

The survey stations were set up at the crossing point between the trunk roads and the border of the Study area. Six stations were selected from field investigation as shown in Fig. 4.3.2.

#### **4.4 Traffic Speed Survey**

This survey was implemented to obtain the data of the average vehicle driving speed on principal roads. These data are useful for analyzing the relationship between vehicle speed and traffic volume on the roads.

10 principal roads were chosen for survey. These roads are shown in the Fig. 4.4.1.

#### **4.5 Traffic Volume Survey at Cross Section**

The traffic volume survey was conducted in order to grasp the traffic volume on the principal roads in the study area. By obtaining this traffic volume, the transportation bottleneck points can be understood together with the information of road capacity, road configuration, etc.

The 17 survey points on the principal roads were selected through the road observation. The selected survey points are shown in Fig. 4.5.1.

#### **4.6 Traffic Volume Survey at Intersection**

In the Study area some intersections caused the traffic congestion because of lack of traffic signals, poor configuration, etc. In order to find the improvement plan of the intersections, the traffic volume was counted by direction at selected intersections. The survey points were selected among the high traffic volume intersections on the major roads. The selected 23 survey points are shown in Fig. 4.6.1.

#### **4.7 Public Transportation Survey**

Due to the low car ownership rate, the majority of people in the study area use buses and taxis. Therefore, the improvement of these public transportation means is very important to formulate the future transportation plan. The Study Team carried out a public transportation survey to obtain the information on the characteristics of bus and taxi users, conditions of public transportation facilities, etc.

##### **4.7.1 Bus Terminal Inventory Survey**

There are no "bus terminals" in the literal sense of the word in the study area, therefore, the study team defined a bus terminal as (1) bus stops at bus route termination point, (2) bus stops where many bus routes concentrate and (3) bus transfer points. The study team selected 10 bus terminals according to this definition, which are shown in Fig. 4.7.1. Survey items are as follows;

- a. Area (Total area and forum)
- b. Pavement
- c. Time table
- d. Platform
- e. Ticket office

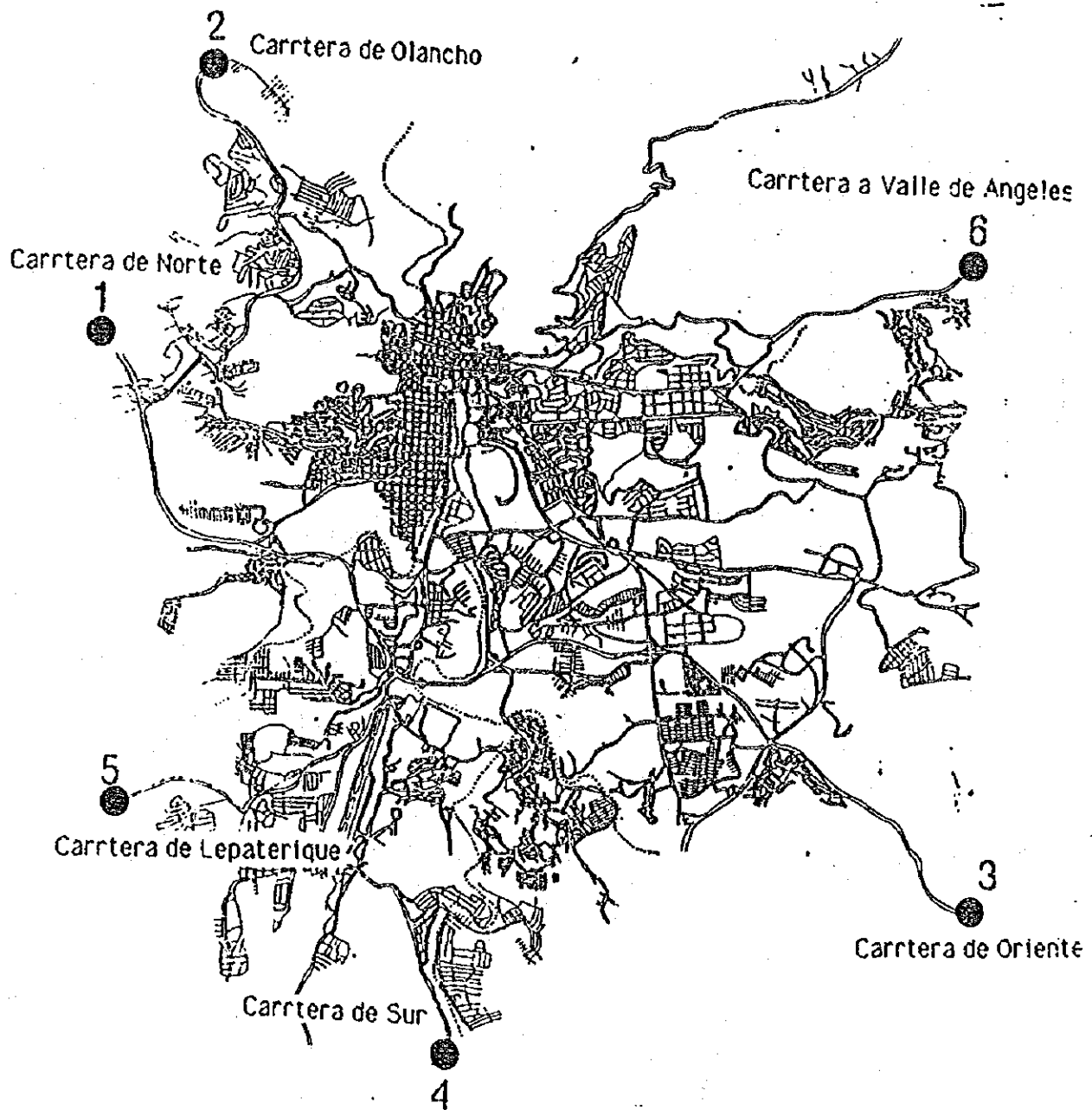


Fig. 4.3.2 Survey Station of Cordon Line Survey

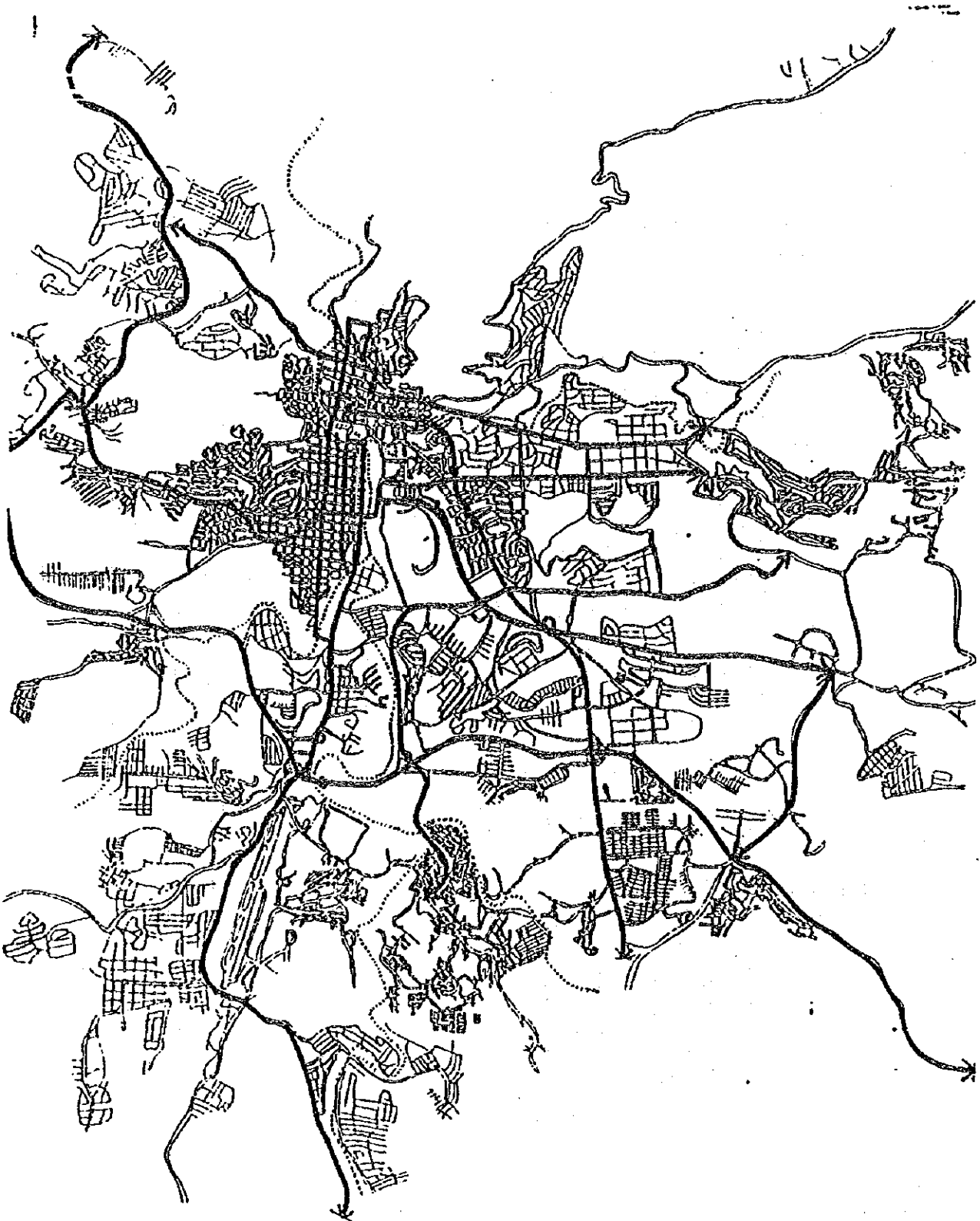
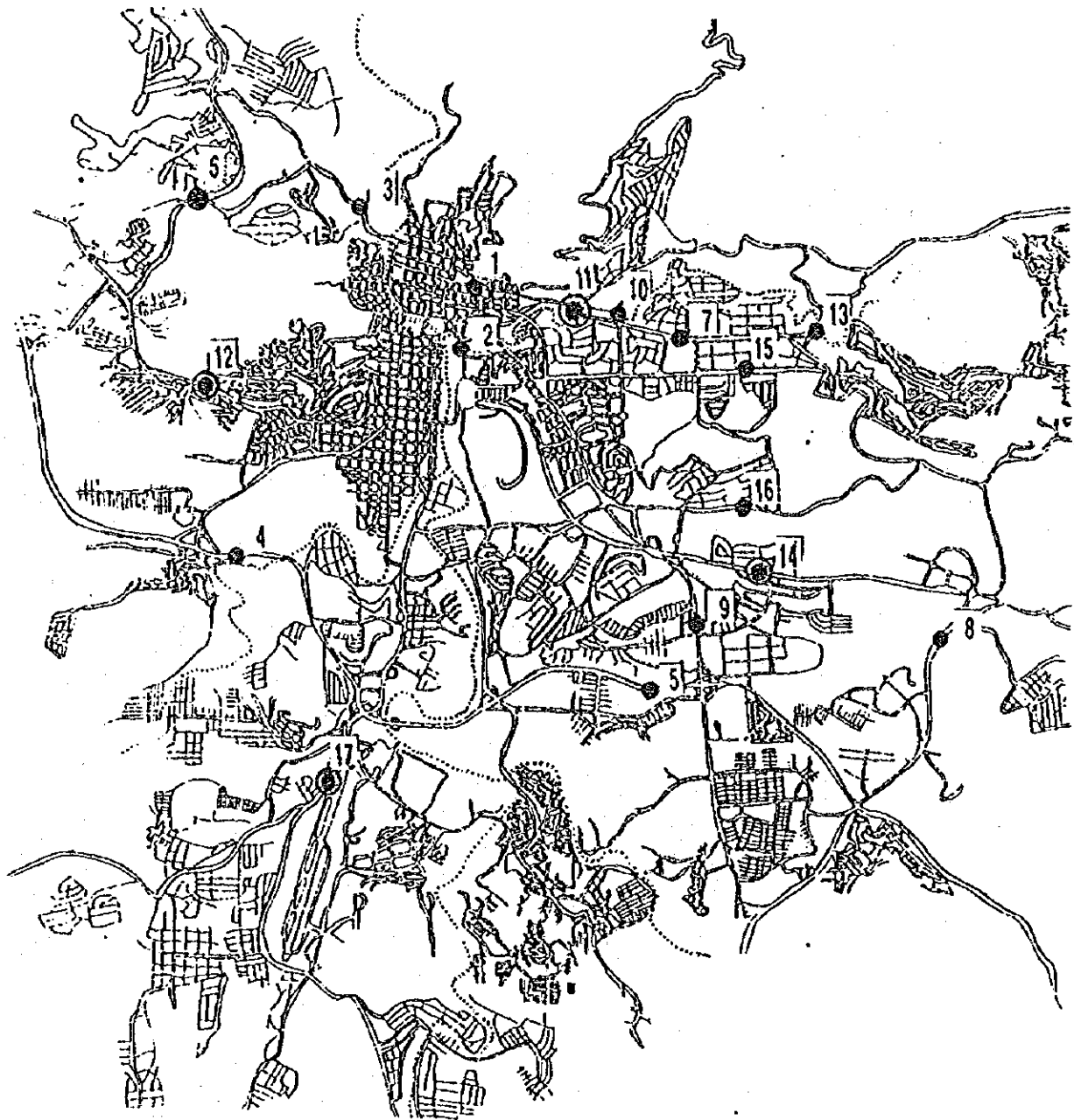
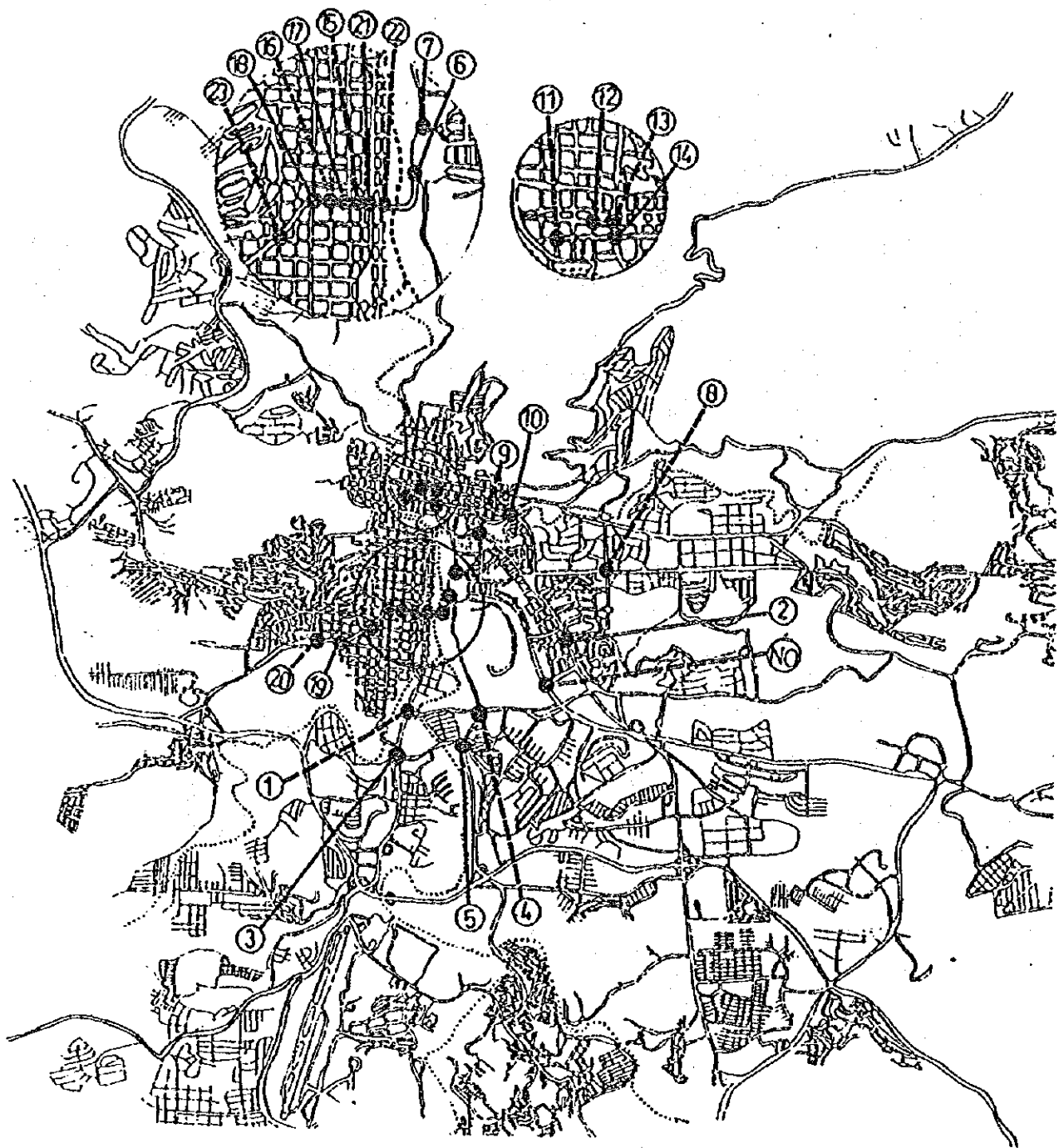


Fig. 4.4.1 Selected Road for Vehicle Speed Survey



**Fig. 4.5.1 Survey Points for Traffic Volume Survey  
at Cross Section**



**Fig. 4.6.1 Survey Points of Traffic Volume Survey at Intersections**

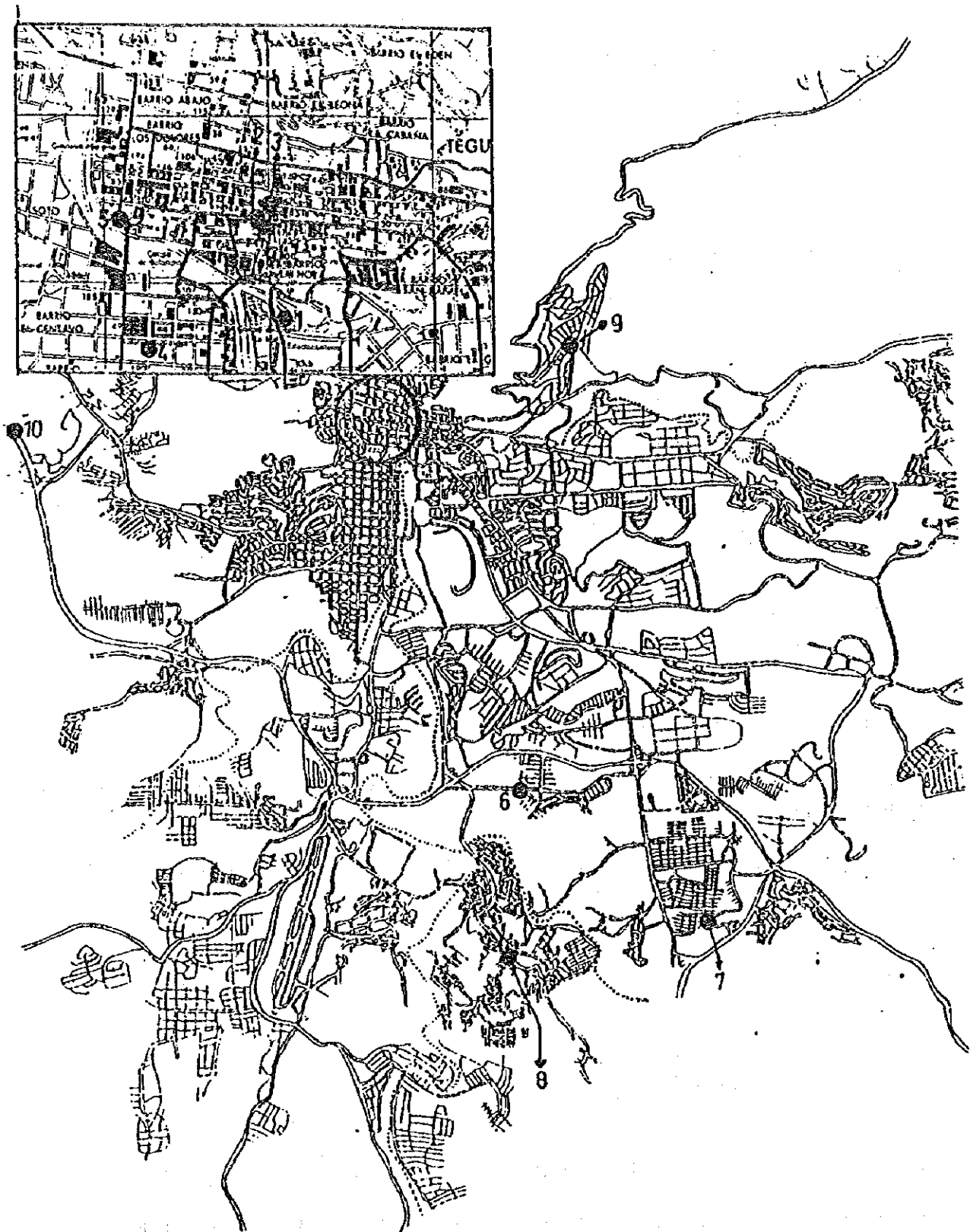


Fig. 4.7.1 Surveyed Bus Terminals

- f. Information office
- g. Telephone box
- h. Route map
- i. Traffic signal
- j. Sanitary facilities
- k. Coffee shop
- l. Taxi
- m. No. of bus routes

#### **4.7.2 Bus Volume Survey at Bus Terminal**

The number of departing and arriving buses at the bus terminal was counted in this survey. Survey points were the above-mentioned 10 bus terminals.

#### **4.7.3 Bus Passenger Survey at Bus Terminal**

The number of passengers getting on and off buses arriving and departing was surveyed. The survey items are as follows;

- 1. Direction (arrival and departure)
- 2. Time (arrival and departure)
- 3. Route (origin and destination)
- 4. No. of Passengers (getting on and off)

#### **4.7.4 Bus Stop Inventory Survey**

There are 45 bus routes in the study area. These bus routes were grouped into 10 categories based on their route characteristics.

The ten (10) bus routes (one each for the above 10 categories) were selected for this survey. Survey items are as follows;

- a. Direction
- b. Pavement condition
- c. Bus bay
- d. Time table
- e. Waiting Facilities
- f. Information board
- g. Bus stop mark

#### **4.7.5 Bus Passenger Survey at Bus Stop**

The bus passenger count survey and the bus passenger interview survey were conducted under this survey. The number of bus passengers getting on and off was counted at all bus stops on the above selected bus routes.

On the other hand, the bus passenger interview survey was carried out parallel to the count survey on the same buses. This survey covered 5 buses on 10 regular routes from the starting time in the

morning to the ending time at night of the bus operation. Survey items includes origin and destination of bus stops and trip purpose.

#### **4.7.6 Taxi Pool Inventory Survey**

There are 18 taxi stands in the center of Tegucigalpa and 23 taxi stands in the center of Comayagüela (at the moment 3 taxi pools are no longer in operation). At these stands shown in Fig. 4.7.2 (1)~(2), the following items were investigated;

- a. Direction of trip
- b. Capacity(number of passengers by taxi)
- c. Service area

#### **4.7.7 Taxi User Interview Survey**

This survey aims to know how the taxis are used. The study team selected 5 major taxi stands from Tegucigalpa and 5 major taxi stands from Comayagüela (shown in the above Figures). At these stands the interview was made to the taxi users. Survey items are as follows;

- a. Time
- b. Destination
- c. Trip purpose

### **4.8 Parking Survey**

#### **4.8.1 Parking Inventory Survey**

The aim of this survey is to obtain the information on the parking capacity in the central areas of Tegucigalpa and Comayagüela. At this moment there are 74 parking lots in Tegucigalpa and 122 parking lots in Comayagüela as shown in Fig. 4.8.1 (1)~(2). Survey items are;

- a. Direction Location
- b. Area
- c. Capacity
- d. Public or Private Operation

#### **4.8.2 Interview Survey for Parking Lot User**

In order to know how the parking lots are presently used, interviews were made with the parking lot users. Survey items were;

- a. Time of arrival
- b. Destination
- c. Walking Distance
- d. Parking time
- e. Cost
- f. Trip purpose



Direction of taxi pool

Direction of taxi pool	Capacity
TEGUCIGALPA	26
Centro-Reparto	28
Centro-los robles	32
Centro-Loarque	26
Centro-Cerro Grande	23
Centro-Buenos Aires	25
Centro-El Bosque	46
Centro-Torocagua	11
La Isla-La joya	20
Centro-Villa Olimpica	24
Centro-Col21 de Octubre	15
Centro-El Sitio	46
Centro- Col. San Miguel	42
Centro-Los Llaaos	27
Centro-Col.F Victor Ardon	66
Centro-Col. Hato de Enmedio	87
Centro-Col. Kennedy	34
Centro-Corte Suprema de Justicia	7
Mercedito San Miguel-Punto Varios	

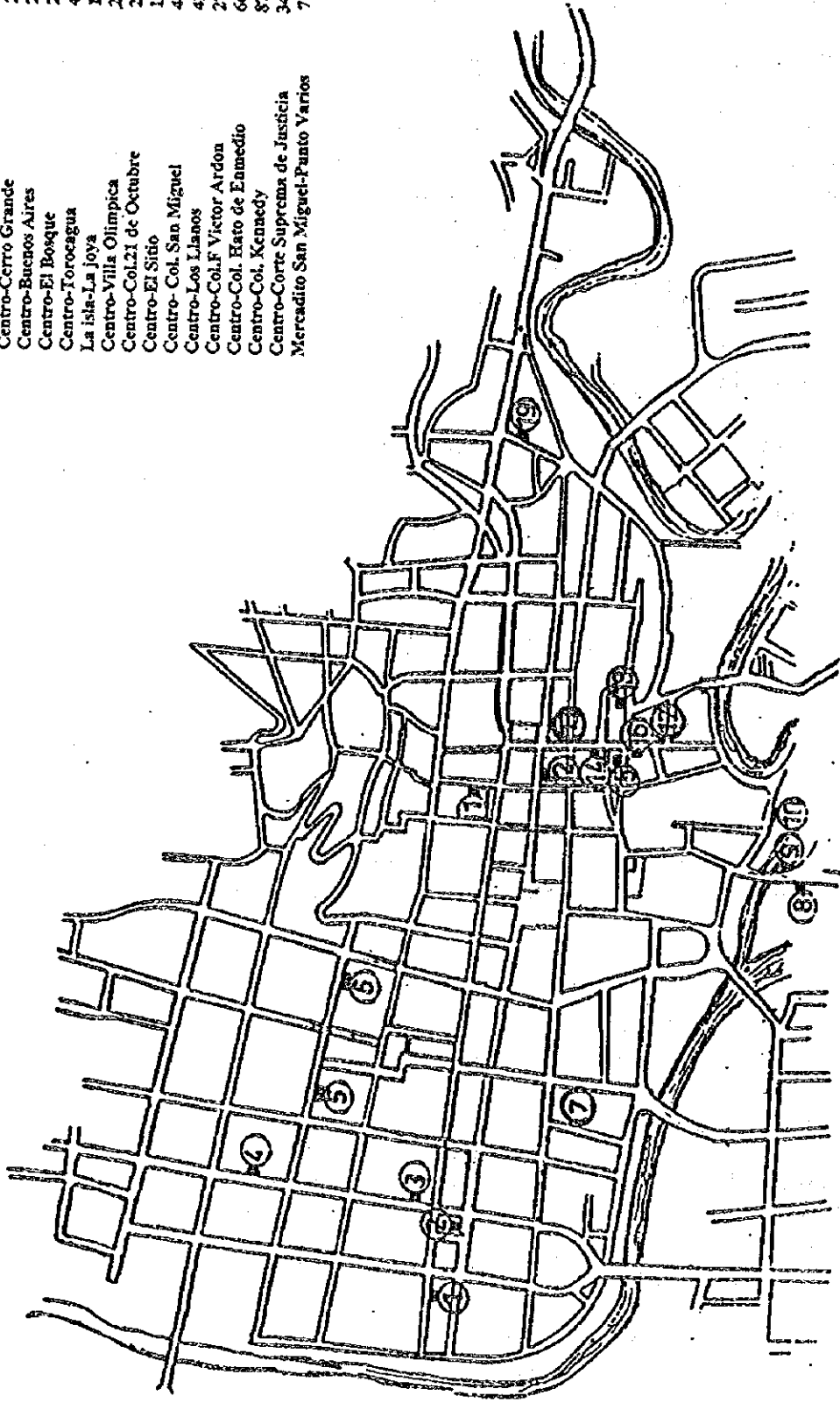
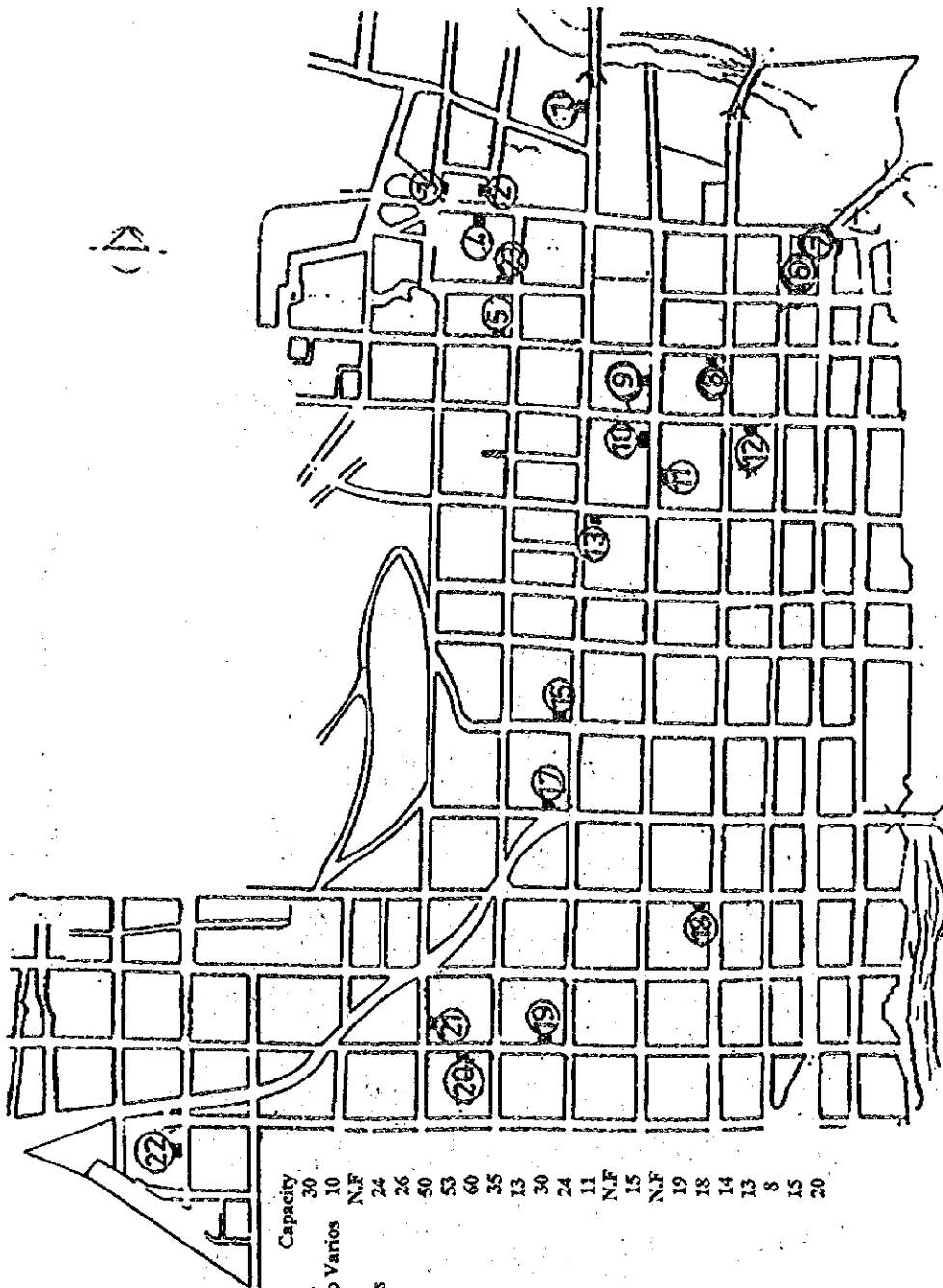


Fig. 4.7.2 (1) Taxi Stands at Tegucigalpa



Capacity
30
10
N.F
24
26
50
53
60
35
13
30
24
11
N.F
15
N.F
19
18
14
13
8
15
20

- COMAYAGÜELA
- Mercado las americas-Punto Varios
- Fiestas Mercado Las Americas-Punto Varios
- Mercado las Americas-El Carrizal
- Super Mercado Mirna-Punto Varios
- A Colonia Profesores
- A Colonia Centro America Oeste
- A Colonia Kennedy
- A Colonia Mato de Enmedio
- A Colonia Suyapa
- A Colonia San Miguel
- A Colonia Pena por bajo
- A Colonia Cerro Grande
- A Residencial Cento America Oeste
- Terminal Aurora
- Central Automotris-Carrizal
- Terminal El Rey
- Hermano Pedro-Punto varios
- Terminal Nortenos
- Terminal Saenz
- Terminal Mariabel Junquen
- Terminal Hedman Alias
- Mercado-Carrizal

\*N.F: funtion AT present

Fig. 4.7.2 (2) Taxi Stands at Comayagüela

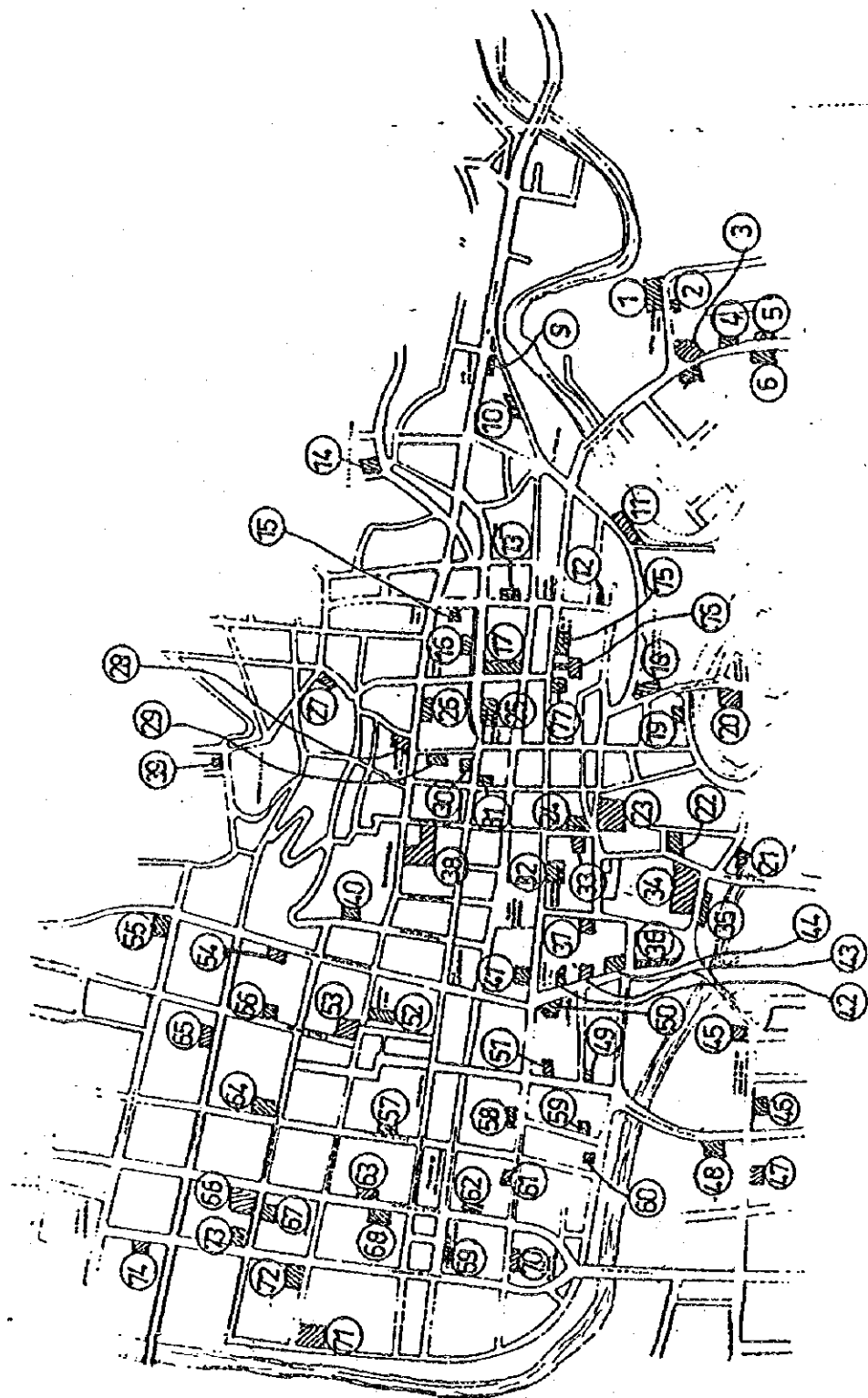


Fig. 4.8.1 (1) Parking Lots in Tegucigalpa

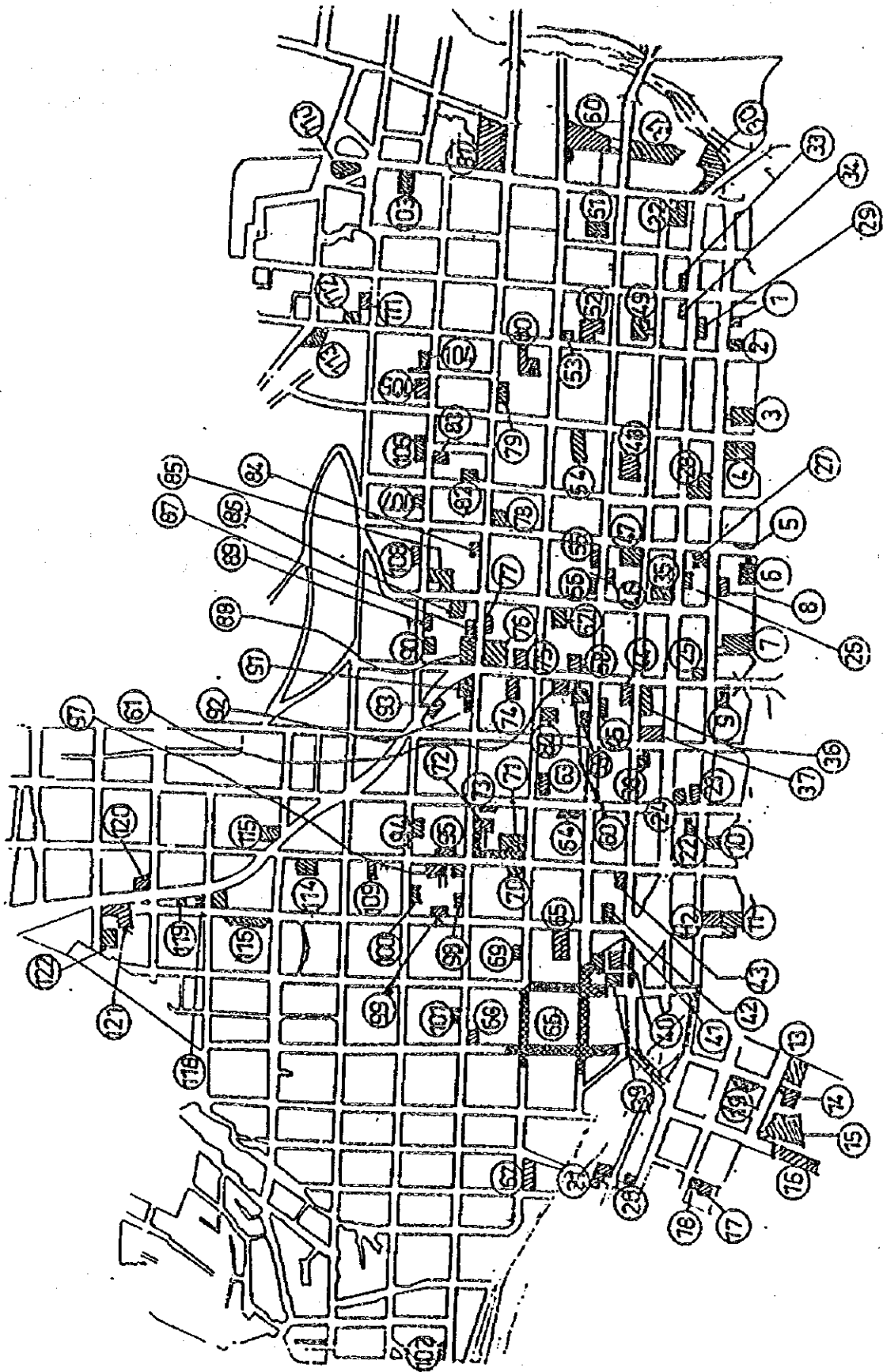


Fig. 4.8.1 (2) Parking Lots in Comayagüela

### **4.8.3 Street Parking Survey**

This survey was carried out in two ways. The first survey was a count of the number of vehicles parking on roads. For this purpose 10 blocks were selected each in Tegucigalpa and Comayagüela. These blocks are shown in Fig. 4.8.2 (1) ~ (2).

The second survey consisted of interviews of drivers parking their cars on the roads. The survey items are as follows;

- a. Time of arrival
- b. Destination
- c. Walking distance
- d. Parking time
- e. Parking budget
- f. Trip purpose

### **4.9 Truck Terminal Survey**

This survey was conducted to obtain information on the facilities and the number of trucks using the truck terminals. A total of 166 truck terminals were surveyed. The survey points are shown in Fig. 4.9.1.

### **4.10 Road Inventory Survey**

In order to obtain information of the existing road conditions, investigation of road design, road length by type of pavement, road alignment, etc., was conducted in this survey.

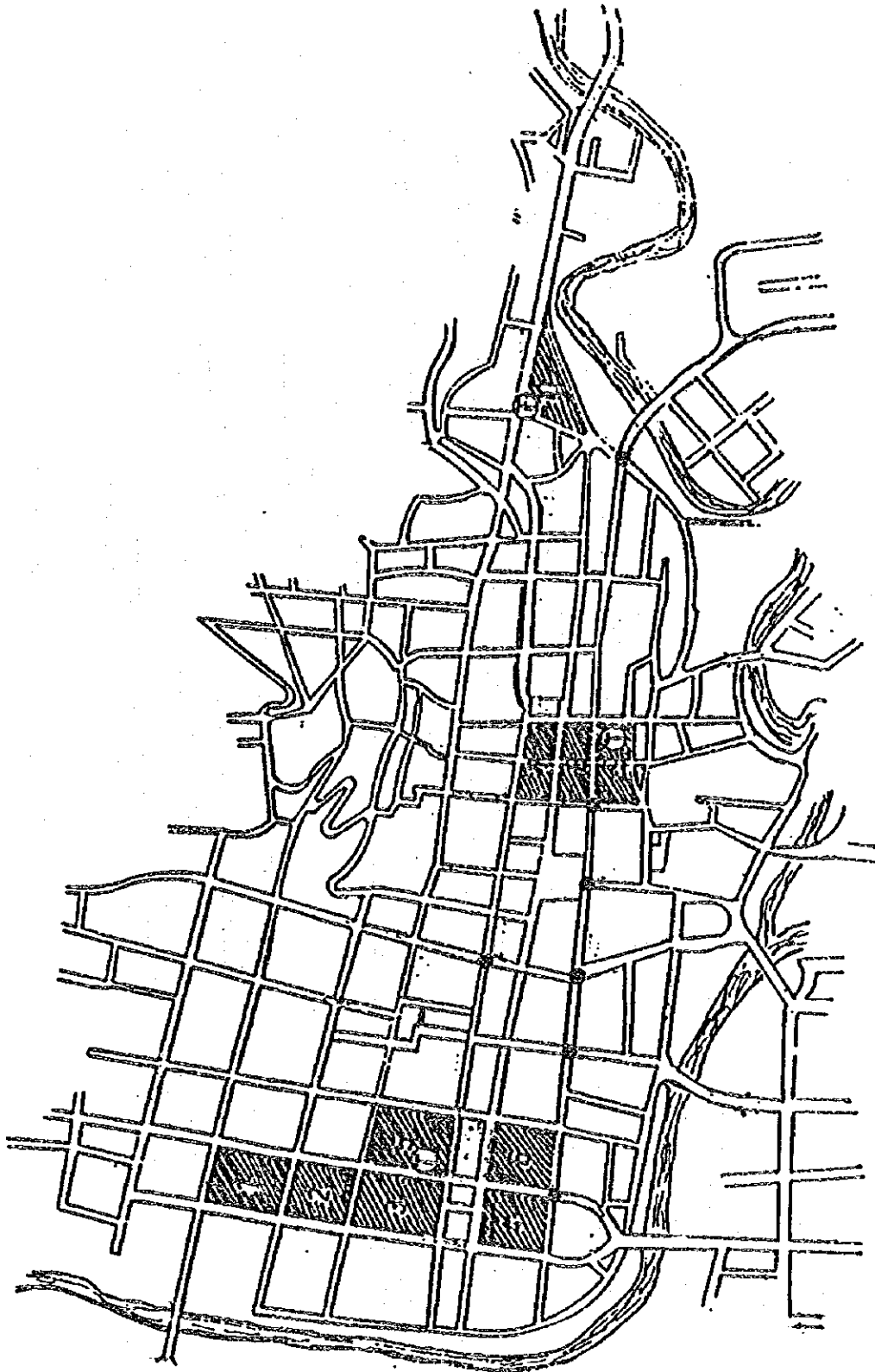


Fig. 4.8.2 (1) Area for Road Parking in Tegucigalpa



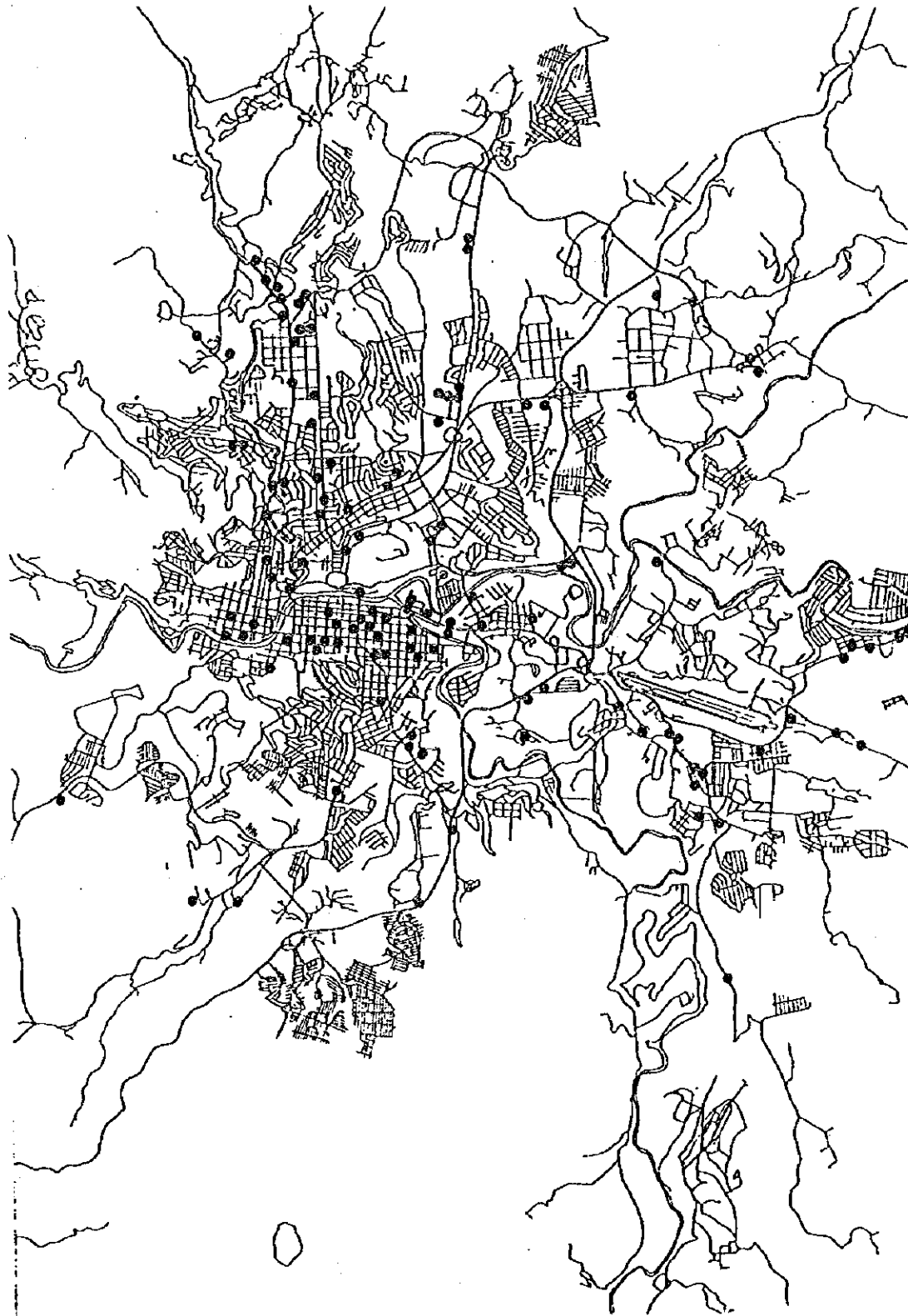


Fig. 4.9.1 Survey Points of Truck Terminals



## **CHAPTER 5**

# **RESULTS AND ANALYSIS OF TRAFFIC SURVEY**

## CHAPTER 5 RESULTS AND ANALYSIS OF TRAFFIC SURVEY

### 5.1 General

In this chapter the results and analysis of the above-mentioned various traffic surveys are explained. Table 5.1.1 summarizes survey scale, application of survey results and tables and figures related to the analysis.

**Table 5.1.1 Summary of Survey**

Survey	Scale	Main Application	Tables / Figures
Person/trip	5.2% of Sample rate	Traffic Demand	Table 5.2.1~5.2.15 Fig. 5.2.1~5.2.17
Screen Line	10 points	Check of OD Table	Table 5.4.1, Fig. 5.4.1
Cordon Line	6 points	Traffic Demand	Table 5.3.1, Fig. 5.3.1
Vehicle Speed	10 Routes	Traffic Assignment	Fig. 5.5.1
Traffic Count (Cross Section)	17 principal roads	Traffic Assignment	Table 5.6.1, Fig. 5.6.1
Traffic Count(Intersection)	23 intersections	Facility Improvement Traffic Control	Table 5.7.1 (1)~(3) Fig. 5.7.1
Bus Survey	10 terminals 45 bus routes	Modal Split Facility Improvement	Table 5.8.1~5.8.10 Fig. 5.8.1~5.8.6
Taxi Survey	41 stands	Modal Split	Table 5.9.1~5.9.3 Fig. 5.9.1~5.9.2
Off-Road Parking	20 points	Traffic Control	Table 5.10.1~5.10.4
On-Road Parking	20 blocks	Traffic Control	Table 5.10.5~5.10.7
Truck Terminal	166 terminals	Traffic Control	Table 5.11.1

### 5.2 Person/Trip Survey

#### 5.2.1 Outline of the Sample Data

##### (1) Personal characteristics

The total number of households investigated by this survey was 9,026 households, and the total family members are 36,744 persons, of which 27,914 persons are 5 years old or over. The average number of family members was 4.1 in this survey. The number of persons interviewed was 26,757 persons (Male 12,351 and Female 14,406). As a result, the sample rate was 4.0%. About 20% of interviewed persons made no trips on the survey day. The number of persons who belong to the households owning cars was 4,652 (17.4%).

## (2) Trip Characteristics

The total number of sample trips by purpose and by mode was 57,583 trips as shown in Table 5.2.1. The average number of trips per person per day was 2.2 trips.(if excluding the non-trip persons, 2.6 trips).

**Table 5.2.1 Number of Trips by Purpose and by Mode**  
(Unit: trips/day)

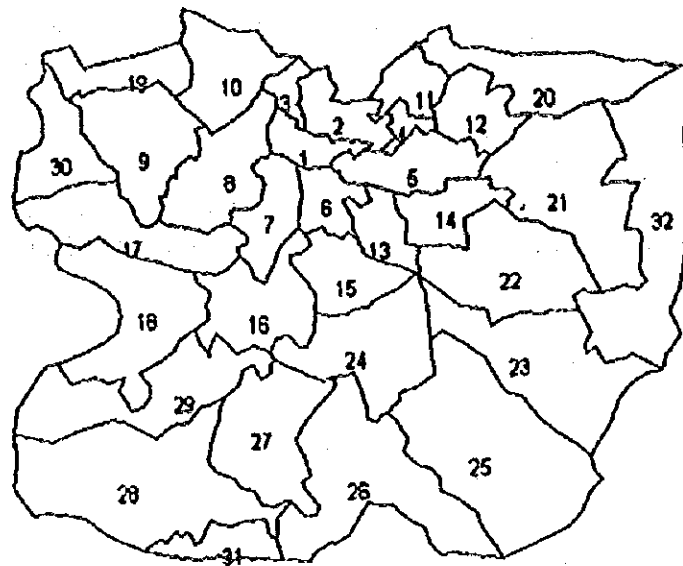
Mode/Purpose	To Work	To School	To Home	To Office	Business	Shopping	Others	Total
Walk	1,684	4,001	6,548	78	67	714	396	13,488
Private Car	3,224	696	4,728	283	316	503	730	10,480
Bus	6,577	4,652	13,122	93	199	1,498	1,090	27,231
Mini Bus	559	408	1,146	9	19	146	33	2,320
Taxi	1,025	265	1,732	23	53	284	170	3,552
Trailer	5	0	3	0	0	0	0	8
Large Truck	48	0	49	0	13	6	5	121
Small Truck	41	1	52	4	5	5	2	110
Bicycle	90	15	128	10	11	8	11	273
Total	13,253	10,038	27,508	500	683	3,164	2,437	57,583

### 5.2.2 Aggregated Zones

Since the data obtained by the person/trip survey is sample data selected randomly from among each PT (Person/Trip) zone (See Section 4.1.2) within the study area, the results need to be expanded to its "Population" defined by the statistics. The most reliable data in the study area is the population data, therefore, the population by gender for the population of those 5 years old or over was confirmed as the "Population". Comparing the sample population by zone and by sex with its population, the sample rate by PT zone varied widely as shown in Table 5.2.2. Therefore, the expansion was performed not by PT zone but by the aggregated zone, that is, the PT zones were aggregated from 92 PT zones to 39 aggregated zones, considering the similarity of zones. Concurrently, the average expansion rate was 22.7 (23.0 for male and 22.5 for female). Table 5.2.2 shows the correspondence of aggregated zones and PT zones and the aggregated zones are shown in Fig. 5.2.1.

**Table 5.2.2 Correspondence Table of Aggregated zones and PT Zones**

Aggre-gated Zone	PT Zones	Aggre-gated Zones	PT Zones
1	1, 2, 3	21	46, 47
2	4, 5, 7	22	48, 49, 50
3	6	23	54, 52, 53
4	8	24	54, 55
5	9, 10, 11	25	56, 57
6	12, 13	26	58, 59, 60, 69, 70
7	14, 15, 16, 17	27	61, 62
8	18, 19, 20	28	63, 64
9	21, 22	29	65, 66, 67
10	23	30	68
11	24, 25	31	71
12	26, 27	32	72, 73, 74
13	28, 31	33	75, 89, 90
14	29, 30, 32	34	76, 81, 88
15	33, 34, 35	35	83, 87, 92
16	36, 37, 38	36	79, 84, 86, 91
17	39, 40, 41	37	80, 85
18	42, 43	38	77, 82
19	44	39	78
20	45		



**Fig. 5.2.1 Aggregated Zone Map**

### 5.2.3 Expansion

The adjustment by screen line is to correct the above expanded results with the actual data obtained by the screen line survey in order to improve its accuracy. This adjustment was performed in case the traffic volume crossing the screen ( $T_p$ ) lines by the expanded results is significantly different from the actual one ( $T_s$ ) obtained by the screen line survey. The adjustment coefficient ( $\alpha$ ) is represented in the following equation if  $T_c$  is the traffic volume crossing the screen line obtained by the cordon line;

$$\alpha = (T_s - T_c) / T_p$$

Before applying this coefficient, the number of person/trips crossing the screen line obtained by the person/trip survey should be converted into the amount of traffic volume. The conversion coefficient was calculated with the results of the person/trip survey. Table 5.2.3 shows the Average Occupancy and Correction Coefficient on the screen line.

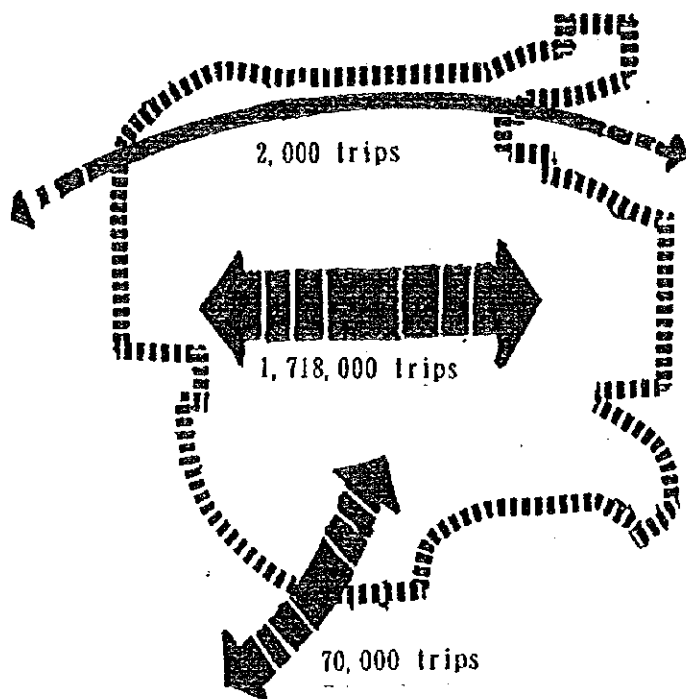
**Table 5.2.3 Average Occupancy**

Type of Vehicle	Average Occupancy (persons)	Correction Coefficient
Private Car	1.8	1.80
Bus	32.0	1.15
Taxi	2.5	2.50
Truck	2.0	7.81
Motorcycle	1.0	2.66

### 5.2.4 Total Number of Person Trips after Expansion

The total number of person trips per day in the study area was about 1,790,000 trips, of which 1,750,000 trips were made by persons living in the study area. The remaining 40,000 trips were made by persons living outside the study area. From the fact that almost 98% of the total trips were made by persons in the study area draws the conclusion that the study area can be considered to be closed from the traffic viewpoint.

Fig. 5.2.2 shows the outline of the trips. The internal-internal trips account for 96.0% (1,718,000 trips) of the total trips, the internal-external trips for 3.9% (70,000 trips) and the external-external trips for only 0.2% (2,000 trips).



(Note: Including trips made by persons living without the study area)

Fig. 5.2.2 Outline of Person Trip

5.2.5 Trip Composition by Purpose

Among the total trips, the trip purpose of "To Home" accounts for 47%, followed by "To Work" (25%), and "To School" (15%) as shown in Fig. 5.2.3. This result indicates that about half of persons made the home-based trips, that is, they go out somewhere and return their home directly without stopping at other places. Therefore, the trip pattern in the study area can be said to be very simple.

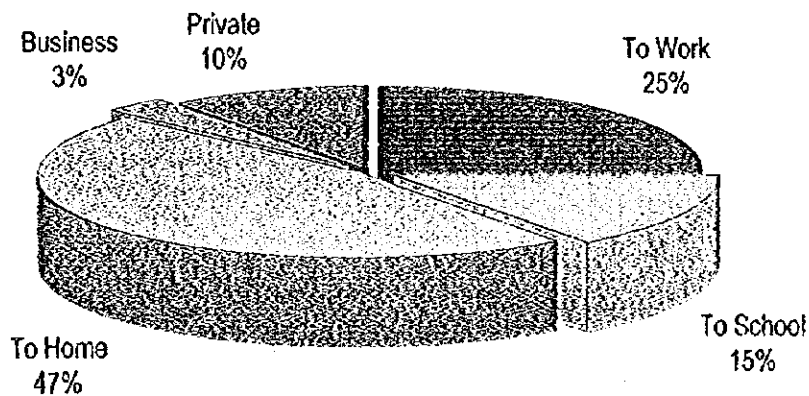


Fig. 5.2.3 Trip Composition by Purpose

### 5.2.6 Trip Composition by Mode

Looking at the trip composition by mode in Fig. 5.2.4, "Bus" shows the highest share at 44%, followed by "Private Car" at 26%, then "Walk" at 17%, "Taxi" at 11%. In the trip composition by mode excluding "Walk" and "Motorcycle", which are less of a burden to transportation facilities, the share of "Bus" becomes 53%. This indicates that "Bus" is the most important transportation mode in the study area. This case is shown in Fig. 5.2.5.

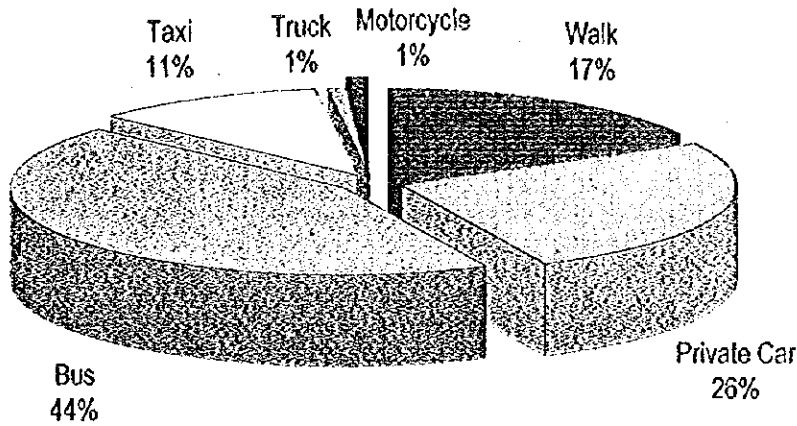


Fig. 5.2.4 Trip Composition by Mode

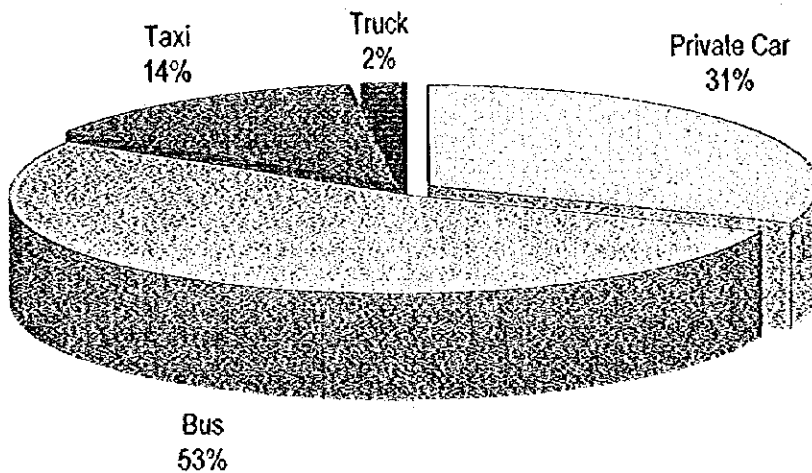


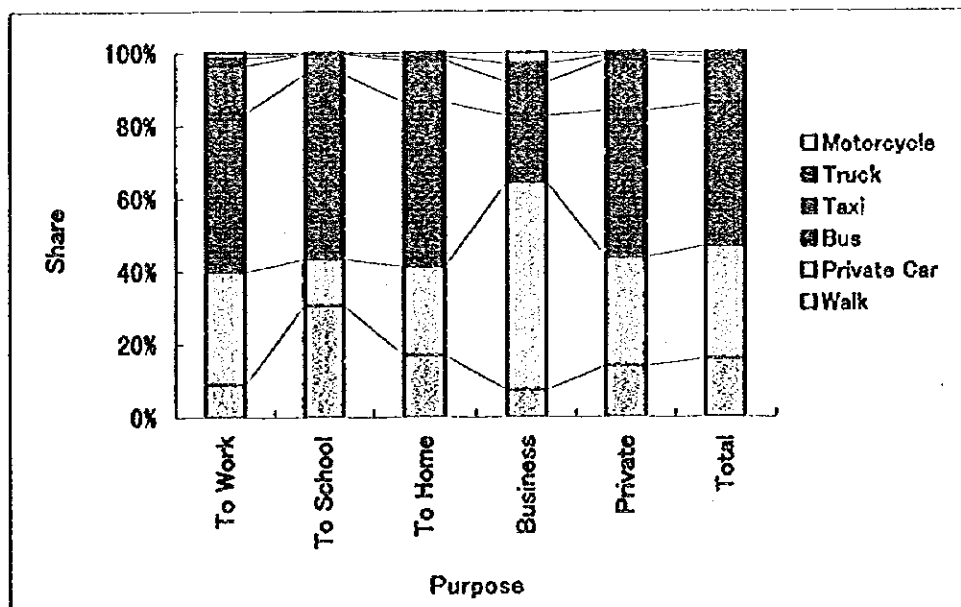
Fig. 5.2.5 Trip Composition by Mode Excluding "Walk" and "Motorcycle"

### 5.2.7 Trip Composition by Purpose and by Mode

The trip composition by purpose and by mode is shown in Table 5.2.4 and Fig. 5.2.6. Except the trip purpose of "Business", the share of "Bus" shows the highest value for each trip purpose. For the "Business" trip, "Private Car" is used most, reflecting the convenience of business activities. For the trip purpose of "To Work", about one third commute with "Private Car".

**Table 5.2.4 Number of Trips by Purpose and by Mode**  
(Unit: trips/day)

Mode/Purpose	To Work	To School	To Home	Business	Private	Total
Walk	38,751	81,276	141,123	3,342	24,947	289,439
Private Car	134,108	33,502	202,680	25,428	52,858	448,576
Bus	187,689	133,993	373,597	8,134	71,285	774,698
Taxi	56,410	14,649	95,801	4,084	24,966	195,910
Truck	9,205	0	9,314	2,285	2,161	22,965
Motorcycle	5,833	957	8,244	1,368	1,263	17,665
<b>Total</b>	<b>431,996</b>	<b>264,377</b>	<b>830,759</b>	<b>44,641</b>	<b>177,480</b>	<b>1,749,253</b>



**Fig. 5.2.6 Trip Composition by Purpose and by Mode**



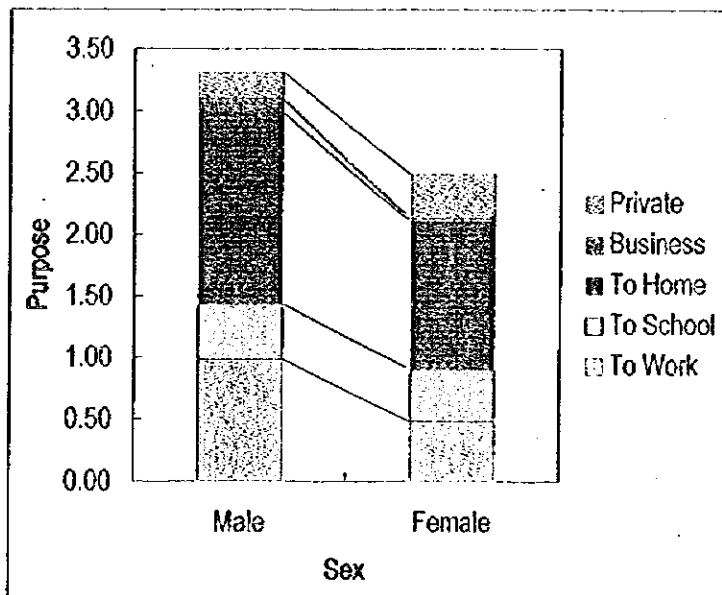
### 5.2.8 Trip Production Rate by Gender

In the study area 81.2% of the people made trips and the remaining 18.8% never went out during survey day. Therefore. The trip production rate in the study area including latter persons resulted in 2.88 trips per person per day. The trip production rate of male was 3.32 trips per day, while for female 2.50 trips per day.

Table 5.2.5 and Fig. 5.2.7 show the trip production rate by gender and by purpose and Table 5.2.6 and Fig. 5.2.8 shows the trip production rate by gender and by mode. In the former, "To Home" shows the highest trip production and in the latter, "Bus" shows the highest trip production.

**Table 5.2.5 Trip Production Rate by Gender and by Purpose**

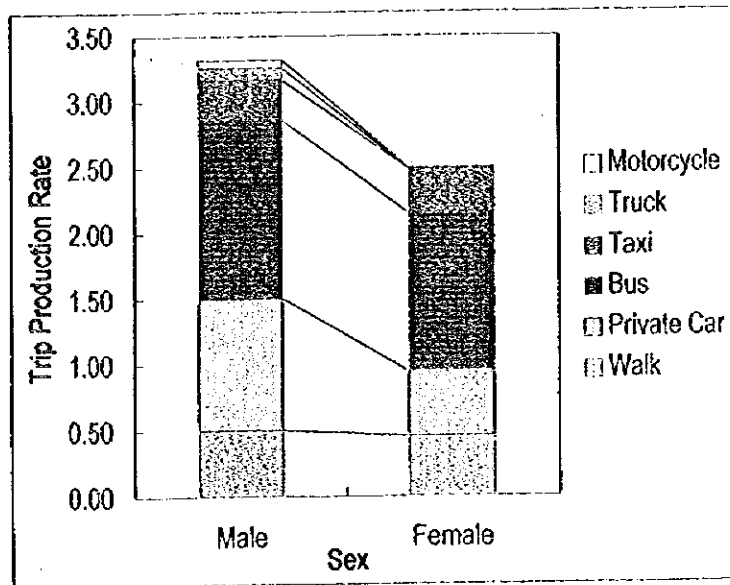
Purpose/Sex	Male	Female
To Work	0.98	0.48
To School	0.45	0.42
To Home	1.56	1.20
Business	0.11	0.03
Private	0.21	0.36
Total	3.32	2.50



**Fig. 5.2.7 Trip Production Rate by Gender and by Purpose**

**Table 5.2.6 Trip Production Rate by Gender and by Mode**

Mode/Sex	Male	Female
Walk	0.50	0.45
Private Car	1.00	0.50
Bus	1.36	1.20
Taxi	0.31	0.33
Truck	0.09	0.01
Motorcycle	0.06	0.01
<b>Total</b>	<b>3.32</b>	<b>2.50</b>



**Fig. 5.2.8 Trip Production Rate by Gender and by Mode**

**5.2.9 Trip Production Rate by Car Owning**

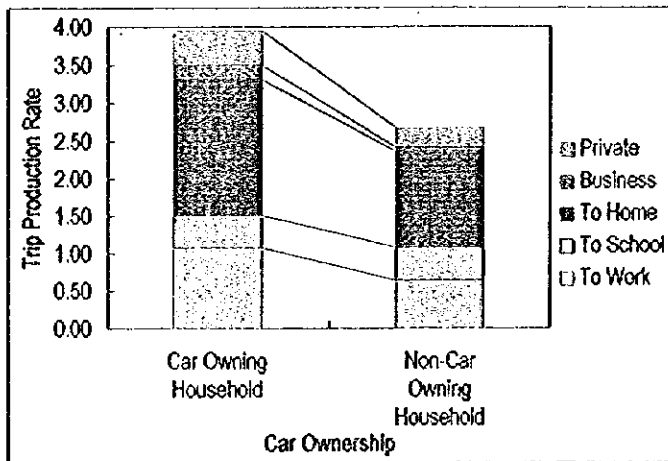
Table 5.2.7 (1)~(2) and Fig. 5.2.9 (1)~(2) show the trip production rate by car ownership. The trip production in the households owning cars was 3.95 per household, which is considerably higher than the figure 2.66 of the non-car-owning household. Especially, persons in the households owning cars make 3.95 trips per day, out of which 2.58 are made by car. This fact indicates that members of households owning cars find it easier to make trips with their own vehicles. Therefore, it can be said that the trip generation depends greatly on the availability of cars.

**Table 5.2.7 (1) Trip Production Rate by Car Owning and by Purpose and**

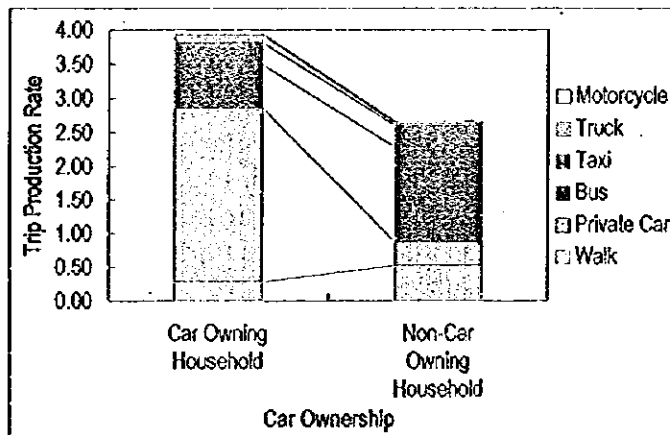
	Car Owning Household	Non-Car Owning Household
To Work	1.08	0.64
To School	0.43	0.44
To Home	1.80	1.28
Business	0.19	0.05
Private	0.45	0.26
Total	3.95	2.66

**Table 5.2.7 (2) Trip Production Rate by Car Owning by Mode**

	Car Owning Household	Non-Car Ownership Household
Walk	0.28	0.52
Private Car	2.58	0.35
Bus	0.63	1.41
Taxi	0.32	0.32
Truck	0.11	0.03
Motorcycle	0.02	0.03
Total	3.95	2.66



**Fig. 5.2.9 (1) Trip Production Rate by Car Owning and by Purpose**



**Fig. 5.2.9 (2) Trip Production Rate by Car Owning and by Mode**

### 5.2.10 Establishment of Present OD Table

The present OD table was established by the procedures shown in Fig. 5.2.10.

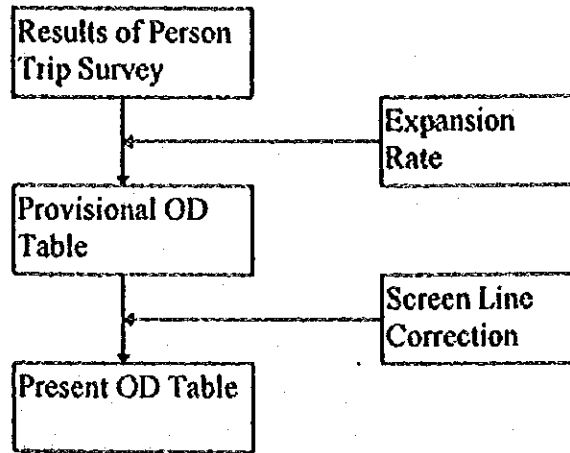


Fig. 5.2.10 Procedures of Present OD Table

The expansion rate and the method of screen line correction were explained in Section 5.2.3. The present OD tables were made according to purpose and mode. Table 5.2.8 shows the present OD table of all purposes and all modes.

### 5.2.11 Trip Generation and Attraction by Zone and Mode

The amounts of trip generation and trip attraction of each zone do not differ greatly from the figures in Table 5.2.9. Zone 2, which includes Central Park, generates and attracts the largest trips, about 130,000, respectively. Zone 56, covering the large residential area of Colonia Kennedy, generates and attracts almost 100,000 trips respectively. Zone 14 where the central market of Comayagüela is located, generates and attracts about 88,000 trips respectively. Zone 54 (Colonia Miraflores), Zone 49 (Villa Olímpica), Zone 15 (Barrio Concepción and Villa Adela) and Zone 20 (Boulevard del Norte o Santa Fe) are also major trip generators and attracters. As for the modal share, the trip generation and attraction of buses account for almost more than 70% of the total generation and attraction in the western suburban area (Zones 41, 42, 43, and 46) and eastern suburban area (Zones 51, 72, and 7). On the other hand, Zones 28, 30 and 35 (Tepeyac, Loma Linda Norte, etc.), newly developed as a high income class residential area, have a higher share of private cars. Fig. 5.2.11 shows the trip generation and attraction.

### 5.2.12 Trip Distribution

Fig. 5.2.12 (1)~(3) illustrates the desired lines of the trip distribution of all purposes, trip distribution of "To Work", and trip distribution of "To school", respectively. Fig. 5.2.13 (1)~(3) also indicates the trip distribution of "Private Car", "Bus" and "Taxi". The main characteristics of these trip distribution are as follows:



Table 5.2.9 Trip Generation and Attraction by Mode

Zone	Trip Generation						Trip Attraction					
	Walk	Car	Taxi	Colectivo	Bus	Total	Walk	Car	Taxi	Colectivo	Bus	Total
1	37222	45444	19877	13243	77439	193225	38574	44877	19259	12834	78117	193661
2	14487	8452	6441	4285	15400	49065	15862	8739	5979	3981	16650	49211
3	2704	2178	1132	747	4272	11033	2537	2170	1514	1011	3793	11025
4	1989	2584	317	209	4465	9564	1924	2510	430	285	4412	9561
5	12215	28115	4703	3135	28568	76736	12643	27380	5922	3949	27291	77191
6	7926	7236	1709	1138	10775	28784	7851	7409	1776	1171	10743	28956
7	46037	40466	9106	6073	79431	181113	47340	40452	9201	6120	78376	181489
8	41433	23031	8322	5549	68333	146668	40247	23650	8357	5570	69581	147405
9	17450	15313	7198	4790	64234	108985	17350	16663	6976	3950	65159	109128
10	2414	3935	1346	896	7032	15623	2355	4129	1167	714	7542	15967
11	4945	4870	803	526	15294	26438	4864	4582	1385	319	14732	26482
12	4312	6230	1654	1100	13880	27176	4251	6461	1822	1213	13404	27151
13	2682	9523	1469	975	5722	20371	2696	9275	1605	1062	5791	20357
14	5322	12163	1169	769	11202	30625	5087	11637	1436	959	11505	30624
15	6322	21111	2084	1373	17542	48396	6360	21224	2438	1622	16916	48560
16	11639	17288	3993	2653	34140	69715	11744	17142	4047	2702	34238	69873
17	11590	12751	3453	2295	27478	57587	11355	13368	3252	2162	27467	57604
18	3362	4631	1450	965	21958	32366	3343	4979	1495	958	21778	32591
19	1525	2844	1082	722	5448	11621	1475	2831	1088	725	5542	11661
20	415	2255	85	55	1232	4042	412	2102	101	58	1365	4018
21	6252	7476	2935	1953	25379	43995	6208	7811	3035	2027	25076	44157
22	4918	16835	5277	3521	37332	67883	4965	17557	4776	3178	37351	67827
23	7614	13197	5893	3915	26363	56972	7525	13192	5610	3737	27197	57261
24	7889	32362	4660	3107	22372	70390	7925	32642	4333	2893	22814	70637
25	11379	26200	6360	4236	33093	81268	11421	26457	6378	4255	32865	81376
26	8412	21875	4707	3139	37928	76061	8300	22327	5083	3373	36905	75988
27	6344	13988	5064	3388	24752	53516	6358	13771	5429	3613	24639	53810
28	3274	21309	1995	1316	8379	36273	3332	20240	1960	1295	9962	36489
29	9838	13555	3864	2569	31760	61586	9713	13483	1708	2460	32383	61747
30	4336	5999	2792	1853	20281	35261	4293	6648	2093	1393	20844	35271
31	285	1038	35	19	2227	3604	255	1029	148	97	2150	3679
32	4899	4488	1820	1220	31448	43875	4866	5212	1732	1154	30121	43985
33	0	6608	115	73	3351	10147	0	7198	95	61	2337	9691
34	0	4041	29	11	759	4840	0	2753	52	26	522	3353
35	0	3628	21	11	829	4489	0	3535	39	17	849	4440
36	0	6655	86	55	1979	8775	0	3949	220	139	1712	6020
37	0	3387	164	105	3693	7349	0	3788	208	132	3257	7385
38	0	3152	123	77	1248	4600	0	3201	116	68	992	4279
39	0	452	2	1	185	640	0	290	26	18	391	725
TOT	311431	476665	123291	82047	827203	1820637	311431	476665	123291	82047	827203	1820637

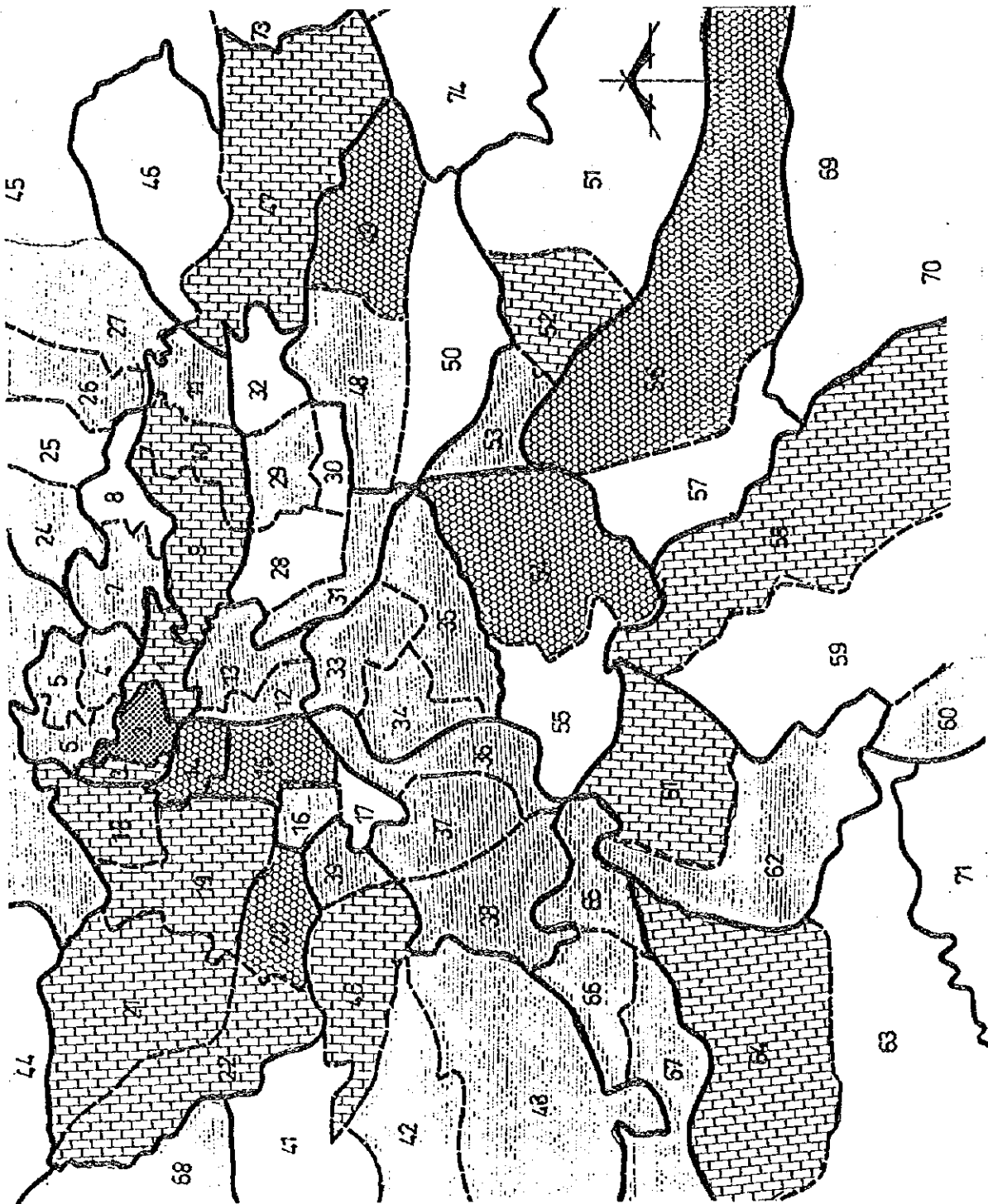
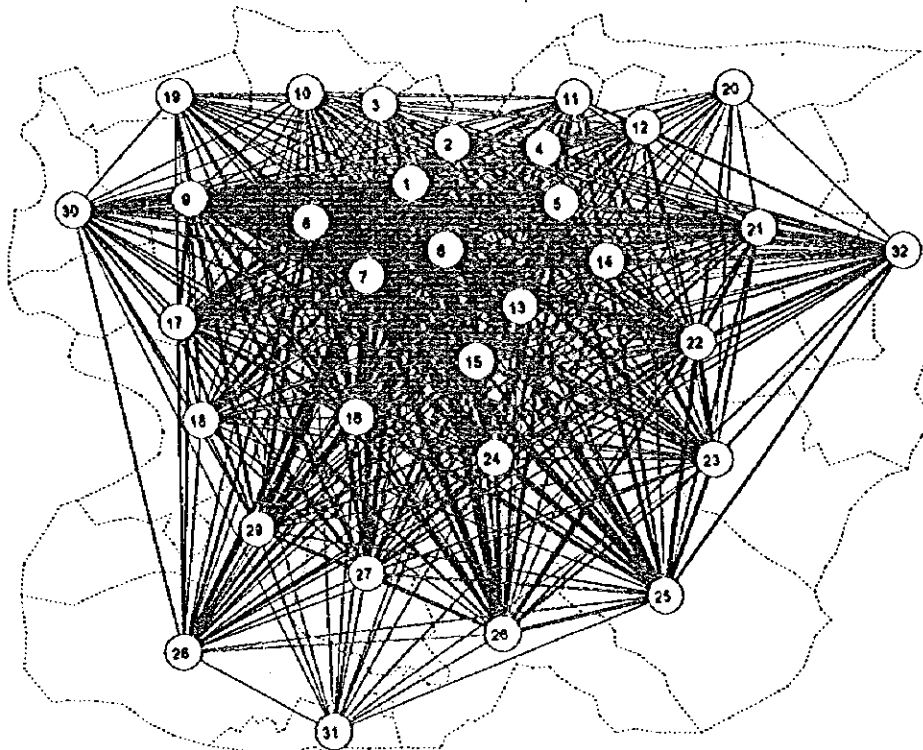
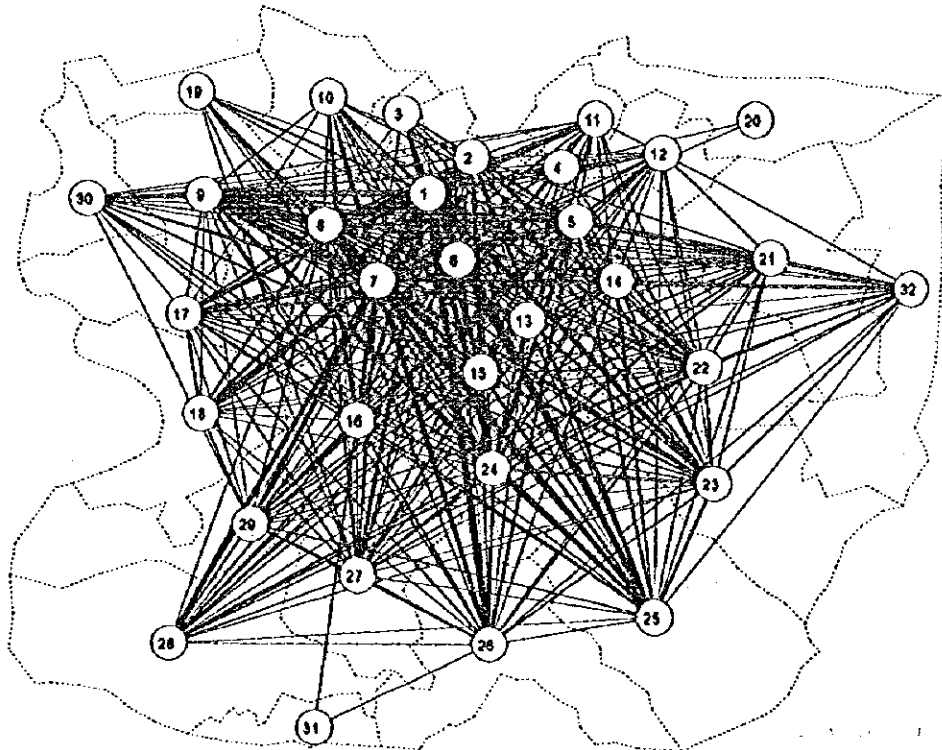


Fig. 5.2.11 Trip Generation and Attraction by Mode

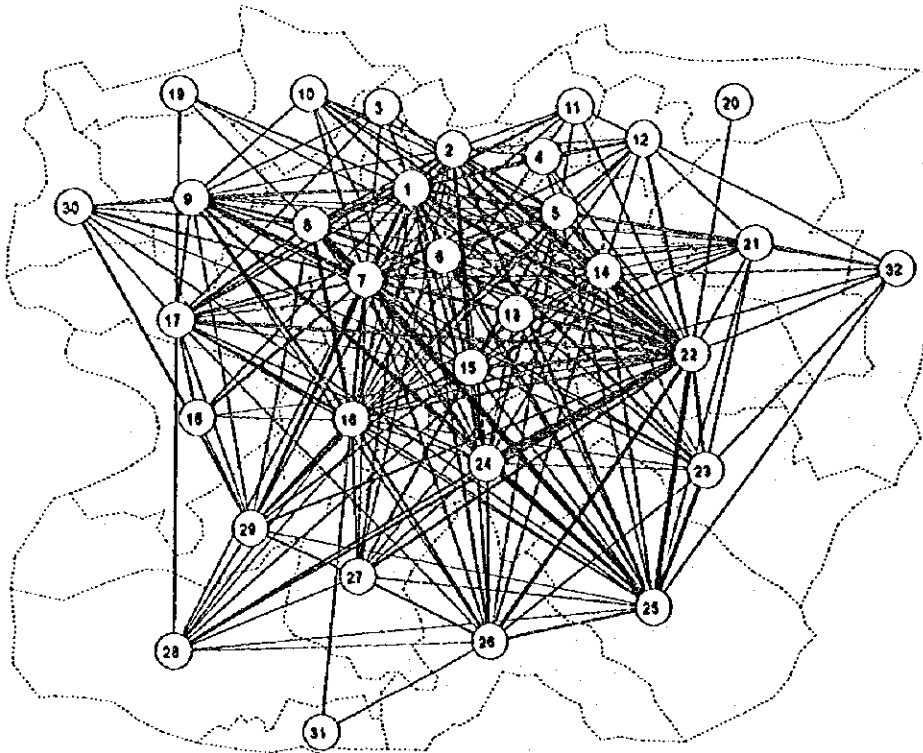


**Fig. 5.2.12 (1) Desired Line (All Purpose)**

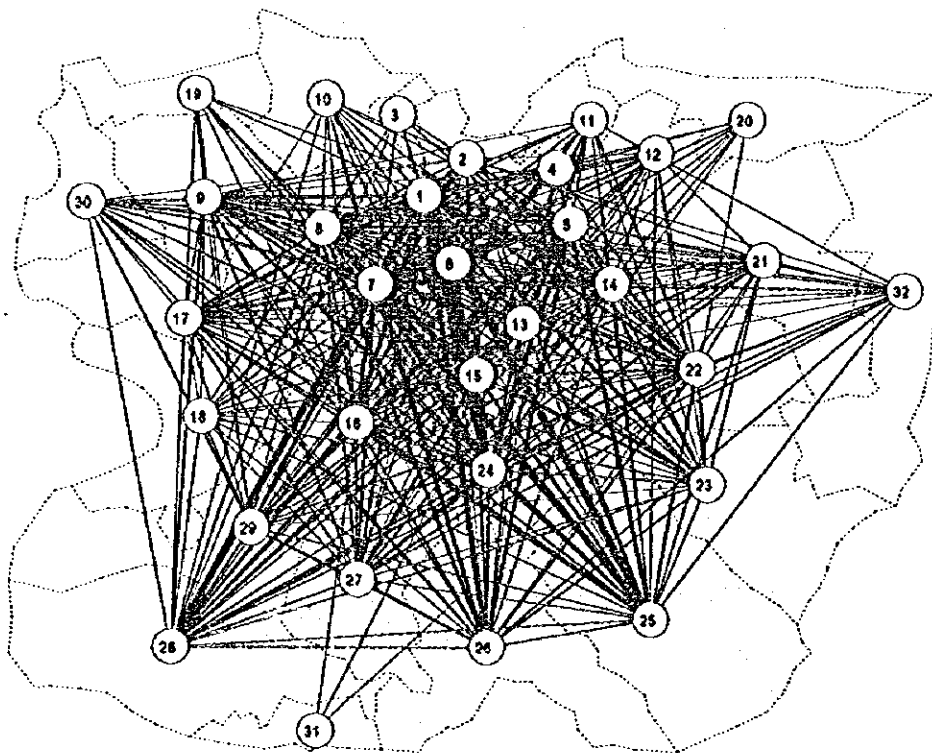


**Fig. 5.2.12 (2) Desired Line (Commuting - Work)**

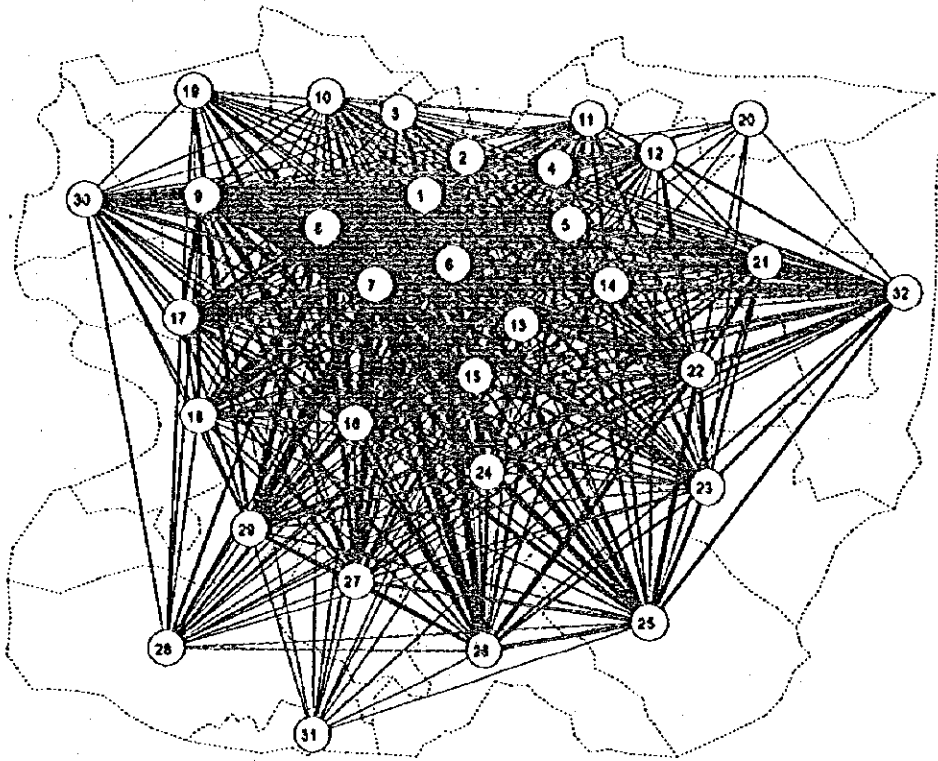




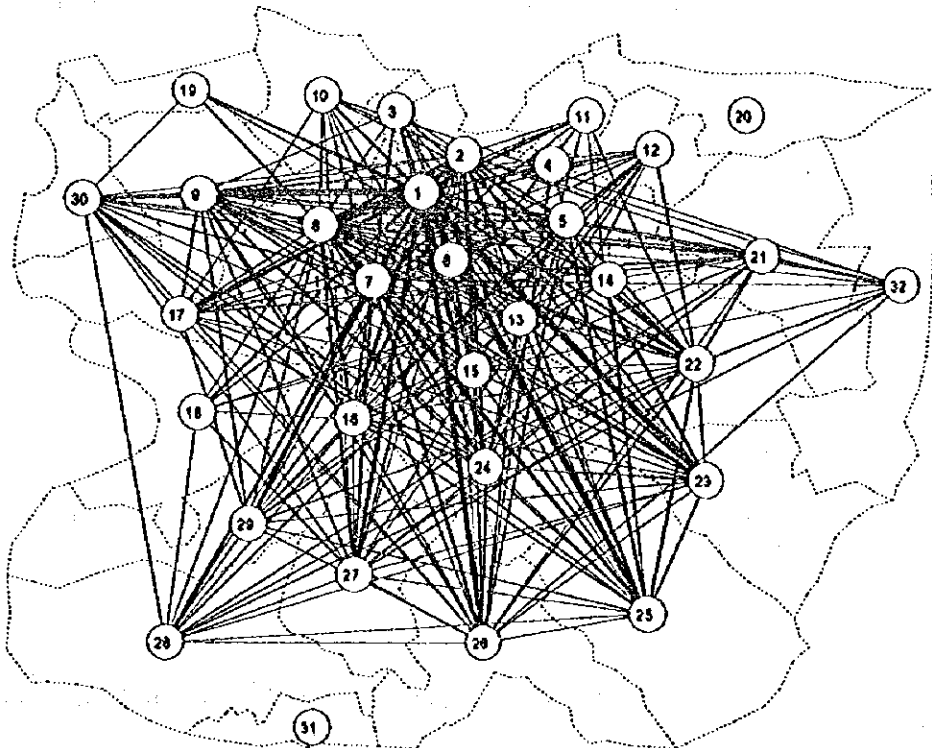
**Fig. 5.2.12 (3) Desired Line (Commuting - School)**



**Fig. 5.2.13 (1) Desired Line (Private Cars)**



**Fig. 5.2.13 (2) Desired Line (Buses)**



**Fig. 5.2.13 (3) Desired Line (Taxis)**

### Distribution of All Purposes

- Within the center of Tegucigalpa (Zone 1), National Stadium (Zone 6), the center of Comayagüela (Zone 7), Colonia San Cristobal (Zone 8) and Tres de Mayo (Zone 9), high amounts of OD trips can be observed. This can be thought as a main reason of the heavy traffic congestion in the central part of the study area.
- The centers of Tegucigalpa and Comayagüela have a large amounts of OD trips with the eastern part of the study area, that is, Zone 21 (Colonia San Miguel), Zone 23 (Colonia El Hato Enmedio) and Zone 25 (Colonia Kennedy). This causes traffic congestion of roads connecting the western part with the eastern part of the study area, such as Calle 9 in the center of Comayagüela.
- The center of Tegucigalpa and Comayagüela also has many OD trips with the southern and southwestern parts of the study area, that is, Zone 27 (Airport), Zone 26 (El Loarque) and Zone 18 (Colonia San Francisco), which causes the heavy traffic congestion of roads connecting the northern and southern part of the study area such as Colonia Europea.

### Trip Distribution of "To Work"

- Heavy traffic is observed between the central area and large population zones, however, the trip distribution pattern is almost same as that of the above.
- Other than the above, large trip concentration can be observed in Zone 5 (Colonia Palmira along Boulevard Morazán) and Zone 24 (Miraflores). This indicates that the business area is transferring to the outside area from the central area.
- Recently Zone 24 (Miraflores) is rapidly developing as the business and commercial area because of its better access.
- Among adjacent zones trip distribution is not large, therefore, the trip length of "To Work" can be said to be relatively long.

### Trip Distribution of "To School"

- The trip distribution is relatively large between adjacent zones by pupils.
- Zone 22 includes the national university and Zone 7 has large primary, secondary and high schools, therefore, a large trip distribution concentrates into these two zones.

### Trip Distribution by Car

- The trip distribution by car shows a heavy OD volume among business and recreational areas (central area of Tegucigalpa and Comayagüela, area along Boulevard Morazán, Miraflores, National Stadium, etc.).
- There is also a large trip distribution between the above business areas and big residential areas (Colonia Kennedy, Colonia El Loaque, etc.).

### Trip Distribution by Bus

- The bus trips concentrate into the center of the Tegucigalpa and Comayagüela from other zones depending on their population size.
- The bus routes from west to east and from north to south need to be improved, since it is observed that so many buses concentrate on these routes.

### Trip Distribution by Taxi

- This distribution concentrates between the central area and large population zones such as Kennedy.
- It is easily understood that the taxi functions as a supplementary mode of the bus in the study area.

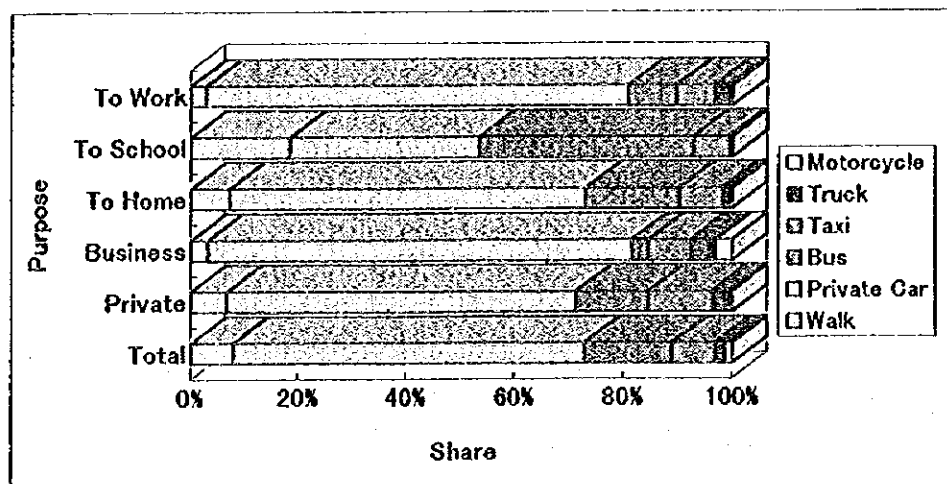
### 5.2.13 Modal Split by Car Owning

The modal splits between the car-owning households and non-car-owning households are remarkably different as shown Table 5.2.10~11 and Fig. 5.2.14~15. More than two thirds of persons in the car-owning households use private cars for all trip purposes except for commuting to school while bus users are very few (about 16.0%). On the other hand, most people in non-car-owning households use buses for all trip purposes. The use of privates is only 13.3% of their total trips.

**Table 5.2.10 Modal Split of Car-Owning Households by Purpose**

(Unit: persons/day)

Purpose/Mode	Walk	Private Car	Bus	Taxi	Truck	Motor-cycle	Total
To Work	3,203	86,874	9,884	7,840	3,322	455	111,578
To School	8,175	15,539	17,520	2,994	0	254	44,482
To Home	13,630	122,397	31,543	15,078	2,637	712	185,997
Business	634	15,464	605	1,530	913	597	19,743
Private	3,210	30,180	6,121	5,460	1,514	223	46,708
Total	28,852	270,454	65,673	32,902	8,386	2,241	408,508

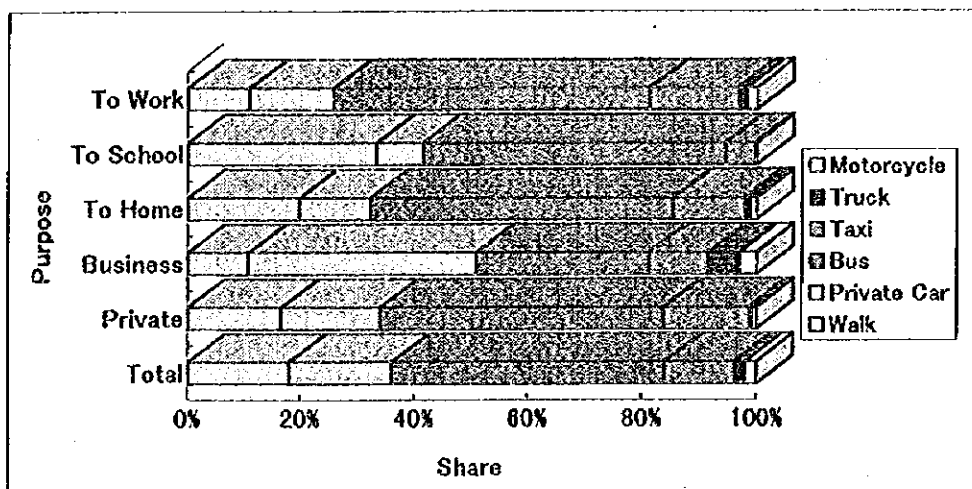


**Fig. 5.2.14 Modal Split of Car-Owning Households by Purpose**

**Table 5.2.11 Modal Split of Non-Car-Owning Households by Purpose**

(Unit: persons/day)

Purpose/Mode	Walk	Private Car	Bus	Taxi	Truck	Motor-cycle	Total
To Work	35,548	47,234	177,805	48,570	5,883	5,378	320,418
To School	73,101	17,963	116,473	11,655	0	703	219,895
To Home	127,493	80,283	342,054	80,723	6,677	7,532	644,762
Business	2,708	9,964	7,529	2,554	1,372	771	24,898
Private	21,737	22,678	65,164	19,506	647	1,040	130,772
Total	260,587	178,122	709,025	163,008	14,579	15,424	1,340,745



**Fig. 5.2.15 Modal Split of Non-Car-Owning Households by Purpose**

#### 5.2.14 Income Distribution

The household selected in this survey was asked their income per month. As shown in Table 5.2.12, the number of households with less than 5,000 Lempiras of the monthly income accounts for 77%. About 47% of the total households were less than 2,500 Lempiras per month.

**Table 5.2.12 Income Distribution**

Monthly Income (Lempiras)	Number of Households (Households)	Accumulated Share (%)
-	130	1.6
500		
501 - 1,000	1,071	14.7
1,001 - 2,500	2,631	47.0
2,501 - 5,000	2,410	76.5
5,000 -	1,917	100.0
Total	8,159	

### 5.2.15 Car-Owning by Income Class

Table 5.2.13 and Fig. 5.2.16 show the car owning by income class. About 56% of the households with more than 5,000 Lempiras of the monthly income own their cars. In addition about 23% of those households own more than two cars. On the other hand, the shares of non-car ownership households are 95% for the households with less than 500 Lempiras of the monthly income, 92% for 501 - 1,000 Lempiras, 86% for 1,001 - 2,500 Lempiras, 62% for 2,501 - 5,000 Lempiras and 44% for more than 5,000 Lempiras.

Table 5.2.13 Car Owning by Income Class

(Unit: household)

Monthly Income (Lps.)	No Car	1 Car	2 Cars	3 Cars	More than 4 Cars	Total
- 500	469	26	0	0	0	495
501 - 1,000	1,040	83	9	0	0	1,132
1,000 - 2,500	1,662	242	34	5	0	1,943
2,501 - 5,000	1,167	521	164	35	0	1,887
5,000 -	145	110	67	6	4	332

Monthly Income (Lps.)	No Car	1 Car	2 Cars	3 Cars	More than 4 Cars	Total
- 500	94.7	5.3	0.0	0.0	0.0	100.0
501 - 1,000	91.9	7.3	0.8	0.0	0.0	100.0
1,000 - 2,500	85.5	12.5	1.7	0.3	0.0	100.0
2,501 - 5,000	61.8	27.6	8.7	1.9	0.0	100.0
5,000 -	43.7	33.1	20.2	1.8	1.2	100.0

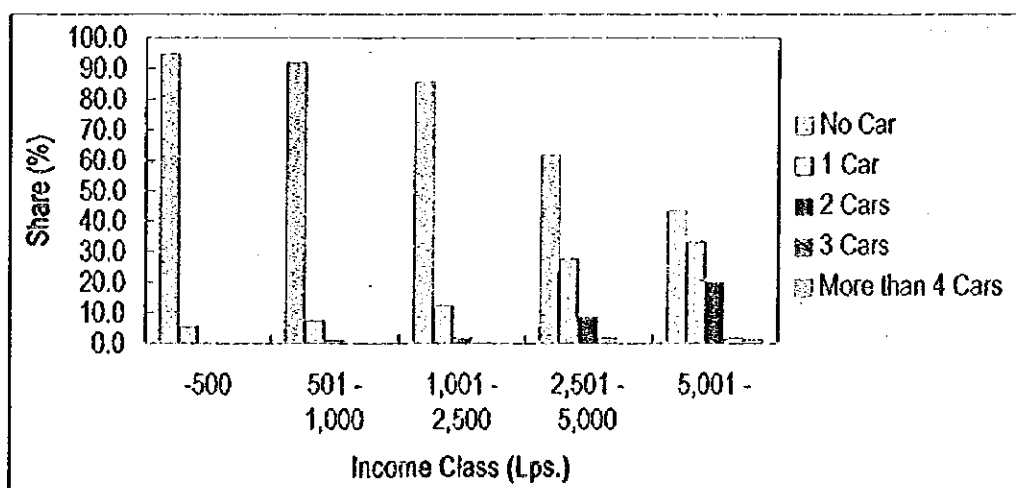


Fig. 5.2.16 Car Owning by Income Class

### 5.2.16 Trips by Mode and by Income Class

Comparing the share of the modal use by income class, the use of public transportation does not differ greatly; however, the usage of cars ranges from 3.6% to 46.8%, reflecting the above-mentioned different car ownership rate. Table 5.2.14 summarizes these results.

**Table 5.2.14 Trips by Mode and by Income Class**

Monthly Income (Lempiras)	Public Transportation (%)	Car (%)
- 500	57.2	3.6
501 - 1,000	62.2	5.9
1,001 - 2,500	61.8	10.4
2,501 - 5,000	53.9	28.8
5,001 -	42.0	46.8

Table 5.2.15 and Fig. 5.2.17 show trips by mode and income class in more detail.

**Table 5.2.15 Trips by mode and Income Class**  
(Unit: trips/day)

Income Class		501 -	1,001 -	2,501 -	
Mode	-500	1,000	2,500	5,000	5,001 -
Walk	771	1,677	2,750	1,861	276
Car	78	315	1,084	3,246	1,210
Bus	1,080	2,812	5,315	4,792	772
Microbus	126	302	452	352	66
Taxi	69	228	622	936	246
Large Truck	3	0	0	2	0
Truck	9	13	11	27	10
Ban	1	1	36	12	0
Motorcycle	6	29	63	45	4
Total	2,143	5,377	10,333	11,273	2,584

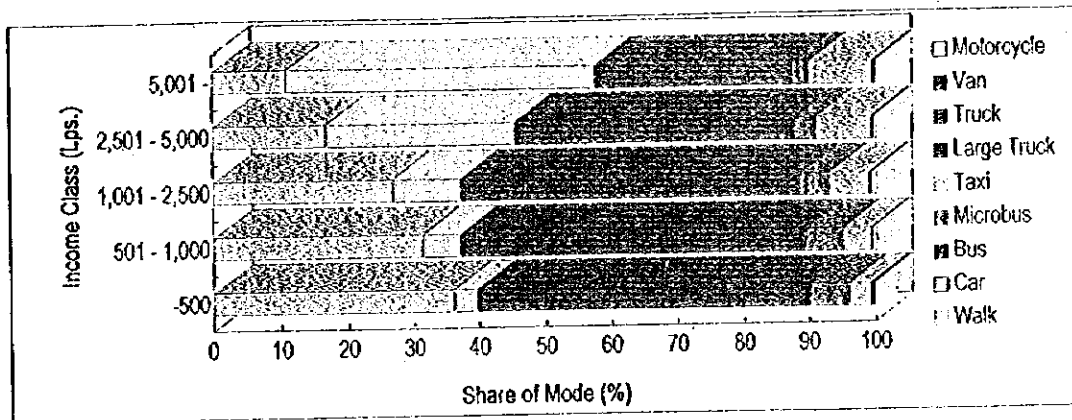


Fig. 5.2.17 Trips by Mode and Income Class

### 5.3 Cordon Line Survey

According to the results of the Cordon line survey, 9,056 vehicles flowed into the study area and 9,223 vehicles flowed out from the study area per day as shown in Table 5.3.1 and Fig. 5.3.1. Among the survey stations, the number of vehicles going from and to San Pedro Sula (Survey Station No. 3) was counted at 4,655 vehicles, of which the number of trucks accounted for almost 30 %.

Table 5.3.1 Traffic Volume at Cordon Line Station  
(Unit: vehicles/day)

Station No.	Direction	Car	Bus	Truck	Total
No. 1 Norte	To Study Area	1,404	161	616	2,181
	To Outside	1,600	143	731	2,474
No. 2 Olancho	To Study Area	823	143	274	1,240
	To Outside	685	141	277	1,103
No. 3 Oriente	To Study Area	1,062	357	277	1,696
	To Outside	1,060	301	275	1,636
No. 4 Sur	To Study Area	1,121	155	392	1,668
	To Outside	1,073	133	426	1,630
No. 5 Lepaterique	To Study Area	809	64	139	1,012
	To Outside	911	66	110	1,087
No. 6 Valle Angeles	To Study Area	1,162	55	422	1,259
	To Outside	1,172	59	60	1,291
Total	To Study Area	6,381	935	1,740	9,056
	To Outside	6,501	843	1,879	9,223



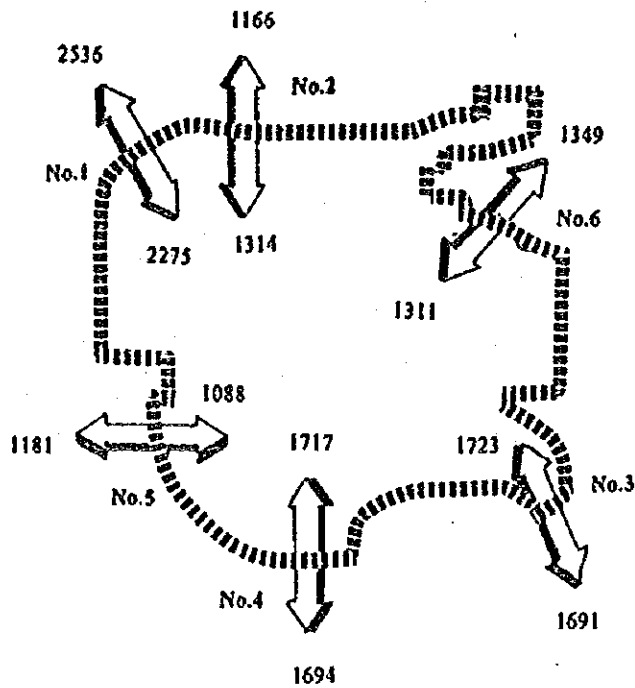


Fig. 5.3.1 Traffic Volume Passing at Cordon Line Stations

5.4 Screen Line Survey

As described in Section 4.3.1, the Cholteca river was selected as a Screen Line. Table 5.4.1 and Fig. 5.4.1 show the traffic volume passing through this Screen Line. The total number of vehicles crossing this Screen Line was 172,320 vehicles per days. The number of vehicles crossing to the western side of the Cholteca river was a little more than those crossing to the eastern side of the river.

Table 5.4.1 Traffic Volume at Each Survey Station (Unit : vehicles/day)

Station No.	To Comayagüela	To Tegucigalpa	Total
1	3,347	3,260	6,607
2	3,395	2,620	6,015
3	8,312	3,078	11,390
4	11,155	8,676	19,831
5	8,796	12,780	21,576
6	9,882	7,708	17,590
7	9,882	7,165	17,047
8	29,377	25,006	54,383
9	4,192	5,361	9,553
10	4,159	4,169	8,328
<b>Total</b>	<b>92,497</b>	<b>79,823</b>	<b>172,320</b>

Note: Excluding motorcycles and others

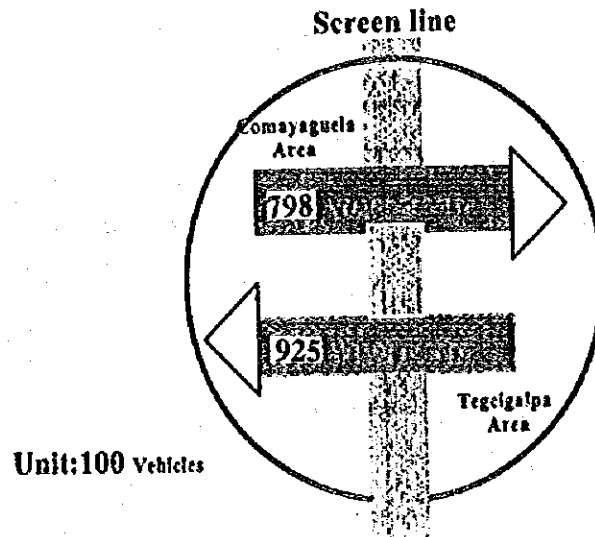


Fig. 5.4.1 Traffic Volume Crossing the Screen Line

### 5.5 Vehicle Speed Survey

In the study area there are three peak hours, that is, morning (7:30~8:30), noon (11:30~12:00) and evening (17:30~18:30). According to the Vehicle Speed Survey, the traffic congestion is worst during the evening peak hours. The vehicle velocity on the roads within the CBD area is almost less than 5-10 Km/h, especially, on Avenida Miguel de Cervantes and Avenida Cristobal Colón in the central area of Tegucigalpa, Calle 9 in the central area of Comayaguéla and roads near the National Stadium. However, outside CBD area the velocity improves to about 30-40 km/h, except roads near the airport and some sections of Boulevard Santa Fé. Comparing this velocity with that of off-peak hours, the velocity on each road section is higher than that of the peak hours (about by 10-20 km/h). On the other hand, the velocity during the morning peak hours is a little better, compared with the evening peak, almost by 5-10 km/h. The results of the vehicle velocity in the evening hours is shown in Fig. 5.5.1.

### 5.6 Traffic Volume Survey at Cross Section

In order to grasp the traffic volume on major roads in the study area, the traffic volume counting survey was carried out at 17 points (See Fig. 4.5.1). As shown in Table 5.6.1, at the survey point 17 (Blvd. Comunidad Europea) and survey point 9 (Blvd. Miraflores), the traffic volume exceeded 45,000 vehicles per day. Compared with the traffic volume with the road capacity, Avenida Los Proceres (No.11) registered the congestion rate of 3.3, followed by Avenida Juan Lindo (No.10) and the road between La Isla Bridge and the National Stadium (No.2). Traffic congestion is decreases on the roads in the outskirts of the city except near the airport (survey point 17). Fig. 5.6.1 shows the degree of the traffic congestion on the major roads in the study area.

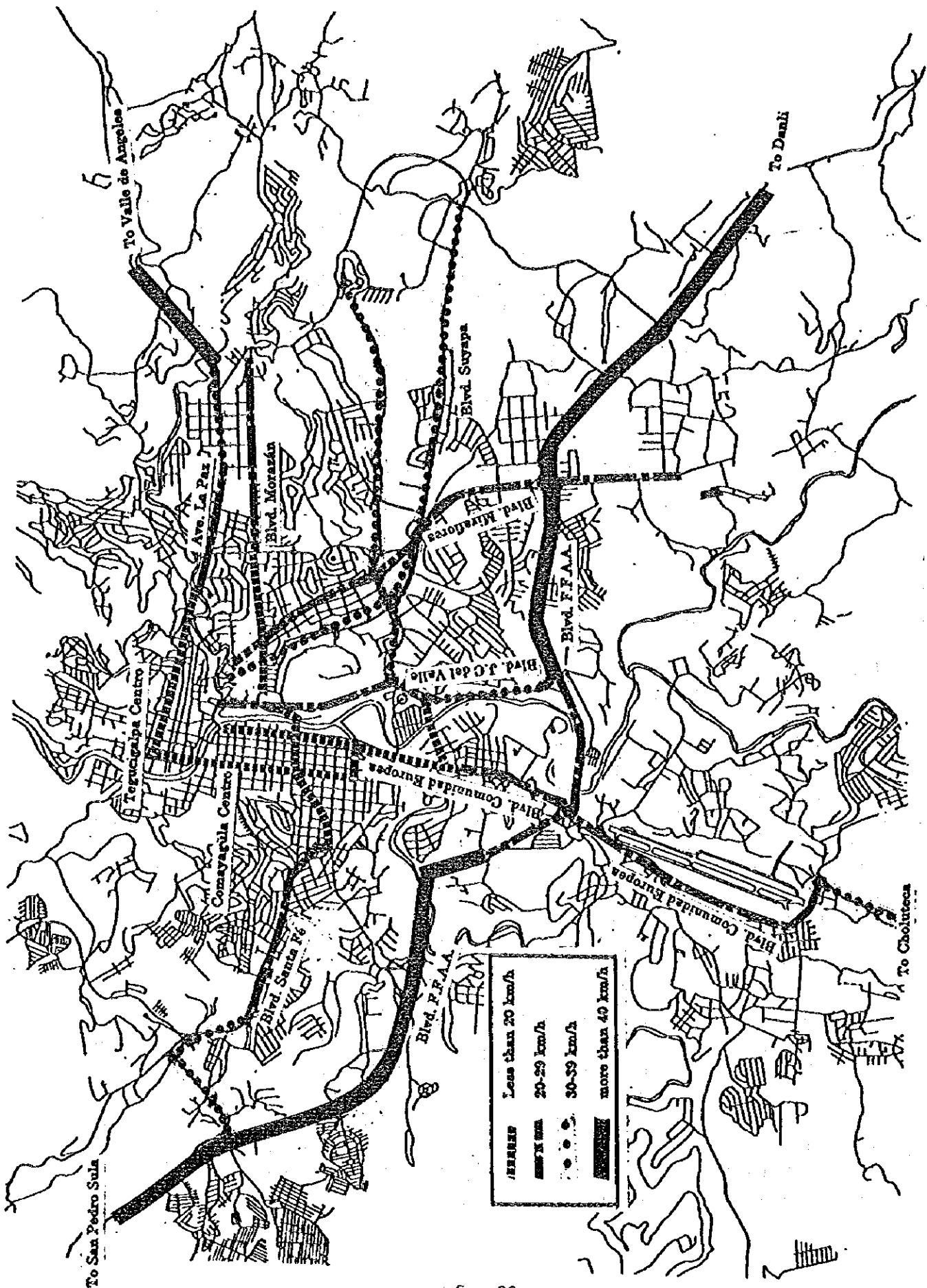


Fig 5.5.1 Vehicle Speed on Major Roads

Table 5.6.1 Traffic Volume on Major Roads

No.	Survey Location (Road Name)	Traffic Volume (16h)	Traffic Volume (24h) (A)	Direction	No. of Lanes	Traffic Capacity of Road			Average Congestion Rate (A)/(B)
						Standard	Coefi.	Capacity (B)	
1	Ave. Gutenberg	9,428	9,899	1	1	12,000	0.8	9,600	1.03
2	Calle Isla	10,029	10,530	1	2	10,000	0.8	16,000	0.66
3	Salida de Colonia Cero Grande	4,722	4,958	2	2	8,000	0.8	12,800	0.39
4	Bld. F.F.A.A. (west)	28,001	29,401	2	4	12,000	1	48,000	0.61
5	Bld. F.F.A.A. (east)	28,738	30,175	2	4	12,000	1	48,000	0.63
6	Carretera a Olancho	9,309	9,774	2	2	10,000	0.8	16,000	0.61
7	Ave. Los Proceres	22,526	23,442	2	4	8,000	0.8	25,600	0.92
8	Anillo Periferico (Suyapa)	7,106	7,461	2	2	8,000	0.8	12,800	0.58
9	Bld. Miraflores	45,598	47,878	2	4	12,000	0.8	38,400	1.25
10	Ave. Juan Lindo	8,604	9,034	2	2	8,000	0.8	12,800	0.71
11	Ave. La Paz	20,400	21,420	2	2	8,000	0.8	12,800	1.67
12	Ave. Santa Fe	33,700	35,385	2	4	12,000	0.8	38,400	0.92
13	Ave. Los Proceres	18,649	19,581	2	4	10,000	0.8	32,000	0.61
14	Bld. Suyapa	17,400	18,270	2	4	10,000	0.8	32,000	0.57
15	Bld. Morazan	7,796	8,186	2	4	10,000	0.8	32,000	0.26
16	Bld. Juan Pablo 2	13,640	14,322	2	4	12,000	0.8	38,400	0.37
17	Bld. Comu. Europea	45,800	48,090	2	4	12,000	0.8	38,400	1.25

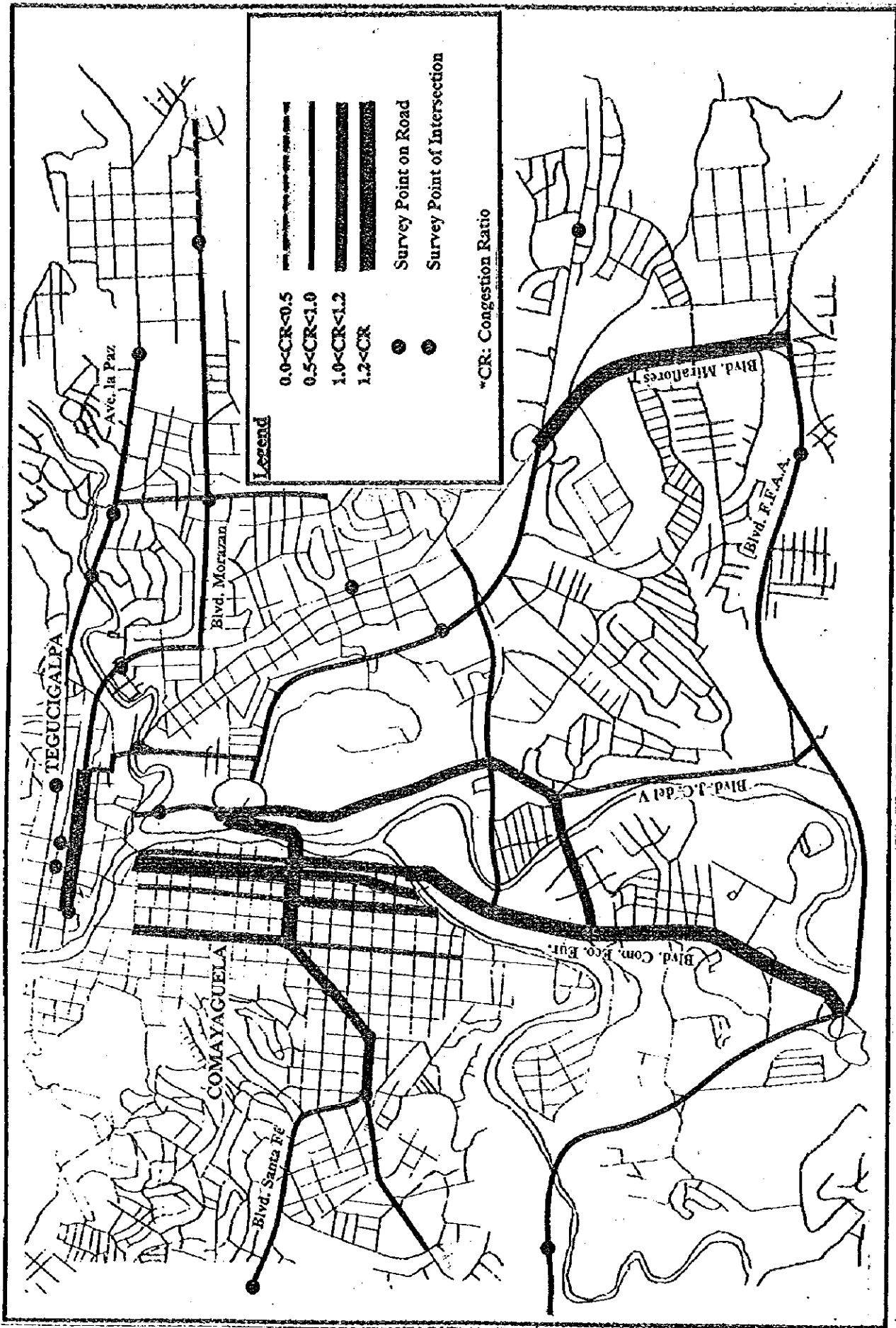


Fig. 5.6.1 Degree of Traffic Congestion on Major Roads

## 5.7 Traffic Volume Survey at Intersections

The traffic volume by direction was surveyed at 23 intersections (see Fig. 5.7.1). The survey results are shown in Table 5.7.1 (1)-(3) with their physical characteristics and the saturation degree. Theoretically speaking, if the saturation degree exceeds 0.9, the intersections are considered congested. As a result, intersections No.3 to 7 and No. 20 need improvement. The improvement of these intersections is examined in Chapter 9.

Fig. 5.7.1 shows the traffic flows on Calle 9 in the central area of Comayagüela, where a total of 9 intersections exist. This Calle is the most important road for west-east traffic, therefore, it is desirable to install traffic signals with a coordinated control system as much as possible. The traffic volume by direction at each intersection is shown in Appendix 5.

Station of Traffic Volume Survey  
at Intersection

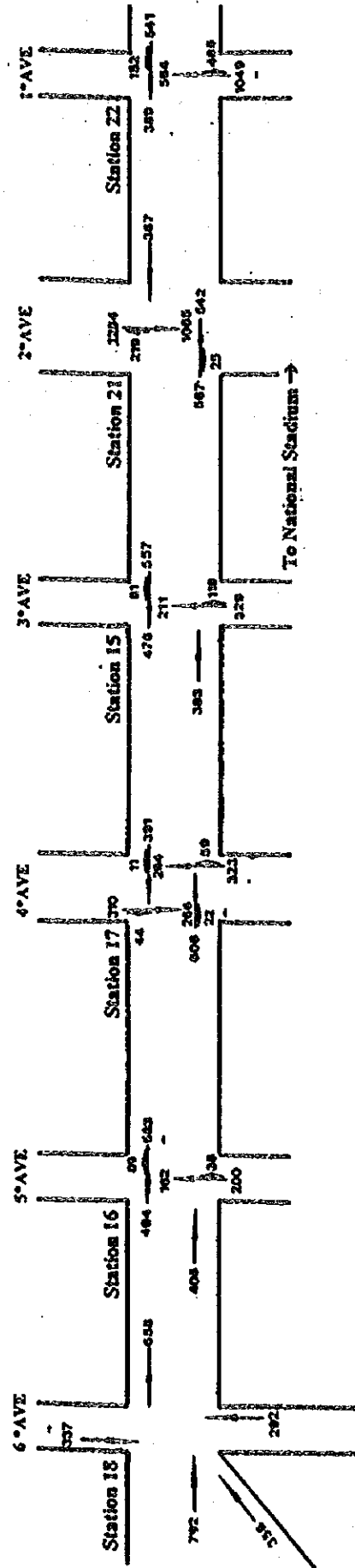
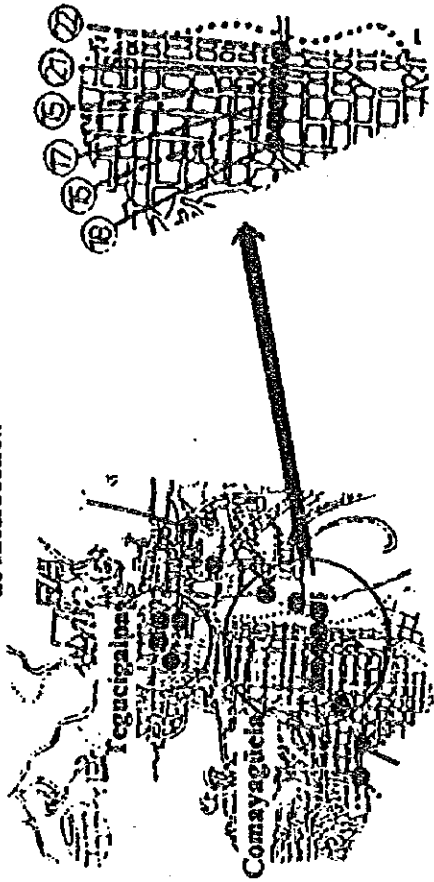


Fig. 5.7.1 Traffic Flows at Intersections  
in Central Area of Comayagüela

Table 5.7.1 (1) Analysis of Traffic Volume at Intersections

	Name of Road	Width of Road	Number of Lanes	Peak hour	Peak Traffic Volume	Right Turn		Left Turn		Large Vehicle Ratio	Cycle Length of Signal	Saturation of Each Direction
						Turn Vehicle	Ratio	Turn Vehicle	Ratio			
NO-1	Bvd. EUROPEA(S)	7.4m	2	15	1,121	0	0	0	0	0.116 10	NO	0.691
T	Bvd. EUROPEA(N)	7.5m	2		1,219	0	0	0	0	0.100 8		
	Y Puente El Prado	6.6m	1		559	559	100	0	0	0 8 1		
NO-2	Bvd. Juan M. GALVEZ(N)	12.2m	2+L	12	1,002	175	18	152	15	27 3	90sec	0.420
+	Bvd. Juan M. GALVEZ(S)	10.0m	2		723	90	12	129	18	15 2		
	y Ave. REP. DE URUGUAY(E)	16.4m/2	2+L		608	220	36	33	5	9 2		
	y Ave. REP. DE URUGUAY(W)	16.0m/2	2+L		625	58	9	181	29	10 2		
NO-3	Bvd. EUROPEA(N)	7.4m	2	10	1,161	55	5	416	36	109 9	80sec	0.979
+	Bvd. EUROPEA(S)	10.1m	2		1,425	157	11	457	32	187 13		
Stag.	y PUENTE VERDE(W)	10.8m/2	1		432	414	96	0	0	24 6		
	y Call. GOLANE	7.3m/2	1		414	265	64	0	0	61 15		
NO-4	Bvd. JOSE DEL VALL(N)	8.0m/2	1	15	554	169	31	0	0	29 5	90sec	0.964
+	Bvd. JOSE DEL VALL(S)	12.3m/2	2		1,309	609	47	379	29	89 7		
Stag.	y Call. LA SALUDE	12.3m/2	2		914	145	16	686	73	54 6		
	y Call. LA SALUD(W)	11.0m/2	1		133	2	2	0	0	5 5		
NO-5	Bvd. JOSE DEL VALL(N)	12.0m/2	2	17	1,398	574	41	0	0	59 4	NO	1.151
+	Bvd. JOSE DEL VALL(S)	9.0m	2		556	242	44	0	0	35 6		
Stag.	y Call. Golan(W)	6.5m	1		961	168	18	791	82	28 3		
	y Otro(E)	8.5m/2	1		17	0	0	0	0	0 0 0		
NO-6	Cal. LA ISLA (N)	7.4m+6.1m	3	11	1,527	0	0	0	0	62 4	NO	1.094
Y	Call. PUENTE J.R. MOLINA	6.5m	1		844	844	100	Puente	0	104 12		
NO-7	Cal. LA ISLA (N)	12.0m/2	2	10	1,130	0	0	0	0	0 0 0	NO	0.930
Y	CIRCUNVALACION(W)	7.1m+7.1m	2		414	414	100	0	0	76 19		
NO-8	Bvd. MORAZON(W)	13.3m	2+L	16	1,298	153	12	287	21	44 3	90sec	0.775
+	Bvd. MORAZON(E)	13.2m	2+L		1,565	112	7	202	13	24 2		
	y Ave. JUAN LINDO(N)	12.2m/2	1		412	114	28	89	22	9 2		
	y Ave. JUAN LINDO(S)	9.2m/2	1		445	189	43	101	23	9 2		



Table 5.7.1 (2) Analysis of Traffic Volume at Intersections

NO-9	Ave. JUAN R. MOLINA(W)	7.1m	1	8	716	694	97	22	3	14	2	NO	0.827
T	AVE. SAN MARTIN (S)	9.0m/2	1		523	9	2	0	0	65	13		
NO-10	Ave. CERVANTES(E)	9.3m/2	1	8	508	79	16	0	0	60	12		0.817
+	Cal. LA PLAZUE(S)	5.4m	1		969	228	24	577	60	19	2		
NO-11	Ave. CERVANTES(E)	5.0m	1	8	332	227	68	0	0	59	18	60sec	0.386
+	Cal. MORELOS(S)	6.3m	1		249	0	0	27	11	115	46		
NO-12	Ave. C.COLON(E)	5.1m	1	9	479	0	0	0	0	72	15	NO	0.382
+	Cal. LOS DOLORES(S)	8.0m	1		171	171	100	0	0	7	4		
NO-13	Ave. S.MENDIETE(E)	5.0m	1	9	356	0	0	128	36	46	13	90sec	0.558
+	Ave. C.COLON(N)	4.8m	1		546	123	23	0	0	71	13		
NO-14	Ave. CERVANTES(E)	7.2m	1	9	693	0	0	362	52	65	10	90sec	0.647
+	Cal. S.MENDIETA(N)	6.3m	1		311	27	9	0	0	7	3		
NO-15	9an. Cal. (W)	8.4m/2	1	9	383	0	0	0	0	21	6	NO	0.415
+	9nd. Cal.(E)	8.3m/2	1		557	0	0	0	0	20	4		
	y 3rd. Ave(S)	7.9m	1		329	118	36	0	0	8	2		
NO-16	9nd. Cal(W)	9.0m/2	1	7	405	0	0	0	0	20	5	NO	0.404
+	9nd. Cal(E)	8.1m/2	1		583	89	15	0	0	22	4		
	5ta.Ave(S)	8.4m	2		200	38	19	0	0	63	32		
NO-17	9nd. Cal(E)	8.1m/2	1	9	402	11	3	0	0	15	8	120sec	0.549
+	9nd. Cal(W)	8.2m/2	1		606	22	4	0	0	28	5		
	4ta. Ave(S)	9.0m/2	1		323	59	17	0	0	12	4		
	4ta. Ave(N)	8.9m/2	1		310	44	14	0	0	62	20		
No-18	9nd. Cal(E)	9.0m/2	1	16	658							120sec	0.520
Steps	9nd. Cal(W) Right only	9.0m/2	1		792								
	Ave. LEMPIRA(SW)	15.0m/2	1		356								
	6ta. Ave(N)	9.0m/2	1		337								
	6ta. ave(S)	8.6m/2	1		292								
NO-19	9nd. Cal(E)	15.0m/2	2	8	732	3	0	0	0	148	20	NO	0.574
+	9nd. Cal(W)	15.0m/2	2		880	13	2	0	0	147	17		
	10ma. Ave.S.O.(N)	9.2m/2	1		4	3	75	0	0	0	0		
	10ma .Ave.S.O.(S)	9.2m/2	1		40	33	83	0	0	4	10		

Table S.7.1 (3) Analysis of Traffic Volume at Intersections

NO-20	Bvd. CABANAS(SW)S.only	5.20m	2	8	728	728	100	0	0	51	7	30sec	1.067
Y	Bvd. CABANAS(E)	7.0m	2		1,105	0	0	146	13	171	16		
	Bvd. SANTA FE(W)S.only	9.2m	2		308	0	0	0	0	63	8		
NO-21	9nd. Cal(E)S.only	8.0m/2	1	17	367	0	0	0	0	15	4	120sec	0.660
+	9nd. Cal(W)	8.3m/2	1		567	25	4	0	0	32	6		
	2da. Ave.(N)	12.1m	2		1,284	219	17	0	0	29	2		
NO-22	9nd. Cal(E)	7.5m/2	1	16	541	152	28	0	0	18	3	120sec	0.759
+	9an. Cal(w)	7.5m/2	1		667	0	0	0	0	31	5		
	2da. Ave.(S)	8.1m	2		1,049	485	46	0	0	22	2		
NO-23	9nd. Cal(E)	13.8m/2	2	8	625	0	0	0	0	149	24	NO	0.537
+	9nd. Cal(W)	14.7m/2	2		822	10	1	0	0	97	12		
Steps	8a. Ave.(N)	9.2m/2	1		10	10	100	0	0	0	0		
	8a. Ave.(S)	9.1m/2	1		39	33	85	0	0	3	8		
	11a. Cal(SE)	9.1m/2	1		35	0	0	0	0	3	9		

## 5.8 Bus Survey

### 5.8.1 Number of Buses and Bus Fare

Buses are the most dominant transportation mode and consist of urban bus, interurban bus and microbus. The number of these buses are summarized in Table 5.8.1.

**Table 5.8.1 Outline of Public Transport in Tegucigalpa**

	Bus		Urban Microbus	Taxi (Fixed Route)
	Urban	Interurban		
Operator	5 cooperative, 16 companies, 45 individuals	5 cooperative, 61 companies, 91 individuals	109 companies, 58 individuals	car owner
No. of Units	1017 *	541	502	1250
No. of Routes	41	81	28	-
Network of Routes	See Fig.4.8.1	See Table4.8.2	See Fig.4.8.2	-
Fare	Lps. 0.9 (ordinarily)	Depend on route	Lps.0.6-1.5 (Depending on route)	Lps.2.5 per 1 person

Note: \* No. of Units Subsidized

Source: SECOPT

#### (1) Bus

There are 41 urban buses routes and 81 interurban bus routes. The former is shown in Fig. 5.8.1 and Table 5.8.2, the latter in Table 5.8.3. Interurban buses directly connect Tegucigalpa with other cities such as San Pedro Sula and Choluteca.

Fig. 5.8.2 shows the number of bus routes assigned for each road. The number indicated in this figure is counted by single direction, not by round trip. This figure shows;

- All present bus routes pass through the CBD.
- There are some roads where more than 30 bus routes concentrate into the center of study area.
- Many bus routes are assigned on roads connecting the CBD area with the direction of Carrizal (northwest of the study area) and Flor del Campo (southwest of the study area) outside the CBD.

The Sindicato De Transporte Urbano (S.T.U.) is organized under 2 partnerships, 2 private enterprises and 28 private companies with operating 645 buses within the study area. The urban bus rate is set at Lps. 0.9 per ride, however, the government pays a subsidy of Lps. 0.3 to maintain this rate on only weekdays. The passenger charge results in Lps. 0.6. The express bus rate is Lps. 2.0, with no government aid.

#### (2) Microbus

109 companies and 58 commercial individuals are operating 502 microbuses for 28 routes as shown in Fig. 5.8.3 and Table 5.8.4. Microbus fare rates fluctuate Lps. 0.6 to 1.5 depending on their routes.

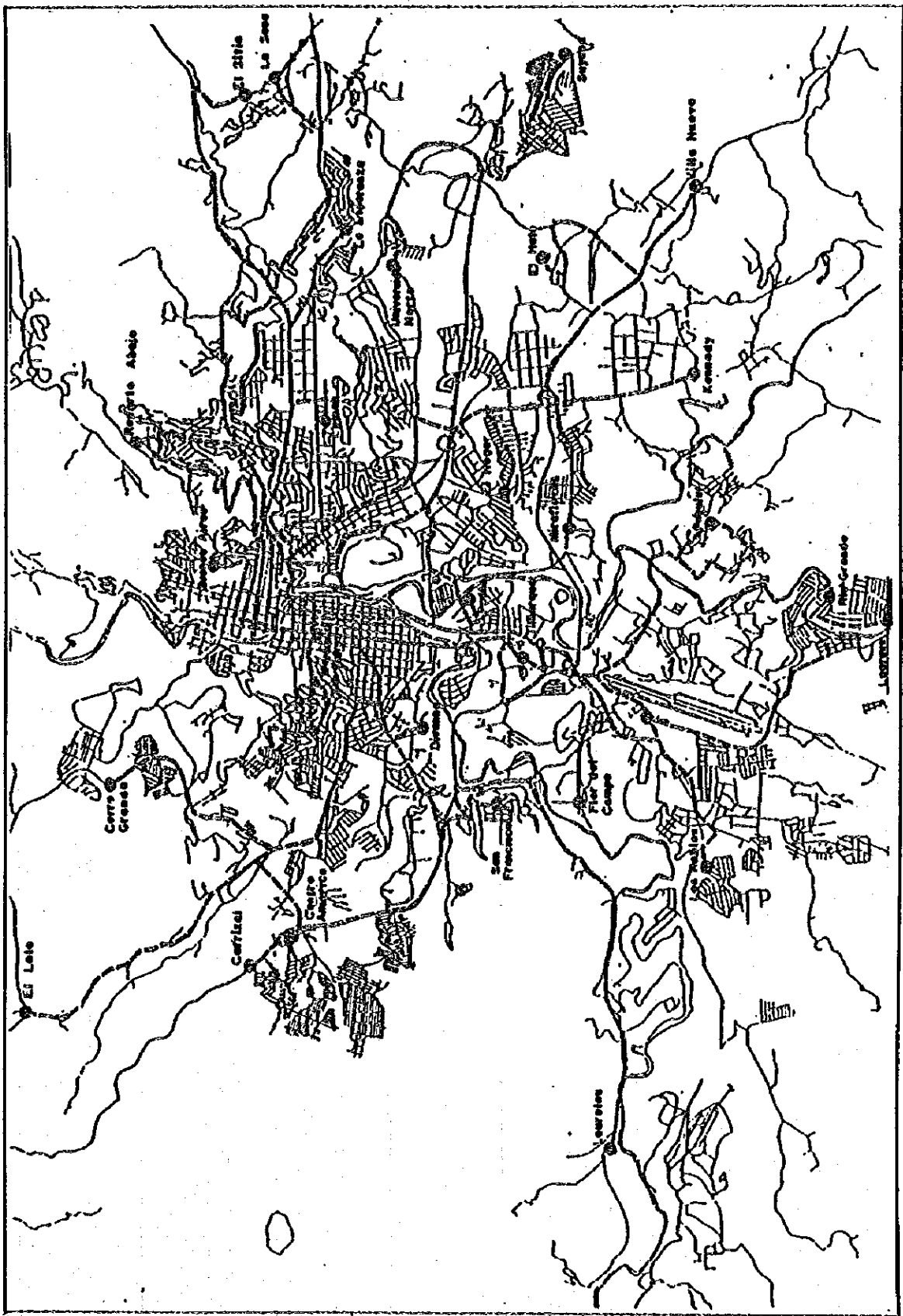


Fig. 5.8.1 Urban Bus Route Network

Table 5.8.2 Outline of Urban Bus Route

No.	Route of Name	No of Bus Stop	Trips (Trips/day /Unit)	No. of Bus Units (Units / day)	No. of Passengers (Persons/day)	Duration (H.M)
1	CerroGrande-LaSosa	36	4	5	900 to 1000	3.00
2	Carrizal-Hogar	26	7	3	800 to 1000	2.00
3	Carrizal-Miraflores	29	5	37	1000 to 1200	2.00
	Miraflores-Carrizal	33	-	-	1000 to 1500	1.00
4	CentroAmerica-UniversidadNorte	30	4	5	800	3.00
5	Carrizal-Prado	25	6	42	800 to 1200	2.00
	Prado-Carrizal	30	-	-	700	1.40
6	CentroAmerica-Prado	31	6	19	900 to 1000	1.30
7	CerroGrande-Hogar	26	5	1	900 to 1000	3.00
8	CerroGrande-Kennedy	31	4.5	47	900	3.00
9	CerroGrande-VillaNueva	29	4.5	19	900 to 1000	3.00
	VillaNueva-Cerro Grande	31	-	-	900 to 1000	2.45
10	Lolo-BuenosAires	23	5	21	1100	1.10
11	Lomas-Popular	26	5	9	800	2.00
	Popular-Lomas	19	-	-	900	1.00
12	RioGrande-Lomas	26	4.5	43	1000	1.00
	Lomas-RioGrande	27	-	-	800	2.00
13	Popular-RepertoAbajo	20	6	17	1000	1.00
	RepertoAbajo-Popular	23	-	-	1300	2.00
14	Popular-ElSitio	23	5	35	1000	1.00
	ElSitio-Popular	29	-	-	1000 to 1200	1.30
15	Popular-RepertoArriba	29	5	17	1200 to 1300	2.00
16	Flor del Campo-El Sitio	38	5	17	800	2.00
	El Sitio-Flor del Campo	24	-	-	900 to 1000	1.30
17	RioGrande-Kennedy	32	4	12	1000 to 1200	2.15
18	Hato-LosRobles	29	5	23	850 to 900	2.30
	LosRobles-Hato	28	-	-	900	1.20
19	Miraflores-RioGrande	34	5	4	900 to 1100	1.20
	RioGrande-Miraflores	30	-	-	900 to 1000	1.30
20	Miraflores-LosLaureles	34	5	2	850 to 900	1.10
	LosLaureles-Miraflores	24	-	-	750	1.10
21	Miraflores-SanFrancisco	36	5	1	858	1.15
	SanFrancisco-Miraflores	32	-	-	400 to 500	1.35
22	Miraflores-Popular	34	5	21	1000 to 1300	1.00
	Popular-Miraflores	18	-	-	900	0.55
23	Tiloarque-Prado	18	4	7	700	0.55
	Prado-Tiloarque	26	-	-	700	2.00
24	SanFrancisco-RepertoAbajo	29	5	2	750	1.45
	RepertoAbajo-SanFrancisco	22	-	-	800 to 900	2.14
25	Carrizal-RepertoArriba	34	5	20	1300	1.45
26	CentroAmerica-RepertoAbajo	25	5	13	800 to 1100	2.45
27	UniversidadNorte-Divanna	25	6	4	800	3.00
28	UniversidadNorte-Flor del Campo	31	0	0	1000 to 1100	3.00
	Flor del Campo-Universidad Norte	30	-	-	700	2.00
29	SanFrancisco-UniversidadNorte	23	5	3	400 to 500	1.30
	UniversidadNorte-SanFrancisco	29	-	-	800	2.00
30	UniversidadNorte-LosLaureles	34	5	12	800	3.00
	Los Laureles-Universidad Norte	25	-	-	800	1.30
31	Suyapa-MercadoSanIsidro	25	4	14	750 to 800	1.05
	MercadoSanIsidro-Suyapa	24	-	-	800 to 900	1.00
32	Carrizal-LaSosa	30	5	49	1000 to 1200	2.00
	LaSosa-Carrizal	35	-	-	900 to 1000	3.00
33	Carrizal-LaEsperanza	27	5	4	1300 to 1400	2.00
	LaEsperanza-Carrizal	25	-	-	800 to 900	2.00
34	Carrizal-ElSitio	37	4	7	1000 to 1100	2.00
	ElSitio-Carrizal	29	-	-	1000	1.30
35	SanFrancisco-LaSosa	38	5	1	600 to 800	1.30
	LaSosa-SanFrancisco	27	-	-	800 to 900	3.00
36	RepertoAbajo-Carrizal	23	6	19	1000 to 1200	2.30
	Carrizal-RepertoAbajo	25	-	-	1200 to 1300	1.45
37	RepertoAbajo-Profesores	17	8	12	1000 to 1200	1.45
	Profesores-RepertoAbajo	14	-	-	800 to 1000	1.15
38	Tiloarque-LaSosa	26	4	57	950 to 1000	1.20
	LaSosa-Tiloarque	30	-	-	1000 to 1200	2.30
39	Tiloarque-LaEsperanza	23	4	17	1000	1.00
	LaEsperanza-Tiloarque	23	-	-	900 to 1000	2.00
40	Tiloarque-ElSitio	20	4	1	1000	1.30
41	CentroAmerica-LaSosa	33	4	1	1200	1.45

Table 5.8.3 Interurban Bus Route

No.	Route	No. of Bus Unit	Operator Cooperation	Company	Individual
1	Tegucigalpa-Comayagua	25	0	1	2
2	Tegucigalpa-Siguatepeque	21	0	3	0
3	Tegucigalpa-San Pedro Sula	102	0	0	1
4	Tegucigalpa-Villa San Antonio	1	0	0	1
5	Tegucigalpa-Marcala	4	0	0	1
6	Tegucigalpa-La Par	5	0	1	0
7	Tegucigalpa-Aylerique	4	0	1	1
8	Tegucigalpa-Yurumela	1	0	0	1
9	Tegucigalpa-Santa Rosita	1	1	0	0
10	Tegucigalpa-Lemani	1	0	0	1
11	Tegucigalpa-Yoro	6	1	1	0
12	Tegucigalpa-San Jose del Potrero	1	0	0	1
13	Tegucigalpa-La Libertad	3	0	1	0
14	Tegucigalpa-La Esperanza	12	0	3	0
15	Tegucigalpa-Jesus de Oloro	3	0	0	3
16	Tegucigalpa-La Ceiba	9	0	2	0
17	Tegucigalpa-San Isidro	3	0	1	0
18	Tegucigalpa-Orocuina	3	0	1	0
19	Tegucigalpa-Aldea Esquilmay	2	0	1	0
20	Tegucigalpa-Choluteca	45	0	7	1
21	Tegucigalpa-San Marcos de Colon	17	0	2	0
22	Tegucigalpa-Goascoran	3	0	0	3
23	Tegucigalpa-Agua Fria	1	0	0	1
24	Tegucigalpa-San Marcos-Capulin	1	0	0	1
25	Tegucigalpa-San Jose de Paspira	4	0	1	2
26	Tegucigalpa-San Antonio de Flores	4	0	1	2
27	Tegucigalpa-San Antonio de Pedus	1	0	0	1
28	Tegucigalpa-Sociedad	3	0	0	3
29	Tegucigalpa-San Juan Bosco	2	0	0	2
30	Tegucigalpa-Tapatoca	1	0	0	1
31	Tegucigalpa-Paspire	1	0	0	1
31	Tegucigalpa-Santo Domingo	2	0	0	2
33	Tegucigalpa-Costa de Amates	2	0	0	2
34	Tegucigalpa-Llure	3	0	1	0
35	Tegucigalpa-Coraycito	1	0	0	1
36	Tegucigalpa-Lengua	4	0	1	1
37	Tegucigalpa-Alianza	4	0	1	2
38	Tegucigalpa-Ameyito	35	0	5	6
39	Tegucigalpa-Santa Rita	1	0	0	1
40	Tegucigalpa-San Juan	12	0	1	4
41	Tegucigalpa-Aguanqueterique	2	0	0	2
42	Tegucigalpa-Araucaria	1	0	0	1
43	Tegucigalpa-Coyolito	3	0	1	1
44	Tegucigalpa-Playa Grande	1	0	0	1
45	Tegucigalpa-Cedeno	4	0	1	0
46	Tegucigalpa-La Fraternidad	6	0	1	0
47	Tegucigalpa-Morolica	4	0	0	4
48	Tegucigalpa-Guasajule	1	0	0	1
49	Tegucigalpa-Los Alpes	2	0	0	2
50	Tegucigalpa-Aldea El Moray	2	0	1	0
51	Tegucigalpa-Catacamas	39	0	2	0
52	Tegucigalpa-Campamento	2	0	0	2
53	Tegucigalpa-Guayapa	3	0	1	0
54	Tegucigalpa-San Luis	3	0	1	0
55	Tegucigalpa-Las Vegas	3	0	1	1
56	Tegucigalpa-Esquilas	1	0	0	1
57	Tegucigalpa-Sufaco	5	0	2	1
58	Tegucigalpa-Silca	1	0	0	1
59	Tegucigalpa-Manguilla	2	0	1	0
60	Tegucigalpa-Julicapa	3	0	1	0
61	Tegucigalpa-Vado Ancho	6	0	0	6
62	Tegucigalpa-Moroceli	4	0	1	0
63	Tegucigalpa-El Paraiso	25	0	3	0
64	Tegucigalpa-Danil	2	0	1	0
65	Tegucigalpa-Villa San Fco.	3	0	1	0
66	Tegucigalpa-Guinopa	9	0	0	1
67	Tegucigalpa-San Lucas	2	0	0	2
68	Tegucigalpa-Aldea El Portillo	1	0	0	1
69	Tegucigalpa-El Barro	1	0	0	1
70	Tegucigalpa-Yuscaran	4	0	0	4
71	Tegucigalpa-Oropoli	4	0	1	2
72	Tegucigalpa-Telapantli	3	0	1	1
73	Tegucigalpa-San Rosa de Copan	5	0	1	1
74	Tegucigalpa-San Lorenzo	2	0	1	0
75	Tegucigalpa-Rio Abajo	1	0	0	1
76	Tegucigalpa-Cane	3	0	0	3
77	Tegucigalpa-Las Vegas	1	0	0	1
78	Tegucigalpa-Trujillo	7	1	1	0
79	Tegucigalpa-Olancho	4	1	0	0
80	Tegucigalpa-Sonaguera	4	1	0	0
81	Tegucigalpa-Santa Barbara	6	0	1	0
	Total	541	5	61	91

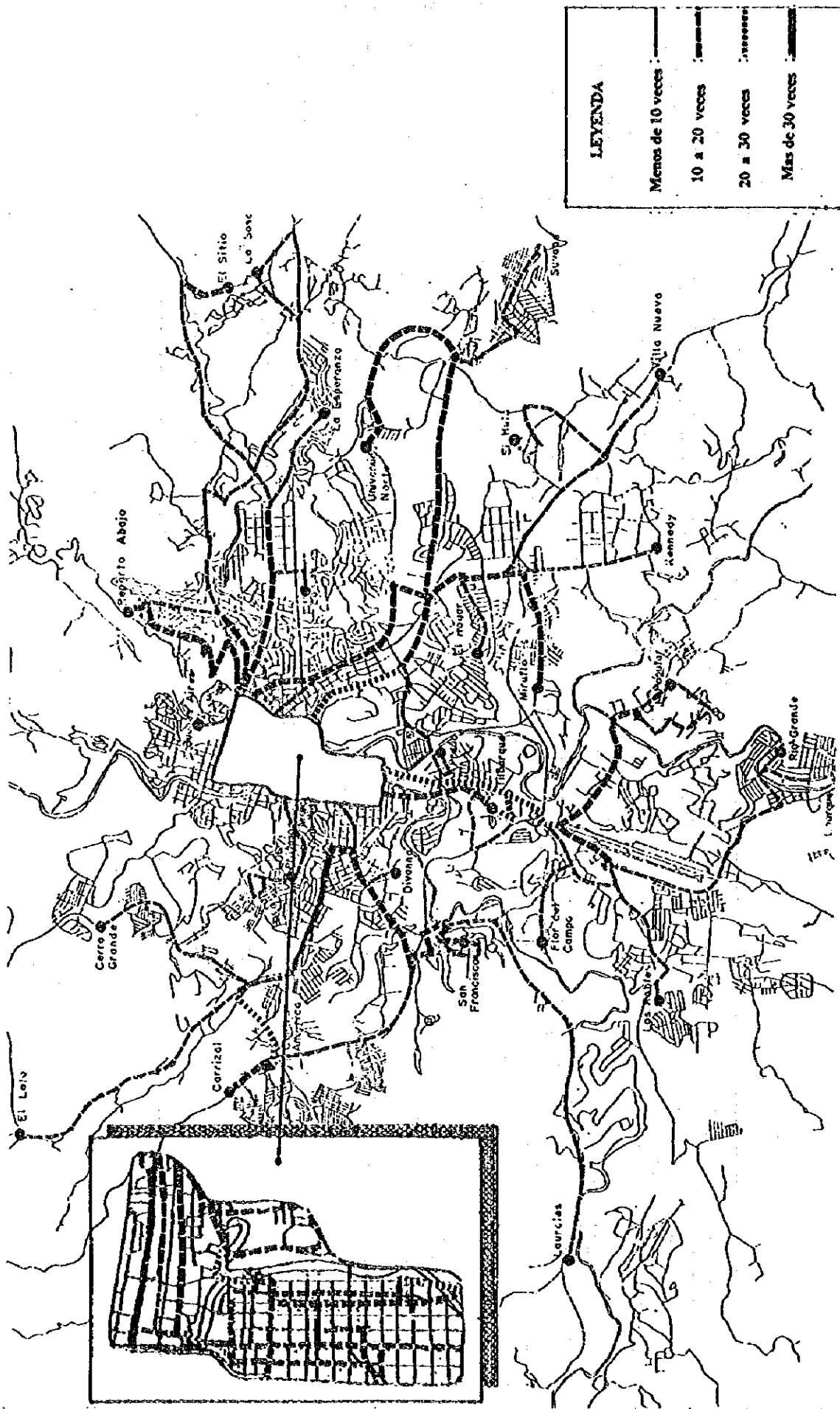


Fig. 5.8.2 Number of Urban Bus Routes on Each Road



Fig. 5.8.3 Urban Microbus Route Network



Table 5.8.4 Outline of Urban Microbus Route

No.	Route	No. of Bus Unit	No. of Operator	
			Company	Individual
1	Villa Vieja-Mercado San Isidro	72	13	3
2	Los Pinos-Mercado San Isidro	35	11	3
3	La Fuente-Ministerio de Educ.	46	9	0
4	La Canada-La Pena-Mercado San Isidro	47	17	3
5	Col. Nueva Suyapa-Mercado San Isidro	37	3	1
6	Col. 19 de Sept.-Laureles-Merc. San Isidro	24	2	6
7	Campo Cielo-Mercado San Isidro	19	4	0
8	Residencial C.A.-Ministerio de Educ.	24	8	9
9	Col. Flor del Campo-Merc. San Isidro	33	1	2
10	Col. Israel Sur-Merc. San Isidro	21	2	0
11	Col. Los Llanos-La Isla	21	2	0
12	Col. La joya-La Isla	4	3	1
13	Col. Zapote Norte-Merc. San Isidro	9	1	0
14	Col. San Fco.-Israel-Quezada-Merc. San I.	21	2	0
15	Col. Ulloa-Gasolinera Dippsa	9	1	0
16	Col. Las Torres-Merc. San Isidro	13	1	12
17	Col. Rafael L. Callejas-Merc. San Isidro	8	1	2
18	Col. Reynel Funez-Merc. San Isidro	4	3	1
19	Laureles-Merc. San Isidro	2	2	0
20	Col. Lomas del Toncontin-Merc. San Isidro	7	2	1
21	Col. Alto Paraiso-Nueva Danli-Merc. S. I.	22	8	3
22	La Cuesta-Merc. San Isidro	1	0	1
23	Col. Merriam-Merc. San Isidro	1	1	0
24	Cementerio General-El Pastel-14 de Feb.	9	3	6
25	Centro A. Oeste-Bivd. Fuerzas Armadas	2	0	2
26	Tiloarque-Instituto Central	2	1	1
27	La Laguna-Villafranca	5	4	1
28	Col. Centro A. Oeste-Puente Mallol	4	4	0
	Total	502	109	58

## 5.8.2 Bus Terminal and Bus Stop Survey

Urban bus and microbus terminals are located at the beginning or end of routes as shown in Figs. 5.8.1 and 5.8.3 above. In addition, bus stops where many bus routes gather for the convenience of transferring buses, can be considered as urban bus terminals. Table 5.8.5 summarizes bus terminal facilities installed at selected major urban bus terminals. This table shows that all bus terminals have station area, but bus waiting area, entrance/exit way, other service facilities for passengers are not installed at most bus terminals.

Interurban bus terminals are shown in Fig. 5.8.4. Most terminals are located in the center of the city.

**Table 5.8.5 Bus Terminal Inventory**

Bus Terminal Name	1	2	3	4	5	6	7	8	9	10	11	12	13
La Isla	E	E	E	-	-	-	-	-	-	-	-	E	E
Parque Central In front of Burger King	E	E	E	-	-	-	-	-	-	-	-	-	-
Central Parque In front of BANCATLAN	E	E	E	-	-	-	-	-	-	-	-	-	-
Farmacia Universal	E	E	E	-	-	-	-	-	-	-	-	-	-
Puente Carlas	E	E	E	-	-	-	-	-	-	-	-	-	-
Miraflores	E	E	E	-	-	-	-	-	-	-	-	-	-
Kennedy	E	E	E	-	-	-	E	-	-	-	-	E	E
Reparto Abajo	E	E	E	-	-	-	-	-	-	E	-	E	E
Popular	E	E	E	-	-	-	-	-	-	-	-	-	-
Carrizal	E	E	E	-	-	-	-	-	-	-	-	-	-

Note: The figures in the first row indicate facilities below;

1 : Station Area                      2 : Bus Waiting Area                      3 : Entrance and Exit

Street

4 : Schedule Table    5 : Passenger Platform                      6 : Ticket Office Shop

7 : Information Office                      8 : Traffic Control Office    9 : Wall Clock

10 : Telephone Booth    11 : Bus Routes Map                      12 : Cafeteria

13 : Bus Company Number

E = Exist,                      - = Nonexistent

Table 5.8.6 shows conditions of bus stop facilities on 10 selected urban bus routes. Only 26% of the observed stops have stop signs and 10% have bus bays. Most of them do not have service facilities for passengers such as bus waiting area with roof, information board, etc. At even major bus stops with bus bays, these bus bays already exceed their capacity during peak hours.



**Fig. 5.8.4 Location of Interurban Bus Terminal**

**Table 5.8.6 Bus Stop Inventory**

Route	No. of Stops on Both Sides	No. of Stops with Stop Sign	No. of Stops with Bus Bay	No. of Stops with Bus Booth
Cerro Grande - La Sosa	80	25 (31%)	0 (0)	3 (4%)
Carrizal - Miraflores	63	14 (22%)	11 (17%)	9 (14%)
Prado - Carrizal	52	13 (25%)	8 (15%)	11 (21%)
Lomas - Rio Grande	54	22 (41%)	8 (15%)	7 (13%)
Los Robles - Hato	61	11 (18%)	12 (20%)	6 (10%)
Centro America - Reparto Abajo	56	10 (18%)	7 (13%)	5 (9%)
Divanna - Universidad Norte	54	4 (7%)	4 (7%)	3 (6%)
Carrizal - La Sosa	75	25 (33%)	5 (7%)	6 (8%)
Reparto Abajo - Carrizal	53	7 (13%)	5 (9%)	3 (6%)
Tiloarque - La Sosa	66	30 (45%)	1 (2%)	3 (5%)
<b>TOTAL</b>	<b>614</b>	<b>161 (26%)</b>	<b>61 (10%)</b>	<b>56 (10%)</b>

Note: ( ) shows ratio of installation

### 5.8.3 Bus Passenger Survey

#### (1) Bus Traffic Volume and Number of Bus Passengers at Bus Terminals

Fig. 5.8.5 (1)~(2) show the number of buses arriving at and departing from starting points and terminal point of bus routes together with bus stops with large volumes of passengers. Fig. 5.8.6 (1)~(2) show the number of passengers getting on and off at these same locations. At the 5 selected bus terminals within the CBD, about 3600 vehicles per day arrive and the number of passengers getting on and off is about 53,900 persons per day. Bus operation is concentrated in the morning and evening peak hours, and many buses operate all day long.

#### (2) Bus Passengers by Route

The total number of boarding passengers (passengers boarding buses at stations) per trip and the average number passengers per bus by route are obtained as shown in Table 5.8.7. The average number of the boarding passengers on all routes is about 100 persons/bus/trip and the average number of passengers is about 25 persons/bus.

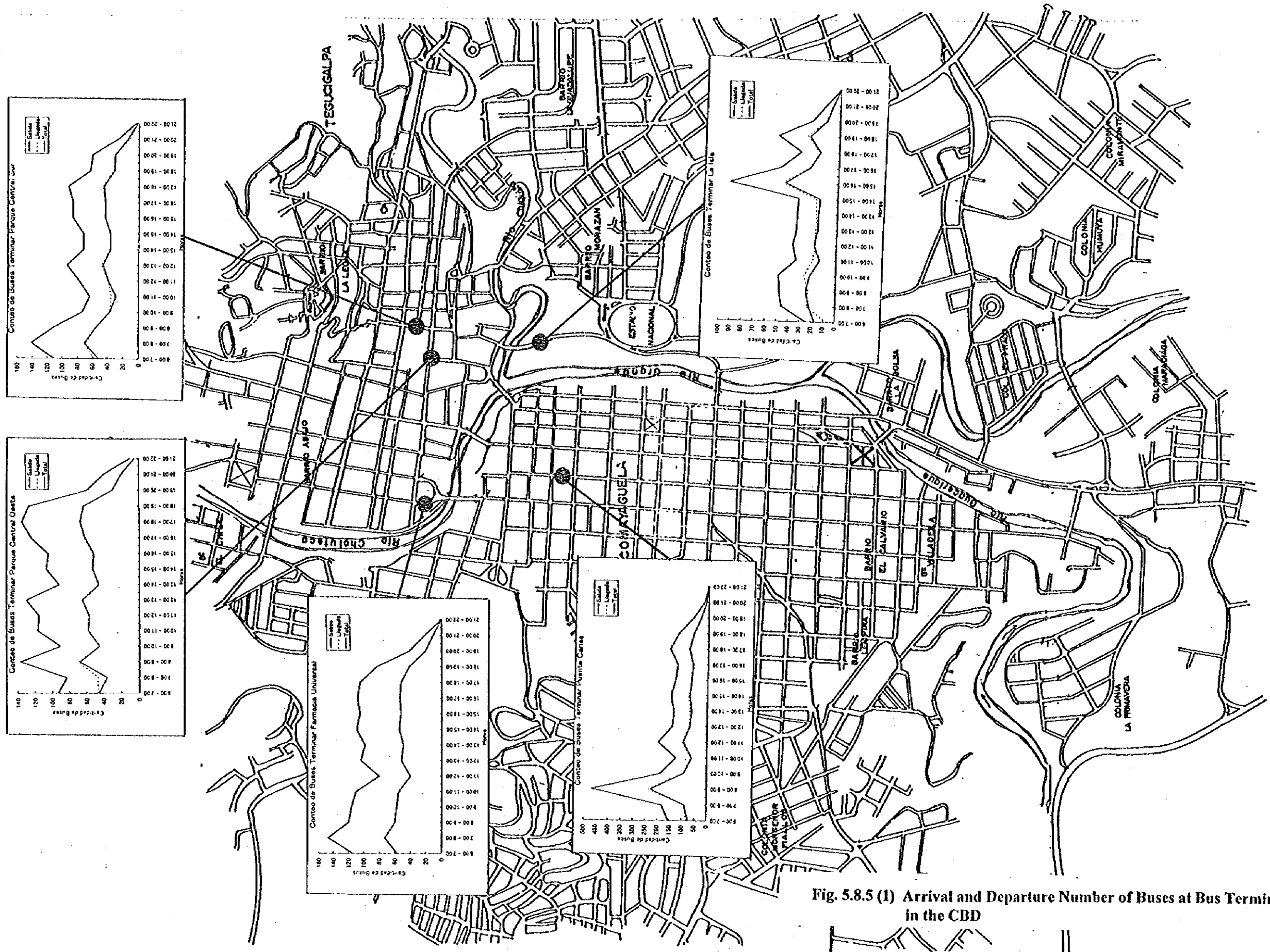


Fig. 5.8.5 (1) Arrival and Departure Number of Buses at Bus Terminals in the CBD

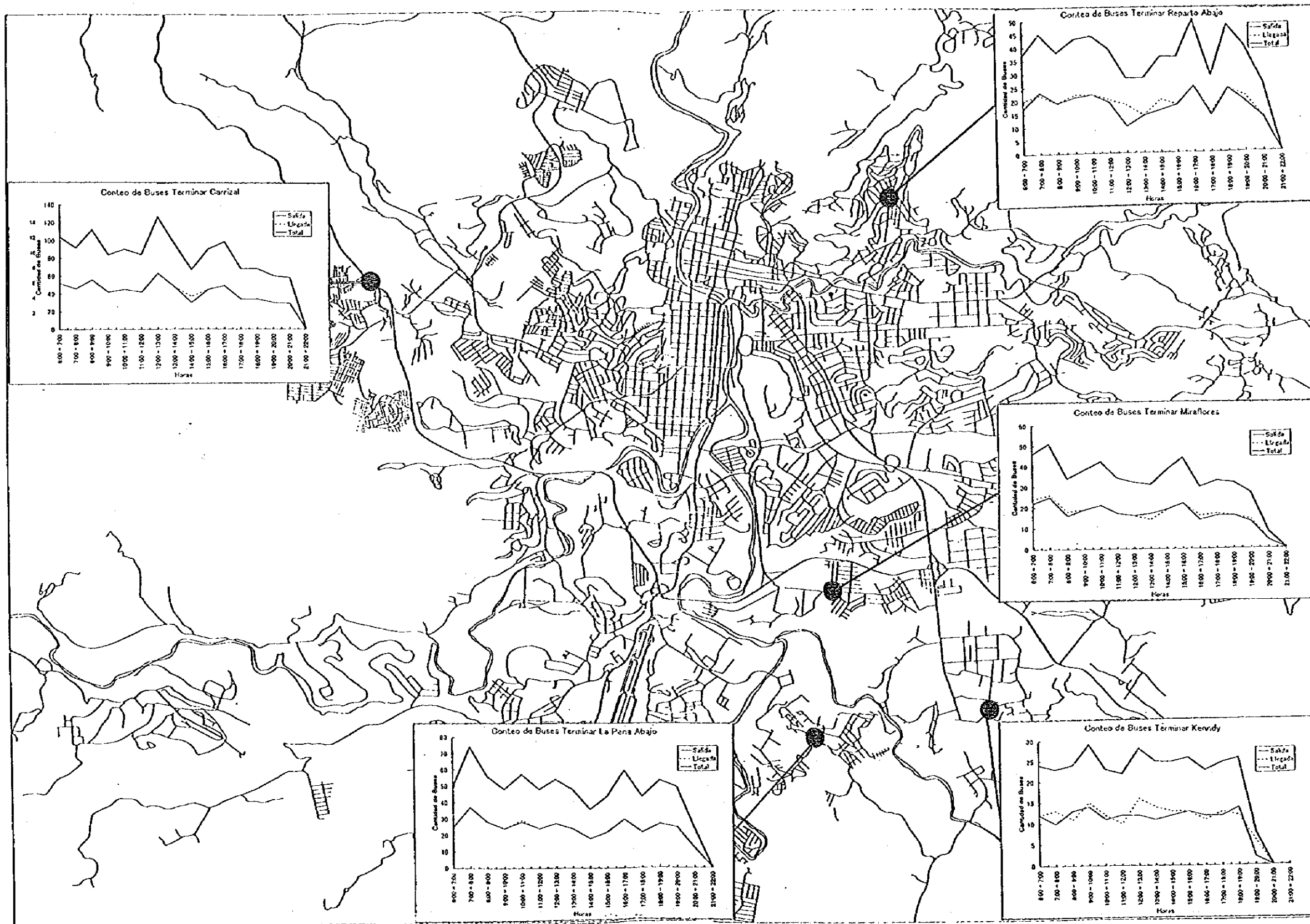


Fig. 5.8.5 (2) Arrival and Departure Number of Buses at Bus Terminals Outside the CBD

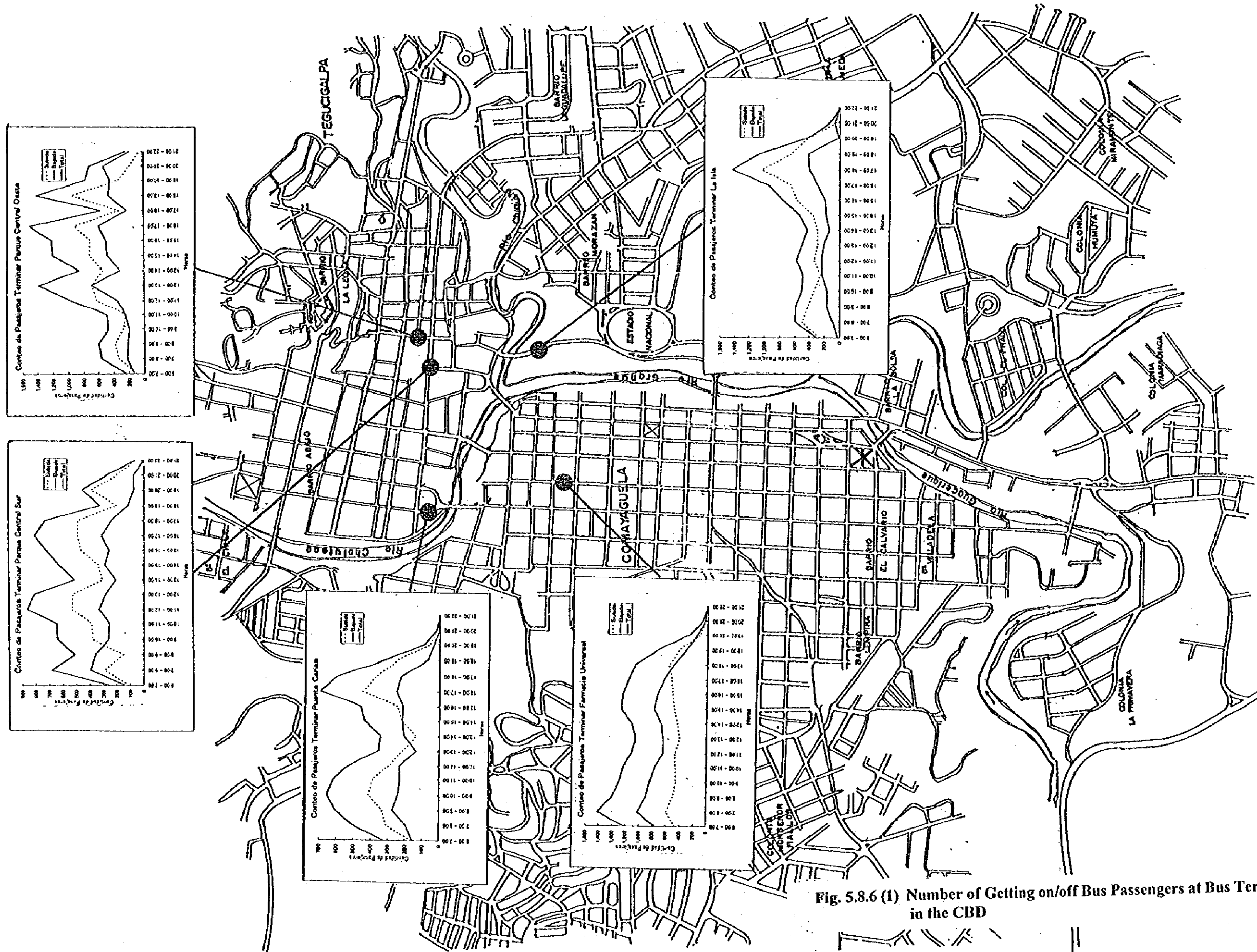


Fig. 5.8.6 (1) Number of Getting on/off Bus Passengers at Bus Terminals in the CBD

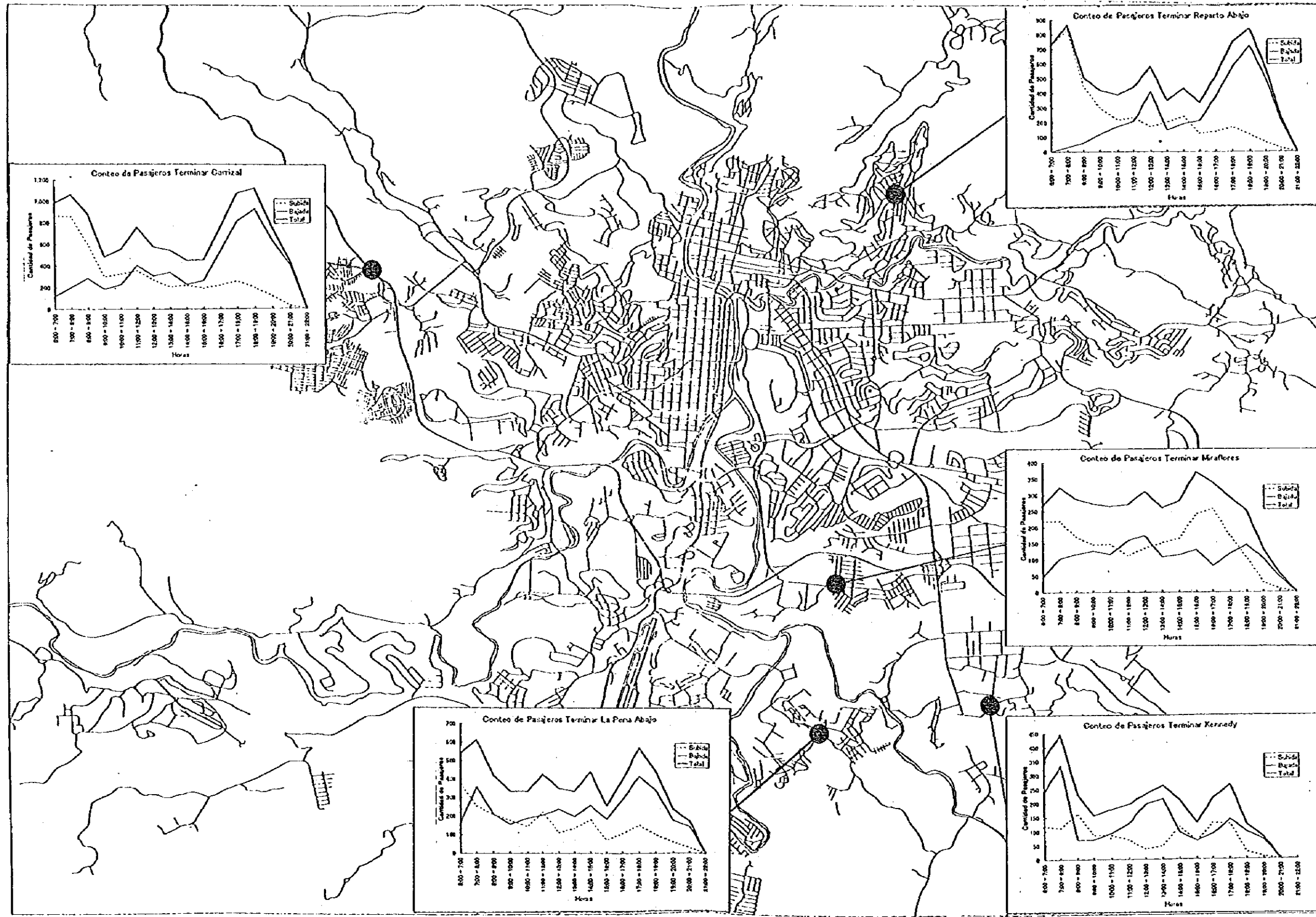


Fig. 5.8.6 (2) Number of Getting on/off Bus Passengers at Bus Terminals Outside the CBD





Table 5.8.7 Number of Bus Passengers by Each Route

No.	Route of Name	Morning Time		Noon Time		Evening Time		Whole Day(Average)	
		No. of Getting on Passengers (Persons)	No. of Average Passengers (Persons/Unit)	No. of Getting on Passengers (Persons/Unit)	No. of Average Passengers (Persons/Unit)	No. of Getting on Passengers (Persons)	No. of Average Passengers (Persons/Unit)	No. of Getting on Passengers (Persons/Unit)	No. of Average Passengers (Persons/Unit)
1	CerroGrande-LaSosa	145	33	152	36	185	49	161	39
2	Carrizal-Hogar	68	21	64	23	65	15	65	21
3	Carrizal-Miraflores	92	25	88	23	83	19	90	22
4	CentroAmerica-UniversidadNorte	112	16	89	24	101	26	101	22
5	Carrizal-Prado	82	21	78	25	101	31	87	26
6	CentroAmerica-Prado	115	26	118	20	116	23	116	23
7	CerroGrande-Hogar	91	23	69	17	87	28	82	23
8	CerroGrande-Kennedy	141	41	90	14	77	17	103	24
9	CerroGrande-VillaNueva	125	34	127	32	153	44	135	37
10	Lolo-BuenosAires	262	30	192	32	118	9	190	24
11	Lomas-Popular	126	30	118	33	122	25	122	29
12	RioGrande-Lomas	102	24	84	24	67	20	85	23
13	Popular-RepartoAbajo	115	32	114	25	108	28	112	28
14	Popular-ElSitio	95	21	89	20	72	15	85	19
15	Popular-RepartoArriba	89	16	65	8	85	22	80	15
16	Flor del Campo-El Sitio	150	49	127	31	166	53	151	44
17	RioGrande-Kennedy	125	34	119	30	123	32	122	32
18	Mato-LosRobles	142	25	132	44	132	47	136	39
19	Miraflores-RioGrande	75	12	103	25	104	22	94	20
20	Miraflores-LosLaureles	73	24	76	22	76	20	75	22
21	Miraflores-SanFrancisco	80	26	98	24	61	18	80	23
22	Miraflores-Popular	82	15	81	23	102	23	88	20
23	Tilcarque-Prado	73	16	53	13	60	16	62	15
24	SanFrancisco-RepartoAbajo	62	17	67	16	91	25	73	19
25	Carrizal-RepartoArriba	77	27	61	9	98	28	78	21
26	CentroAmerica-RepartoAbajo	112	32	85	31	127	39	108	34
27	UniversidadNorte-Divanna	77	25	66	19	120	21	88	21
28	UniversidadNorte-Flor del Campo	20	13	24	12	43	33	29	21
29	SanFrancisco-UniversidadNorte	95	15	76	7	78	13	83	12
30	UniversidadNorte-LosLaureles	138	30	110	23	120	32	123	28
31	Suxaca-MercadoSanIsidro	55	31	63	33	119	68	79	44
32	Carrizal-LaSosa	103	30	123	29	113	27	113	29
33	Carrizal-LaEsperanza	108	35	100	27	113	36	107	33
34	Carrizal-ElSitio	78	29	66	20	107	32	81	27
35	SanFrancisco-LaSosa	124	24	84	18	104	16	104	19
36	RepartoAbajo-Carrizal	66	23	76	24	85	28	76	25
37	RepartoAbajo-Profesores	103	40	75	27	92	37	90	35
38	Tilcarque-LaSosa	114	34	103	33	91	30	103	32
39	Tilcarque-LaEsperanza	70	26	67	24	93	30	77	27
40	Tilcarque-ElSitio	96	24	91	30	59	18	82	24
41	CentroAmerica-LaSosa	79	24	80	21	82	24	80	23
	Average No. on All Routes	101	26	91	24	100	28	98	26

Observing bus passengers by route, Lolo-Buenos Aires (No.10), Cerro Grande-La Sosa (No.1) and Flor del Campo-El Sitio (No.16) have many boarding passengers. On the other hand, by time period, there is not a large fluctuation of the number of boarding passengers, however, the average number of passengers fluctuates greatly.

As for the bus transfer, in Carrizal area, where the transfer demand is high, about 10% of bus users transfer buses to go to destinations lacking direct bus routes.

#### 5.8.4 Bus Operation

##### (1) Management Organization

The S.T.U. is organized as 2 partnerships, 2 private enterprises and 28 private companies, which are operating 713 buses within the study area, as shown in Table 5.8.8. The S.T.U. manages every enterprise and partnership but does not fulfill the administrative function sufficiently. Though all public transportation in Honduras is organized, it can be said that the organization is impractical because each agency manages his bus privately.

**Table 5.8.8 Outline of Organization of S.T.U.**

Organization	COTRACOPL	COTRANAL	I.T.H.S.A.	ETBA	PRIVATE
Number of Offices	1	1	1	1	-
Number of Employees	32	72	14	52	28
Number of Buses	297	34	297	26	-
Number of Associates	180	23	115	18	28

Note : These data are in Sept. ,1995

Source : S.T.U.

##### (2) Bus Operation by S.T.U.

According to the survey results conducted by S.T.U. in May, 1995, the urban bus operation can be summarized as in Table 5.8.9.

**Table 5.8.9 Outline of Urban Bus Operation by S.T.U.**

Item	Contents
Number of Existing Routes	42 routes
Average Length of Routes	26.5 km
Number of Trips / Day / Unit	4.65 trips
Average Run KM. / Day / Unit	108.70 km
Average Run KM. / Month / Unit	2,717.5 km
Number of Working Days / Month	25 days
Average Number of Passengers / Day / Unit	1,069 passengers
Number of Units	645 buses

Note : Source : S.T.U. (May, 1995)

### (3) Financial Condition

Table 5.8.10 shows the basic data of financial situation of bus operators in 1995. The average revenue is Lps. 178 per day per bus and the average rate of profit is 26%.

**Table 5.8.10 Basic Data of Financial Status**

Average Revenue / Day / Bus	178 Lps.
Number of Working Days / Month	26 days
Average Cost / Day / Bus	132 Lps.
Average Profit / Day / Bus	46 Lps.
Average Profit Rate	26 %

Source : SECOPT