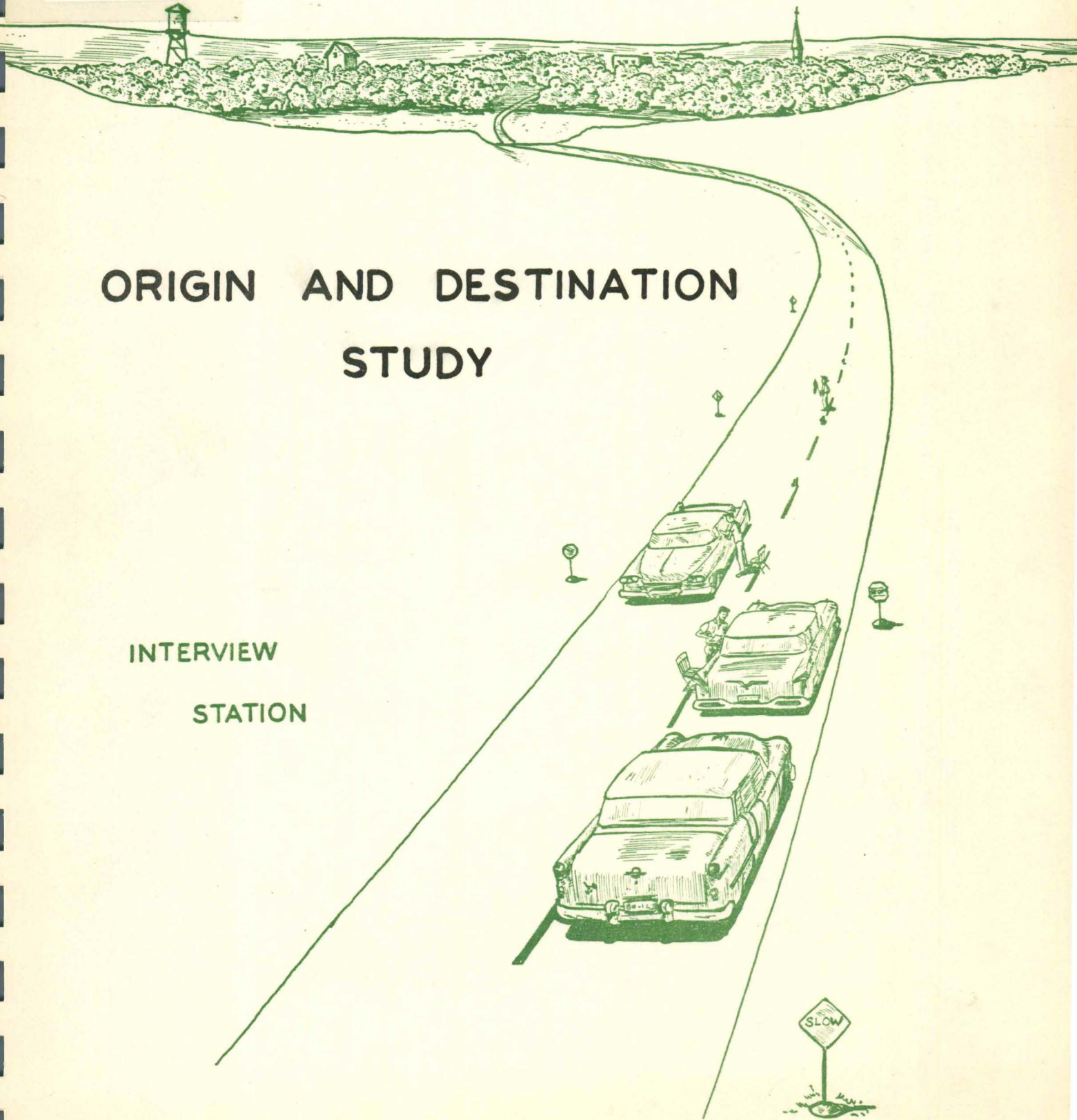


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FAIRFIELD

ORIGIN AND DESTINATION STUDY

INTERVIEW
STATION



Fairfield 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.

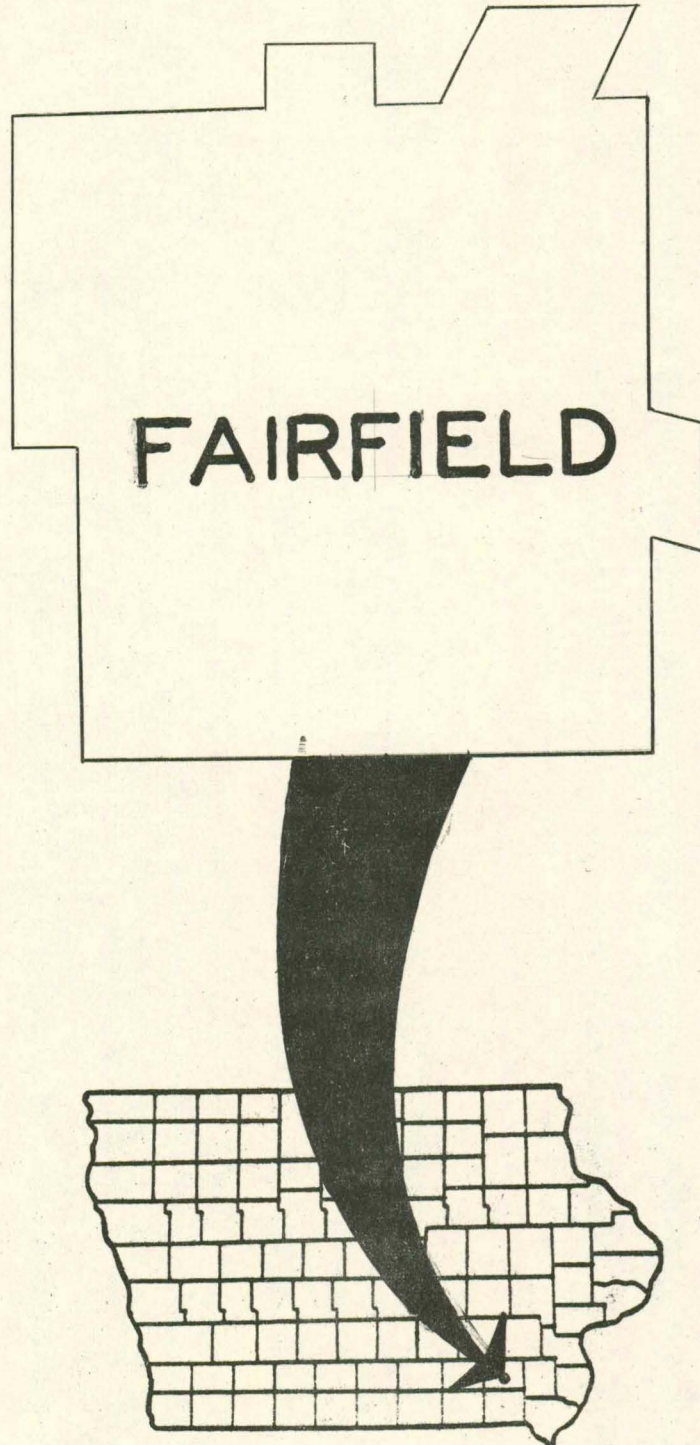
Duplicated Through Trips (Duplicates)

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



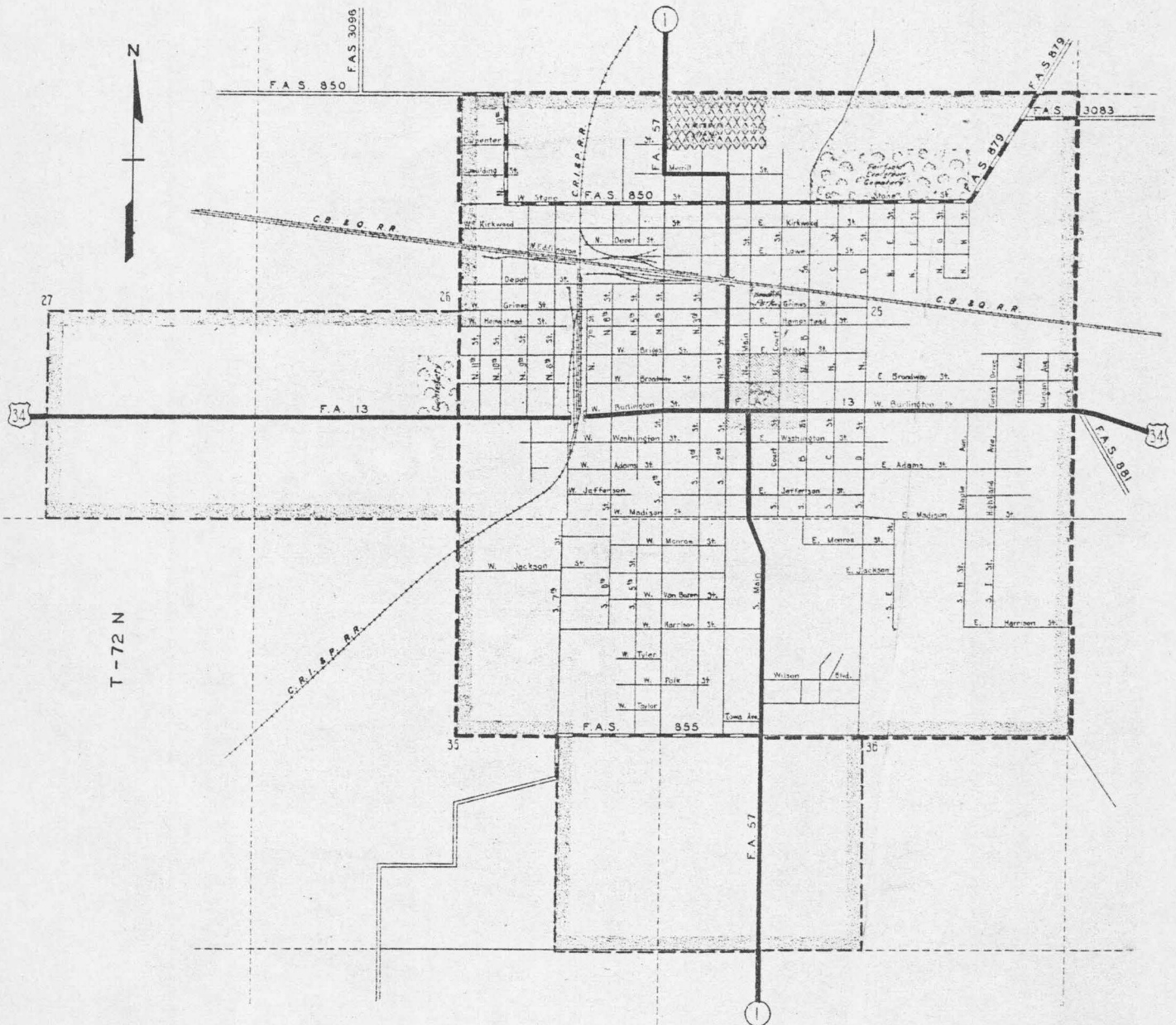
This report of the Fairfield Urban Area Traffic Survey describes briefly the characteristics of the urban area pertinent to the local problem of highway transportation and presents and analyzes the data gathered in the survey. All trip data obtained in the survey are presented in terms of the number 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 85.99 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 8,533 trips crossed the Fairfield city limits. Out of this total 30.18 per cent were classified as external through trips which passed via the central business district.

Of all trips passing through the interview stations 23.54 per cent had termini in the central business district. However, another 17.83 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, 28.45 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
 FAIRFIELD URBAN AREA

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A. HISTORY

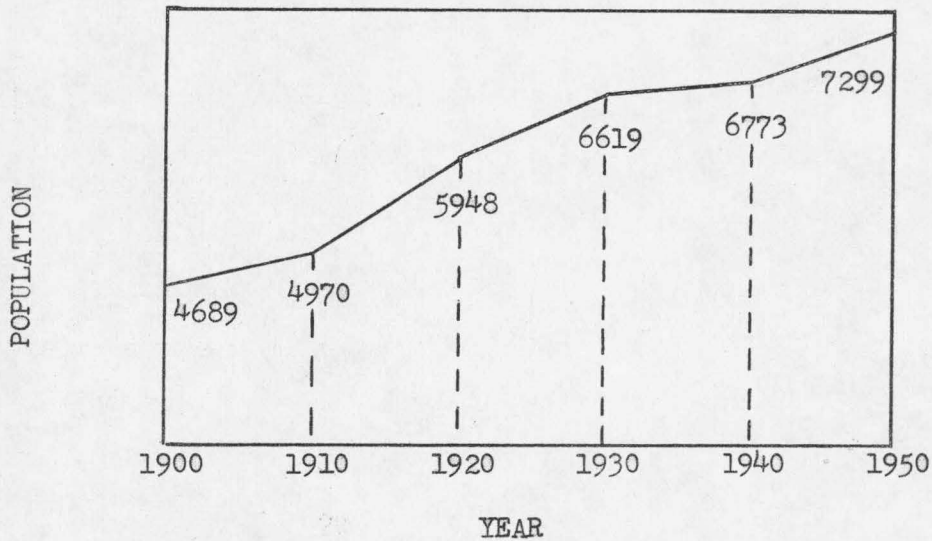
Founded in 1839 by Rodham Bonifield, the original town of Fairfield consisted of twenty-five blocks, platted in regular squares of eight lots each. It was named Fairfield by Mrs. Rodham Bonifield because of its location on a beautiful little prairie surrounded by timber and brush land. William Hueston built the first house, a log structure, in April 1839. Soon after completing this building Hueston opened the first store in Fairfield. The court house, also erected in 1839 was the first frame building in the community.

In 1843 Fairfield's first school opened in a log cabin. The Jefferson County Library Association was incorporated in March 1852 and a 500 volume library was established. In 1893 Andrew Carnegie became interested in the library and, because it was the first west of the Mississippi River, he contributed \$40,000 to the Library Association.

Parsons College was founded in Fairfield in 1875. It was named after Lewis P. Parsons whose will provided for the Parsons Endowment Fund and the establishment of the college. The school was first housed in the residence of Bernhart Hein, and the first class was graduated in 1880.

The starting point of the 1954 Fairfield covered wagon caravan, which commemorated the 100th Anniversary of the first Iowa State Fair, is marked by a monument. The original fair was held in Fairfield in 1854. The cities population trends from 1900 through 1950 are illustrated on the following page.

FAIRFIELD POPULATION TRENDS



B. CHARACTERISTICS

Fairfield is located in the third county west of the Mississippi River and the second tier of counties north of the Iowa-Missouri border. The nearly square urban area is situated in level to gently rolling terrain.

The central business district is located in the middle of the urban area and consists principally of retail, wholesale, and service firms. Many of Fairfield's industries are located in the northwest section of the city. They include the Dexter Division of the Philco Corporation, Loudon Machinery Company, and the Iowa Malleable Iron Company. The manufacturing plants are all located on or very near railroad lines.

Parsons College is in the north central part of the city bordering the north corporation line. Some 45 faculty members are engaged in

teaching the 600-student enrollment. The 65-acre campus is mostly wooded and includes 22 buildings.

The Chicago, Burlington, and Quincy Railroad splits the north half of the city. It intersects the Chicago, Rock Island, and Pacific Railroad which passes through the west part of Fairfield, near the center of the northwest quarter of Fairfield. Practically all rail spurs and sidings are located in this area.

Primary highway U.S. 34 bisects the city in an east-west direction and passes through the central business district. It intersects north bound Ia. 1 at the west edge of the central business district and southbound Ia. 1 at a point one block farther east. There are grade separations at both of the highway and railroad intersections within the city.

A. INTRODUCTION

Part III of this report describes briefly the purposes and objectives, procedures, and findings of the Fairfield Urban Area Traffic Survey. Summaries and illustrations of the significant data classifications are included. All information was collected during the period of August 18 to 21, 1958, inclusive. 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.

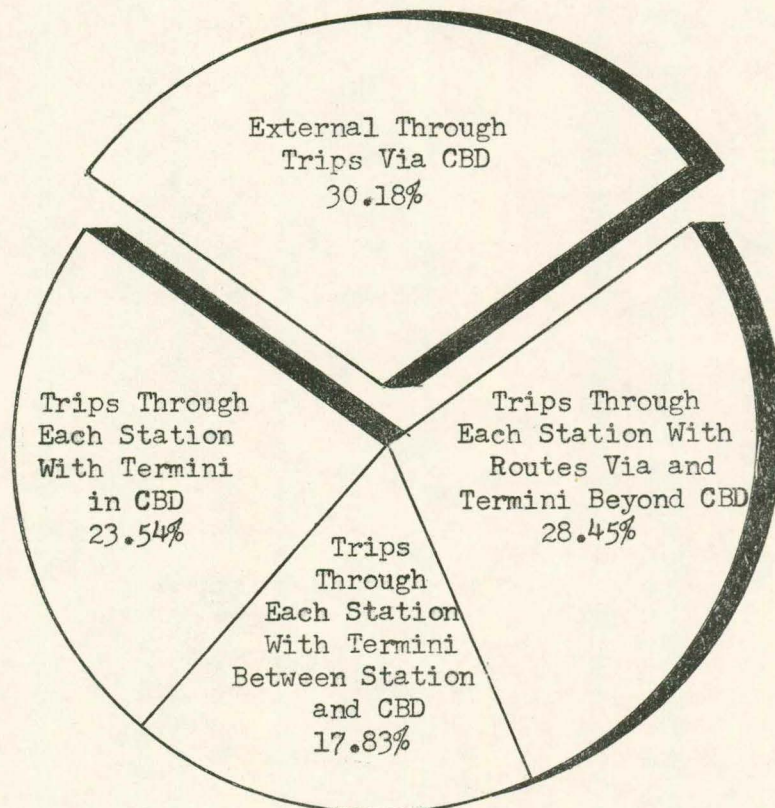
Each interview station was operated for 16 hours starting at 6 AM and ending at 10 PM. This scheme of operation provided for coverage of all but a small portion of the trips passing through each station in the twenty-four hour day. This small portion of traffic was accounted for by portable automatic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

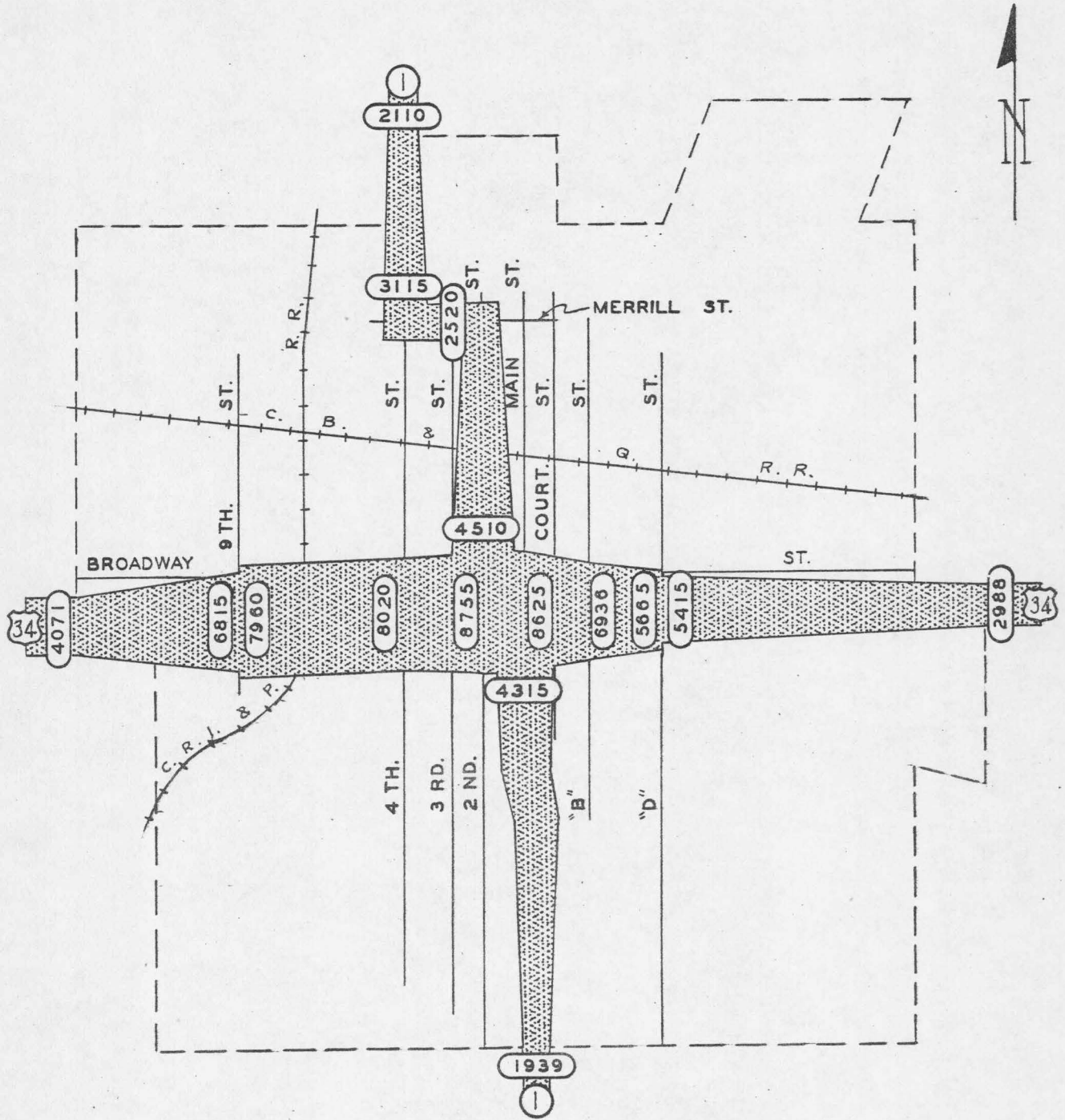
The following illustration represents a net total trip summarization and percentage distribution of the termini for all trips passing through the external interview stations on an average weekday in August 1958. It should be noted that the few external through trips having termini on non-primary rural 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 Fairfield 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		
Ia 1 N	1,819	191	100	2,110	1,860	88.15
US 34 E	2,468	308	212	2,988	2,598	86.95
Ia 1 S	1,731	113	95	1,939	1,555	80.20
US 34 W	3,595	217	259	4,071	3,539	86.93
Total	9,613	829	666	11,108	9,552	85.99



TRAFFIC FLOW MAP
 CITY OF FAIRFIELD
 JEFFERSON COUNTY
 AVERAGE WEEK DAY TRAFFIC AUGUST-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 2,575 trips, or 30.18 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 1 N	2,110	757	35.87
US 34 E	2,988	1,821	60.94
Ia 1 S	1,939	605	31.20
US 34 W	4,071	1,967	48.32
Less Duplicates	2,575	2,575	100.00
Total	8,533	2,575	30.18

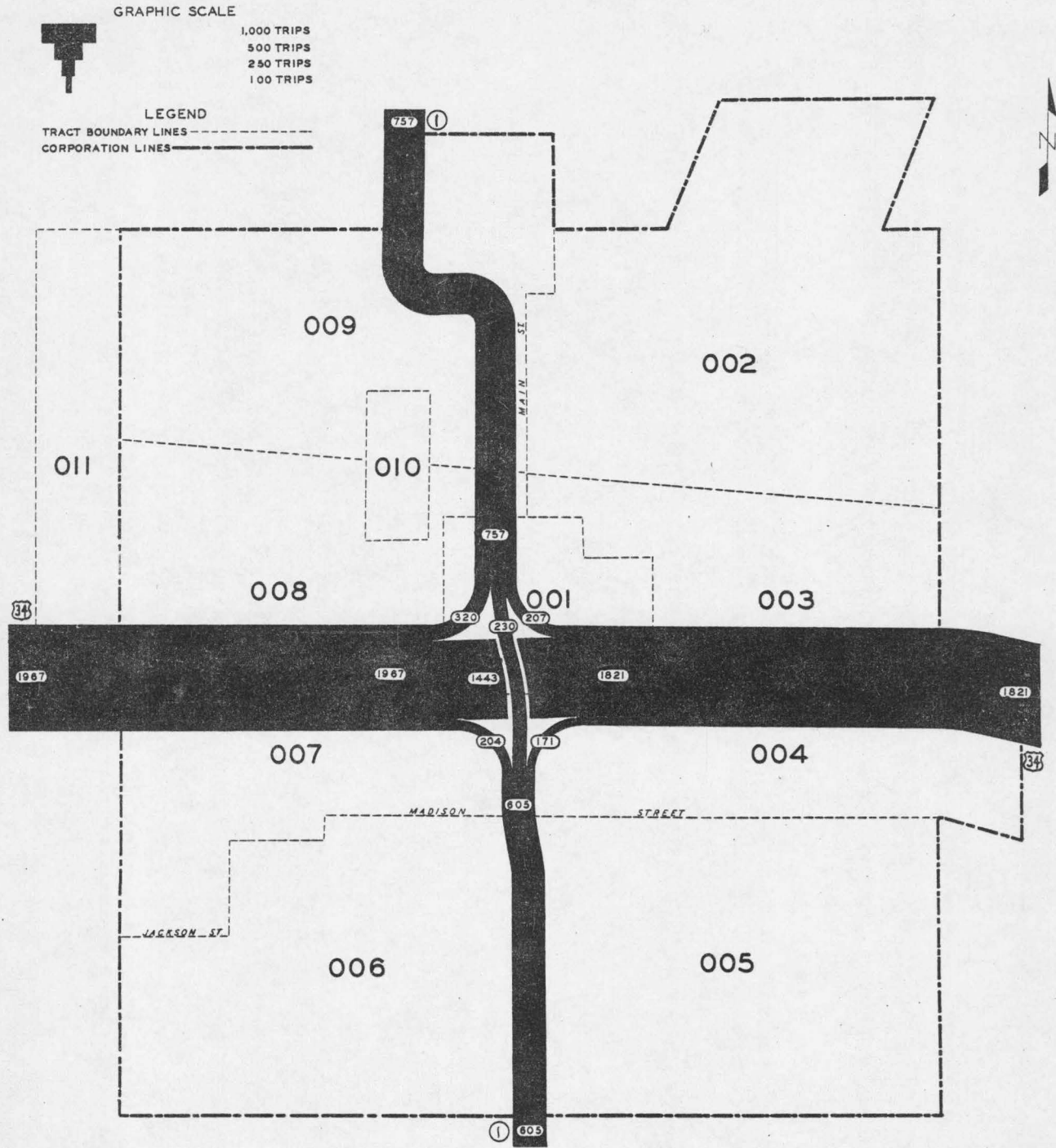


CHART NO. 1
ORIGIN OR DESTINATION OF TRIPS
BETWEEN PRIMARY ROAD ENTRANCES
IN THE URBAN AREA
OF
FAIRFIELD
AUGUST AVERAGE WEEKDAY TRAFFIC-1958

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 23.54 per cent of the total trips passing through all external stations fall into the above explained category.

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
Ia 1 N	2,110	450	21.33
US 34 E	2,988	405	13.56
Ia 1 S	1,939	485	25.01
US 34 W	4,071	669	16.43
Less Duplicates	2,575	---	-----
Total	8,533	2,009	23.54

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

The information contained in Table 4 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, 1,521 trips, or 17.83 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.

External Station Location	Total Trips Through Station	Termini Between Station and CBD	
		Number	Per Cent of Total
Ia 1 N	2,110	212	10.05
US 34 E	2,988	177	5.92
Ia 1 S	1,939	231	11.92
US 34 W	4,071	901	22.13
Less Duplicates	2,575	---	-----
Total	8,533	1,521	17.83

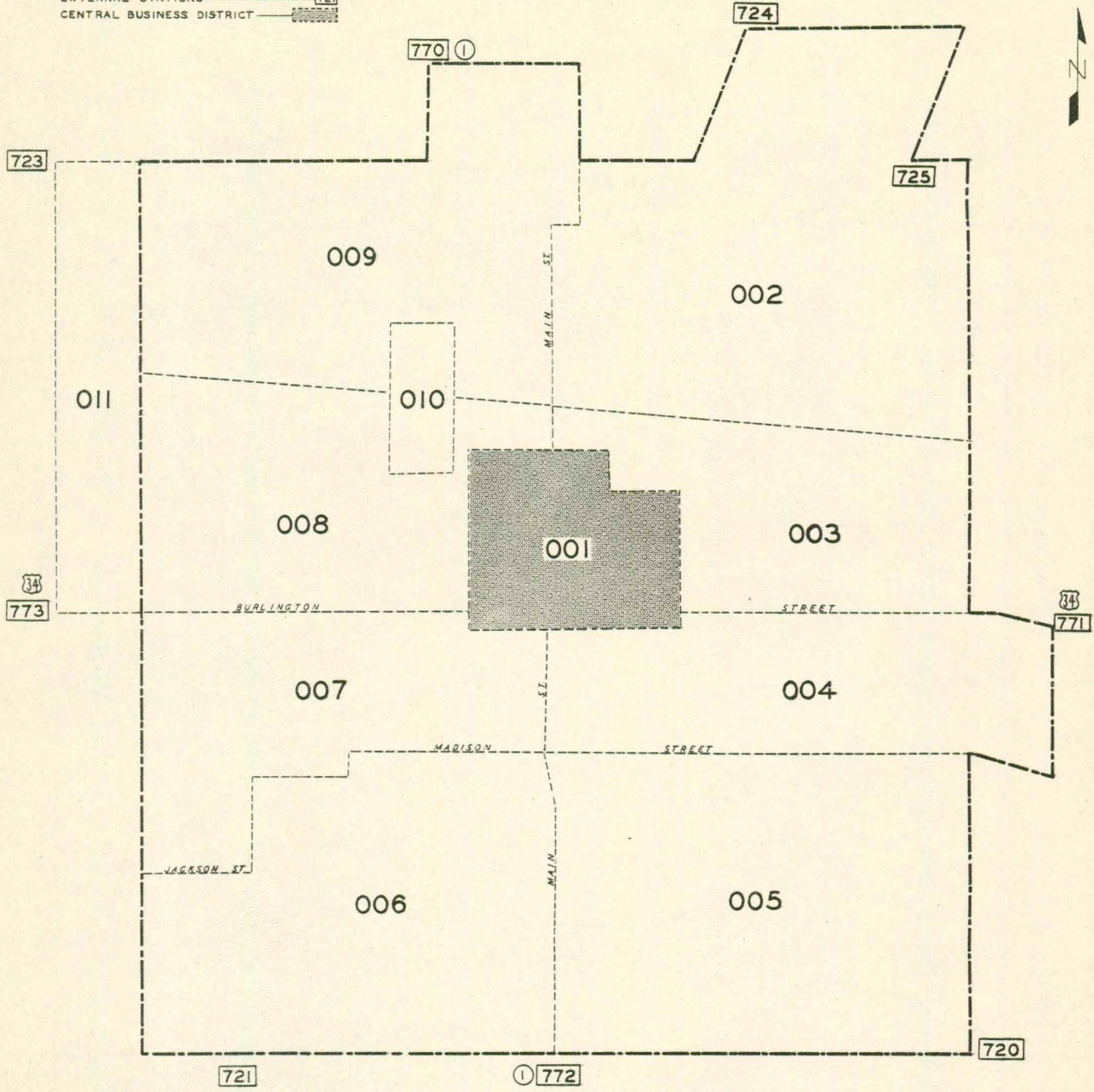
5. Trips Through Each Station With Routes Via
and Termini Beyond the Central Business District:

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 via and have their termini beyond the central business district. It can also be seen from the following table that 2,428 trips, or 28.45 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 5 Trips Through Each Station With Routes Via and Termini Beyond the Central Business District on an Average Weekday in August 1958			
External Station Location	Total Trips Through Station	Routes Via-Termini Beyond CBD	
		Number	Per Cent of Total
Ia 1 N	2,110	691	32.75
US 34 E	2,988	585	19.58
Ia 1 S	1,939	618	31.87
US 34 W	4,071	534	13.12
Less Duplicates	2,575	---	-----
Total	8,533	2,428	28.45

A P P E N D I X

LEGEND
 TRACT BOUNDARY LINES - - - - -
 CORPORATION LINES - - - - -
 EXTERNAL STATIONS - - - - - 721
 CENTRAL BUSINESS DISTRICT - - - - -



TRACT MAP
 OF
 FAIRFIELD URBAN AREA
 WITH
 EXTERNAL STATIONS

1958 Fairfield Origin and Destination
 Total Trips Through Stations Located on
 Ia. 1 N., U.S. 34 E., Ia. 1 S., and U.S. 34 W.
 Average Weekday Traffic in August

		Fairfield Urban Area											Fairfield Total	External Area								External Total	GRAND TOTAL		
		Central Business District	Northeast	East Central	East	Southeast	Southwest	West	West Central	North	Northwest Business District	Northwest		Local Road Southwest	Local Road Southeast	F.M. F.A.S. 850	Local Road N.	F.M. F.A.S. 879	Ia. 1 N.	U.S. 34 E.	Ia. 1 S.			U.S. 34 W.	
Tract		001	002	003	004	005	006	007	008	009	010	011	720	721	723	724	725	770	771	772	773	External Total	GRAND TOTAL		
Tract		Trip Origin											Trip Destination												
Fairfield Urban Area	001	Central Business District																219	199	219	340	977	977		
	002	Northeast																19	10	20	36	85	85		
	003	East Central																22	24	13	36	95	95		
	004	East																43	44	64	84	235	235		
	005	Southeast																16	17	16	26	75	75		
	006	Southwest																41	37	35	95	208	208		
	007	West																59	50	53	78	240	240		
	008	West Central																109	103	136	167	515	515		
	009	North																55	42	43	93	233	233		
	010	Northwest Business District																28	19	16	35	98	98		
	011	Northwest																43	33	28	88	192	192		
		Fairfield Total																654	578	643	1078	2953	2953		
External Area	720	Local Road N. and S.																6	3	1	1	11	11		
	721	Local Road E. and W.																2		2		4	4		
	723	F.M. F.A.S. 850																7		1		8	8		
	724	Local Road N.																2				2	2		
	725	F.M. F.A.S. 879																4		4	6	14	14		
	770	Ia. 1 N.	231	10	29	48	11	32	59	112	58	20	43	653	7	9	6	1	2		108	107	168	408	1061
	771	U.S. 34 E.	206	8	29	46	12	36	40	107	51	18	28	581	2	1	2		99		91	725	920	1501	
	772	Ia. 1 S.	266	16	17	45	30	35	56	116	43	16	35	675		3	3	2	123	80		102	313	988	
773	U.S. 34 W.	329	26	37	61	23	89	84	138	84	28	99	998	1	1	6	13	152	718	102		993	1991		
	External Total	1032	60	112	200	76	192	239	473	236	82	205	2907	10	14	17	1	17	395	909	308	1002	2673	5580	
	GRAND TOTAL	1032	60	112	200	76	192	239	473	236	82	205	2907	10	14	17	1	17	1049	1487	951	2080	5626	8533	

