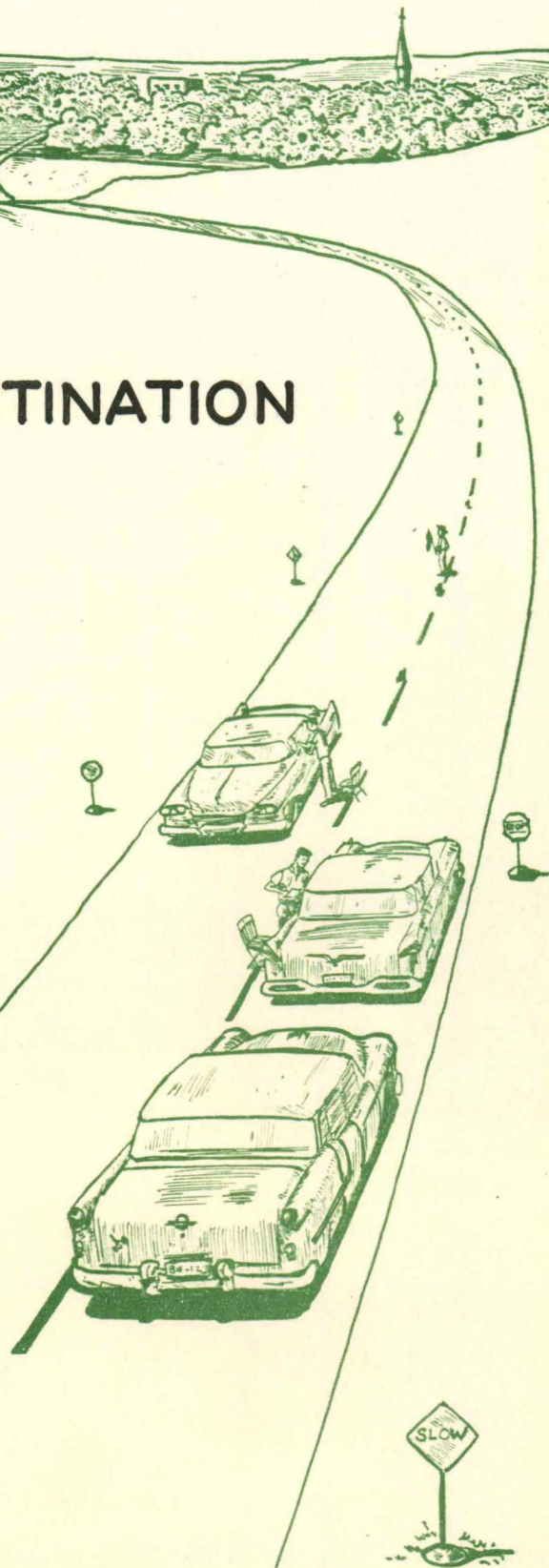


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# DECORAH

## ORIGIN AND DESTINATION STUDY

INTERVIEW  
STATION



17-H53HP  
2:Or16  
Decorah

17-453HP  
2:0r16  
Decorah

Decorah Urban Area  
Origin and Destination  
Traffic Survey

April 1959

Prepared By  
Highway Planning Section  
Safety and Traffic Department  
Iowa State Highway Commission  
In Cooperation With the  
United States Bureau of Public Roads

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## DEFINITIONS

### Urban Area

An area including and adjacent to a municipality or other urban place of 5,000 or more population as shown by the latest available census.

### Corporation Line

A hypothetical line delimiting the municipal area and often called the City Limits.

### Urban or Corporate Area Traffic Survey

A survey of highway travel designed to collect detailed information concerning trip origins and destinations within a selected urban or corporate area.

### External Survey

A study in which trip data is obtained by interviewing motor vehicle operators intercepted at external stations.

### External Station

An interview point located on a principal rural highway which crosses the corporation or urban area line. It is always set up outside of the urban or corporate area, but as close as is practical and possible to the line delimiting this area.

### Tract

One of the several homogeneous sections into which the study area is divided.

### Central Business District (CBD)

The section containing the concentrated commercial and retail business center, in most cases, tract 001.

Trip

A one-way journey between a point of origin and a point of destination.

Origin

The stated beginning point of a single trip.

Destination

The stated terminating point of a single trip.

External Local Trip

A trip with either the point of origin or the point of destination located within the corporate limits, the performance of which trip involves travel through an external interview station.

External Through Trip

A trip with both points of origin and destination located outside the corporate limits, the performance of which trip involves travel through an external interview station and into, through, and out of the corporate or urban area.

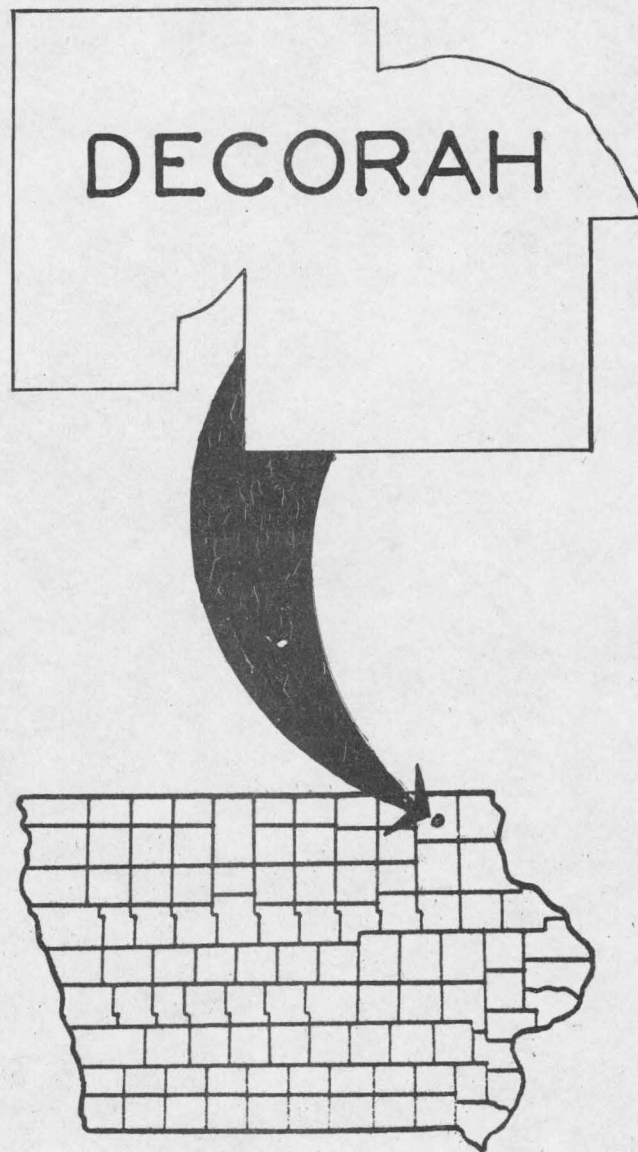
Duplicated Through Trips (Duplicates)

Trips traveling completely across the urban or corporate area, and thereby passing through two interview stations.

Average Weekday

This includes Monday through Friday inclusive.

PART I  
SUMMARY



This report of the Decorah Urban Area Traffic Survey describes briefly the characteristics of the urban area pertinent to the local problem of highway transportation and presents and analyzes the data gathered in the survey. All trip data obtained in the survey are presented in terms of the number of trips per day. They are classified by the origins and destinations of these trips and by the areas within the city, to which and from which they were made. The only information obtained was from those trips crossing the city limits, and this was done by maintaining roadside interview stations at the entrances of the principal rural highways into the city. These trips, for which the data were obtained, may be defined as "rural trips." Knowledge of the number of "urban trips" or "intra-city trips" is not available in this external type survey.

For this particular study, carried on in June and July, information was gathered by interviewing 87.27 per cent of the average weekday traffic. After the expansion of this information it was found that for an average weekday in July 1958, a total of 7,009 trips crossed the Decorah city limits. Out of this total 20.69 per cent were classified as external through trips. These were divided into two groups. External through trips which passed via the central business district accounted for 19.33 per cent. The remaining 1.36 per cent, which were also external through trips, traveled without passing via the central business district.

Of all trips passing through the interview stations 34.48 per cent had termini in the central business district. However, another 18.08 per cent of the total had termini in the residential and intermediate

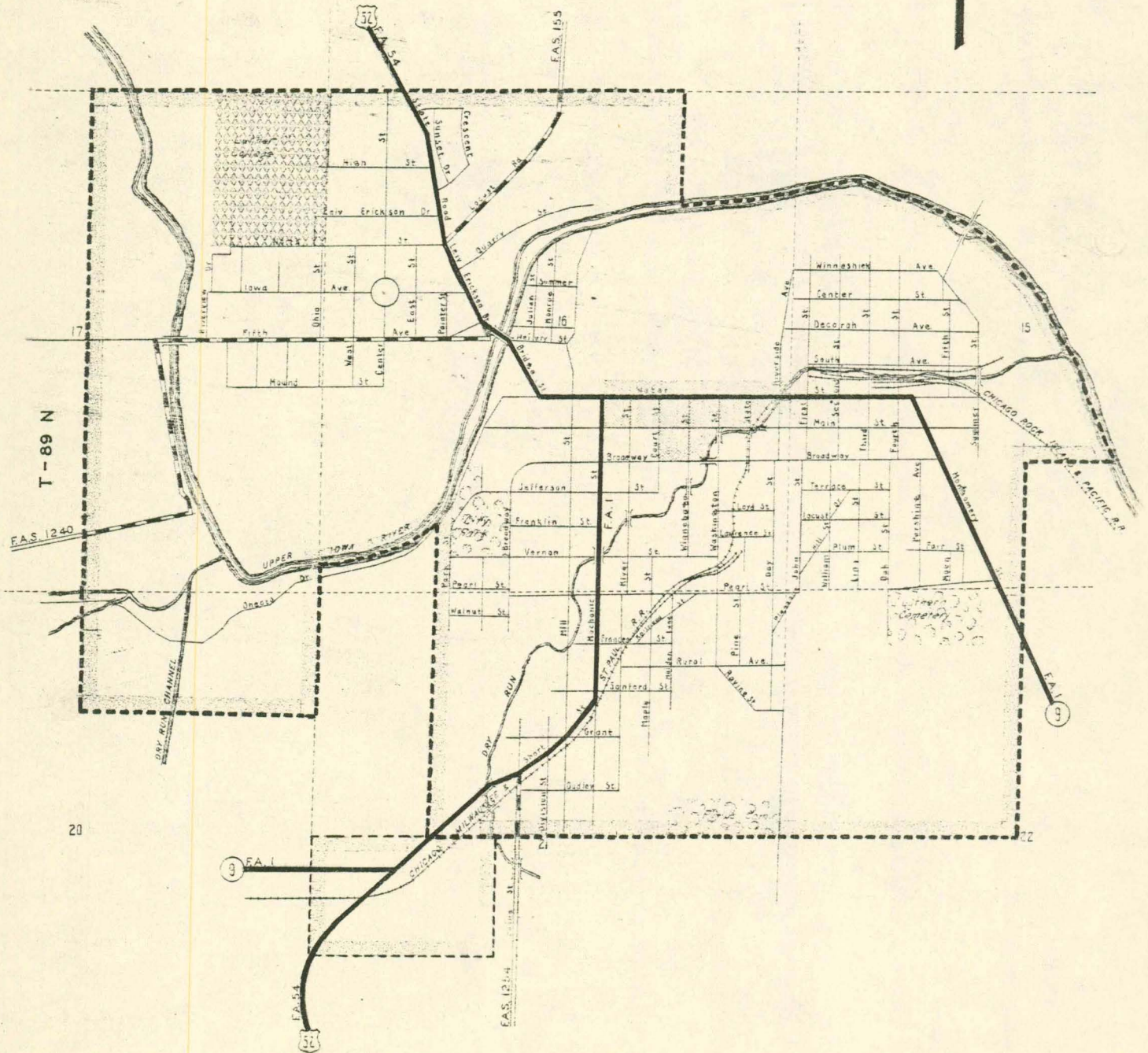
areas between the station and the central business district. In addition to this, 26.75 per cent of the total trips passing through the interview stations had routes via and termini beyond the central business district.



PART II  
 HISTORY AND CHARACTERISTICS  
 DECORAH URBAN AREA



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A. HISTORY

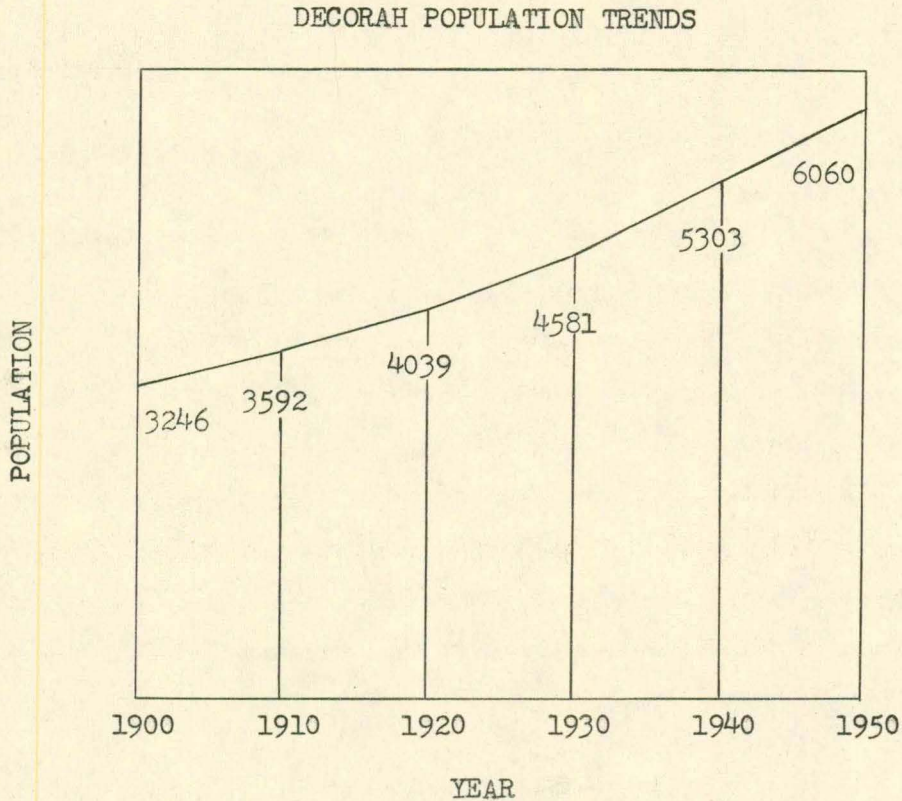
Decorah was named for Chief Waukon Decorah who aided the white men during the Black Hawk War. William Day, a Virginian, with his family and eight other pioneers, were the first white settlers in the community. They arrived on June 10, 1849 and selected the location because of its beautiful surroundings and abundant water supply. Day built a permanent log cabin which later became the Winneshiek Hotel. Other settlers followed, and a store was built by Newell and Derrick on the corner of Crescent Washington and Water streets. These men had previously traded their goods in the "Smoke House" of the hotel.

The first mail, one letter and two newspapers, arrived in Decorah in June 1851. Two years later the town was platted and the first school house erected. Theodore W. Burdick, who also served one term in the House of Representatives, was the town's first teacher. On November 2, 1855 the original edition of the town's first newspaper, The Decorah Chronicle, was published. From 1851 to 1856 three towns in Winneshiek county, Lewiston, Moneek, and Decorah, were competing for the county offices. However, Judge David Reed ruled on the case and in 1856 Decorah was officially made the Winneshiek County seat.

In 1861 Decorah was incorporated, and a Congregational Church was erected. Also during 1861, Luther College was moved from La Crosse to Decorah. The Milwaukee, Prairie Du Chien Railroad completed a line from Conover to Decorah in 1869. By 1870 the town had a population of 1,925. The following year Decorah was incorporated as a second-class city.

The Standard Telephone Company began operation in 1898 and

inaugurated long distance service to Lansing and Waukon. The company had about 180 telephone installations in the community the first year. By 1900 there were 3,246 residents in Decorah. The city's trend of steadily increasing population is illustrated below.



#### B. CHARACTERISTICS

Decorah is located in the second county West of the Mississippi River along the Iowa-Minnesota Border. The city is situated in hilly terrain with Dry Run Creek and the Upper Iowa River dividing the urban area into four segments.

The general configuration of the Urban Area is a square containing

approximately four square miles. The central business district lies slightly north and east of the center of the urban area and consists of about 12 square blocks. Luther College Campus is located in the northwest quarter of the city.

The Chicago, Milwaukee, and St. Paul and Pacific Railroad enters Decorah near the southwest corner of the urban area. It runs north-easterly through the city, crosses the central business district, and terminates at a depot in the east end of the business district. The Rock Island Railroad crosses the east corporation line and runs northwesterly for approximately one-half mile to a point near the east edge of the central business district where the line terminates.

Highways U.S. 52 and Ia. 9 intersect near the south corporation line of the city, and the combined routes continue northerly to the west edge of the central business district. At that point, Ia. 9 turns east, runs six blocks through the central business district, and then continues east and south to the city's east highway exit. U.S. 52 turns west at the west edge of the central business district and continues northwesterly out of the city.

# PART III SURVEY PRESENTATION

Municipal  
Traffic Surveys  
Origin and Destination Operations  
Instructions to Field Personnel

**Section I Procedures for collection of data**

**1. Purpose and Scope**  
The origin and destination traffic survey of an urban area is a study which provides information regarding the travel by motor vehicle within sections of an urban area. Research in traffic operations may be done by interviewing motor vehicle operators in the area, whether they are within the urban area. These interviews provide the field personnel with information about the survey area.

**2. Location of Stations**  
The origin and destination interview stations should be located on major highways entering the area. The exact location should be determined by the field supervisor in consultation with the city engineer.

**3. Operating Schedule**  
Each station will be operated during the 8 hour working periods, one on each side of the highway, on Friday inclusive. All traffic passing through the station during the 8 hour period should be interviewed. Both sides of the highway should be operated. A portable external survey recorder is required to be used at each station.

**d. Supervision**  
A supervisor should be assigned to direct the operations at each station.

IOWA STATE HIGHWAY COMMISSION  
DEPARTMENT OF SAFETY AND TRAFFIC  
QUESTIONNAIRE AND CODING SHEET FOR EXTERNAL ORIGIN AND DESTINATION DATA  
URBAN AREA TRAFFIC SURVEYS

CITY \_\_\_\_\_ OF \_\_\_\_\_  
SHEET \_\_\_\_\_ OF \_\_\_\_\_  
INTERVIEWER \_\_\_\_\_

STATION NO.	DATE	ROUTE	NUMBER OF VEHICLES	NUMBER OF OPERATORS	NUMBER OF OPERATORS	NUMBER OF OPERATORS	ORIGIN (Address or City and State)	DESTINATION (Address or City and State)	TRAFFIC TYPE	TYPE OF VEHICLE	SEX	AGE	HAIR	EYES	WEIGHT	HEIGHT	EDUCATION	EMPLOYMENT	VEHICLE MAKE	VEHICLE MODEL	VEHICLE TYPE	VEHICLE COLOR	VEHICLE LICENSE	VEHICLE REGISTRATION	VEHICLE TAX	VEHICLE INSURANCE		

EXTERNAL ORIGIN AND DESTINATION TRIPS

TRIP NO.	DATE	TIME	ORIGIN (Address or City and State)	DESTINATION (Address or City and State)	TRAFFIC TYPE	TYPE OF VEHICLE	SEX	AGE	HAIR	EYES	WEIGHT	HEIGHT	EDUCATION	EMPLOYMENT	VEHICLE MAKE	VEHICLE MODEL	VEHICLE TYPE	VEHICLE COLOR	VEHICLE LICENSE	VEHICLE REGISTRATION	VEHICLE TAX	VEHICLE INSURANCE						

Urban Area  
Origin and Destination  
Traffic Survey

## FINAL REPORT

March 1959

Prepared by  
Highway Planning Survey Division  
Iowa State Highway Department  
In Cooperation With the  
United States Bureau of Public Roads

A. INTRODUCTION

Part III of this report describes briefly the purposes and objectives, procedures, and findings of the Decorah Urban Area Traffic Survey. Summaries and illustrations of the significant data classifications are included. All information was collected during the period of June 30 and July 1 to 3, 1958, inclusive. It is reported in terms of the number of trips daily on an average July weekday in 1958 and classified by trip origins and destinations.

B. PURPOSES AND OBJECTIVES

The purposes of this survey were to determine the origin, destination, and number of daily trips into, out of, and through the urban area. Ultimate objectives were to assemble and present, as clearly as possible, the traffic patterns and volumes as they exist. This presentation reveals the amount of street congestion which may be attributed to through highway travelers, and the exact routes by which these travelers enter and exit the urban area. It will also assist city officials and highway administrators in determining the location and type of street or highway improvements necessary to alleviate particular traffic problems.

C. PROCEDURES

The data for the determination of the origin and destination of all trips were gathered through roadside interviews of motor vehicle operators. These interviews were obtained at the external stations located on each rural road entrance to the city. All vehicles were stopped as they passed through the station and the motor vehicle

operator was asked the purpose, origin, and destination of this particular trip. The interviewers also recorded for each vehicle, from visual inspection, other data such as the type, the place of registration, and the number of passengers.

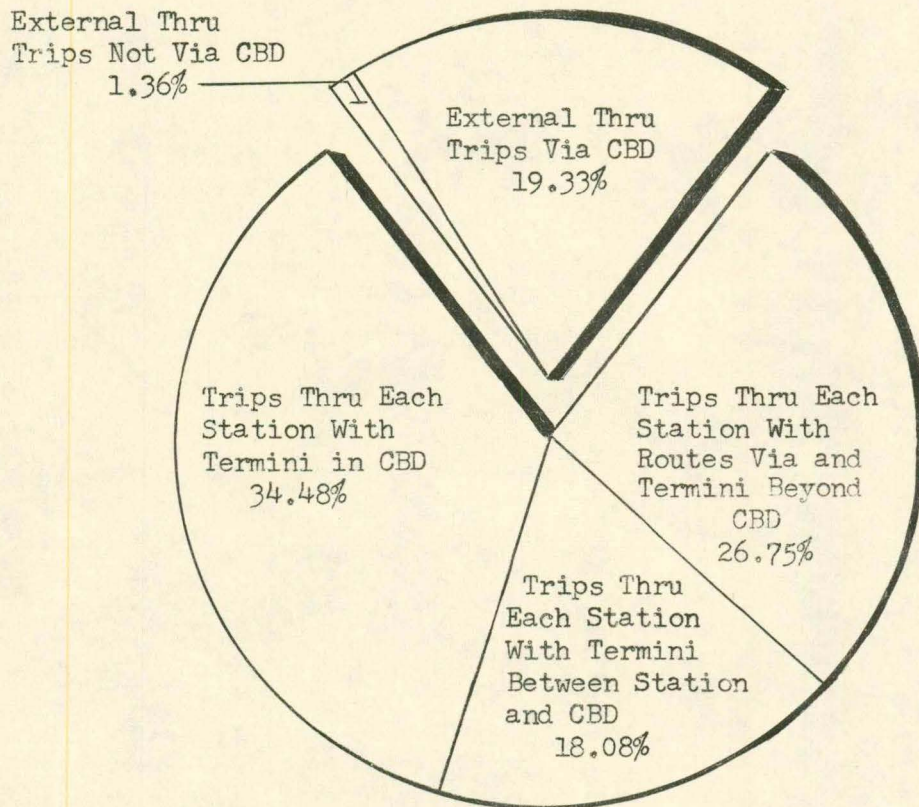
Each interview station was operated for 16 hours starting at 6 AM and ending at 10 PM. This scheme of operation provided for coverage of all but a small portion of the trips passing through each station in the twenty-four hour day. This small portion of traffic was accounted for by portable automatic traffic recorders which were operated continuously at each station for the entire period of the survey. Factors obtained by using these recorder tapes provided means for converting all of the data to average twenty-four hour weekday values. The information gathered was then coded and punched on I.B.M. cards to expedite tabulation.

#### D. FINDINGS

Most of the significant findings of this survey have been summarized in the ensuing tables and charts. Any other combinations of related material may be found by referring to the trip tabulation sheet in the appendix.

Three traffic flow diagrams will be found in appropriate locations throughout the presentation of the findings. The first one encountered merely gives a pictorial view of the entire traffic pattern within the area. A traffic flow map depicting all external through trips will be found next, immediately following the external through trip tables. The third and final flow diagram is found following the group of tables relating all of the external local trips to their termini.

The following illustration represents a net total trip summarization and percentage distribution of the termini for all trips passing through the external interview stations on an average weekday in July 1958. It should be noted that the few external through trips having termini on non-primary rural roads, as listed on the trip tabulation sheet in the appendix, are all included with the external local trips.

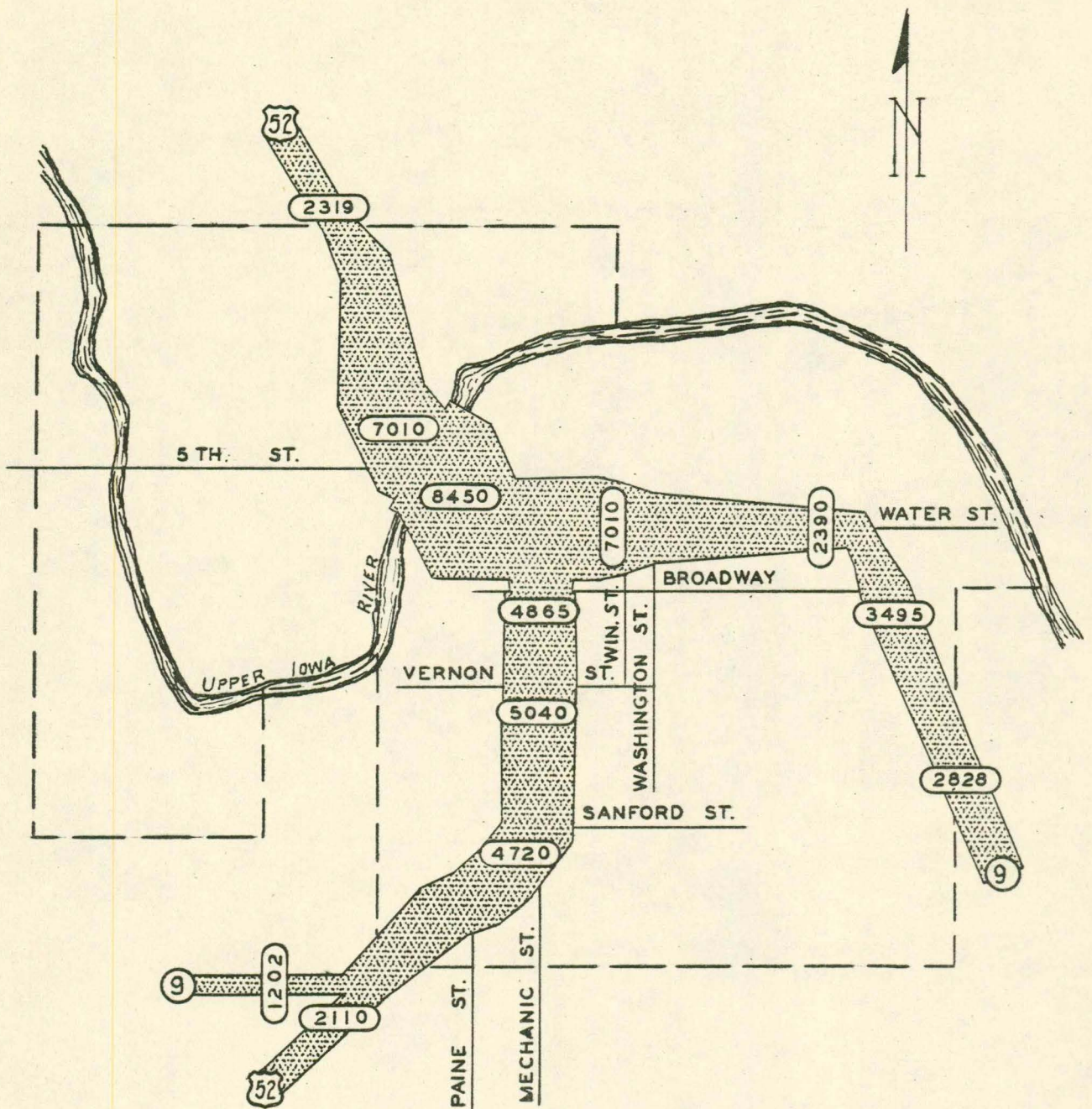




1. Traffic and Interview Summary:

By using the previously explained procedures, the information in the following table was obtained. The external stations are listed with the total traffic passing each station, the total number of interviews taken at each station, and the per cent that this interview figure is of the total traffic figure. This information is all based on the flow of traffic for an average weekday in July 1958.

Table 1 Traffic Entering or Leaving the Decorah Urban Area by Way of the Principal Rural Road Entrances						
External Station Locations	Average Weekday Traffic-July 1958				No. of Inter- views Taken	Per Cent Inter- viewed
	Passenger Cars and Pick-Ups	Single Unit Trucks	Truck Combi- nations	Total		
Ia 9 E	2,567	202	59	2,828	2,464	87.13
US 52 S	1,809	206	95	2,110	1,808	85.69
US 52 N	2,063	169	87	2,319	2,074	89.44
Ia 9 W	1,080	98	24	1,202	1,036	86.19
Total	7,519	675	265	8,459	7,382	87.27



TRAFFIC FLOW MAP  
 CITY OF DECORAH  
 WINNESHIEK COUNTY  
 AVERAGE WEEK DAY TRAFFIC JUNE-1958

2. External Through Trips Via  
the Central Business District:

Table 2 presents a very good comparison between the total trips passing through each external station and the number or per cent of these trips which pass directly through the urban area via the central business district. This same relationship is again presented both numerically and on a percentage basis for the summation of all trips through all stations. From this presentation it is shown in the following table that 1,355 trips, or 19.33 per cent of the total trips passing through all external stations, were external through trips traveling via the central business district.

External Station Location	Total Trips Through Station	Through Trips Via the CBD	
		Number	Per Cent of Total
Ia 9 E	2,828	565	19.98
US 52 S	2,110	862	40.85
US 52 N	2,319	1,014	43.72
Ia 9 W	1,202	269	22.38
Less Duplicates	1,450	1,355	93.45
Total	7,009	1,355	19.33

3. External Through Trips Not  
Via the Central Business District:

The following table reveals the exact relationship between all trips passing through each external station and the percentage of these trips which pass directly on through and out of the urban area, but not via the central business district. This same comparison is also presented for the total of all external through trips passing through all external stations. From Table 3 it is then noted that this figure is 1.36 per cent.

Table 3 External Through Trips Not Via the Central Business District on an Average Weekday in July 1958			
External Station Location	Total Trips Through Station	Through Trips Not Via the CBD	
		Number	Per Cent of Total
Ia 9 E	2,828	--	--
US 52 S	2,110	95	4.50
US 52 N	2,319	--	--
Ia 9 W	1,202	95	7.90
Less Duplicates	1,450	95	6.55
Total	7,009	95	1.36

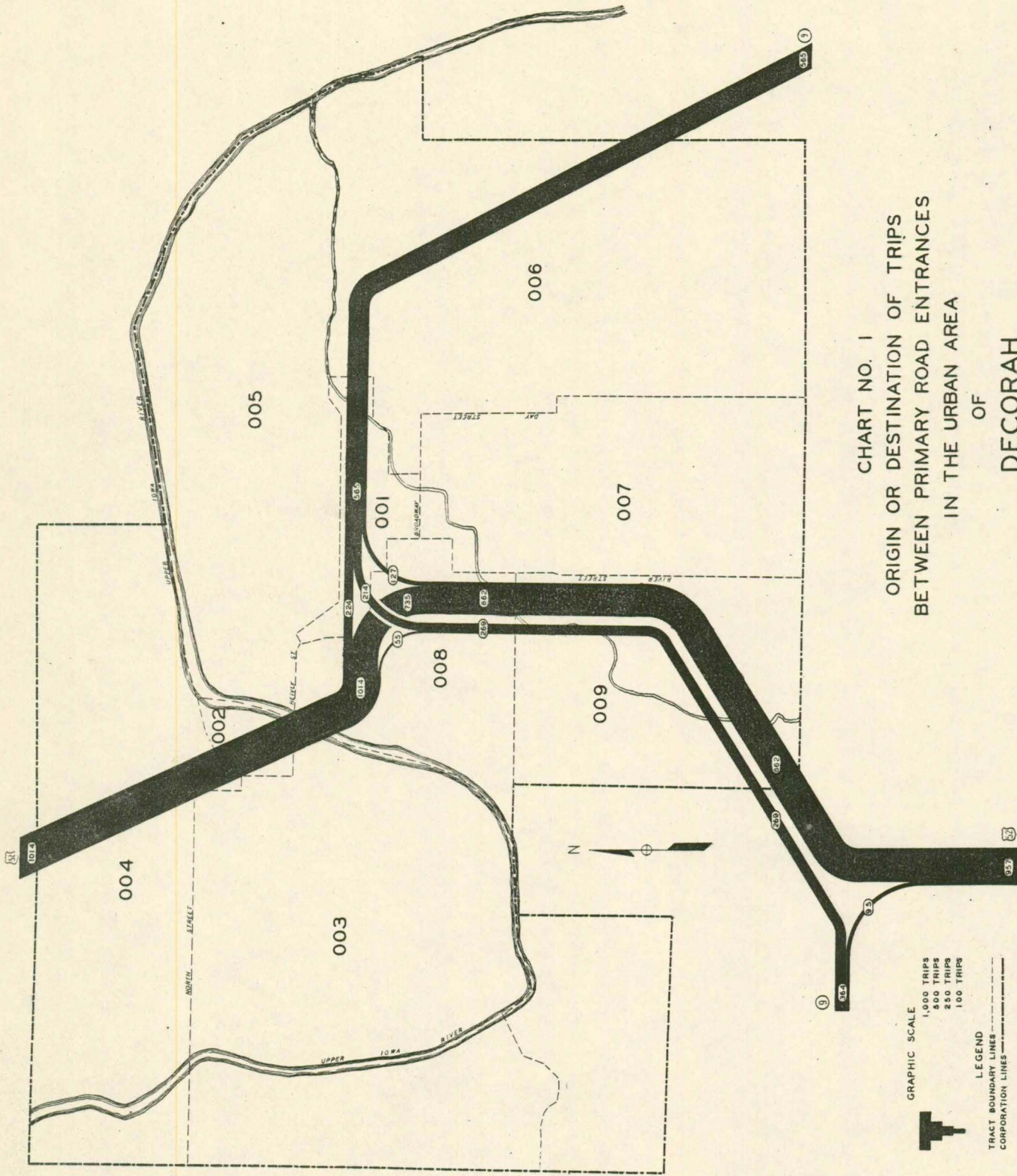


CHART NO. 1  
 ORIGIN OR DESTINATION OF TRIPS  
 BETWEEN PRIMARY ROAD ENTRANCES  
 IN THE URBAN AREA

OF  
**DECORAH**

JULY AVERAGE WEEKDAY TRAFFIC 1958

GRAPHIC SCALE

- 1,000 TRIPS
- 500 TRIPS
- 250 TRIPS
- 100 TRIPS

LEGEND

- TRACT BOUNDARY LINES
- CORPORATION LINES

4. Trips Through Each Station With  
Termini in the Central Business District:

Table 4 compares the total trips passing through each station with the percentage of these respective trips having termini in the central business district. It also relates the total of all trips passing through all of the stations to the number of these same trips having termini in the central business district. On this comparative basis 34.48 per cent of the total trips passing through all external stations fall into the above explained category.

Table 4 Trips Through Each Station With Termini in the Central Business District on an Average Weekday in July 1958			
External Station Location	Total Trips Through Station	Termini in the CBD	
		Number	Per Cent of Total
Ia 9 E	2,828	951	33.63
US 52 S	2,110	552	26.16
US 52 N	2,319	572	24.67
Ia 9 W	1,202	342	28.45
Less Duplicates	1,450	----	-----
Total	7,009	2,417	34.48

5. Trips Through Each Station With Termini  
Between the Station and the Central Business District:

The information contained in Table 5 reveals a comparison of the total trips passing through each station and the percentage of these trips having termini in the residential and intermediate areas between that station and the central business district. In addition to this, the summation of the total trips passing through all of the external stations is compared to the percentage of these total trips having termini as explained above. These comparisons are pointed out both numerically and on a percentage basis. As can be seen from the table, 1,267 trips, or 18.08 per cent of the total trips passing through all of the external stations, had termini in the residential and intermediate areas between the stations and the central business district.

Table 5 Trips Through Each Station With Termini Between the Station and the Central Business District on an Average Weekday in July 1958			
External Station Location	Total Trips Through Station	Termini Between Station and CBD	
		Number	Per Cent of Total
Ia 9 E	2,828	547	19.34
US 52 S	2,110	259	12.28
US 52 N	2,319	322	13.89
Ia 9 W	1,202	139	11.57
Less Duplicates	1,450	-----	-----
Total	7,009	1,267	18.08

6. Trips Through Each Station With Routes Via  
and Termini Beyond the Central Business District:

In Table 6 a comparison is made between the total trips passing through each external station, and the number and percentage of these trips which pass directly via and have their termini beyond the central business district. It can also be seen from the following table that 1,875 trips, or 26.75 per cent of all trips passing through all stations, travel directly via the central business district and have their termini beyond it. These comparisons are made both numerically and on a percentage basis for all of the routes listed.

Table 6 Trips Through Each Station With Routes Via and Termini Beyond the Central Business District on an Average Weekday in July 1958			
External Station Location	Total Trips Through Station	Routes Via-Termini Beyond CBD	
		Number	Per Cent of Total
Ia 9 E	2,828	765	27.05
US 52 S	2,110	342	16.21
US 52 N	2,319	411	17.72
Ia 9 W	1,202	357	29.70
Less Duplicates	1,450	---	---
Total	7,009	1,875	26.75



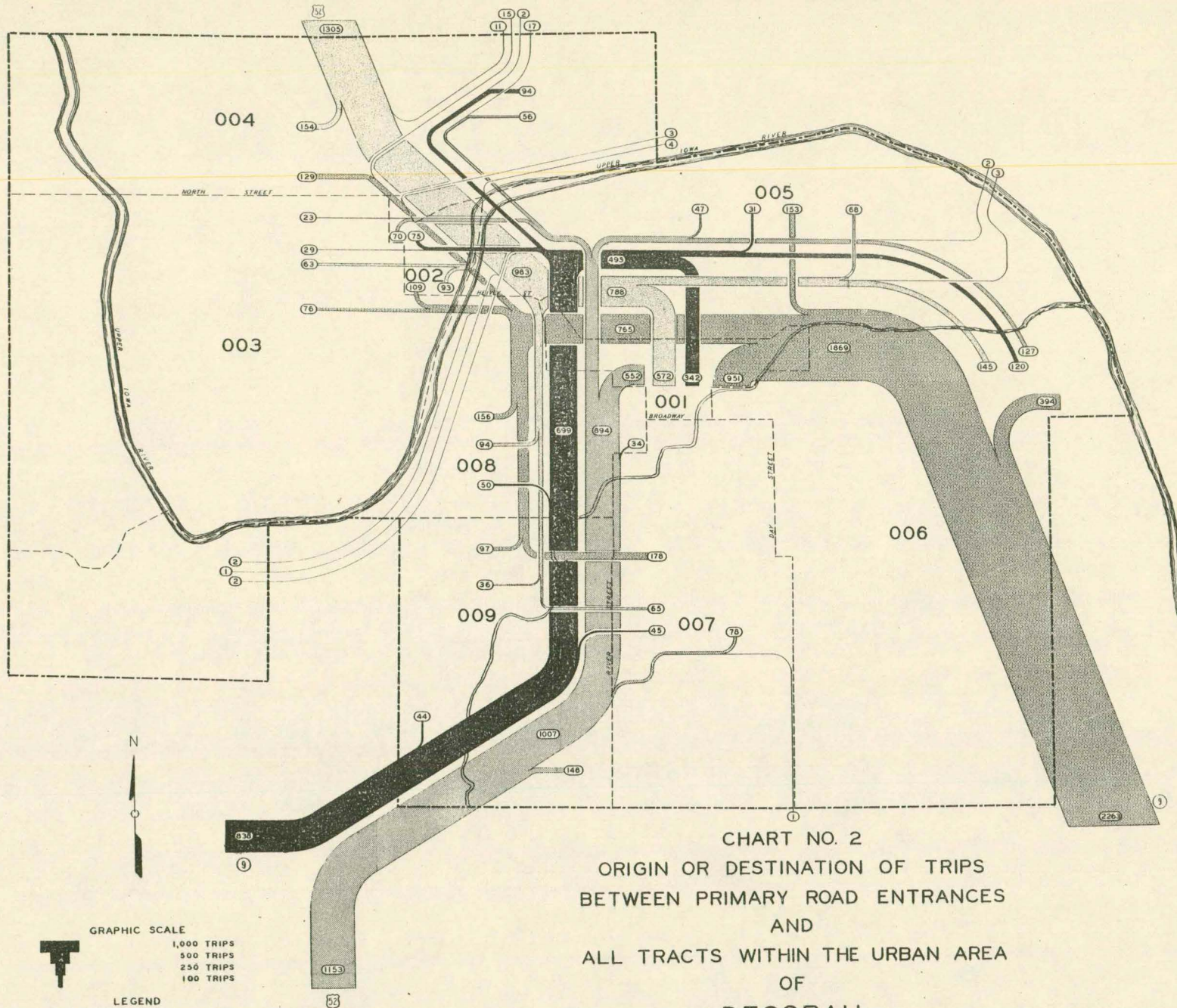
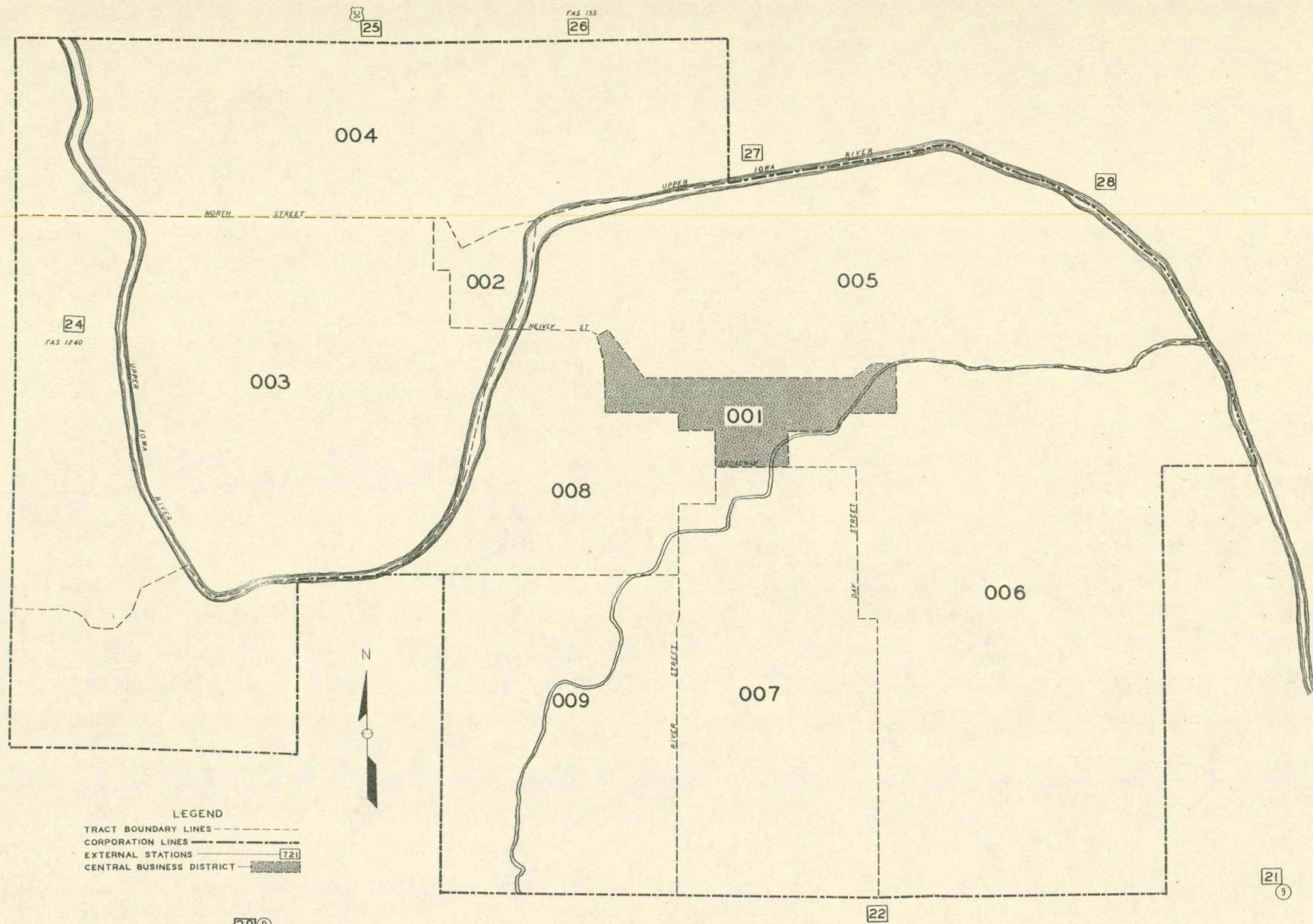


CHART NO. 2  
 ORIGIN OR DESTINATION OF TRIPS  
 BETWEEN PRIMARY ROAD ENTRANCES  
 AND  
 ALL TRACTS WITHIN THE URBAN AREA  
 OF  
 DECORAH

JULY AVERAGE WEEKDAY TRAFFIC 1958

A P P E N D I X



TRACT MAP  
 OF  
 DECORAH URBAN AREA  
 WITH  
 EXTERNAL STATIONS

29 9

23 53

22

21 9

1958 Decorah Origin and Destination  
 Total Trips Through Stations Located on Primary's  
 U.S. 52 N., U.S. 52 S., Ia. 9 E., and Ia. 9 W.  
 Average Weekday Traffic in July

Tract	Decorah Urban Area											Decorah Total	External Area								External Total	GRAND TOTAL	
	Central Business District	West Business Dist.	West	Northwest	North	Southeast	South	West Central	Southwest	West and South	Ia. 9 East		U.S. 52 S.	U.S. 52 N.	Ia. 9 W.	Local Road South	F.A.S. 1240 West	F.A.S. 155 North	Local Road Northeast	Local Road North			
	001	002	003	004	005	006	007	008	009	010		721	723	725	729	722	724	726	727	728			
												464	255	269	145							1133	1133
istrict												58	44	47	38							187	187
												40	13	37	13							103	103
												77	23	69	60							229	229
												70	23	35	22							150	150
												198	68	74	61							401	401
												92	36	30	26							184	184
												83	18	45	28							174	174
												50	70	21	17							158	158
												1132	550	627	410							2719	2719
	487	51	36	52	83	196	86	73	47	2	1113		55	106	100			9	3		273	1386	
	297	26	10	33	24	59	42	16	76		583	72		378	43	π		4			497	1080	
	303	46	26	85	33	71	35	49	15	1	664	118	357		26			9		3	513	1177	
	197	37	16	34	9	59	19	22	27	2	422	114	52	29				1	3		199	621	
													1								1	1	
												6	13	2							21	21	
															1						1	1	
													2		1						3	3	
	1284	160	88	204	149	385	182	160	165	5	2782	310	480	515	171			23	6	3	1508	4290	
	1284	160	88	204	149	385	182	160	165	5	2782	1442	1030	1142	581			23	6	3	4227	7009	