1	149
701	12	6	2			8
701	13	1		10		11
701	14	29	13	3		45
701	15	43	20	18	4	85
701	16	30	21	8	1	60
701	17	1				1
Cl.3	Total	844	188	77	10	1,119

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
703	1	96	20	1		117
703	2	2	2			4
703	3	22	1			23
703	4	18	3	2		23
703	5	19	9	8		36
703	6	50	8	1		59
703	7	31	2	1		34
703	8		1			1
703	10	3	3			6
703	11	24	5	5		34
703	14	11	3	1		15
703	15	9	2	1		12
703	16	1	3			4
Cl.3	Total	286	62	20		368
706	1	186	20	16	2	224
706	3	101	4			105
706	4	57	2	3		62
706	5	28	12	14	2	56
706	6	117	16	8	4	145
706	7	55	13			68
706	8	26	1	1		28
706	9	3			2	5
706	10	16	4			20
706	11	98	18	8	5	129
706	12	6				6
706	13		1			1
706	14	26	6	1	3	36
706	15	34	6	9	2	51
706	16	8	6	6	2	22
Cl.3	Total	761	109	66	22	958
709	1	14	6			20
709	3	4				4
709	4	4				4
709	5	3	1	2		6
709	6	15	7			22
709	7		1			1
709	10	1				1
709	11	15	3			18
709	14	4	1	2		7
709	15	8	3			11
709	16		1			1
Cl.3	Total	68	23	4		95
711	1	114	11	5		130
711	3	28	4			32
711	4	25	1			26
711	5	17	6	4		27
711	6	50	14	6		70
711	7	17	2	2		21
711	8	8				8
711	10	12	2			14
711	11	44	11	4		59
711	12	10	1			1
711	13			1		1
711	14	24	3	2	3	32
711	15	22	11	3	4	40
711	16	15	5			20
711	17	1	1			2
Cl.3	Total	387	72	27	7	493

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
712	1	43	6	1		50
712	3	16	1			17
712	4	14	2			16
712	5	8	2	1		11
712	6	34	4	1		39
712	7	9	3	1		13
712	8	2				2
712	10	1				1
712	11	21	3	1		25
712	12	2				2
712	14	11	3	1		15
712	15	7	6	7		20
712	16	2	1			3
Cl.3	Total	170	31	13		214
701	702	2	1			3
701	703	5	3	1		9
701	706	150	23	35	29	237
701	709	1				1
701	710	1				1
701	711	44	7	5	4	60
701	712	4		1		5
703	701	6	3			9
705	701	1		1		2
706	701	124	24	30	26	204
708	701	1				1
709	701	2				2
711	701	45	5	5	2	57
712	701	5				5
Cl.4	Total	391	66	78	61	596
703	701	6	3			9
703	702			1		1
703	706	4	1			5
703	709	1				1
703	711	11	2	1		14
703	712	1				1
701	703	5	3	1		9
706	703	2	2			4
709	703	1				1
711	703	11	1	1	1	14
712	703	1				1
Cl.4	Total	43	12	4	1	60
706	701	124	24	30	26	204
706	702	1	1			2
706	703	2	2			4
706	707		1			1
706	709	2	1			3
706	711	719	59	57	236	1,071
706	712	24	2	6	3	35
701	706	150	23	35	29	237
702	706	1				1
703	706	4	1			5
708	706	1				1
709	706	5		1		6
711	706	669	55	47	239	1,010
712	706	23	5	6		34
Cl.4	Total	1,725	174	182	533	2,614

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
709	701	2				2
709	703	1				1
709	706	5		1		6
709	711	1				1
701	709	1				1
703	709	1				1
706	709	2	1			3
711	709	1	1			2
Cl.4	Total	14	2	1		17
711	701	45	5	5	2	57
711	703	11	1	1	1	14
711	706	669	55	47	239	1,010
711	709	1	1			2
711	712	2				2
701	711	44	7	5	4	60
703	711	11	2	1		14
706	711	719	59	57	236	1,071
709	711	1				1
712	711	3				3
Cl.4	Total	1,506	130	116	482	2,234

VEHICLE TRIPS						
From	To	Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
712	701	5				5
712	703	1				1
712	706	23	5	6		34
712	711	3				3
701	712	4		1		5
703	712	1				1
706	712	24	2	6	3	35
711	712	2				2
Cl.4	Total	63	7	13	3	86

TABLE E-2

VINTON STUDY AREA

NONDIRECTIONAL TRIPS BETWEEN STATIONS AND TRACTS

1969 AVERAGE JUNE WEEKDAY TRAFFIC

VEHICLE TRIPS						
Between		Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
701	1	436				571
701	2	9	2	2		13
701	3	126	12			138
701	4	112	11	3		126
701	5	114	30	15	3	162
701	6	268	42	8		318
701	7	103	8	3	1	115
701	8	10	4			14
701	10	46	3	4		53
701	11	253	43	10	1	307
701	12	12	3			15
701	13	2		18		20
701	14	59	21	7	1	88
701	15	90	43	35	5	173
701	16	44	33	13	1	91
701	17	3				3
Cl.2&3	Total	1,687	361	147	12	2,207
703	1	170	31	4		205
703	2	6	2			8
703	3	41	2			43
703	4	38	4	4		46
703	5	51	19	18		88
703	6	108	19	2		129
703	7	54	4	1		59
703	8	4	1			5
703	10	5	6			11
703	11	43	11	9		63
703	12	1	1			2
703	13			1		1
703	14	18	8	2		28
703	15	15	5	2		22
703	16	1	4			5
Cl.2&3	Total	555	117	43		715
706	1	357	40	21	7	425
706	2	1	1	1		3
706	3	183	9			192
706	4	104	6	9	2	121
706	5	65	24	29	2	120
706	6	251	28	17	4	300
706	7	92	20			112
706	8	46	1	1		48
706	9	3			2	5
706	10	39	8	1	2	50
706	11	199	31	23	14	267
706	12	6	1	1		8
706	13	1	1	1		3
706	14	61	13	1	16	91
706	15	87	21	21	6	135
706	16	12	11	11	9	43
Cl.2&3	Total	1,507	215	137	64	1,923
709	1	23	10			33
709	3	5				5
709	4	10				10
709	5	8	3	3		14
709	6	32	11			43
709	7	1	1			2
709	10	1				1
709	11	27	7			34
709	14	7	4	2		13
709	15	10	5			15
709	16		1	1		2
Cl.2&3	Total	124	42	6		172

VEHICLE TRIPS						
Between		Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
711	1	211	25	10	2	248
711	3	53	8	2		63
711	4	46	1		2	49
711	5	35	11	9	5	60
711	6	114	25	10		149
711	7	44	8	3		55
711	8	22				22
711	10	25	4	1		30
711	11	104	27	4		135
711	12	16	1			17
711	13	3		1		4
711	14	49	13	3	12	77
711	15	52	18	13	6	89
711	16	33	10			43
711	17	1	1			2
Cl.2&3	Total	808	152	56	27	1,043
712	1	92	14	2		108
712	3	30	2			32
712	4	30	3	1		34
712	5	23	6	3		32
712	6	78	8	2		88
712	7	16	5	2		23
712	8	3				3
712	10	10				10
712	11	48	9	3		60
712	12	3				3
712	14	25	5	2		32
712	15	19	10	14		43
712	16	5	2			7
Cl.2&3	Total	382	64	29		475
701	702	2	1			3
701	703	11	6	1		18
701	705	1		1		2
701	706	274	47	65	55	441
701	708	1				1
701	709	3				3
701	710	1				1
701	711	89	12	10	6	117
701	712	9		1		10
Cl.4	Total	391	66	78	61	596
Cl.2&3	Total	1,687	361	147	12	2,207
701	Total	2,078	427	225	73	2,803
703	701	11	6	1		18
703	702			1		1
703	706	6	3			9
703	709	2				2
703	711	22	3	2	1	28
703	712	2				2
Cl.4	Total	43	12	4	1	60
Cl.2&3	Total	555	117	43		715
703	Total	598	129	47	1	775

VEHICLE TRIPS						
Between		Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
706	701	274	47	65	55	441
706	702	2	1			3
706	703	6	3			9
706	707		1			1
706	708	1				1
706	709	7	1	1		9
706	711	1,388	114	104	475	2,081
706	712	47	7	12	3	69
Cl. 4	Total	1,725	174	182	533	2,614
Cl.2&3	Total	1,507	215	137	64	1,923
706	Total	3,232	389	319	597	4,537
709	701	3				3
709	713	2				2
709	706	7	1	1		9
709	711	2	1			3
Cl. 4	Total	14	2	1		17
Cl.2&3	Total	124	42	6		172
709	Total	138	44	7		189

VEHICLE TRIPS						
Between		Auto	Pickup and Panel	Single Unit & Bus	Semi Truck	Total
711	701	89	12	10	6	117
711	703	22	3	2	1	28
711	706	1,388	114	104	475	2,081
711	709	2	1			3
711	712	5				5
Cl.4	Total	1,506	130	116	482	2,234
Cl.2&3	Total	808	152	56	27	1,043
711	Total	2,314	282	172	509	3,277
712	701	9		1		10
712	703	2				2
712	706	47	7	12	3	69
712	711	5				5
Cl. 4	Total	63	7	13	3	86
Cl.2&3	Total	382	64	29		475
712	Total	445	71	42	3	561

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