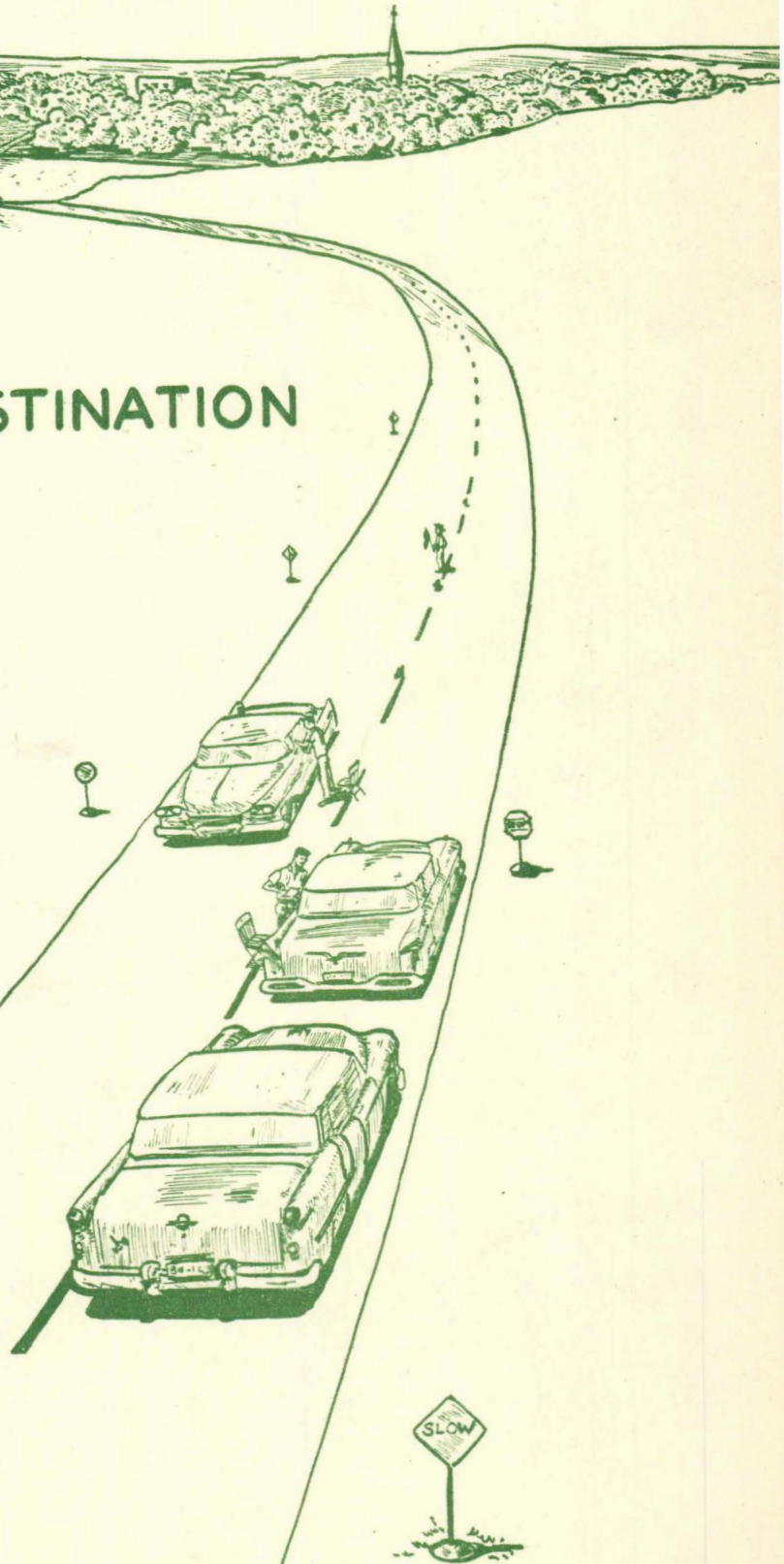


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# CLARINDA

## ORIGIN AND DESTINATION STUDY

INTERVIEW  
STATION



Clarinda 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.

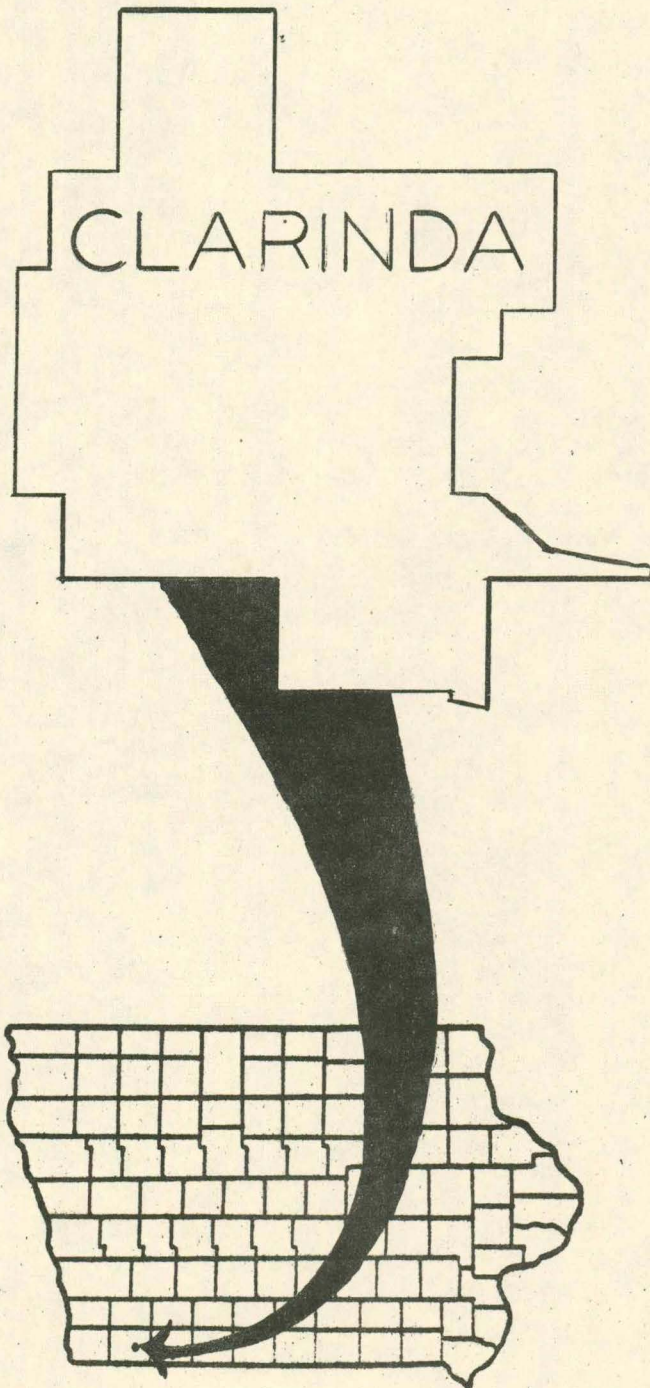
Duplicated Through Trips (Duplicates)

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 Clarinda 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, information was gathered by interviewing 90.03 per cent of the average weekday traffic. After the expansion of this information it was found that for an average weekday in August 1958, a total of 5,795 trips crossed the Clarinda city limits. Out of this total 28.72 per cent were classified as external through trips, which passed via the central business district.

Of all trips passing through the interview stations 27.26 per cent had termini in the central business district. However, another 24.19 per cent of the total had termini in the residential and intermediate areas between the station and the central business district. The final consideration is given to the 1,149 trips, or 19.83 per cent of the total number of trips which passed through the stations, with routes via and termini beyond the central business district.



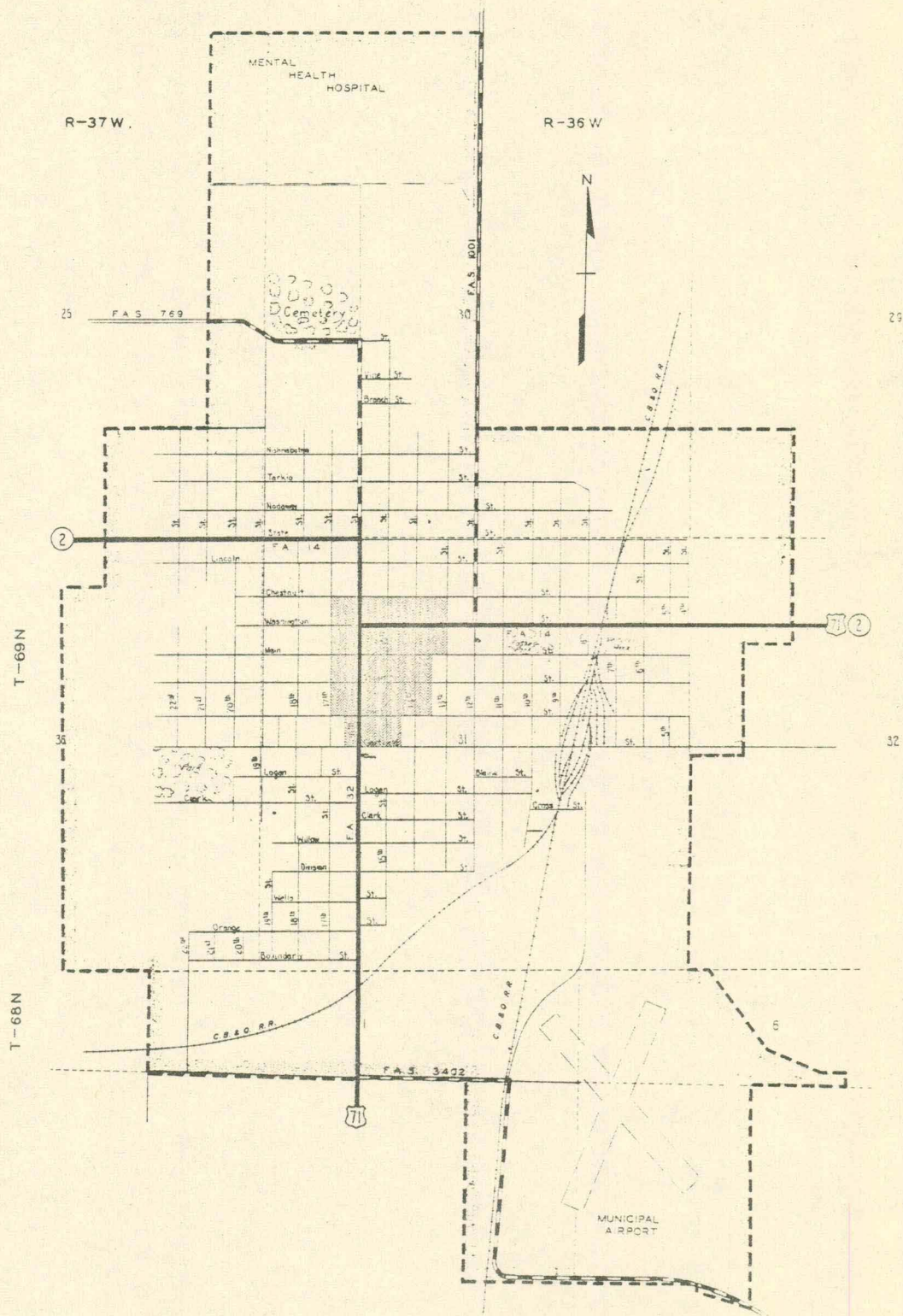
In addition to the above information, data breakdowns were also made for all truck trips entering and leaving the Clarinda urban area. Out of a total of 691 trucks which crossed the Clarinda city limits, 52.53 per cent were classified as external through trips which passed via the central business district. Of all trucks passing through the interview stations 14.18 per cent had termini in the central business district. However, another 12.88 per cent of the total 691 trucks had termini in the residential and intermediate areas between the station and the central business district. In addition to this, 20.41 per cent of the total trucks, passing through the interview stations, had routes via and termini beyond the central business district.



# PART II

## HISTORY AND CHARACTERISTICS

### CLARINDA URBAN AREA





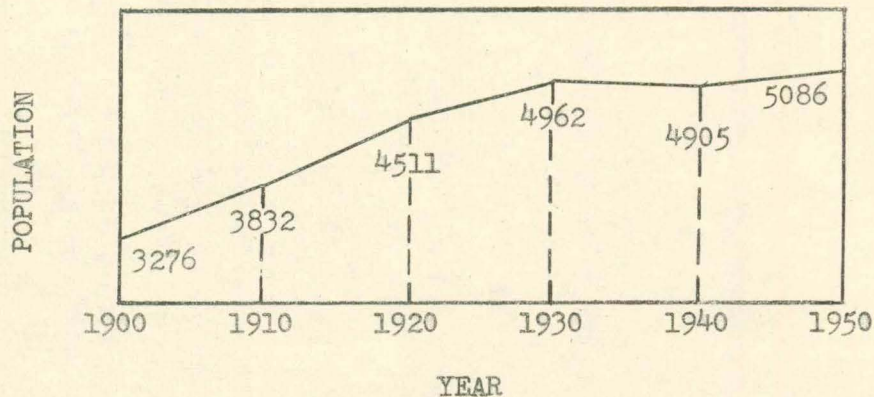
A. HISTORY

Reverend S. Farlow and his family were the first to settle within Clarinda's present boundaries. Judge Snyder was the next to move into the area, and the first school house was erected in 1854. Doctor J.L. Barrett settled in the area in 1855 and was the first physician in Clarinda. The following year, in 1856, the town's first postmaster established a post office in a dugout located behind the present Clarinda Bank.

The community's first church was built in 1858, and in 1861 the town was a stopping place on the Underground Railway. There were about 500 Negroes living in the town at that time.

The first regiment of the Western Division of the Volunteer Militia was organized in the town on July 3 and 4, 1861. Clarinda was first incorporated in 1866 and named after Clarinda Buck, a popular lady in the town. In December 1888 the State Hospital for the Insane was established one mile north of the city. By 1900 there were 3,276 residents living in the city. Population fluctuations are illustrated below.

CLARINDA POPULATION TRENDS





## B. CHARACTERISTICS

Clarinda is the county seat of Page County, which is located three counties east of the Missouri River, along the Iowa-Missouri border. The city itself is situated in hilly terrain and the corporate boundaries are slightly rectangular in configuration. Its' longer axis runs north and south. The Nodaway River is located just east of the city and provides a large industrial water potential.

The central business district is located slightly west of the center of Clarinda. Esco of Iowa, J.R. Kearney Corporation, Lisle Corporation, and Northwestern Clock are some of the principal industries in the city. Their combine production includes electrical transformers, electrical plating and switches, tools and magnetic plugs, and special timing devices.

Transportation facilities serving Clarinda include the Chicago, Burlington, and Quincy Railroad which crosses the corporation line near the northeast corner of the city and runs southerly across the municipality. Practically all spurs and switch tracks are concentrated in the southeast part of the corporate area.

There are four primary highway entrances to Clarinda. U.S. 71 enters from the south, Ia. 2 from the west, Ia. 194 from the north, and combined Ia. 2 and U.S. 71 from the east. Eastbound Ia. 2 and northbound U.S. 71 intersect in the heart of the central business district and continue easterly as a combined arterial out of the city. Ia. 2 intersects with Ia. 194 two blocks north of the central business district.







A. INTRODUCTION

Part III of this report describes briefly the purposes and objectives, procedures, and findings of the Clarinda Urban Area Traffic Survey. Summaries and illustrations of the significant data classifications are included. All information was collected during the period of August 4, 5, and 7, 1958. It is reported in terms of the number of trips daily on an average August 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.

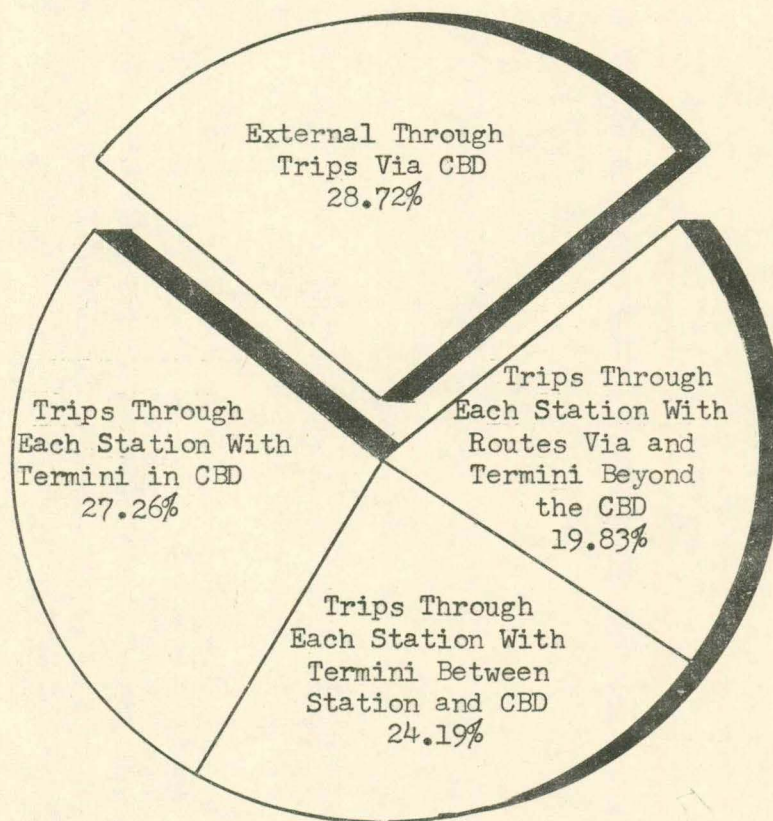
Each interview station was operated for 16 hours starting at 6 AM and ending at 10 PM. This scheme of operation provided for coverage of all but a small portion of the trips passing through each station in the twenty-four hour day. This small portion of traffic was accounted for by portable automatic 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 sheets in the appendix. Five 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 trip table. The third diagram is found following the group of tables relating all of the external local trips to their termini. The final two flow maps will be found in the section pertaining only to trucks.

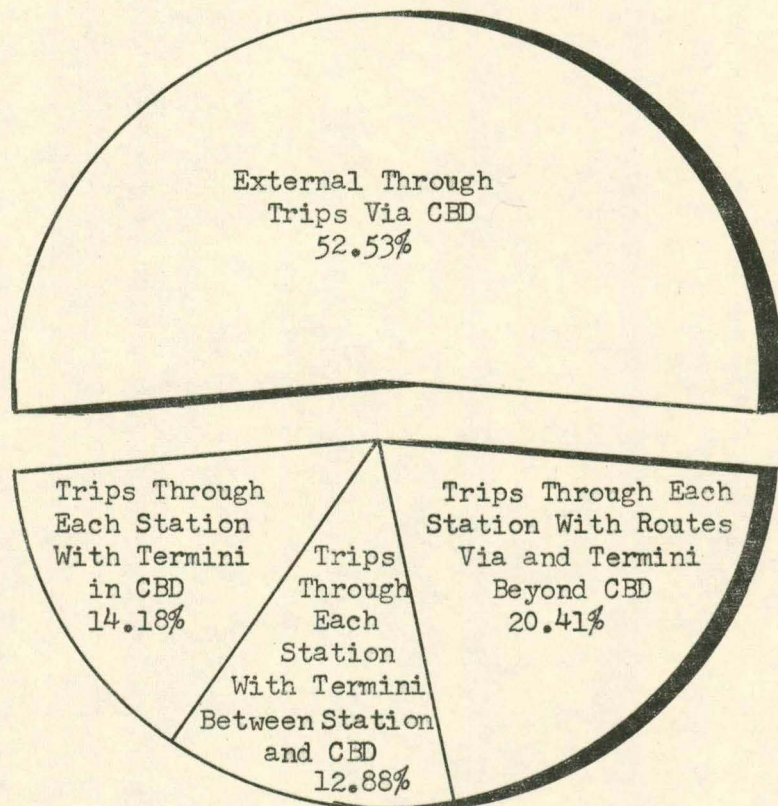


The following illustration represents a net total trip summarization and percentage distribution of the termini for all trips passing through the external interview stations on an average weekday in August 1958. It should be noted that the few external through trips having termini on non-primary rural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





The following illustration represents a net total truck trip summarization and percentage distribution of the termini for all trucks passing through the external interview stations on an average weekday in August 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.



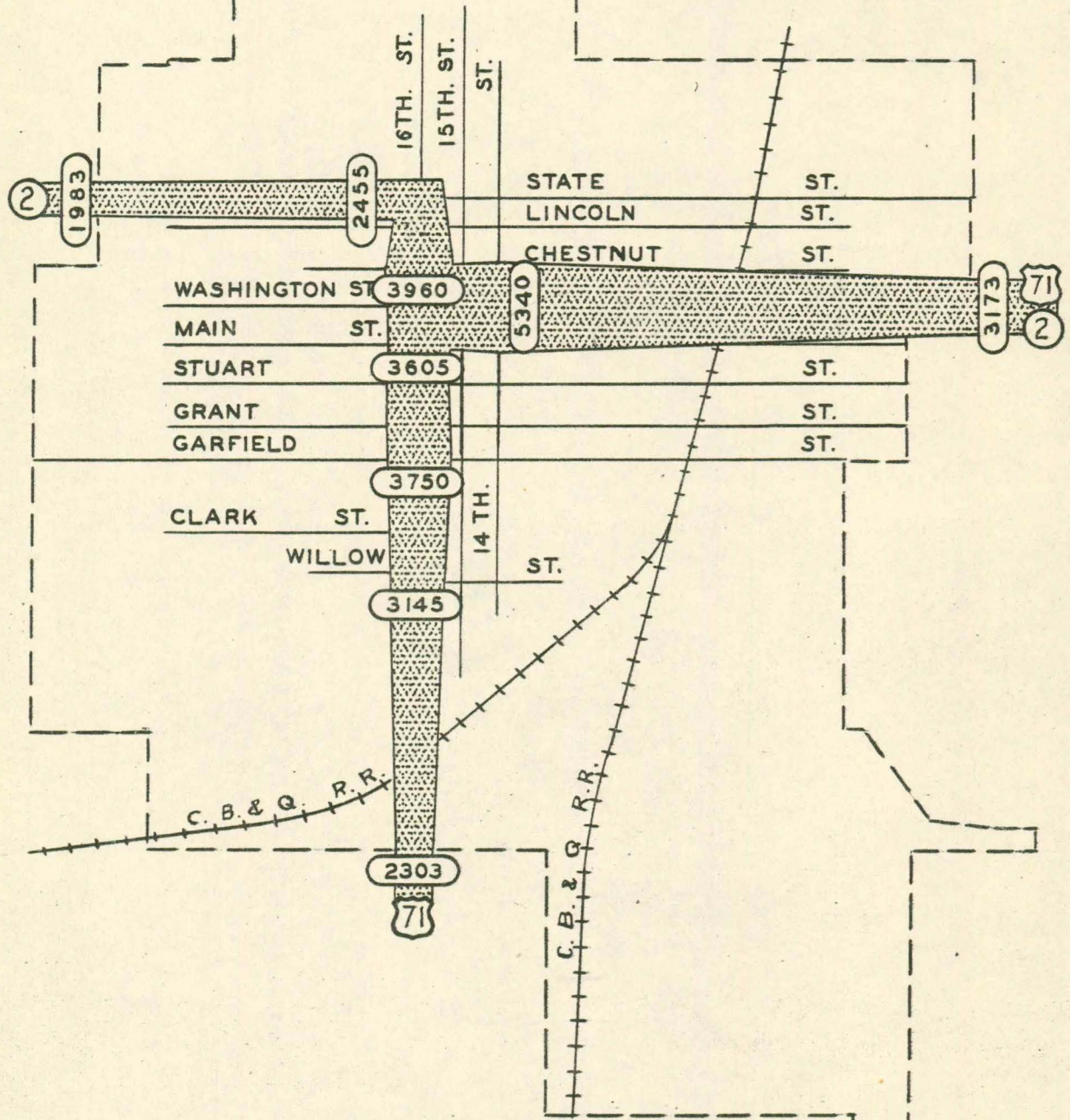


1. Traffic and Interview Summary:

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 August 1958.

Table 1 Traffic Entering or Leaving the Clarinda Urban Area by Way of the Principal Rural Road Entrances						
External Station Locations	Average Weekday Traffic-Aug 1958				No. of Inter- views Taken	Per Cent Inter- viewed
	Passenger Cars and Pick-Ups	Single Unit Trucks	Truck Combi- nations	Total		
US 71-Ia 2 E	2,765	182	226	3,173	3,076	96.94
US 71 S	1,953	100	250	2,303	1,974	85.71
Ia 2 W	1,687	156	140	1,983	1,665	83.96
Total	6,405	438	616	7,459	6,715	90.03





TRAFFIC FLOW MAP  
CITY OF CLARINDA



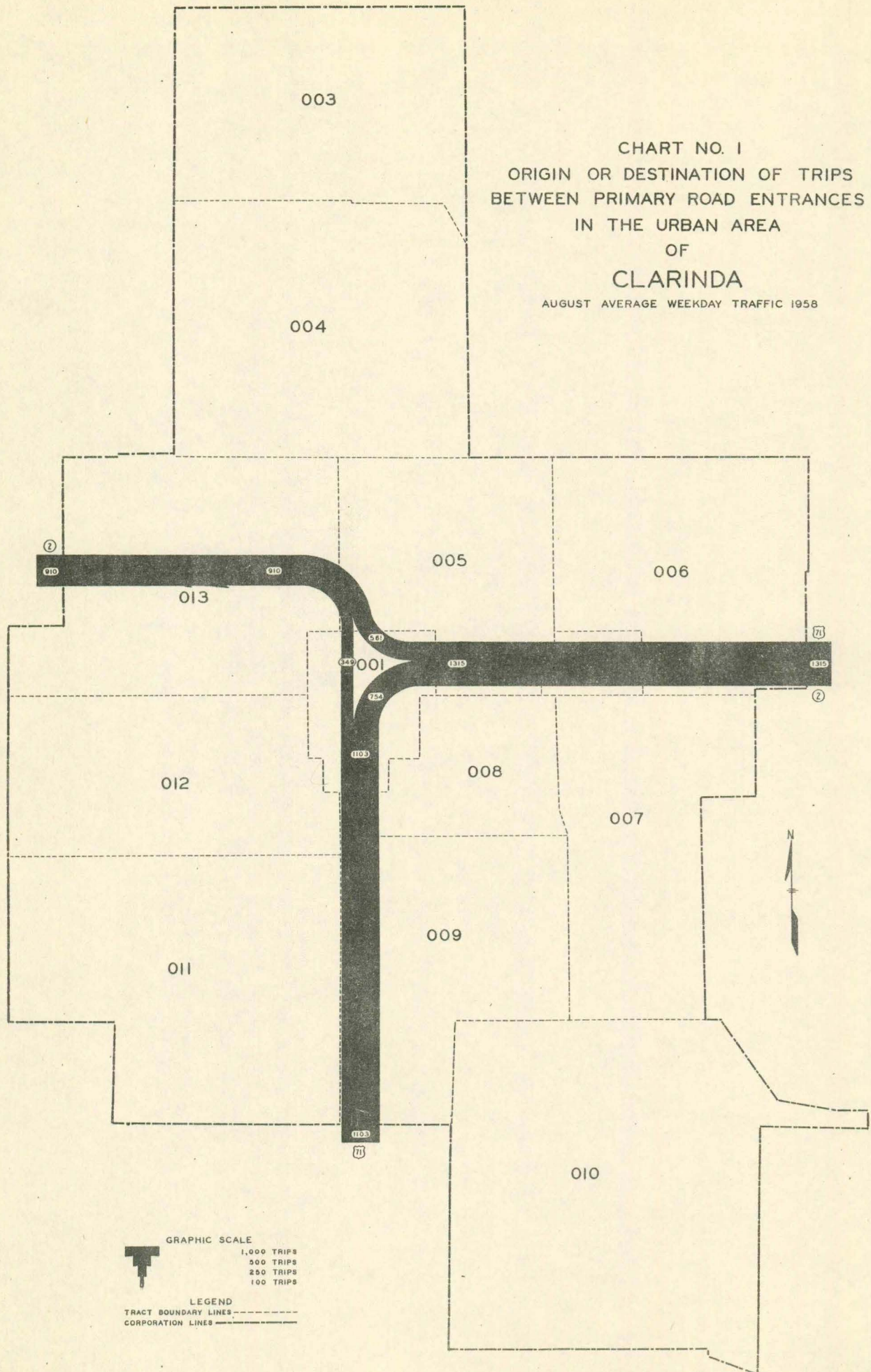
2. External Through Trips Via  
the Central Business District:

The following table reveals the exact relationship between all trips passing through each external station and the percentage of these trips which are external through trips passing via the central business district. This same relationship is also presented for all trips passing through all stations. From Table 2 it is then noted that 28.72 per cent of all trips fall into this category.

Table 2 External Through Trips Via the Central Business District on an Average Weekday in August 1958			
External Station Location	Total Trips Through Station	Through Trips Via the CBD	
		Number	Per Cent of Total
US 71 & Ia 2 E	3,173	1,315	41.44
US 71 S	2,303	1,103	47.89
Ia 2 W	1,983	910	45.89
Less Duplicates	1,664	1,664	100.00
Total	5,795	1,664	28.72



CHART NO. 1  
 ORIGIN OR DESTINATION OF TRIPS  
 BETWEEN PRIMARY ROAD ENTRANCES  
 IN THE URBAN AREA  
 OF  
**CLARINDA**  
 AUGUST AVERAGE WEEKDAY TRAFFIC 1958





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

Table 3 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 27.26 per cent of the total trips passing through all external stations had termini in the central business district.

Table 3 Trips Through Each Station With Termini in the Central Business District on an Average Weekday in August 1958			
External Station Location	Total Trips Through Station	Termini in the CBD	
		Number	Per Cent of Total
US 71 & Ia 2 E	3,173	661	20.83
US 71 S	2,303	500	21.71
Ia 2 W	1,983	419	21.13
Less Duplicates	1,664	---	-----
Total	5,795	1,580	27.26



4. Trips Through Each Station With Termini

Between the Station and the Central Business District:

The information contained in the table below 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, 1,402 trips, or 24.19 per cent of the total trips, follow this pattern.

External Station Location	Total Trips Through Station	Termini Between Station and CBD	
		Number	Per Cent of Total
US 71 & Ia 2 E	3,173	916	28.87
US 71 S	2,303	181	7.86
Ia 2 W	1,983	305	15.38
Less Duplicates	1,664	---	-----
Total	5,795	1,402	24.19



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

In Table 5 a comparison is made between the total trips passing through each external station and the number and percentage of these trips which pass directly through and have their termini beyond the central business district. It can also be seen from the following table that 1,149 trips, or 19.83 per cent of all trips passing through all stations, go directly by way of the central business district and have their termini beyond it.

External Station Location	Total Trips Through Station	Routes Via-Termini Beyond CBD	
		Number	Per Cent of Total
US 71 & Ia 2 E	3,173	281	8.86
US 71 S	2,303	519	22.54
Ia 2 W	1,983	349	17.60
Less Duplicates	1,664	---	----
Total	5,795	1,149	19.83



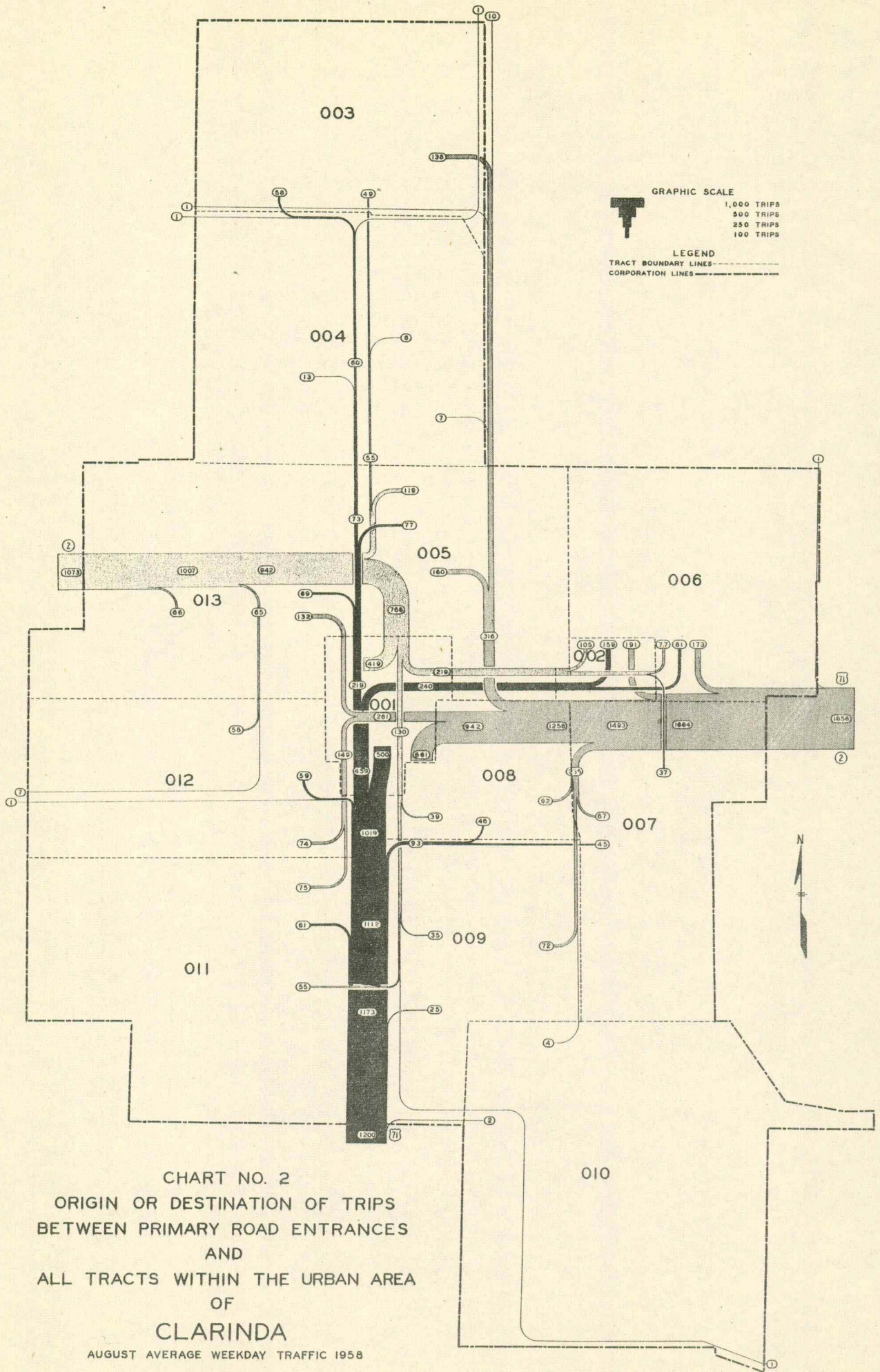


CHART NO. 2  
 ORIGIN OR DESTINATION OF TRIPS  
 BETWEEN PRIMARY ROAD ENTRANCES  
 AND  
 ALL TRACTS WITHIN THE URBAN AREA  
 OF  
**CLARINDA**  
 AUGUST AVERAGE WEEKDAY TRAFFIC 1958



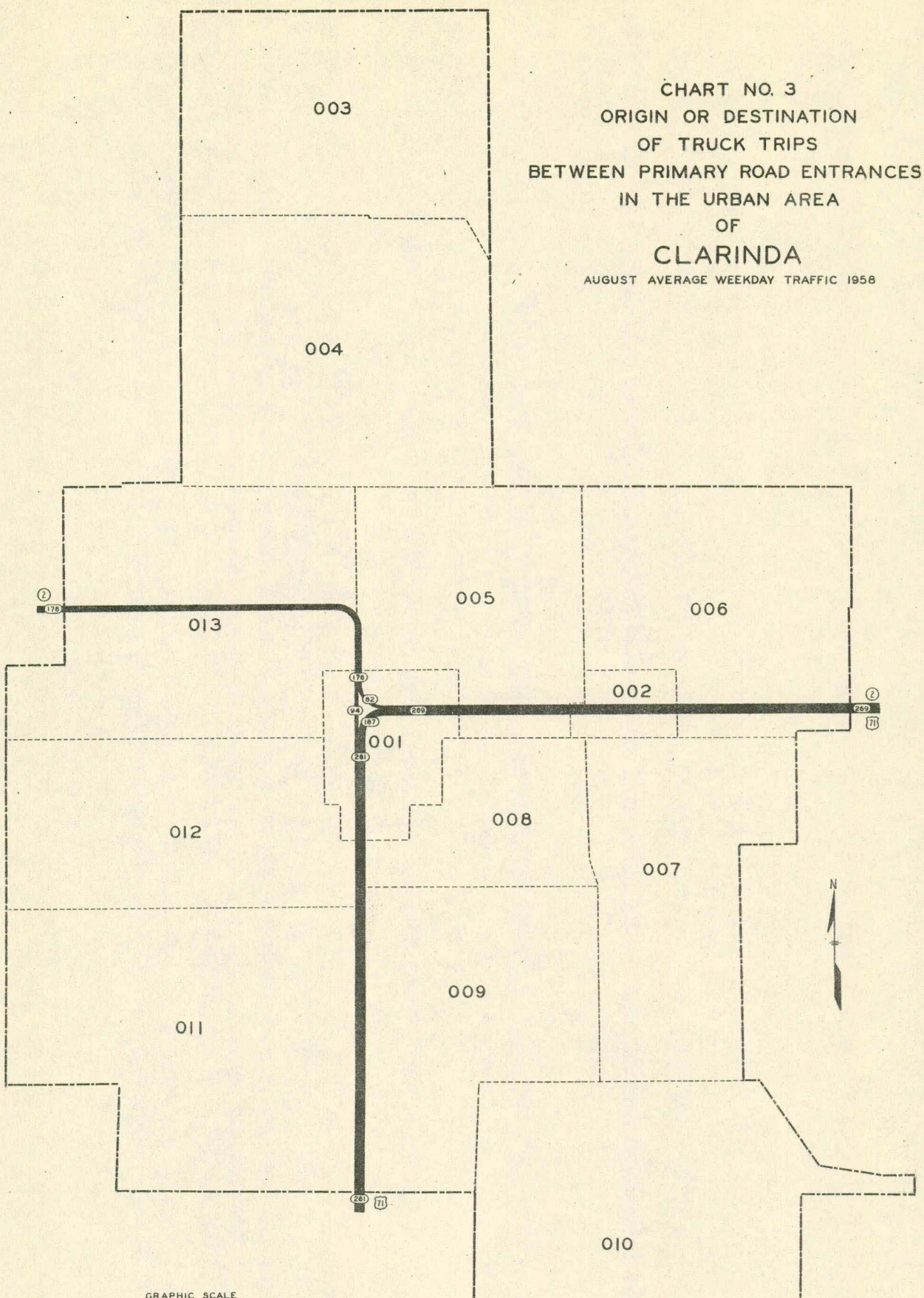
6. External Through Truck Trips Via  
the Central Business District:

Table 6 presents a very good comparison between the total number of trucks passing through each external station and the number or per cent of these trucks 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 truck trips through all stations. From this presentation it is shown in the following table that 363 trucks, or 52.53 per cent of the total number of trucks passing through all external stations, were external through truck trips traveling via the central business district.

Table 6 External Through Truck Trips Via the Central Business District on an Average Weekday in August 1958			
External Station Location	Total Trips Through Station	Through Trips Via the CBD	
		Number	Per Cent of Total
US 71 & Ia 2 E	408	269	65.93
US 71 S	350	281	80.29
Ia 2 W	296	176	59.46
Less Duplicates	363	363	100.00
Total	691	363	52.53



CHART NO. 3  
ORIGIN OR DESTINATION  
OF TRUCK TRIPS  
BETWEEN PRIMARY ROAD ENTRANCES  
IN THE URBAN AREA  
OF  
**CLARINDA**  
AUGUST AVERAGE WEEKDAY TRAFFIC 1958



GRAPHIC SCALE



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

Table 7 compares the total number of trucks passing through each station with the percentage of these trucks which have termini in the central business district. It also relates the total of all trucks passing through all of the stations to the number of same trucks having termini in the central business district. On this comparative basis 14.18 per cent of the total trucks passing through all external stations fall into the above explained category.

Table 7 Truck Trips Through Each Station With Termini in the Central Business District on an Average Weekday in August 1958			
External Station Location	Total Trips Through Station	Termini in the CBD	
		Number	Per Cent of Total
US 71 & Ia 2 E	408	52	12.75
US 71 S	350	22	6.28
Ia 2 W	296	24	8.11
Less Duplicates	363	----	-----
Total	691	98	14.18



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

The information contained in Table 8 reveals a comparison of the total number of trucks passing through each station and the percentage of these trucks which have termini in the residential and intermediate areas between that station and the central business district. In addition to this, the summation of the total number of trucks passing through all of the external stations is compared to the percentage of this total which have termini as explained above. These comparisons are pointed out both numerically and on a percentage basis. As can be seen from the table, 89 trucks, or 12.88 per cent of all trucks passing through all of the external stations, had termini in the residential and intermediate areas between the stations and the central business district.

Table 8 Truck Trips Through Each Station With Termini Between the Station and the Central Business District on an Average Weekday in August 1958			
External Station Location	Total Trips Through Station	Termini Between Station and CBD	
		Number	Per Cent of Total
US 71 & Ia 2 E	408	61	14.95
US 71 S	350	18	5.14
Ia 2 W	296	10	3.38
Less Duplicates	363	--	-----
Total	691	89	12.88



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

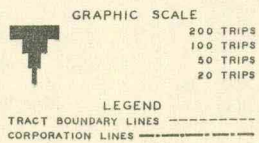
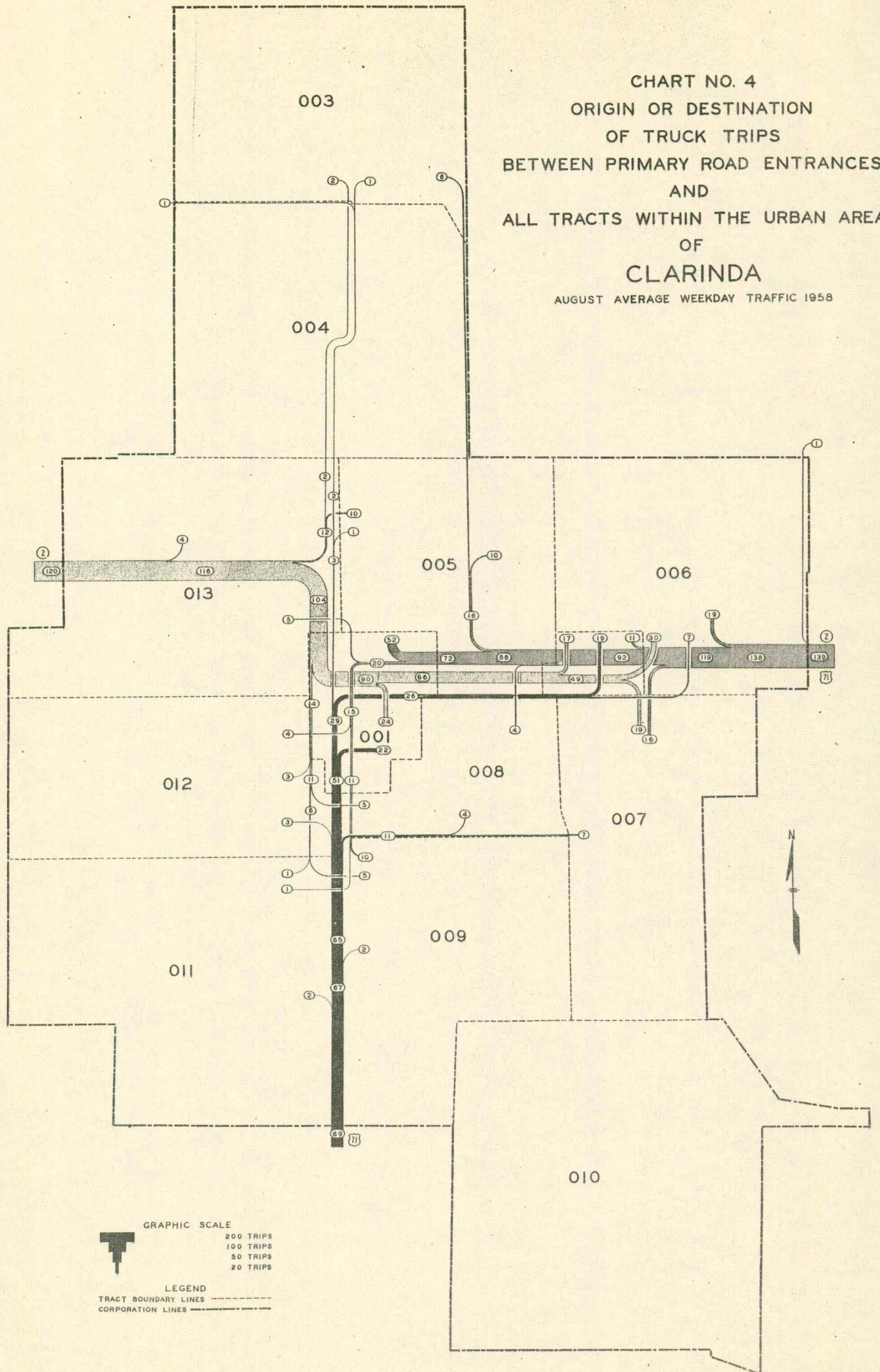
In Table 9 a comparison is made between the total number of trucks passing through each external station, and the number and percentage of these trucks which pass directly via and have their termini beyond the central business district. It can also be seen from the following table that 141 trucks, or 20.41 per cent of all trucks 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.

External Station Location	Total Trips Through Station	Routes Via-Termini Beyond CBD	
		Number	Per Cent of Total
US 71 & Ia 2 E	408	26	6.37
US 71 S	350	29	8.29
Ia 2 W	296	86	29.05
Less Duplicates	363	---	-----
Total	691	141	20.41



CHART NO. 4  
 ORIGIN OR DESTINATION  
 OF TRUCK TRIPS  
 BETWEEN PRIMARY ROAD ENTRANCES  
 AND  
 ALL TRACTS WITHIN THE URBAN AREA  
 OF  
**CLARINDA**

AUGUST AVERAGE WEEKDAY TRAFFIC 1958

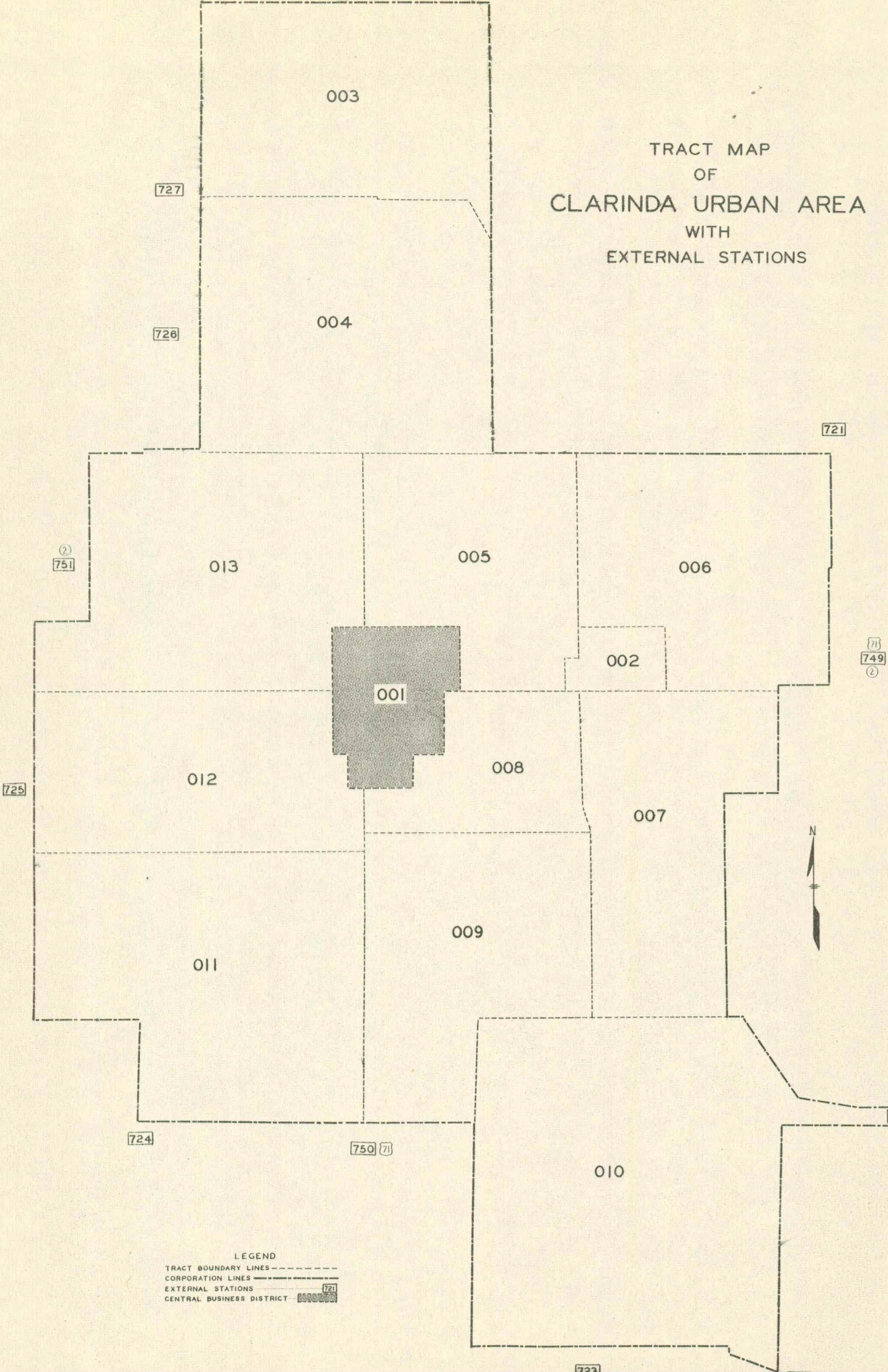




A P P E N D I X



TRACT MAP  
OF  
CLARINDA URBAN AREA  
WITH  
EXTERNAL STATIONS



LEGEND  
TRACT BOUNDARY LINES - - - - -  
CORPORATION LINES - - - - -  
EXTERNAL STATIONS - - - - -  
CENTRAL BUSINESS DISTRICT - - - - -



1958 Clarinda Origin and Destination  
 Total Trips Through Stations Located on Primary's  
 U.S. 71 and Ia. 2 E., U.S. 71 S., and Ia. 2 W. Average Weekday Traffic in August

	Tract	Trip Origin	Clarinda Urban Area													Clarinda Total	External Area									External Total	GRAND TOTAL		
			Central Business District	East Business District	State Hospital	North	North Central	Northeast	Southeast	South Central	South	Airport	Southwest	West	Northwest		U.S. 71 and Ia. 2 East	U.S. 71 South	Ia. 2 West	F.A.S. 1001 North	Local Road North	F.A.S. 3402 South	Local Road South	Local Road South	Local Road South			F.A.S. 769 West	Local Road West
			001	002	003	004	005	006	007	008	009	010	011	012	013		749	750	751	720	721	722	723	724	725			726	727
Clarinda Urban Area	001	Central Business District														305	237	200									742	742	
	002	East Business District														84	82	56									222	222	
	003	State Hospital														72	26	25									123	123	
	004	North														3	6	6									15	15	
	005	North Central														71	32	65									168	168	
	006	Northeast														80	34	43									157	157	
	007	Southeast														30	17	19									66	66	
	008	South Central														45	23	18									86	86	
	009	South														32	11	16									59	59	
	010	Airport														1	1										2	2	
	011	Southwest														36	33	33									102	102	
	012	West														40	26	27									93	93	
	013	Northwest														69	35	34									138	138	
		Clarinda Total														868	563	542									1973	1973	
External Area	749	U.S. 71 and Ia. 2 East	356	107	66	4	89	93	37	47	40	3	39	34	63	978	373	283	2							658	1636		
	750	U.S. 71 South	263	77	32	7	45	47	28	25	14	1	28	33	34	634	381	190	1						1	573	1207		
	751	Ia. 2 West	219	49	24		54	34	18	21	19		22	31	32	523	278	159		1			4			442	965		
	720	F.A.S. 1001 North														8					1					8	8		
	721	Local Road North														1										1	1		
	722	F.A.S. 3402 South																											
	723	Local Road South																											
	724	Local Road South																											
	725	Local Road West																1	3								4	4	
	726	F.A.S. 769 West																											
727	Local Road West															1										1	1		
	External Total	838	233	122	11	188	174	83	93	73	4	89	98	129	2135	669	533	476	3	1			4	1	1687	3822			
	GRAND TOTAL	838	233	122	11	183	174	83	93	73	4	89	93	129	2135	1537	1096	1018	3	1			4	1	3660	5795			



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