

**URBAN TRANSPORT
MASTER PLAN STUDY
FOR THE
JOHOR BAHRU CONURBATION
MALAYSIA**

**TECHNICAL REPORT 2
HOME INTERVIEW PERSON TRIP SURVEY**

MARCH 1982

**JAPAN INTERNATIONAL
COOPERATION AGENCY**

**GOVERNMENT OF
MALAYSIA**



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1. INTRODUCTION

1.1 Objective

The objective of the survey is to collect origin and destination data on person trips to be utilized in the planning of public transport system as well as in the comprehensive planning of an urban transport system.

1.2 Scope of Work

Basically this survey focus on gathering informations on present day movements of trips on a typical day within the defined Primary Study Area. Information on household characteristics are also collected to obtain essential facts on prevailing travel desires and habits of the Johor Bahru populace. These informations, in combination with data from land-use study, economic study and other components of the Transport Master Plan Study, will serve as a basis for projecting future travel patterns. Significant relationship should be established between these factors and public transport use.

The scope of the survey will thus cover the following :-

- a. Conduct a home interview survey
- b. Edit and compile survey data
- c. Calculate expansion factors

1.3 General Approach to the Survey

In the Person Trips Survey, it is usual to conduct home interview survey, cordon line and screen line surveys and other related surveys, such as taxi, bus and truck surveys. In order to obtain the detailed information on the travel movements on the public transport in the Johor Bahru Conurbation, the three kinds of survey were undertaken in the Project.

- a. Owner Interview Survey
- b. Home Interview Survey
- c. Cordon Line Survey
- d. Screen Line Survey

A. Home Interview Survey

The purpose of the home interview survey is to obtain the detailed information on the travel requirements of the inhabitants of Johor Bahru Conurbation. In order to get the information, person trip survey of given one day for three weekdays (from Monday to Wednesday) among five weekdays will be undertaken. As factors influencing the person trip, household and household member's characteristics are also surveyed in the Project.

B. Cordonline Survey

The purposes of these survey are (1) to obtain data on present vehicle and public traffic volumes and (2) to collect data in order to expand and supplement the data collected by the home interview from its sample to the full universe of vehicle and passenger movements. In this survey, it will be undertaken OD interview and traffic count survey on cordonline.

C. Screenline Survey

The purpose of this survey is to collect information in order to expand the data collected in the home interview survey. For this survey, traffic counting and vehicle occupancy survey will be undertaken on the screenline.

This report however only covers the Home Interview Survey. Reports on Cordonline and Screenline Surveys are prepared separately.

1.4 Survey Procedure

Figure 1 outlines the procedure of the Home Interview Person Trip Survey.

1.5 Survey Schedule

Figure 2 shows the schedule of the Home Interview Survey. In preparing the schedule the following factors were taken into consideration

- i) the period of the survey was the average time and did not include any 'special' days.

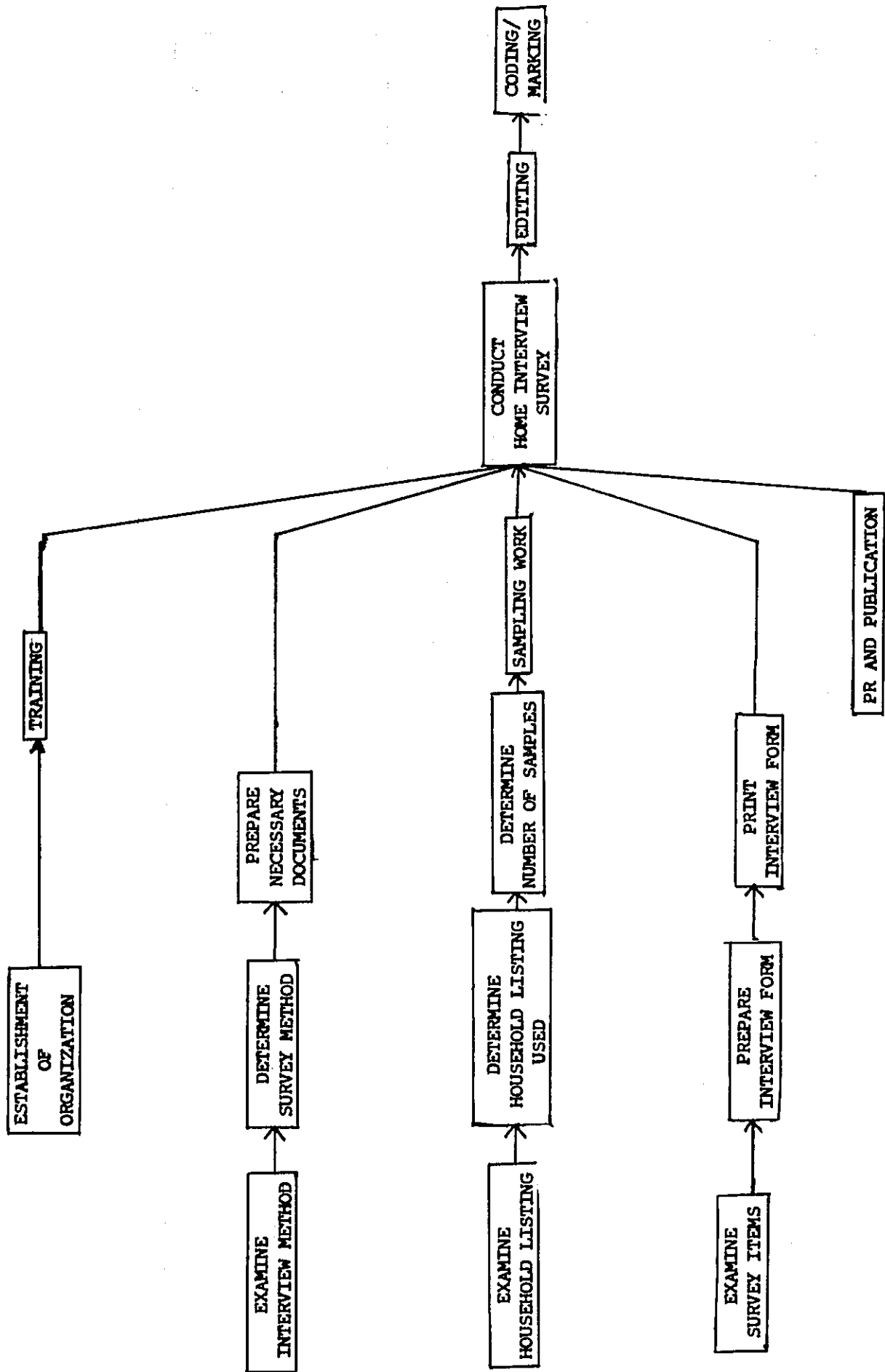


Fig.1 Procedure of Home Interview Person Trip Survey

Fig.2 SCHEDULE OF HOME INTERVIEW SURVEY

NO.		SEPTEMBER	OCTOBER	NOVEMBER
1.	PRINTING OF NECESSARY DOCUMENTS	██████████		
2.	SAMPLING	██████████		
3.	TRAINING		██	
4.	FIELD SURVEY		██████████	
5.	EDITING AND CODING		██████████	██████████

ii) the actual field survey will commence on completion of the Vehicle Owner Interview Survey in order to avoid the necessity of recruiting new interviewers. The actual schedule on the survey as it was conducted was as follows:-

15th Sept. - 30th Sept.	Printing of documents
19th Sept. - 8th Oct.	Sampling
11th October	Briefing of first batch of Interviewers
15th October	Briefing of second batch of Interviewers
12th Oct. - 31st Oct.	Field Survey
22nd Oct. - 12th Nov.	Editing and Coding

2 STUDY AREA AND ITS ZONING

2.1 Study Area

The Primary Study Areas defined by the Scope of work cover Johor Bahru District and part of Kota Tinggi. They are:-

Johor Bahru Town, Kota Tinggi Town, Senai Kulai, Sedenak, Pulai, Tanjong Kupang, Plentong, Ulu Tiram, Sungai Tiram, Tebrau.

The secondary Study Areas cover Pontian District and part of the Kota Tinggi District.

2.2 Zoning System

The zones have been delineated generally on the basis of the following criteria.

a. The boundary of a traffic zone shall conform with the boundary of enumeration blocks or group of enumerations of 1980 housing and population census. The boundary of a group of zones shall also conform to the boundary of the district, mukim, kampung or town. This will facilitate the collection of available data on land use and socio-economic data.

b. The boundary of a zone shall follow with natural and man-made physical features, such as rivers, railway and roads.

c. The area covered by a zone shall define the area served by roads or public transport routes to reflect the intensity of the transport networks.

d. The size of the zones shall vary generally increasing with distance from the urban center.

e. As a result, the Primary Study Area is sub-divided into 76 internal traffic zones. The number of zones at each town and mukim is as follows:-

Johor Bahru Town	53 Zones
Plentong	7 Zones
Tanjong Kupang	1 Zone
Pulai	3 Zones
Senai Kulai	4 Zones
Sedenak	2 Zones
Tebrau	4 Zones
Kota Tinggi	2 Zones

As to the Secondary Study Area, it is sub-divided into 4 zones as follows:-

Pontian District	3 Zones
Sedili Kecil	
Johor Lama	1 Zone
Tanjong Surat	
Pengerang	
Pantai Timur	

The external area is sub-divided into 20 zones including Singapore and Thailand.

The zone code list is shown in Table 1 and the zoning maps are shown in Appendices B.1, B.2 and B.3.

Table 1 : Zone Code List

Zone No.			Town, District	Zone No.			Town, District
A	B	C		A	B	C	
1	1	1	Johor Bahru, Johor Bahru District	2	6	3	Johor Bahru, Johor Bahru District
		2	"	2	7	1	"
		3	"			2	"
		4	"	2	8	1	"
1	2	1	"	3	1	1	"
		2	"			2	"
		3	"			3	"
2	1	1	"			4	"
		2	"			5	"
		3	"	3	2	1	"
2	2	1	"			2	"
		2	"			3	"
		3	"			4	"
		4	"			5	"
		5	"	3	3	1	"
2	3	1	"			2	"
		2	"			3	"
2	4	1	"	3	4	1	"
		2	"			2	"
		3	"	3	5	1	"
2	5	1	"			2	"
		2	"			3	"
2	6	1	"			4	"
		2	"	3	6	1	Plentong, Johor Bahru District

Zone No.			Town, District	Zone No.			Town District
A	B	C		A	B	C	
3	6	2	Plentong, Johor Bahru District	4	6	1	Sungai Tiram, Johor Bahru District
		3	Pasir Gudang Port, Johor Bahru District			2	" "
		4	Plentong, Johor Bahru District	A	B	C	District, State, Country
3	7	1	"	9	1	1	Batu Pahat, Johor
		2	"			2	Kluang, Johor
		3	"			3	Ulu Sungai Sedili Besar, Kota Tinggi
		4	"			4	Mersing, Johor
4	1	1	Tanjong Kupang, Johor Bahru District			5	Segamat, Johor
		2	Pulai, Tanjong Kupang, Johor Bahru District			6	Muar, Johor
		3	" " "	9	2	1	Melaka
		4	" " "			2	Negeri Sembilan
4	2	1	Senai Kulai, Johor Bahru District			3	Selangor
		2	" "	9	3	1	Pahang
		3	" "			2	Trengganu
		4	" "			3	Kelantan
4	3	1	Sedenak, Johor Bahru District	9	4	1	Perak
		2	" "			2	Penang
4	4	1	Tebrau, Johor Bahru District			3	Kedah and Perlis
		2	" "	9	5	1	Western Part of Singapore
		3	" "			2	North Central of Singapore
		4	" "			3	Eastern Part of Singapore
4	5	1	Ulu Sungai Johor, Kota Tinggi District			4	South Central of Singapore
		2	Kota Tinggi, Kota Tinggi District				
		3	" "				

3 PREPARATORY WORK

3.1 General

Apart from the physical aspect of the preparatory work ie. printing of documents, sampling, training of interviewers etc., the preliminary stage of the survey was started very much earlier than as stipulated in the schedule given in Fig. 2 with decisions and selections had to be made regarding sampling design, sampling frame, method of conducting survey and questions to be incorporated into the questionnaire. These were then laid before the Technical Committee for discussions and approval.

3.2 Establishment of Survey Organisation

The home interview survey was carried out by the Study Team in close cooperation with the Johor State Economic Planning Unit. The Study Team had decided that the Malaysian Counterparts be fully responsible for the implementation of the survey and the Japanese members of the Study Team will impart advice and knowledge to them. The Japanese members of the Study Team however will be fully responsible for the accuracy of the data collected. The organisation for the implementation of this survey is given in Figure 3.

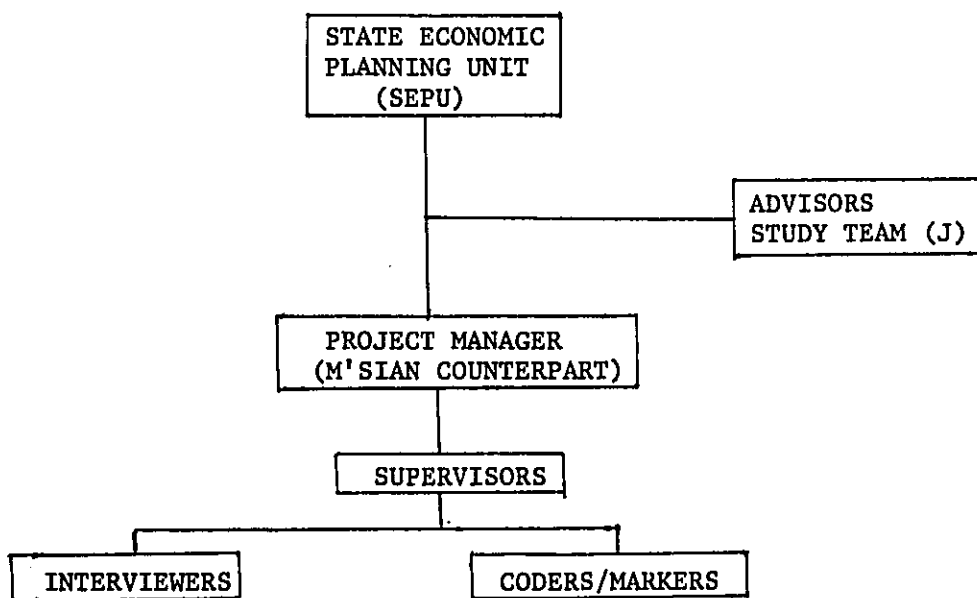


FIG. 3 : ORGANISATION CHART OF HOME INTERVIEW SURVEY

3.3 Determination of Interview Method

The following are survey methods available and normally adopted for home interview survey:-

- a. Mail Survey Method with interviewee filling-up
- b. Distribution and Collection Survey Method with interviewee filling-up
- c. Interview Survey Method with interviewee filling-up

Based on the past experience in both Manila and other countries, methods b and c would be suitable for the Home Interview Survey.

Due to budget limitation and the need to gather large samples with high accuracy, method 'b' was employed.

3.4 Sampling

3.4.1 Sampling List

Since the Home Interview Survey is to clarify person movements of inhabitants in Johor Bahru Conurbation the household and population was the subject of the interviews conducted. It is therefore necessary to select the listing of household and population which represent current situation correctly and precisely. Initially the following listings were considered as possible options:-

- a. Household and Population Census Listing

A Household and Population Census was conducted by the Statistic Department in 1980. The listing prepared from this census should provide a precise household listing. In the census the towns and mukims were further sub-divided into several enumeration areas which are the smallest area of the census.

b. Electional Listing

Person who are listed up for electional purposed are only limited persons aged 18 years old and over. In this listing, there are no mention of households, themselves. Therefore, we can't use this listing.

c. Customer Listing of Electric Company

The Customer listing might be available for the home interview survey. However the listing is expected to be bias. Considering this, it might not be suitable to use it as the sampling list.

Among these listings, the housing and population census listing was considered the most precise and unbiased and thus presented the most likely choice. The samples will then be the name of head of household and the corresponding addresses.

However the list of household from the 1980 census could not be released to the study team by the Department of Statistic. Instead the list of addresses of living quarters within the study area from the same census was made available which then constitutes the sampling frame. The household occupying the selected living quarters will then be interviewed.

3.4.2 Sampling Method

The sampling methods that can be adopted for the home interview are as follows:-

- a. Random Sampling
- b. Random with Equal Interval Sampling
- c. Stratified Sampling
- d. Multistage Sampling

Brief explanations are presented below:-

a. Random Sampling

This method is to select the samples among the household using random number. When this method is employed in the sampling, it is expected to involve a lot of sampling work and, at the same time, giving the field work much load.

b. Random with Equal Interval Sampling

This method is to select the samples using random table as the first step and then to select the samples using equal interval number. This method is popular to select samples especially for the home interview survey.

c. Stratified Sampling

This method is to stratify the households at first and to select the samples using random sampling or random with equal interval sampling methods. If it is intended to get the informations of car-owned and non car-owned household characteristics, this method can be used.

d. Multistage Sampling

This method is to classify the households into large block, medium block and small block at first step and to select the samples by stage, ie. to select some large block and then to select medium block within the selected large block so on. The advantage of this method is that the sampled households can be concentrated in a few small blocks and as a result the survey can be conducted quicker and easier.

It was concluded that the Multistage Sampling method or random sampling method are suitable for home interview survey's sampling among those. In view point of reduction field work in home interview,

it was proposed that the multistage sampling method as the most suitable.

3.4.3 Sampling Size

The sampling rate was set up at 2 per cent of the living quarters/household in the study area. This is because this survey is only supplementary to the owner interview survey in terms of getting information for modal split. The sampling size of the Home Interview Survey is as follows:-

Total No. of Living Quarters in Study Area	86123
Total No. of Sample Living Quarters	1723

3.5 Design of Interview Form

Being the primary source of input for the survey it was essential that the questionnaire be carefully designed. It should be clear and easily understood and at the same time meets the objective of the survey. A carefully designed questionnaire can contribute considerably towards the saving of time and reducing errors. Since the design of the interview form is aimed at getting information of the current status of person trip in Johor Bahru and factors that influence person trips, the following items were incorporated into it.

a. Characteristics of Household

1. Address
2. Family Size
3. Housing Type and Structure
4. Car Ownership
5. Household Income
6. Accessibility to Public Transport

b. Characteristics of Household Member

1. Name
2. Age
3. Sex
4. Office Address
5. School Address
6. Occupation
7. Nature of Place of Work
8. Type of Driving Licence owned

c. Trip Information

1. Origin and Destination
2. Institution
3. Time Started and Time of Arrival
4. Trip Purpose
5. Mode of Travel
6. Transfer Point and Mode
7. Driver or Passenger
8. Parking Status

Two forms were designed with the first containing questions pertaining to informations on Characteristics of Household and the second on Characteristic of Household Member and Trip Information. Form 2 was printed both in Bahasa Malaysia and English. A brief instruction is also attached to every set of forms. The design of the interview forms are shown in Fig. 4a, 4b, 4c and 4d.

3.6 Printing of Documents

As shown in the schedule the printing of all necessary documents began on the 15th of September. Below is the list of documents printed. Some of the documents were prepared basically for administrative purposes in order to ensure that the survey could be conducted smoothly and effectively:-

- i. Sampling Card Fig.7
- ii. Control List Fig.6
- iii. Instruction to fill
interview form (Panduan
Mengisi Borang Soalselidek) Fig. 4a

Borang 1 - Maklumat Keluarga

Borang ini akan diisi oleh pembanci. Setiap keluarga satu borang saja.

Borang 2- Maklumat Anggota Keluarga dan Perjalanan yang dibuat

Borang 2 hendaklah diisi oleh semua anggota keluarga yang berumur 7 tahun keatas. Satu borang untuk tiap-tiap seorang.

A. Maklumat Anggota Keluarga:

1. Tandakan di kotak-kotak yang berkenaan bagi soalan-soalan (2),(3),(6),(7) dan (8) dan tuliskan jawapan kepada soalan-soalan lain dalam ruangan yang disediakan.
2. Dalam soalan (6), "perkhidmatan" termasuklah anggota bomba, polis, pengawal keselamatan, ameh, pelayan restoran, tukang cuci, tukang gunting, pencuci baju dan tukang gambar.

B. Maklumat tentang Perjalanan yang dibuat:

1. Tuliskan nombor kod yang berkenaan bagi soalan (2),(5),(7) dan (8) mengikut panduan yang disediakan. Jawapan untuk soalan-soalan yang lain hendaklah diisi didalam ruangan yang disediakan.
2. Berikan maklumat tentang semua perjalanan yang dibuat pada hari yang dinyatakan dalam borang iaitu selama 24jam bermula dari pukul 12.00 tengah malam sehingga pukul 12.00 tengah malam keesokan harinya. Sebagai contoh, sekiranya hari yang dibanci ialah 5hb September (hari Isnin) maka maklumat yang diperlukan ialah bagi tempuh bermula dari pukul 12.00 tengah malam hari Ahad sehingga pukul 12.00 tengah malam hari Isnin.
3. Masukkan juga maklumat tentang perjalanan yang dibuat dengan berjalan kaki sekiranya jarak perjalanan melebihi 100 meter.
4. Sila ikut susunan bilangan apabila mencatatkan maklumat tentang perjalanan. Tempat permulaan bagi perjalanan kedua dan seterusnya hendaklah sama dengan tempat yang dituju bagi perjalanan sebelumnya.
5. Sekiranya jumlah perjalanan yang dibuat pada hari banci melebihi 9 perjalanan, catitkan tentang perjalanan No. 9,10,11 dan seterusnya hendaklah dibuat diatas borang tambahan dan nomborkan perjalanan-perjalanan tersebut dengan betul.

**URBAN TRANSPORT MASTER PLAN STUDY
IN JOHORE BAHRU**

HOME INTERVIEW PERSON TRIP SURVEY

FORM I

HOUSEHOLD INFORMATION

**INSTRUCTION
TO BE FILLED UP BY INTERVIEWER**

1. NAME :

2. ADDRESS :

Fig. 4b

3. NUMBER OF PERSONS IN YOUR HOUSEHOLD	i		ii		6. HOW LONG HAS YOUR HH LIVED IN THIS HOUSE?	5. TYPE OF YOUR HOUSE	4. DOES YOUR HOUSEHOLD OWN ANY VEHICLES?		LOCATION																					
	a. Motor-cycle		b. Motorcar				c. Lorry			ZONE NUMBER	H. H. NUMBER																			
a. MALE	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
b. FEMALE	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
c. TOTAL	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9

7. WHERE DID YOUR HOUSEHOLD LIVE PREVIOUSLY?	8. WHAT IS THE NAME OF THE TOWN/KAMPUNG WHERE YOU LIVED PREVIOUSLY?	9. HOUSEHOLD MONTHLY INCOME GROUP	10. HOW FAR FROM YOUR HOUSE TO BUS STOP?	11.
<input type="checkbox"/> In other state <input type="checkbox"/> In other town/ kampong in Johore <input type="checkbox"/> In same town/ kampong	a. NAME OF THE TOWN/KAMPUNG : b. ADMINISTRATIVE DISTRICT : c. STATE :	<input type="checkbox"/> Less than \$100 <input type="checkbox"/> \$100 - \$299 <input type="checkbox"/> \$300 - \$599 <input type="checkbox"/> \$600 - \$999 <input type="checkbox"/> \$1000 - \$1999 <input type="checkbox"/> \$2000 - \$4999 <input type="checkbox"/> \$5000 & over	<input type="checkbox"/> Less than 50 yds <input type="checkbox"/> 50 - 99 yds <input type="checkbox"/> 100 - 199 yds <input type="checkbox"/> 200 - 299 yds <input type="checkbox"/> 300 - 499 yds <input type="checkbox"/> 500 & over	0 1 2 3

Fig.4c

BORANG SOALSELIDIK BAGI BANGSI: PERJALANAN YANG
DIBUAT OLEH ORANG-ORANG PERSEORANGAN

BORANG 2

TUJUAN TEMBUJAL INI JALAH UNTUK MENGUMPUL BUTIR-BUTIR YANG PERLU BAGI: KAJIAN DALAM MENYEDIAKAN
SATU PELAN INDIK SISTEM PENGANGKUTAN DI JOHOR BAHRU DAN SEMUA MAKLUMAT YANG DIBERI ADALAH DI-
ANGGAP SULIT. SILA BERIKAN JAWAPAN BAGI SOALAN-SOALAN DI BAWAH INI MENGENAI PERJALANAN-PERJALANAN
YANG TELAH ANDA BUAT SEPANJANG HARI PADA TARIKH YANG TELAH DITENTUKAN (24 JAM)

A. KETERANGAN ANGGOTA KELUARGA

.1981.

PERJALANAN DIBUAT PADA

1. Nama	2. Kumpulan Umur	3. Jantina	4. Alamat Tempat Kerja	5. Alamat Sekolah	6. Pekerjaan	7. Industri	8. Jenis Lesen Pemandu yang dimiliki
	1 <input type="checkbox"/> 7-14 2 <input type="checkbox"/> 15-19 3 <input type="checkbox"/> 20-29 4 <input type="checkbox"/> 30-39 5 <input type="checkbox"/> 40-49 6 <input type="checkbox"/> 50 & keatas	1 <input type="checkbox"/> Laki 2 <input type="checkbox"/> Perempuan			D. <input type="checkbox"/> Kejuruteraan Teknikal 1 <input type="checkbox"/> Perancangan dan Pengiraan 2 <input type="checkbox"/> Perancangan dan yang berkaitan 3 <input type="checkbox"/> Pelesenan Jualan 4 <input type="checkbox"/> Perkhidmatan 5 <input type="checkbox"/> Pelajar Ijazah, pembantu, pengangkutan dan lain-lainnya berkaitan 6 <input type="checkbox"/> Peranan, Perkhidmatan dan Perkhidmatan 7 <input type="checkbox"/> Perkhidmatan 8 <input type="checkbox"/> Lain-lain 9 <input type="checkbox"/> Lain-lain	D. <input type="checkbox"/> Peranan, Perkhidmatan dan Perkhidmatan 1 <input type="checkbox"/> Perkhidmatan dan lain 2 <input type="checkbox"/> Perkhidmatan 3 <input type="checkbox"/> Perkhidmatan 4 <input type="checkbox"/> Perkhidmatan 5 <input type="checkbox"/> Perkhidmatan, Perkhidmatan, Sar dan 6 <input type="checkbox"/> Lain, Ar dan yang berkaitan 7 <input type="checkbox"/> Perkhidmatan 8 <input type="checkbox"/> Lain-lain 9 <input type="checkbox"/> Lain-lain	1 <input type="checkbox"/> Tadbir 2 <input type="checkbox"/> Motorikal 3 <input type="checkbox"/> Kereta 4 <input type="checkbox"/> Kenderaan Perdagangan

B. MAKLUMAT MENGENAI PERJALANAN

Jenis Tempat Permulaan/Tempat Dituju		Perjalanan Pertama		Perjalanan Kedua		Perjalanan Ketiga		Perjalanan Keempat	
D. Tempat Kedatangan 1. Pejabat Kerajaan, dan Swasta 2. Kolej, Institut dan Pendidikan 3. Kandang 4. Kemudahan Pengangkutan 5. Institut Pengajian 6. Menengah, Atas dan Sosial 7. Kawasan Perumahan, Perkhidmatan, Perkhidmatan 8. Tempat Persewaan, Hiburan 9. Lain-lain		(1) Tempat Permulaan (Alamat atau nama bangunan)		Sama seperti tempat yang dituju dalam perjalanan pertama		Sama seperti tempat yang dituju dalam perjalanan kedua		Sama seperti jenis tempat yang dituju bagi perjalanan ketiga	
Tujuan Perjalanan 1. Ke Tempat Kerja 2. Ke Sekolah 3. Urusan Rumah, Perdagangan 4. Ke Rumah 5. Membelanjakan 6. Berhampar 7. Seseorang-ujama 8. Larian, Sukan 9. Lain-lain		(2) Jenis Tempat Permulaan (3) Masa Bertolak 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan pertama 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan kedua 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan ketiga 1. Pagi 2. Petang Minit Jam	
Cara Utama Perjalanan Dibuat C. Berjalan, Kaki 1. Motosikal 2. Basikal, Roda Tiga, Basikal 3. Kereta 4. Telex 5. Bas, Salutan, Kereta 6. Bas Bersejarah 7. Van, Van 8. Kereta, Kereta 5. Lain-lain		(4) Masa Tiba 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan pertama 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan kedua 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan ketiga 1. Pagi 2. Petang Minit Jam	
(5) Jenis Tempat Yang Dituju Yang Dituju		(6) Tempat Yang Dituju (Alamat atau Nama Bangunan)		Sama seperti jenis tempat yang dituju bagi perjalanan pertama 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan kedua 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan ketiga 1. Pagi 2. Petang Minit Jam	
(7) Tujuan Perjalanan		1. Pemandu 2. Penumpang		Sama seperti jenis tempat yang dituju bagi perjalanan pertama 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan kedua 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan ketiga 1. Pagi 2. Petang Minit Jam	
(8) Cara utama perjalanan dibuat		1. Pemandu 2. Penumpang		Sama seperti jenis tempat yang dituju bagi perjalanan pertama 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan kedua 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan ketiga 1. Pemandu 2. Penumpang	
(9) Sekiranya anda menaiki kereta, adakah anda seorang pemandu atau penumpang?		1. Pemandu 2. Penumpang		Sama seperti jenis tempat yang dituju bagi perjalanan pertama 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan kedua 1. Pagi 2. Petang Minit Jam		Sama seperti jenis tempat yang dituju bagi perjalanan ketiga 1. Pemandu 2. Penumpang	

Sila Lihat Sebelah

HOME TELEPHONE NUMBER TO BE USED BY TELEPHONIST

FORM 1

A. HOUSEHOLD MEMBER INFORMATION

1. Name	2. Age Group	3. Sex	4. Work Address	5. School Address	6. Occupation	7. Industry	8. Driving License Held
	<input type="checkbox"/> 15-18 <input type="checkbox"/> 19-24 <input type="checkbox"/> 25-29 <input type="checkbox"/> 30-34 <input type="checkbox"/> 35-39 <input type="checkbox"/> 40-44 <input type="checkbox"/> 45-49 <input type="checkbox"/> 50 & above	<input type="checkbox"/> Male <input type="checkbox"/> Female			<input type="checkbox"/> Professional and Technical Work <input type="checkbox"/> Administrative and Managerial Work <input type="checkbox"/> Clerical & Related Work <input type="checkbox"/> Sales Work <input type="checkbox"/> Service Work <input type="checkbox"/> Factory, Construction, Transportation <input type="checkbox"/> Farming <input type="checkbox"/> Fishing <input type="checkbox"/> Hunting <input type="checkbox"/> Student <input type="checkbox"/> Unemployed <input type="checkbox"/> Others	<input type="checkbox"/> Agriculture, Forestry & Fishing <input type="checkbox"/> Mining & Quarrying <input type="checkbox"/> Manufacturing <input type="checkbox"/> Construction <input type="checkbox"/> Commerce <input type="checkbox"/> Transportation, Storage & Communication Services <input type="checkbox"/> Electricity, Water & Heat and Gas Services <input type="checkbox"/> Government Services <input type="checkbox"/> Health Services <input type="checkbox"/> Others	<input type="checkbox"/> No <input type="checkbox"/> Motor Cycle <input type="checkbox"/> Motor Car <input type="checkbox"/> Commercial Vehicle

TRIPS MADE ON 1981

B. TRIP INFORMATION

Facility of Origin/Destination	Trip No. 1	Trip No. 2	Trip No. 3	Trip No. 4
(1) Origin (Address or Name of Building)	Same as the Destination of Trip No. 1	Same as the Destination of Trip No. 2	Same as the Destination of Trip No. 3	Same as the Destination of Trip No. 4
(2) Facility of Origin	Same as the Facility of Destination of Trip No. 1	Same as the Facility of Destination of Trip No. 2	Same as the Facility of Destination of Trip No. 3	Same as the Facility of Destination of Trip No. 4
(3) Departure Time	1. AM _____ 2. PM _____ Hour Minute	1. AM _____ 2. PM _____ Hour Minute	1. AM _____ 2. PM _____ Hour Minute	1. AM _____ 2. PM _____ Hour Minute
(4) Arrival Time	1. AM _____ 2. PM _____ Hour Minute	1. AM _____ 2. PM _____ Hour Minute	1. AM _____ 2. PM _____ Hour Minute	1. AM _____ 2. PM _____ Hour Minute
(5) Facility of Destination				
(6) Destination (Address or Name of Building)				
(7) Trip Purpose				
(8) Main Mode of Travel				
(9) If you travel by vehicle, were you a driver or passenger?	1. Driver 2. Passenger	1. Driver 2. Passenger	1. Driver 2. Passenger	1. Driver 2. Passenger

Facility of Origin/Destination

1. Home
2. Workplace
3. School
4. Religious Institution
5. Educational Institution
6. Hospital and Health Center
7. Public Institution
8. Other

Trip Purpose

1. Work
2. Business
3. Shopping
4. Recreation
5. Religious Purpose
6. Social
7. Other

Main Mode of Travel

1. Walking
2. Motorcycle
3. Car
4. Taxi
5. School Bus
6. Stage Bus
7. Other

Please Turn Over

- iv. Questionnaire Fig. 4b, 4c and 4d
- v. Interviewers Manual Appendix A

3.7 P.R. And Notification

No press release was made on the Home Interview Person Trip Survey and due to inadequate time, notification letters were also not sent to the selected household. However prior to this the State Economic Planning Unit had issued a statement with regard to the Vehicle Owner Interview Survey and also generally about the Transport Master Plan Study being conducted. It was thus reasonable to expect the people in the study area to be aware of this fact.

However in order to further ensure better understanding and cooperation from the potential interviewees a letter of explanation from the Director of the State Economic Planning Unit was attached with every set of Interview Forms. An example of this letter is given in Fig. 5.

4 ACTUAL SURVEY

4.1 General

The actual survey is composed of the following:-

- a. Sample selection
- b. Field Survey ie. Distribution and Collection of Interview Form
- c. Checking and Editing

4.2 Sample Selection

As stated under item 3.4 the following had been concluded with regard to sampling :-

- a) The list of Living Quarters from the 1980 Population Census will constitute the sampling frame.
- b) The multistage sampling method will be adopted.
- c) The sampling rate is 2%.

UNIT PERANCANG EKONOMI NEGERI JOHOR

Tingkat 1, Bangunan Kerajaan,
Jalan Bukit Timbalan,
Johor Bahru.

Tarikh: 30hb. September, 1981.

Tuan/Puan yang dihormati,

KAJIAN PENGANGKUTAN JOHOR BAHRU

Sukacita dimaklumkan bahawa Kerajaan Malaysia dengan kerjasama Kerajaan Negeri Jepun, dan dengan persetujuan Kerajaan Negeri Johor serta dibantu oleh Majlis Perbandaran Johor Bahru, sedang menjalankan satu kajian pengangkutan bagi bandar Johor Bahru dan kawasan di sekitarnya. Tujuan utama kajian ini ialah bagi menyiapkan satu Pelan Induk Pengangkutan bagi memenuhi keperluan-keperluan serta memperbaiki sistem lalulintas dan pengangkutan bagi Bandar Johor Bahru. Kawasan kajian adalah meliputi kawasan Majlis Perbandaran Johor Bahru dan kawasan-kawasan serta daerah di sekitar kerana pengangkutan-pengangkutan yang datang daripada kawasan-kawasan tersebut memberi kesan kepada keadaan lalulintas di Bandar Johor Bahru sendiri.

2. Untuk menjayakan kajian di atas, beberapa banci lalulintas sedang dan akan dijalankan. Pada peringkat permulaannya, kerja-kerja banci ini telah ditumpukan untuk menentukan corak perjalanan pemilik-pemilik kenderaan yang tinggal di Johor Bahru dan kawasan di sekitarnya. Untuk tujuan tersebut, lebih kurang 15,000 nama pemilik-pemilik kenderaan daripada daerah Johor Bahru dan Bandar Kota Tinggi telah ditemui bagi mendapatkan maklumat berkenaan. Banci ke atas pemilik-pemilik kenderaan ini telah dimulakan pada awal bulan September, 1981 dan hampir selesai dijalankan.

3. Di samping banci ke atas pemilik-pemilik kenderaan, adalah didapati perlu untuk menjalankan banci ke atas penghuni-penghuni rumah. Selain daripada menentukan corak perjalanan, banci yang kedua ini juga bertujuan untuk mendapatkan maklumat mengenai taraf sosio ekonomi penduduk-penduduk tempatan dan keperluan-keperluan dari segi pengangkutan awam bagi Bandar Johor Bahru. Tuan/Puan serta keluarga adalah di antara lebih kurang 2,000 keluarga yang telah dipilih untuk ditemui oleh pembanci-pembanci bagi mendapatkan maklumat-maklumat berkenaan. Ada kemungkinan tuan/puan telah pernah juga ditemui pada bulan September yang lepas, sewaktu banci pertama dijalankan.

4. Dengan itu kerjasama tuan/puan amatlah diharapkan untuk mengisi borang-borang yang diedarkan kepada tuan/puan oleh pembanci yang datang melawat ke rumah tuan/puan. Pembanci ini ada dibekalkan dengan Pas Resmi daripada Unit Perancang Ekonomi Negeri Johor. Kerjasama tuan/puan amatlah penting bagi kejayaan kajian ini dan sekiranya tuan/puan menghadapi apa-apa masalah semasa mengisi borang-borang ini sila dapatkan bantuan Pembanci.

5. Sila juga maklum bahawa maklumat-maklumat yang dikumpul adalah dianggap sulit dan hanya digunakan untuk menjalankan kajian ini.

Sekian terima kasih.

Berkhidmat Untuk Negara

Shahir
.....
(DR SHAHIR BIN NASIR)
Pengarah,
Unit Perancang Ekonomi Negeri,
Johor.
b.p. Setiausaha Kerajaan,
Johor.

Fig. 5 : Letter of Explanation

Based on the above, the sample selection follows the following procedure:-

1. The Study Team was furnished by the Department of Statistics with a list of enumeration blocks in the district of Johor Bahru and Kota Tinggi together with the corresponding number of living quarters in each enumeration block. This list was extracted from the 1980 Housing and Population Census. Therefore before the actual selection of sample could commence, it was initially essential to determine the enumeration blocks that lies within the primary study area and summing up the living quarters in these enumeration blocks in order to arrive at the total number of living quarters in the study area. Applying the predetermined rate of 2% the number of sample living quarters comes to 1,723.
2. Since the number of living quarters in the study area was given according to enumeration blocks it is thus necessary to convert these into traffic zones. This was done by means of a conversion table in which all enumeration blocks lying within one zone were grouped together. From the conversion table the total number of living quarters in each traffic zone could be determined. The conversion table is shown in Appendix C.
3. The total living quarters sampled was distributed to each traffic zones in proportion to the number of living quarters in each traffic zones. When this was completed it was found that certain zones had too few samples. Thus the number of samples for these zones were enlarged to obtain a more representative result. The final total of sample household (living quarters) was 1974.

4. Due to the time and cost limitation it is necessary that the sampled living quarters for each traffic zones to be concentrated in a relatively small area and not dispersed all over the traffic zones. It was thus decided that the samples for each zone be selected from a single enumeration block in that zone. It was not necessary to select more than one block because the total number of sampled living quarters for each traffic zone never exceeded the total located in each enumeration block which average about one hundred. As mentioned earlier the multistage sampling method was adopted and as the first stage and enumeration block was randomly selected from each traffic zone. This was followed by the selection of living quarters in the chosen enumeration blocks by using random numbers. The sampling result is presented in Table 2.

5. Details of the sampled living quarters as listed below are then transcribed to the Control List:-

- a. Zone Number
- b. Address of Living Quarters

The transcription had to be done at the Department of Statistic in Kuala Lumpur because the list of the living quarters are too long and bulky and could not be taken out from the premises of the department. Fig. 7 shows an example of the Control List.

6. When all the sampled living quarters had been transcribed onto the Control List, numbering was made by Traffic Zone. The numbering start from 0001 in each Traffic Zone.

CONTROL LIST FOR HOME INTERVIEW PERSON TRIP SURVEY

Name of Supervisor:

--	--	--

Zone No.

Sample Size:

Number of samples substituted: _____

Fig. 6

H H No.	Name of Head of Household	Address	No. of H H Members	Questionnaire		
				Allocated	Substituted	Submitted

Signature of Supervisor:

Fig. 7
SAMPLING CARD FOR HOME INTERVIEW PERSON TRIP SURVEY

Zone No.	H H No.	name of assistant supervisor	
		name of interviewer	
Date trips made		Address	
		Tel No.	

	Name	Age	Sex	Results of Interview					
				Interviewed	Not Interviewed	Refused to Answer	Moved out to other place	Not Located	Others
TOTAL									

Number of H H Member	Persons
Below 7 yrs	Persons

Results of Visiting		
	Date	Time
No. 1		
No. 2		

Memo

Signature of Interviewer

Date

Table 2

SAMPLING RESULT

No	Zone No.	Total No Of Living Quarters	Number Of Living Quarters Chosen As Samples	E.B. Chosen	
				C.D.NO.	E.B. NO.
1	111	786	10	0109	112
2	112	84	10	0109	84
3	113	571	11	0108	103
4	114	547	11	0108	107
5	121	794	16	0109	83
6	122	500	10	0108	88
7	123	437	10	0108	53
8	211	105	10	0108	93
9	212	272	10	0108	97
10	213	258	10	0108	-
11	221	622	22	0108	76
12	222	710	14	0108	123
13	223	256	10	0108	80
14	224	94	10	0108	72
15	225	251	10	0108	59
16	231	627	13	0108	66
17	232	919	18	0108	118
18	241	1088	22	0109	66
19	242	2261	45	0109	118
20	243	1255	22	0109	43
21	251	2839	56	0109	92
22	252	1042	21	0128	87

continued

Table 2 SAMPLING RESULT

No	Zone No.	Total No Of Living Quarters	Number Of Living Quarters Chosen As Samples	E.B.Chosen	
				C.D.NO	E.B. NO
23	261	813	16	0128	83
24	262	2988	58	0128	59
25	263	943	19	0128	50
26	264	1442	29	0128	43
27	265	418	8	0128	91
28	271	489	10	0109	94
29	272	892	18	0109	97
30	281	1065	21	0128	108
31	311	2034	41	0108	20
32	312	83	10	0108	2
33	313	404	10	0108	125
34	314	1604	32	0108	10
35	315	1672	34	0108	39
36	321	1744	37	0127	71
37	322	2531	51	0127	33
38	323	1219	24	0127	47
39	324	475	10	0127	26
40	325	820	16	0127	32
41	331	877	28	0109	31
42	332	3397	66	0109	26
43	333	1244	25	0127	52
44	341	2036	42	0128	22

continued

Table 2 SAMPLING RESULT

No	Zone No.	Total No Of Living Quarters	Number Of Living Quarters Chosen As Samples	E.B.Chosen	
				C.D.NO	E.B. NO
45	342	1763	35	0128	19
46	351	3397	49	0127	13
47	352	644	13	0128	4
48	353	236	10	0128	7
49	354	197	10	0128	28
50	361	1452	29	0106	95
51	362	402	10	0106	53
52	363	-	-	-	-
53	364	2142	44	0106	60
54	371	653	13	0106	32
55	372	1807	36	0106	9
56	373	383	10	0106	36
57	374	744	15	0106	24
58	411	1252	25	0105	52
59	412	665	13	0105	44
60	413	1195	24	0105	20
61	414	2712	50	0105	1
62	421	2083	96	0107	124
63	422	5132	103	0107	92
64	423	1551	31	0107	54
65	424	846	17	0107	115
66	431	3138	63	0107	18

continued

Table 2 SAMPLING RESULT

No	Zone No.	Total No Of Living Quarters	Number Of Living Quarters Chosen As Samples	E.B.Chosen	
				C:D.NO	E.B.NO
67	432	761	15	0107	12
68	441	587	12	0105	88
69	442	273	10	0105	92
70	443	1106	22	0105	93
71	444	1902	38	0105	65
72	451	1897	38	0114	29
73	452	1958	39	0113	51
74	453	4895	98	0113	47
75	461	1314	26	0106	75
76	462	889	18	0106	91

Legend

- C.D. - Census District
E.B. - Enumeration Block

4.3 Recruitment of Interviewers

Since the Home Interview Survey starts on the completion of the Vehicle Owner Interview Survey, the interviewers for the latter survey who wanted to continue were re-recruited. However the number of interviewers that remained was inadequate and additional interviewers were recruited. The final tally of interviewers was 68. These interviewers were under the supervision of 6 assistant supervisors. However towards the end of the survey period there still remained a few samples that need to be interviewed. In order to meet the deadline the assistant supervisors themselves had to conduct the interview on the few remaining samples.

Every interviewer was provided with an identification card containing a photograph and particulars of the respective interviewer as shown in Fig. 8.

Fig.8 Identification Card

KAJIAN LALULINTAS	Nº	272
YUNIT PERANCANG EKONOMI NEGERI, JOHOR.		
NAMA _____	Saiz K/P.	
KAD PENGENALAN NO. _____		
telah di lantik sebagai Pembanci untuk menjalankan Kajian Pengangkutan Johor Bahru.		
T.T. Pemegang		

Pas ini adalah rasmi yang dikeluarkan kepada pembanci untuk menjalankan tugas rasmi dalam Lajian Pengangkutan Johor Bahru

- Pas ini hendaklah dipakai pada setiap masa semasa menjalankan tugas
- Pas ini hendaklah diserahkan balik kepada pejabat yang mengeluarkannya apabila pemegangnya telah berhenti atau bertukar dari jawatan yang menyebabkan pas ini dikeluarkan
- Seandainya pas ini mestilah dimaklumkan dengan segera kepada pejabat yang mengeluarkannya
- Seandainya menjumpai pas ini hendaklah menyerahkan pas ini ke Balai Polis atau pejabat Balai Polis. Pegawai Polis dikehendaki mengembalikan pas ini kepada Pejabat Lajian Negeri Johor.

b.p. Pengarah,
Yunit Perancang Ekonomi Negeri,
Johor

4.4 Payment Scheme

In order to ensure high rate of productivity from the interviewers and because quite a large number of the interviewers were working on a part-time basis a piece-rate payment scheme was considered most suitable as compared to the daily payment scheme. For each completed questionnaire the interviewer will be paid a constant rate of \$3.50. Even for the samples in the more remote areas this rate is still considered reasonable because as explained earlier sample household for each zone was selected from a single enumeration block which means that the distance between one sample household to another is kept to a minimum.

Travel allowance was also given for every household interviewed and the rate vary according to the location of the sample household as provided below:-

Table 3 : Travel Allowance

Zone Code	
All zones 1 and 2, 311 - 315	
321 - 325, 331 - 333, 341, 342 - 351	M\$0.90
361 - 364, 371 - 374, 413, 441 - 444	M\$1.10
411, 412, 414, 421 - 424, 431, 432, 451 - 453, 461 & 462	M\$1.60
Average	M\$1.20

In addition to the above the interviewers were also paid an allowance of \$11.00 and travel allowance of \$2.00 for attending the briefing. The Assistant Supervisors were paid \$13.00 per day.

4.5 Field Survey

4.5.1 Briefing

Two briefings were held for this survey. The first was on the 11th of October 1981 at the Bilek Mesyuarat Jabatan Kerja Raya, Negeri Johor. The interviewers attending this briefing comprise of those retained from the Vehicle Owner Interview Survey. The second briefing was held on the 15th of October 1981 at the same venue which was attended by the freshly recruited interviewers. Every interviewer was given a copy of the Interviewers Manual (See Appendix A) and was required to follow closely the instructions and explanations provided in it. During the briefing, stress was made on the definition of trips which in the first instance might appear complicated and unless properly understood by the interviewers will render the survey ineffective. Another source of confusion among the interviewers was the grouping of several occupations, industries, facility of origin/destination and occupation under a few selected categories. Despite the care taken in determining the component of each category the interviewers were sometimes still unsure as to which category certain items belong to. For such cases the interviewers were instructed to write down the items in the respective spaces in the interview forms and should later seek the advise of the Assistant Supervisors when they report to the office.

4.5.2 Allocation of Samples

Samples were allocated to the respective interviewers on the briefing day itself. Based on past experience a higher rate of productivity can be expected from the interviewers if they were given samples located near their place of residence. To do this the zone code of the addresses of every interviewer were listed down and then matched with

the traffic zones in the study area. However not all of the interviewers could be given samples located near their home. Some had to survey neighbouring zones and others had to cover more than one zone. Each interviewer was given an average of 28 sample household to be interviewed for the duration of the entire field survey period. However those interviewers that had exhausted their samples before the survey period ended could be allocated additional samples provided their work were found satisfactory.

4.5.3. Interviews

The method of conducting the survey is detailed in the interviewers manual (See Appendix A). The interviewers were instructed to begin the survey on the 12th of October. The interviews to be conducted involved routine trips made by household members on the average. So the following days were specified as the most appropriate days for the interviews to be conducted.

OCTOBER																														
T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
											o	o	o				o	o	o				o	o	o					

o SURVEY DAY

The interviewers can however visit the sample household residence on other days and ask the interviewees to fill the interview forms with trip informations on the days specified above. Each interviewer have to conduct the survey on their own. They need not report to the office until they have completed all their samples with the exception of cases where they have to consult their supervisors if they confront any difficulties.

4.6 Storage and Retrieval of Questionnaire

A proper system of storage and retrieval was necessary in order to avoid confusion and loss of completed questionnaires. Questionnaires for each household was kept in a single envelope. These were then stacked onto shelves which were labelled with the zone numbers. Envelopes containing questionnaires for a single zone were stacked together.

4.7 Checking and Editing

Among the interview forms collected, it could be found some missing and/or error informations. These should be examined and edited in order to obtain the precise informations. In the checking and editing process, the following steps were taken for checking and editing:

- a. Assistant Supervisor's Check
- b. Project Manager's Check and Editing

They are made up of the following:-

1. Assistant Supervisor's Check

In the checking and editing process, the supervisor's check is the most important to control the data obtained from the interviewee.

The following checks were made to ensure interviewers:

- a. Implement the home interview correctly
- b. fill up the interview form without omission

c. fill up the interview form without error.

d. fill up every trip sequentially.

Interviewers are requested to reinterview when the interview forms collected are not satisfactory through above checking items.

2. Project Manager's Check and Editing

The Project Manager's check is to examine whether the informations obtained are logical and precise and to edit these logically and correctly.

Therefore, in this step, the following checks are made;

a. Checking contents of each interview form and inter-relationship of each form logically.

b. Judging whether the interview forms are valid or invalid.

c. editing the interview forms in order to make coding work precisely.

5 RESULT OF SURVEY

5.1 Returns

The overall returns of the survey was highly satisfactory. The composition of the sample household is given in Table 4 below:-

Table 4 : Composition of Sample Household

Particulars	No.	%
Total Number of Sample Household	1974	-
Total Number of Members of Sampled Household	10267	100
Total Number of Household Members below 7 years old	1649	16.2
Total Number of Household Members above 7 years old	8618	83.8

Table 5 shows that the number of sample household that was able to be interviewed was very satisfactory. However not all of the household interviewed were from the original list of samples. Due to the limited time available to complete this survey, callbacks could not be made as often as might be necessary to household that could not be interviewed by the interviewers on their first visit. As a result a total of 754 household or 37.9% of the total sample household had to be substituted with neighbouring household residing in the same enumeration block due to various factors - the prominent of which being that all or majority of members of the original sample household were not at home when visited by the interviewers. Other reasons for substitution quoted by the interviewers are as follows:-

<u>Reasons</u>	<u>No. of Household Substituted</u>
a. House still unoccupied	29
b. Address could not be found	14
c. Many dogs	5
d. Duplicate address	11
e. Refuse to answer	1

Table 5 : Result of Survey on Household

No.	Particulars	Number	%
1	* Total Number of Living Quarters in Study Area	86123	100
2	Total Number of Sample Household/ Living Quarters	1988	2.3
3	Household interviewed and questionnaires accepted	1962	2.28
4	Household interviewed but questionnaires rejected	10	0.01
5	Household not interviewed	16	0.02

* The list of Living Quarters was used as sampling frame in selecting sample household.

From the Table above it can be seen that the sampling rate of 2% had been satisfactorily exceeded ie. household interviewed and questionnaires accepted is 2.28%. In terms of persons interviewed the collection rate was equally satisfactory as depicted in Table 6 below.

Table 6 : Number of Persons Interviewed

	Members of Sample H.H. above 7 yrs. old		Interviewed		Not Interviewed	
	No.	%	No.	%	No.	%
Male	4402	100	4078	92.6	324	7.4
Female	4194	100	3928	93.7	266	6.3
Total	8598	100	8006	93.2	587	6.8

6 INTERVIEWERS' IMPRESSION

6.1 Outline

This section of the report contains general assessment of the output of the interviewers and also analysing impressions of the interviewers. During the course and at the end of the survey period, feedbacks were constantly gathered from interviewers involved in the home interview person trip survey. These feedbacks provide information for the assessment of the efficiency in the implementation of the survey since the interviewers form the actual link with the object of the study and can provide first hand picture of the actual field survey environment. Views from the interviewers were obtained on the following aspects:-

- a) Survey Material
 - i) the questionnaire
 - ii) the manual of owner interview
 - iii) the briefing/training that they attended
- b) The actual survey in terms of
 - i) the interviewee's response
 - ii) locating of interviewee's homes
- c) Their remuneration/payment
- d) The problems faced by interviewers

6.2 Sex Composition

Male	Female	Total
48	18	66

The interviewers above comprise of both full-time and part-time interviewers. They were given freedom to choose the time of day that they want to conduct their survey but were required to complete the total number of samples allocated to them.

6.3 Rate of Household
Sample Interviewed

6.3.1 Total and by Sex

Table 7 below shows that majority of the interviewers irrespective of male or female completed between 21 to 30 samples. The average number of samples allocated for each interviewer throughout the survey period was 28 household. A similar pattern can be seen for the rate of collection of all interviewers as show in Figure 9.

Table 7 : Member of Household Sample Interviewed

Nos. of Samples	MALE		FEMALE		TOTAL	
	No.	%	No.	%	No.	%
BELOW 10	2	4.17	0	-	2	3.03
11 - 20	12	25.0	1	5.56	13	19.69
21 - 30	23	47.91	15	83.33	38	57.57
31 - 40	5	10.42	2	11.11	7	10.61
41 - 50	3	6.25	0	-	3	4.55
51 - 60	3	6.25	0	-	3	4.55
	48	100	18	100	66	100

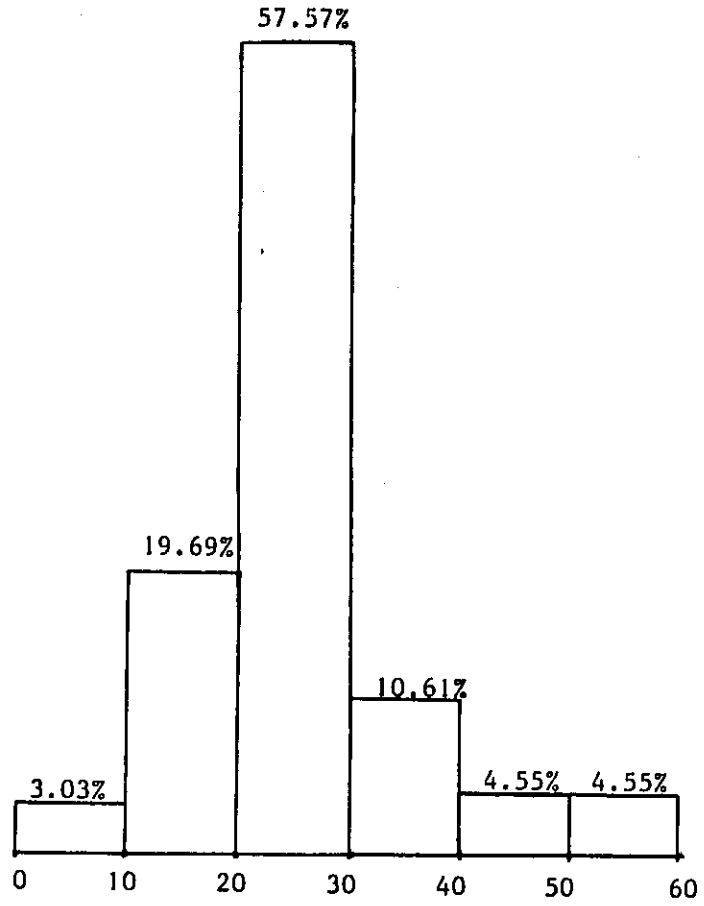


Fig. 9 Number of Samples Interviewed



6.3.2 By Mode of Transport

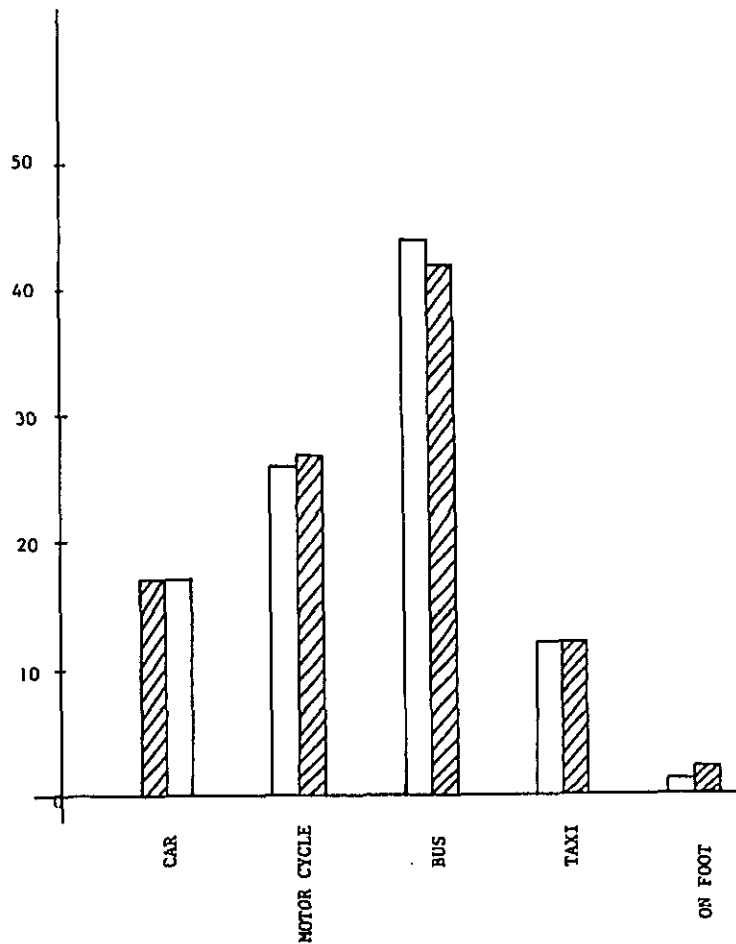
Table 8 and Fig. 10 shows that the mode of transport used by interviewers had no significant effect on the number of samples that was able to be interviewed. The number of samples interviewed corresponded closely with the number of interviewers using each mode.

Table 8 : Mode of Transport Used By Interviewers

MODE OF TRANSPORT	NUMBER OF INTERVIEWERS		NUMBER OF SAMPLES INTERVIEWED	
	NUMBER	%	NUMBER	%
CAR	11	17	301	17
MOTOR CYCLE	18	27	465	26
BUS	28	42	781	44
TAXI	8	12	210	12
ON FOOT	1	2	13	1

Fig. 10 : MODE OF TRANSPORT

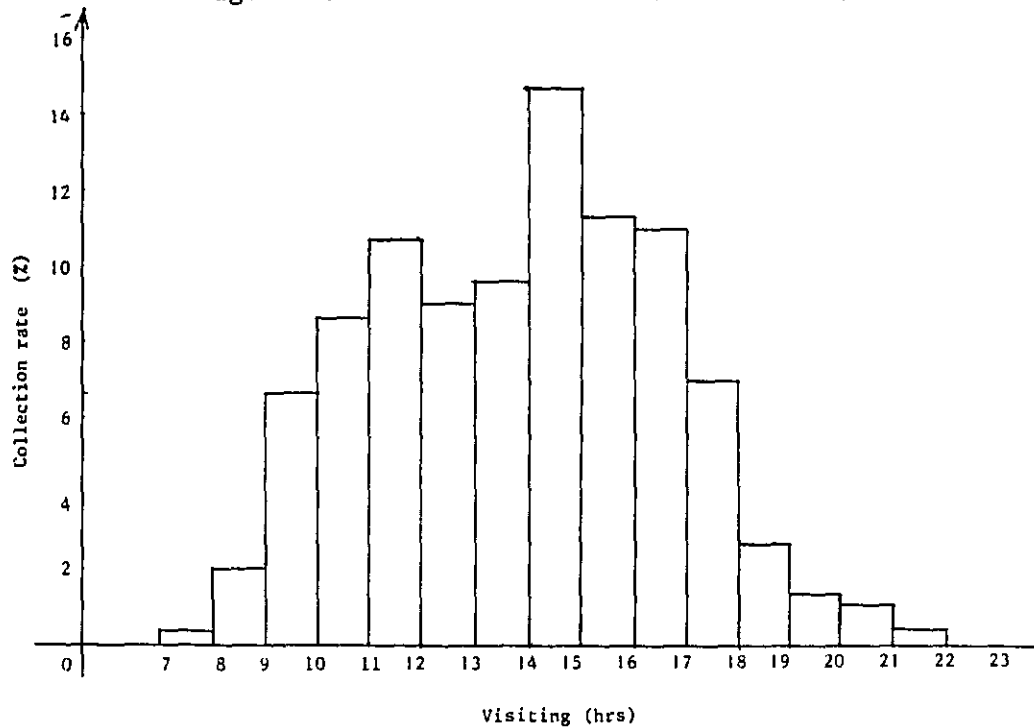
Key
 Numbers of Interviewers
 Number of samples Interviewed



6.3.3 Visiting Hours

For the Home Interview Person Trip Survey it can be seen from Figure 11 that most of the visits by the interviewers were made between 11.00 am. to 5.00 pm. This was probably due to the fact that most of the interviewers were working on a full-time basis and were able to conduct interviews at their own convenience which include normal working period. On the other hand if the interview team were to be made up of mainly part-time interviewers a greater percentage of interviews would probably be conducted after the normal working period which is 4.30 pm. onwards.

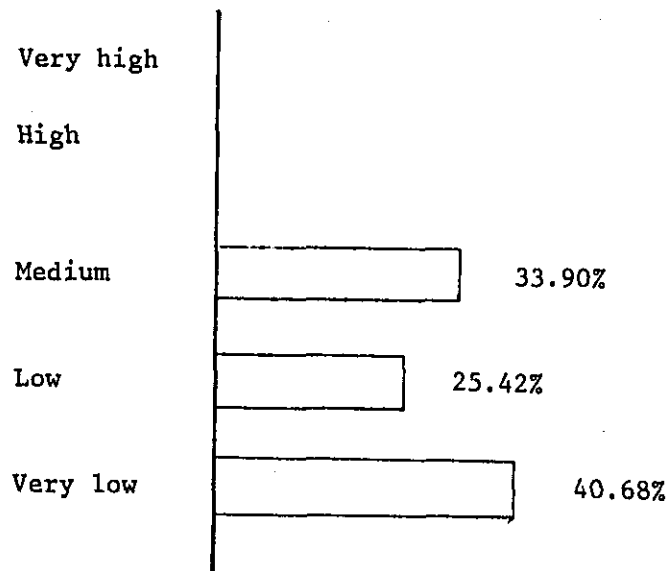
Fig. 11 : CHART OF COLLECTION RATE (%) AGAINST TIME (HRS.)



6.4 Payment Scheme

As can be seen from Figure 12 most of the interviewers felt that the basic payment of \$3.50 per household sample is too low.

Fig.12 : Impression of Basic Payment



Thirty-eight percent of them considered \$5.00 per household sample to be more appropriate and thirty-one per cent decided on \$4.00 per household.

Price per Questionnaires	\$2.00	\$1.00	\$4.00	\$5.00	\$6.00	\$8.00 - \$9.00
Percentages of Interviewers	0	10	31	38	15	6

6.5 Impressions on the Manual,
the Explanation and the
Layout of the
Questionnaire

Understanding the concept of the survey and the importance of the accuracy of the data collected is an important deciding factor which will initiate the interviewers to do their work satisfactory. To ensure that the fully understood the survey, the 'Home Interview Person Trip Survey Manual' was prepared and briefing sessions were held to stress the several finer points that is necessary to attain satisfactory result.

Interviewers impression about the manual and the briefing sessions are as shown in Fig. 14 and Fig. 15

A majority of them felt that the manual was easily understood and the explanation easy to comprehend.

The layout of the Questionnaire Item is always an important factor in any survey. It must be easily understood and should not be ambiguous. A simple and concise questionnaire is best for the comprehension of the general public.

Since the interviewers will have to fill in these questionnaire on most occasion their opinions were sought.

Fig. 13 : Impression of Questionnaire

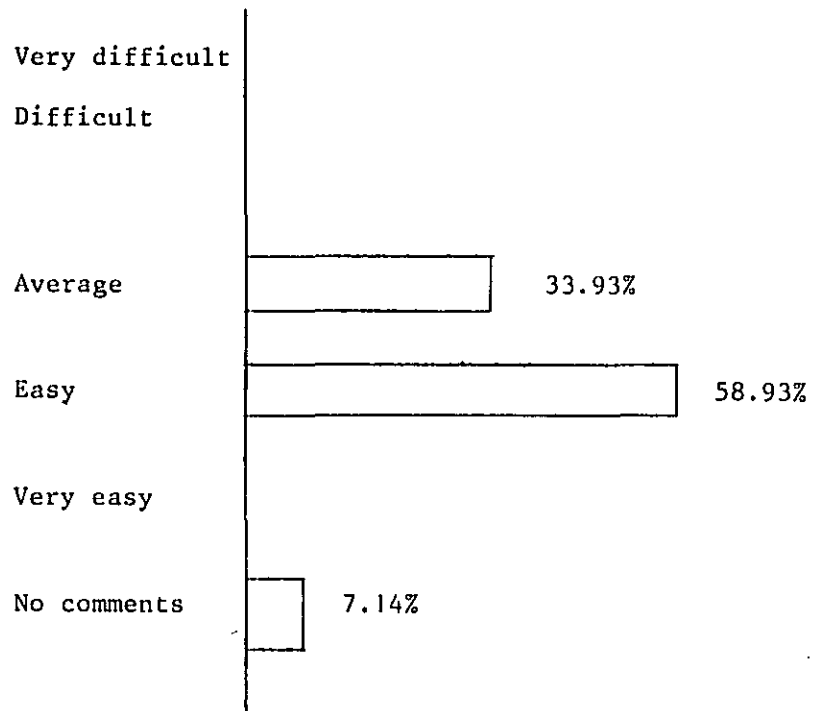


Fig. 14 : Impression of Manual for Home Interview Person Trip Survey

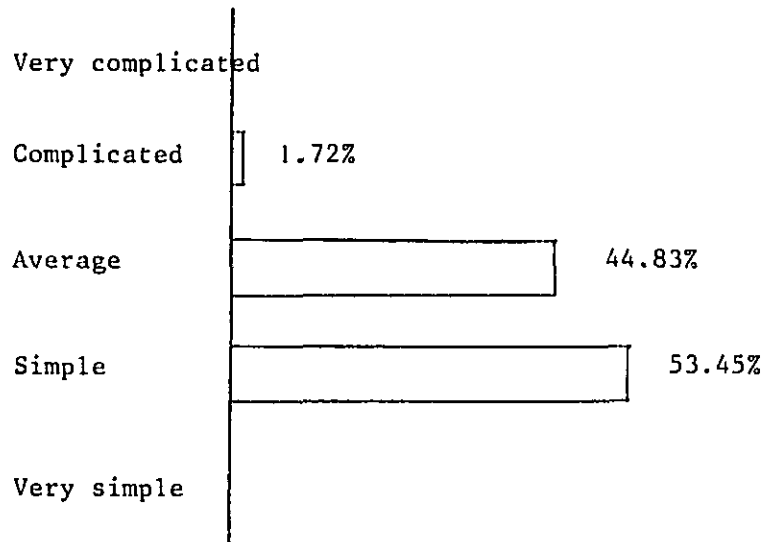
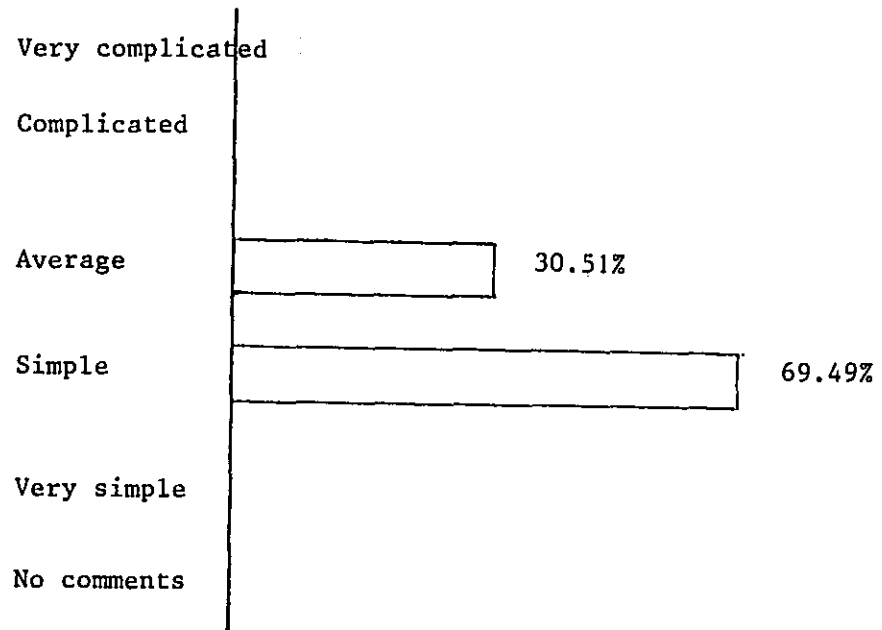


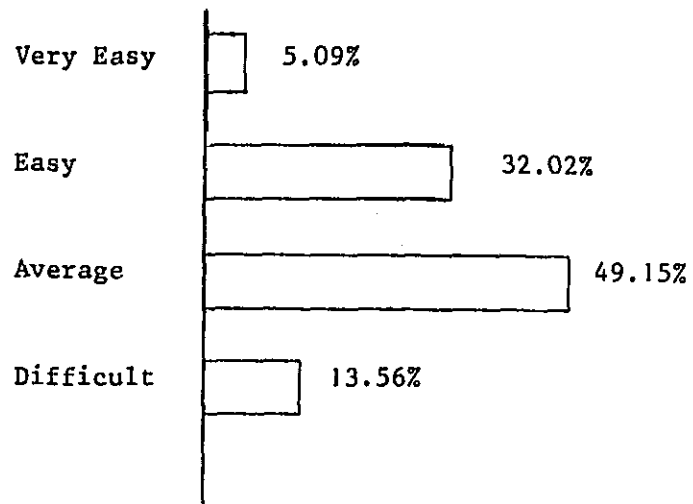
Fig. 15 : Impression of Explanation At Auditorium



6.6 Impression on
Locating Interviewee's
House

As is clear from Figure 16 the multistage sampling process had greatly made the task of locating interviewees home much easier since they were located within relatively small areas. The interviewers conducting interviewees outside MPJB were greatly aided by the maps of enumeration block supplied to the them.

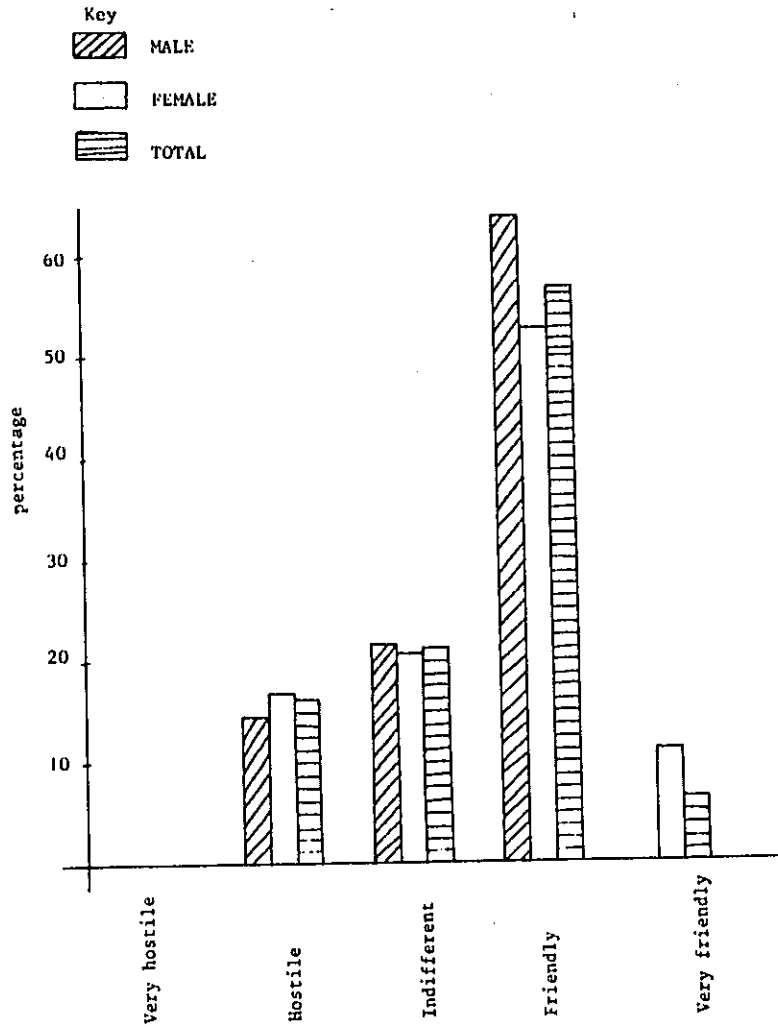
Fig. 16 : Locatin of Interviewee's House



6.7 Impression on Interviewee is Responses

Most of the interviewers reported that generally the interviewees response had been friendly although there were some isolated cases of hostility. Better responses however could be expected if the study team had the time to send notification to potential interviewees prior to the visit by the interviewers.

Fig. 17 : Interviewees' Responses



6.8 Other Problems

Generally the interviewers faced no major problems. Some of them do however find difficulties in interviewing Chinese interviewees who do not speak Bahasa Malaysia and English to well. Another problem often quoted was that not all members of a household sample will be at home when visited by the interviewers and thus necessitating call-backs by them. Additionally unfavourable weather will certainly hamper the efforts of the interviewers.

HOME INTERVIEW PERSON TRIP SURVEY

INTERVIEWER'S MANUAL

AUGUST, 1981

STATE PLANNING UNIT, JOHOR
URBAN TRANSPORT MASTER PLAN TEAM

INTERVIEWER'S MANUAL

1. INTRODUCTION

1.1 Objective

The objective of the survey is to collect origin and destination data of person trips which will then be used in the planning of public transport system as well as for the comprehensive planning of public transport system in Johor Bahru Conurbation.

1.2 Project Area

The project area of the home interview survey covers the primary study area defined by the Inception Report; Johor Bahru Town, Plentong, Tanjung Kupang, Pulai, Senai Kulai, Sedenak, Tebrau, Kota Tinggi.

1.3 Members of Household to be Interviewed

Persons who are aged 7 years and above are to be interviewed in households selected by random sampling method. The total number of households in primary study area in 1980 is estimated at 107,330 which is made up of 459,450 persons aged 7 years and above. The sampling rate adopted is 2% of total households, so that the sampled households is 1723.

1.4 This Survey is undertaken by the State Economic Planning Unit

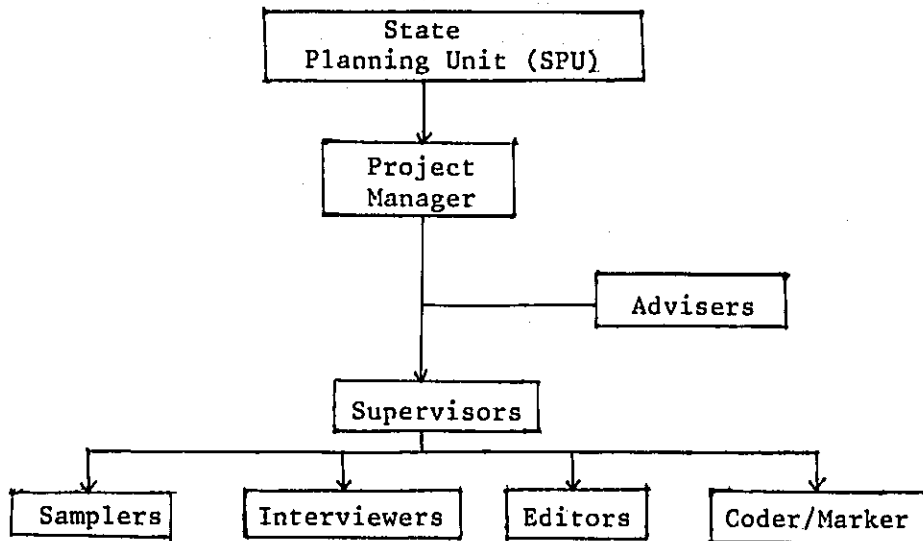
1.5 Survey Period and Day

The survey starts on 12th of October 1981 and ends on 31st of October 1981. The survey days are from Monday to Wednesday excluding national holidays and holidays granted due to bad weather.

2 GENERAL MATTERS FOR HOME INTERVIEW SURVEY

2.1 Organization of the Survey

The organization of the survey will be as follows:



Therefore, you are to perform your duties under the direct supervision of the Supervisor. All problems that you may encounter during the home interview survey must be reported and discussed with him. Weekly attendance reports are to be submitted to Supervisors.

2.2 Interviewers must take note of the following matters

- a. You should bring your ID card while you are conducting the home interview survey.
- b. Information obtained from interviewees during the home interview survey are strictly confidential and must not be shown to any other persons except the supervisors.
- c. When you explain to the interviewees regarding the home interview survey, you should inform them that the data gathered from the survey will only be used for transport planning. Refer them to the letter from State Planning Unit.

2.3 Material to be supplied for Home Interview Survey

The following materials will be supplied through the Supervisors:

- a. Home Interview Manual
- b. Home Interview Forms
- c. Sampling Card (Household List)
- d. Envelopes
- e. ID Card
- f. 2B Pencil
- g. Others - Plastic covers for keeping Materials dry.

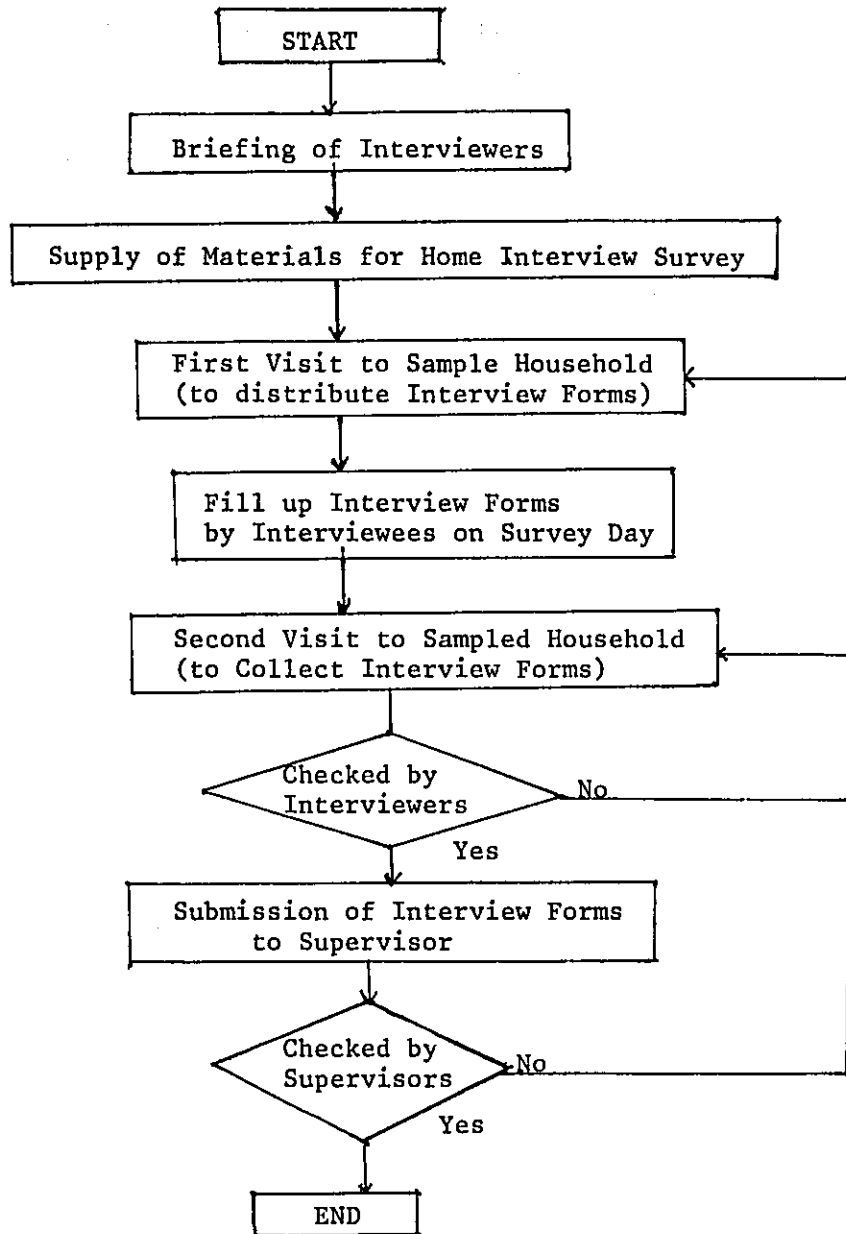
2.4 Basic Procedure

The basic procedure to implement the Home Interview Survey is as follows:

<u>Survey Day</u>	<u>Interview & Collection of Interview Form</u>	<u>Submission of Forms</u>
Sunday		
Monday	0	By the 31st of October earlier if completed.
Tuesday	0	
Wednesday	0	
Thursday	0	
Friday		
Saturday	0	

3. GENERAL INSTRUCTION TO INTERVIEWERS

3.1 Procedure of the Survey



3.2 How to Conduct an Interview

3.2.1 General

It is essential for you to be polite at all times. Introduce yourself politely, "Good Morning Sir/Madam. I am (give your name), from State Planning Unit. We are conducting the Home Interview Survey for Johor Bahru Conurbation". Show ID card. You maybe asked to enter and sit down, but do not always expect this courtesy. Be prepared to interview under inconvenient circumstances. Be friendly with the person you are interviewing. Do not discuss politics, religion or any other controversial subject. Avoid arguments or a prolonged discussion on any question. Be prompt in doing your work. Do not waste time. When you have finished the interview, thank the interviewees and proceed to the next household.

3.2.2 Procedure

- a. Find the household listed in the sampling list. If you cannot find the house, ask the neighbours. Replace with neighbour if you encounter the following circumstances:
 1. All members of the household have transferred.
 2. A house in the sampling list is demolished or vacant.
- b. Identify the head of households who is listed in the sampling list.
- c. Write the names and ages of all other members of the household in the sampling list. Exclude members who are six years old or younger.
- d. Interviewers shall fill up Form 1 with information on each household and Form 2 with information on each member of the household and travel made by each of them.

- e. When you visit the sampled household again in order to collect the interview form, you should examine carefully whether the interviewees fill up all necessary questions or not. If there are any missing informations, you should interview the household members and complete the interview forms. When all members have been interviewed, put all forms in one envelope and write the code number of the household and other informations on the envelope.
- f. Proceed to another household.

3.2.3 Accomplishment

Interviewers are expected to interview a minimum of 28 households during the survey period including re-visit to complete interview forms. A report will be submitted by supervisors on individual accomplishments.

3.3 How to Ask Questions

Should any person refuse to answer the questions in the form, explain to him that the information is strictly confidential, that it will not be available to any person except to certain members of the study team and that it is to be used only for transport planning purposes. The Director of the State Planning Unit himself has guaranteed the confidentiality of the information. However, if after all tactful means have been resorted to and you still fail to get the necessary information, write in the remarks of the sampling list "Refused to answer" and report this matter to the supervisor. Interviewers should not argue or lose their temper.

3.4 How to fill up
the Home Interview
Form

- a. Use a 2B pencil to record the information.
- b. Write legibly and firmly. Do not get forms wet.
- c. Follow the numerical sequence of the items in the form during the interview and complete the entries for each person before asking questions for the next one.
- d. Some of the items have code number to be entered as answers. In accordance with the interviewee's reply, enter the appropriate code number.
- e. Other items require a check(✓) or write entry in the spaces provided for. Write legibly.
- f. If an error is committed, erase it properly and write the correct entry on the space provided for.

3.5 Checking the day's
work

After completing each day's work, check if entries in the form are correct and consistent with other questions. The forms you will submit to your supervisor will be checked two times. Forms having mistakes and/or lack of information will be returned for reinterview.

3.6 Liason with the
Office

Interviewers may contact the office at least once a week on Sunday and/or Saturday to report the progress of work and discuss problems you have encountered during the interview. You may seek advice from time to time. In cases where the interviewers cannot make on the spot decisions, contact your supervisor as soon as it practical for instructions

3.7 Submission of Home Interview Forms

Interviewers are required to submit all interview forms they have completed when they have completed all sample. Submission day is any working day. All forms belonging to a household should be put in one envelope. Sampling card that has been filled-up with names and ages of all members of a household except six years old and younger, must also be submitted.

In case of incomplete interviews on members of a household because of absence of any other reasons, interview forms of this household shall not be submitted. However, the number of persons interviewed will be reported. The supervisor will check all forms submitted in your presence and if he finds that the data are incomplete, these will be returned. Appropriate instructions will be given and necessary materials will be supplied.

3.8 Refusal

You may fail to interview some members of the household. If you encounter a household that refuses to be interviewed, write "refusal" in the remarks column of the sampling card and interview the next door neighbour.

4 DETAILED INSTRUCTIONS TO INTERVIEWERS

4.1 General Instructions

- a. The main purpose of the survey is to obtain information on all trips made by every member of the household except those persons who are below seven years on the given day of the survey.
- b. The 24-hour period for each trip information is to be collected begins at 12 midnight and extends until 12 midnight the next day.

- c. Form 2 is for one person. However, those who made more than 8 trips on the day previous to the interview should be entered in another sheet.
- d. Entry of data for those who are not at home shall be as follows:
 - * The interviewee is not at home for a full day when you visit and also during the previous day, enter the reason in the sampling sheet.
 - * Questions (1) to (11) in Form 1 should be filled up by the interviewer himself.
 - * Hospital - Write the reason in the column (10).
 - * Living outside the Home Interview Survey Area, for example a student attending school in Kuala Lumpur, write the reason in the column (10).
- e. Those who are living together with the other household members shall not be interviewed if they are not part of the family unit, or not sharing common financial resources in the household.

4.2 Sampling Card
(Interviewer's Copy)

Name of head of household. Code No., District and Address will be given to you. Your first task is to complete the sampling card. You are to ask the name and age of all the members of the household, and write them down in the sampling card legibly. Except members who are 6 years and younger.

4.3 Household Information
(Form 1)

- 1-(1) Name
Enter the complete name of the Head of the household.
- 1-(2) Address
Enter the complete home address of the interviewee.

- 1-(3) Number of Persons in your Household
Enter the number of household members who are 7 yrs old and above.
- 1-(4) Does your household own any vehicles?
Check number of vehicles by type owned by the household. If the vehicle is under lease purchase consider it as "owned".
- 1-(5) Type of your house. Check the type of their house.
- 1-(6) How long has your household lived in this house?
Check the number of years the household has lived in the house.
- 1-(7) Where did your household live previously?
Check the place where the household lived previous to this place.
- 1-(8) What is the name of the town where you lived previously?
Enter the name of the town where they lived previously.
- 1-(9) What is the monthly household income?
Enter the total monthly household income. The monthly household income defines the total sum of monthly income of all members in the household. An average figure should be used if it varies greatly during a year.
- 1-(10) How far from your house to bus stop?
Check the approximate distance from the house to the public transportation route of the bus stop where the interviewee usually takes a bus.
- 1-(11) Community Group
Based on your observation, check the community group
0 Malay
1 Chinese
2 Indian
3 Others

4.4 Household Member's
Information (Form 2)

- 2-(1) Name
Enter the complete name of Household members
(one from for each member)
- 2-(2) Age Group
Check the age of the interviewee on the
survey day.
- 2-(3) Sex
Check the square or block
- 2-(4) Work Address
Enter complete office address of interviewee.
- 2-(5) School Address
Enter complete school address of interviewee.
- 2-(6) Occupation
Check the block of the coresponding occupation
of the interviewee. The detailed classification
of occupation is referred to Appendix - 1.
If the interviewee has more than two
occupations, eg. he is a service worker during
day-time and a student during night-time
check both blocks of the corresponding
occupations and write priority ranking between
the two occupations.
For example:- 1. service worker
 2. student
- 2-(7) Industry
Check the block of the corresponding
industry of the interviewee. The detailed
classification of industry is referred to
Appendix - 2.
- 2-(8) Type of Driver License Held
Check the block of the corresponding
license held.

4.5 Trip Information

4.5.1 Definition of Trip

a. What is the "trip"?

A "Trip" is defined as the one-way travel from origin to destination for a particular purpose. You will understand the definition of travel as shown in Fig. A.

When you go to your office from your home, there are two ways; one is to use private car and the other is to use public transport. In the case of using public transport, you take a taxi from home to bus stop and then change mode from taxi to bus and go to office. The latter looks like two trips, however considering the trip purpose, the trip purpose of both modes of travel is only "from home to work". Therefore, a trip is counted by trip purpose and not by mode of travel.

b. Round trips, to and from work, to and from shopping, to and from the cinema, etc. represent at least two trips in these cases; one for the return travel as shown in Fig. B.

c. In general, stops are regarded as the end of the trip and the beginning of another, unless the stops are made for relatively unimportant purpose which do not determine the route of travel, such as dropping a letter in a post box at the road side, buy a packet of cigarettes, gasoline purchase or buy light refreshments, as shown in Fig. C.

Stops of this nature ordinarily do not control the route of travel and should be disregarded. Of course, stops made to avoid conflict with traffic or to comply with directions of traffic control signs and signals are also not counted.

- d. Stops which direct the route of travel, such as transacting business at a bank, visiting a friend, eating a meal; shopping, pick up or discharging a passenger at some specific location should be considered the end of one trip and the beginning of another as shown in Fig. D.

In most case, the person being interviewed will automatically give the proper location to be considered at the end of a trip because of his desire to get some specific location for some specific purpose, but it shall be your responsibility to check this information.

- e. The travels as shown in Fig. F shall not be considered as trips, even if each travel has its own purpose.

* A travel less than 100 meters in distance

* A travel within the same building or the same lot.

- f. It is realized that some occupation in the category such as door-to-door salesman, public utility meter readers and certain deliveryman, may make so many stops which are only a few houses apart but which would be classified as trips. Extremely short trips such as these are difficult to obtain accurately, laborious to record and would not be significant in the subsequent tabulations to be prepared for the analysis. To avoid these unnecessary complications, only trips which are made from one lot to another or greater in length, are to be recorded.

For those who belong to the occupation mentioned above, disregard entirely any travel between stops which are within one lot.

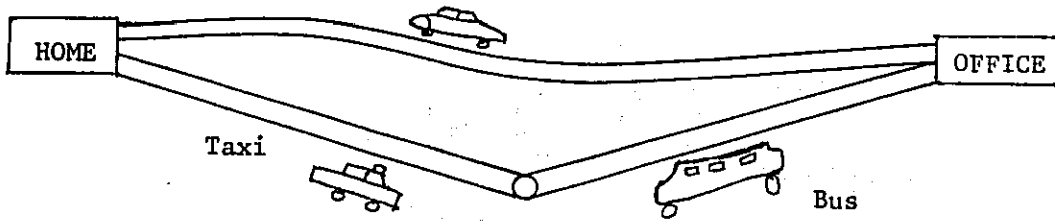
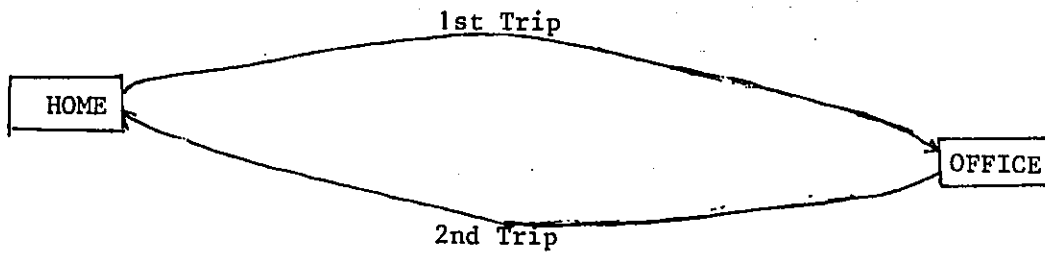


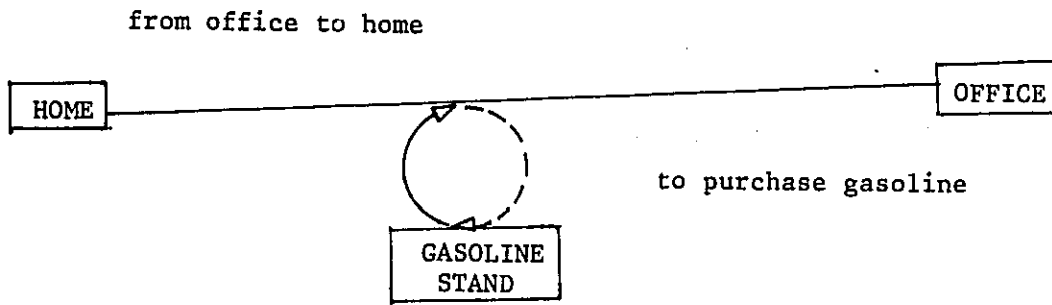
FIGURE A

Example:



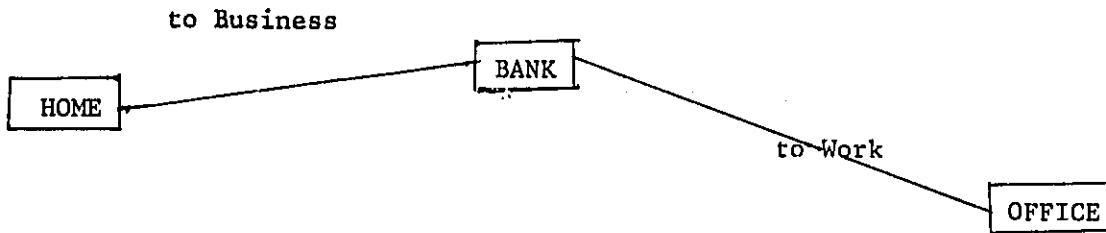
Number of Trips : 2 Trips

FIGURE B



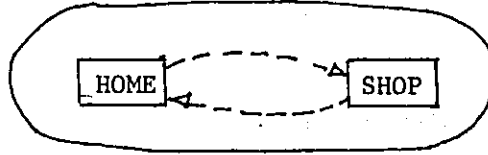
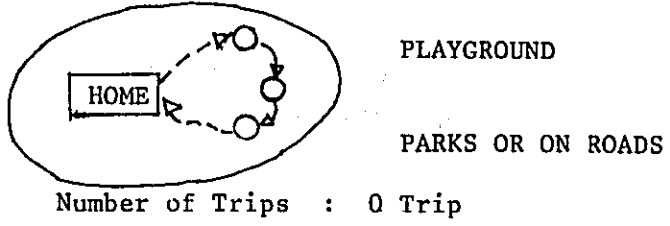
Number of Trips : 1 Trip

FIGURE C



Number of Trips : 2 Trips

FIGURE D



Same Building

Number of Trips : 0 Trip

FIGURE E

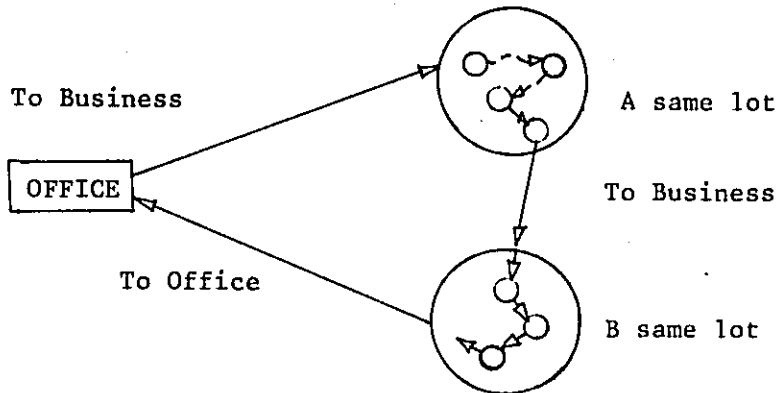


FIGURE F

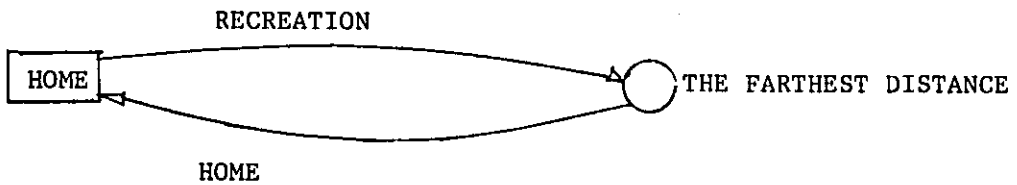


FIGURE G

4.5.2 Detailed Explanations to fill up Trip Informations

(1) Origin

The ORIGIN means the place where the trip was started. In connection with ORIGIN, the following information is necessary.

Enter the Address and District of the ORIGIN. When the trip began outside of Study Area in Johor Bahru, enter also Municipality and State.

In most cases, the Origin of Trip No. 1 will be the address of the interviewee's residence. However, one may have stayed in a friend's house or hotel, as the case may be.

The Origin of Trip No. 2 has to be the DESTINATION OF TRIP No. 1 however, it should be

Remember that to know the ORIGIN and the DESTINATION is one of the most important survey items.

(2) Facility of Origin

Enter the corresponding code number of the facility of ORIGIN.

(3) Departure Time

Enter approximately the time when the trip started. Time is given in hours and minutes either AM or PM. The interviewer can ask indirect questions to get this information. Assuming that the interviewee is a student, for example, the interviewer can ask the time the class starts and usual travel time required from the interviewee's residence to the school, so that the interviewer left the house. Use the tactful approach to get information. Do not forget to enter "Departure Time" of every trip.

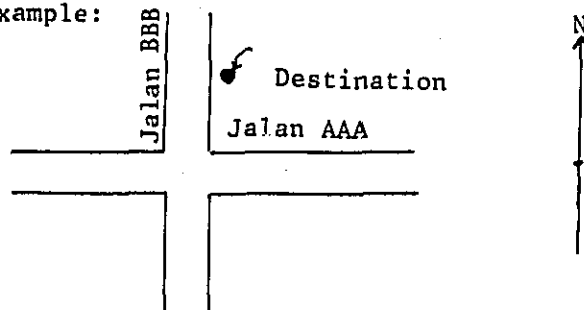
(4) Destination

The DESTINATION means the place where the trip was ended. In connection with DESTINATION, the following information is necessary.

Enter the Address, and District of the DESTINATION. When the trip ended outside of the Study Area in Johor Bahru, enter also Municipality, District and State. The interviewer has to get full information of the DESTINATION, so that the supervisors and covers can also identify the place easily. When the interviewee may not be able to answer the address of the DESTINATION, in this case, the interviewer has to get the following combination of information.

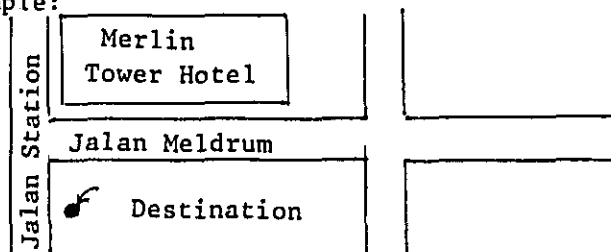
CASE-1 Name of Road, Direction (North, East, etc) and Nearest corner.

Example:



CASE-2 Name of Road and a Monumental Building of Famous Facility.

Example:



DESTINATION is the opposite side of Merlin Tower Hotel along Jalan Meldrum. Enter "Jalan Meldrum/ opposite Merlin Tower Hotel".

Monumental buildings and famous facilities are as follows:

School, College, Mosque, Regional Office, Hospital, Fire Station, Hotel, Bank, Market, Terminal, Park, Cemetery, Athletic and Recreational facilities, and Kampung name.

Be careful when these are referred as the DESTINATION, A bank, for example, may have several branch offices in Johor Bahru Area. Therefore, the name of the branch office has to be defined as well as the name of the Bank. Zone code list will be a good guide.

(5) Facility of Destination

Enter the corresponding code number of facility of the DESTINATION. Code of institution are listed in Appendix 4.

(6) Arrival Time

Enter approximate time when the trip ended.

(7) Trip Purpose

Enter the corresponding code number of trip purpose. Codes of PURPOSE OF TRIP are listed in the Form 3 and Appendix 4.

(8) Main Mode of Travel

Enter the corresponding code number of "Mode of Travel". Codes are listed in "Mode of Travel".

(9) If the interviewee travel by motor cycle, car, van or lorry, check the corresponding box.

Appendix - 1

Occupation.

0.

Professional and Technical Worker:

- * Architects, Engineers and Surveyors
- * Chemist, Pharmacists, Natural and Agricultural Scientists
- * Professors and Teachers
- * Physicians, Surgeons and Dentists
- * Nurses, Midwives, Professional, Medical Workers and Medical Technicians
- * Law and Jurists
- * Clergymen, Charitable and Social Welfare Workers
- * Accountants, Social Scientists and Related Workers
- * Draftsman, Technicians and Semi-professional Workers
- * Deck Officers, Engineers Officers and Pilots Ship
- * Deck and Engine Room Ratings, Ship, Barge Crews and Boatment
- * Aircraft Pilots, Navigators and Flight Engineers
- * Drivers, Firemen and Brakemen, Railway
- * Drivers, Road Transport
- * Conductors, Railway and Road Transport
- * Inspectors, Supervisors, Traffic Controllers and Dispatches and other Workers, Transport
- * Telephone, Telegraph and Related Telecommunication Workers
- * Mail Carriers and Messengers

1.

Administrative and Managerial Worker:

- * Government Officials
- * Directors, Managers and Working Proprietors

2.

Clerical and Related Worker:

- * Bookkeepers, Accounting Clerks and Cashiers
- * Stenographers and Typist
- * Office Machine Operators
- * Clerical Workers

3.

Sales Worker:

- * Working Proprietors, Wholesale and Retail Trade
- * Insurance and Real Estate Salesmen, Salesmen of Securities and Services and Auctioneers
- * Travelling Salesmen and Manufacturer's Agents
- * Salesmen and Related Workers
- * Shop Assistants and Related Workers

4.

Service Workers:

- * Firefighters, Policemen, Guards and Related Workers
- * Housekeepers, Cooks, Maids and Related Workers
- * Waiters, Bartenders and Related Workers
- * Building Caretakers, Cleaners and Related Workers
- * Barbers, Hairdressers, Beauticians and Related Workers
- * Launderers, Dry Cleaners and Pressers
- * Athletes, Sportman and Related Workers
- * Photographers and Related Camera Operators
- * Embalmers and Undertakers Service, Sports and Related Workers

5.

Factory, Construction, Transportation and Related Work:

- * Spinners, Weavers, Knitters, Dyers and Related Workers
- * Tailors, Sewers, Embroiderers and Related Workers
- * Footwear Makers and Leather Workers
- * Related Metal Making and Treating Workers
- * Precision Instrument Mechanics, Watch Repairers and Related Workers

- * Toolmakers, Machinists, Plumber, Welder, Platers and Related Workers
- * Electricians and Related Electrical and Electronics Workers
- * Carpenters, Cabinetmakers and Related Workers
- * Painters
- * Bricklayers, Masons and Other Construction Workers
- * Compositors, Pressmen, Engravers, Bookbinders and Related Workers
- * Potters, Kilnmen, Glass and Clay farmers and Related Workers
- * Millers, Bakers, Brewers and Related Food and Beverage Workers
- * Chemical and Related Process Workers
- * Tobacco Preparers and Tobacco Product Makers
- * Craftsmen and Production Process Workers
- * Packers, Labellers and Related Workers
- * Stationary Engine and Excavating and Lifting Equipment Operators and Related Workers
- * Stevedore and Related Freight Handlers
- * Labourers

6. Agricultural, Forestry and Fishery Work:

- * Agricultural Worker
- * Farmer
- * Fisherman
- * Hunter
- * Lumberjack

7. Student:

- * Elementary School
- * High School
- * College
- * University
- * Vocational School

8. Housewife:

- * Housewife, excluding household helpers

9.

Others

* Jobless

Appendix - 2

Industry

- 0 Agriculture, Forestry and Fishing : Agriculture, Forestry, Fishing, Logging, Hunting, Trapping.
- 1 Mining and Quarrying : Coal Mining, Metal Mining, Crude Petroleum, Stone Quarrying, Mining Services.
- 2 Manufacturing : Food Manufacturing Industries, Beverage Manufacturing Industries, Tobacco Products Manufacturing, Manufacturing of Textiles, Manufacture of Footwear (except Rubber Footwear), Other wearing Apparel and Made-up Textile Goods, Manufacture of Wood, Rattan, Mengkuang, Attap and Cork Products, except Furniture and Footwear, Manufacture of Furniture and Fixtures, Manufacture of Paper and Paper Products, Printing, Publishing and Allied Industries, Manufacture of Leather and Fur and Leather Products, except Footwear and Wearing Apparel, Manufacture of Rubber Products, Manufacture of Chemicals and Chemical Products, Manufacture of Non-Metallic Mineral Products, Petroleum and Coal Products, Basic Metal, Industries, Manufacture of Metal Products, Machinery and Transport Equipment, Manufacture of Machinery, Electrical Machinery.
- 3 Construction : General contractors, Special Trade Contractors, Construction services.

- 4 Commerce : Wholesale Trade, Retail Trade, Banks and Other
Financial Institutions, Insurance, and Real
Estates.
- 5 Transport, Storage, and Communication Services : Transport
Railway Transport
Bus and Tramway Transport
Road Passenger Transport, other than bus and tramway
Road Transport, other than passenger
Ocean Transport
Water Transport, other than Ocean
Air Transport
Service incidental to Transport
Transport not elsewhere classified
- Storage and Warehousing
- Communication
Postal services
Telephone, telegraph and cable services
- 6 Electricity, Water and Related Services : Electricity, Gas and Steam
Generation, transmission and distribution of
electricity.
Gas manufacture and distribution
- Water and Sanitary Services
Water supply
Sanitary Services
- 7 Government Services : Federal government: administrative services.
Other federal government administrative services,
not elsewhere classified
Military Services
Police Services
State government administrative services
Municipal government administrative services
Local government administrative services
Foreign government services

8 Other Services

: Community Services

Education services

Medical and health services

Research and scientific institutes

Religious organizations

Welfare organizations

Trade, Professional and labour organizations

Libraries, museums, botanical and zoological gardens

Community services, not elsewhere classified

Business Services

Legal services

Accounting, auditing and book-keeping services

Engineering and technical services

Advertising and publicity services

Secretarial and management services

Business consultants and specialists

Miscellaneous business services

Recreation Services

Motion picture production, distribution and projection

Theatres and related services

Recreation services, except theatres and motion pictures

Radio and television broadcasting services

Personal Services

Domestic services

Restaurants and other eating and drinking places

Hotels, rooming houses and other lodging places

Laundry, cleaning, dyeing and mending services

Barber and beauty shops

Personal services, not elsewhere classified

Miscellaneous Services

Portrait and commercial photographic studios
Services to building and dwellings
Land clearing services
Own-account grass cutting services
Labour contracting services, not elsewhere
classified
Miscellaneous services not elsewhere classified

Appendix - 3

Facility of Origin/
Destination

0. Residence
* Home, houses and apartments, etc.

1. Government Office and Private Office
* Fully government offices, semi-government offices
as well as private company offices

2. Retail and Wholesale Shops
* Retail shop, wholesale shop, hotel and
entertaining place and restaurant

3. Factory
* Manufacturing factory including light and heavy
industries

4. Transport Facilities
* Marine port, airport, bus terminal, warehouse etc

5. Educational Institution
* Schools, private institution, library etc.

6. Religious and Social Institution
* Mosque, temple, church, etc

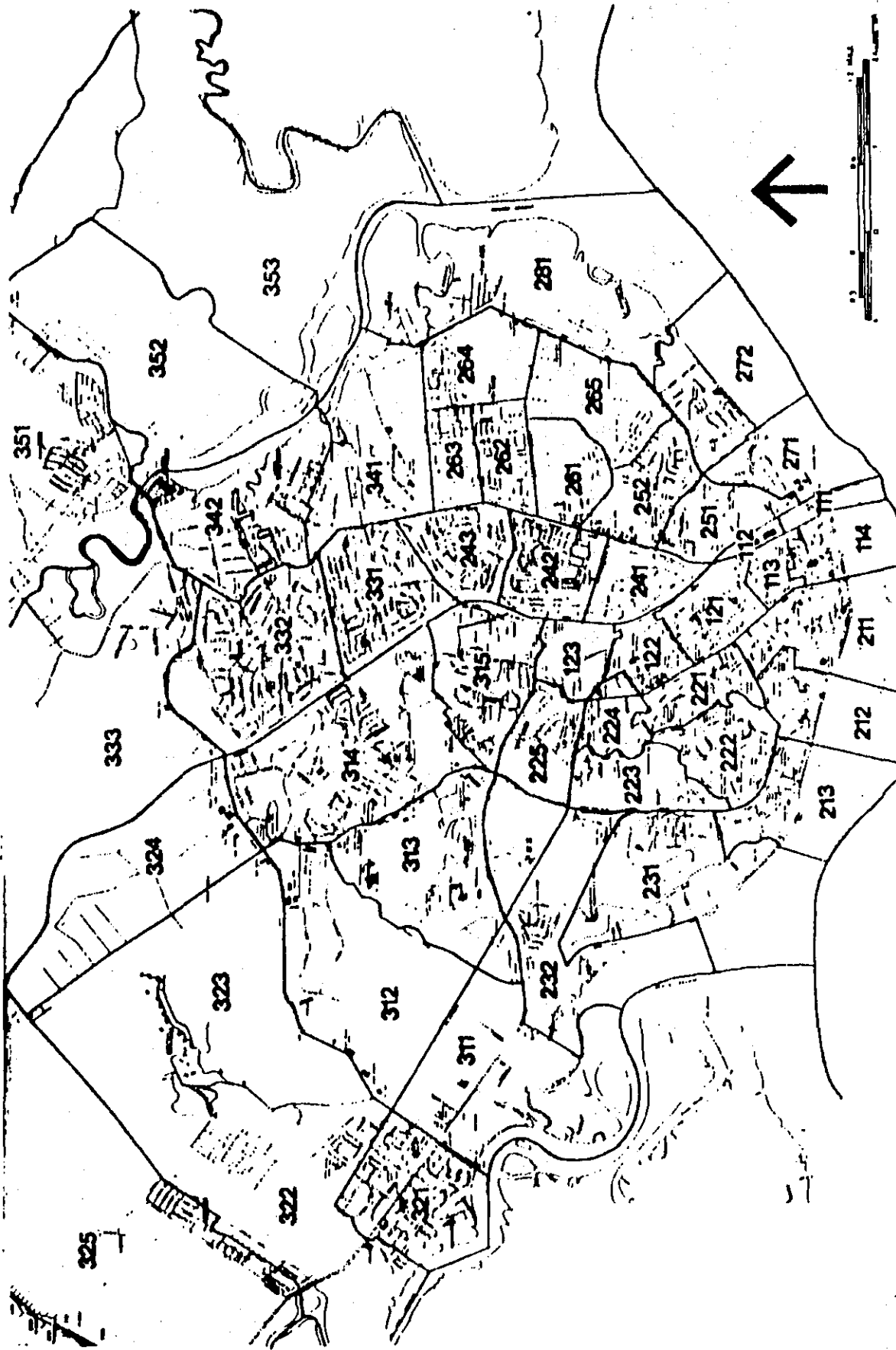
7. Agriculture, Forestry and Fishing Place
 - * Cultiyated agricultural land, forest land and fish farm
8. Park/Recreation
 - * Park, swimming pool, playground, seaside, golf course, tennis court, open space, etc
9. Others
 - * Other than the above facilities

Appendix - 4

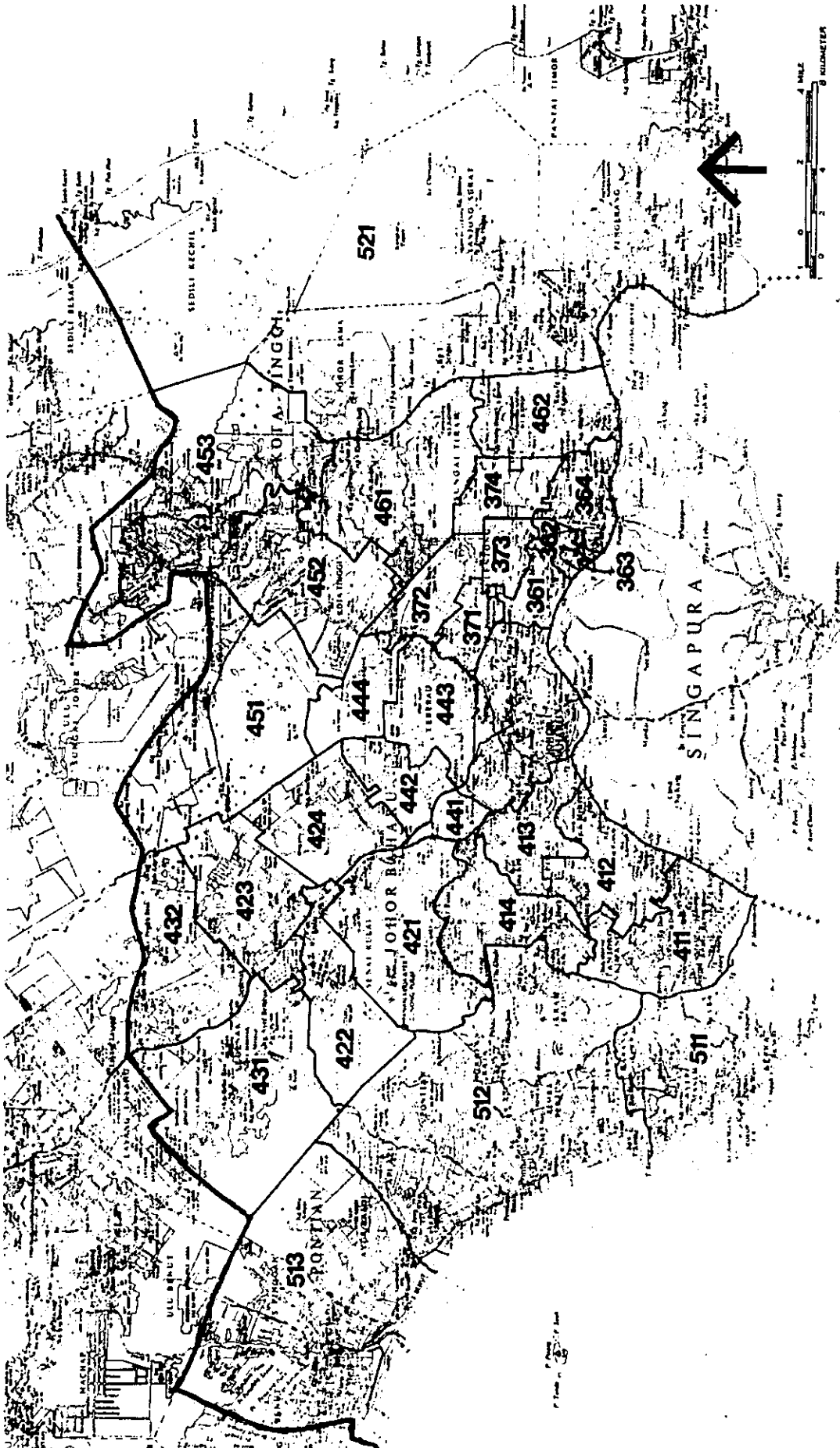
Trip Purpose

- | | | |
|--------------------------------|---|--|
| 1 To Work | : | going to working place, sending other people to work place. |
| 2 To School | : | going to school including vocational school |
| 3 Business/Official engagement | : | selling insurance, sending goods to customers, moving salesman and other business trip |
| 4 To Home | : | going home from work, shopping, school, entertainment, etc. |
| 5 Shopping | : | going to market, shops and other shopping place for the purpose of buying fish/vegetables. |
| 6 Recreation | : | going for meal at restaurant, cafe, coffee house, going to cinema, night clubs, sightseeing, picnic and games. |
| 7 Religious Purpose | : | going to mosque, temple, etc. |
| 8 Social visits | : | social gathering, visiting relatives, going to airport and other private trip. |
| 9 Others | : | other than the above purpose. |

APPENDIX B. I



URBAN TRANSPORT MASTER PLAN STUDY FOR THE JOHOR BAHRU CONURBATION, MALAYSIA.	LEGEND	TITLE	MAP NO.
		TRAFFIC ZONING IN JOHOR BAHRU TOWN	FIG.



<p>URBAN TRANSPORT MASTER PLAN STUDY FOR THE JOHOR BAHRU CONURBATION, MALAYSIA.</p>	<p>LEGEND:</p>	
	<p>TITLE: TRAFFIC ZONING IN JOHOR BAHRU CONURBATION</p>	
<p>MAP NO.</p>		<p>FIG.</p>

APPENDIX B.3

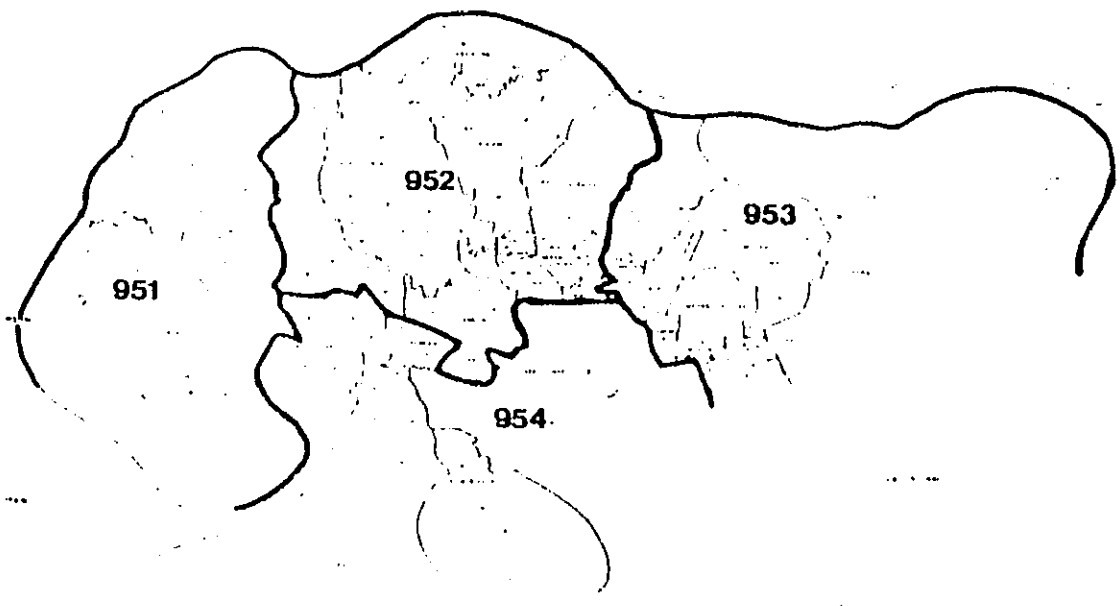
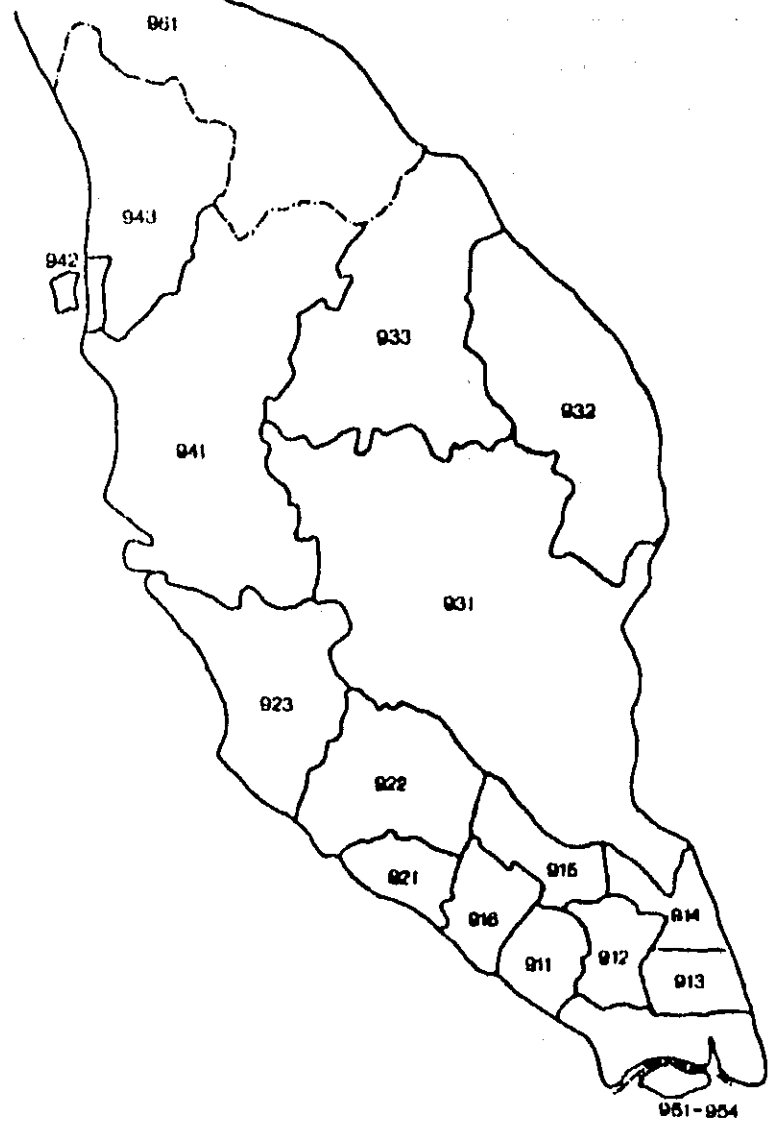


FIG. B.3 TRAFFIC ZONING IN EXTERNAL AREA

APPENDIX C

CONVERSION TABLE (TRAFFIC ZONE, EB NOS. AND LIVING QUARTERS)

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ		
MPJB	111	0109	111	84	MPJB	221	0108	75	76		
			112	105				76	125		
			123	597				77	135		
	112	0109	84	84				86	89		
			113	0108				101	110	87	111
								102	108	92	86
	103	101						222	0108	78	125
	104	45								79	194
	105	100	82	55							
	106	107	84	87							
	114	0108	107	108		85	73				
			108	94		83	106				
			109	113		123	70				
			110	124		223	0108	71	141		
111			108	80	115						
121	0109	73	30	224	0108	72	94				
		74	135			225	0108	57	40		
		83	152					58	40		
	0108	90	90	59	80						
		91	86	60	91						
		98	83	231	0108			64	139		
		99	101					65	113		
	100	56	66					80			
	124	61	68	148							
	122	0109	120	81	69	78					
73			149	70	69						
0108		74	66	232	0108	33	137				
		88	62			34	137				
		89	89			35	59				
		121	50			36	94				
126	3	37	99								
123	0108	53	129			61	118				
		54	155	62	111						
		55	109	63	107						
		56	44	118	57						
211	0108	93	105	241	0109	66	100				
		212	0108			94	123	67	105		
95	48					68	67				
96	51					69	72				
97	50					70	45				
213	0108	67	66			71	115				
		81	122			72	123				
		122	70			75	155				

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ
MPJB			76	150				93	120
			77	108				106	154
			119	48				107	94
	242	0109	46	94	108	84			
			47	128	109	106			
			48	103	110	72			
			49	69	122	65			
			50	159	252	0128	84	58	
			51	62			85	78	
			52	91			86	76	
			53	94			87	55	
			54	117			88	91	
			55	127			89	111	
			56	105			90	46	
			57	97			94	44	
58	176	95	109						
59	80	96	94						
60	96	97	102						
61	87	116	69						
62	103	117	70						
63	155	120	39						
243	0109	64	137	261	0128	76	83		
		65	128			77	68		
		118	53			78	102		
		35	129			79	88		
		36	21			80	89		
		37	155			81	115		
		39	112			82	72		
		40	97			83	141		
		41	134			115	55		
		42	123			262	0128	55	114
		43	131					57	57
		44	120					58	64
45	121	59	87						
117	112	60	74						
78	117	61	67						
79	72	62	66						
80	101	63	120						
81	69	64	65						
82	50	65	82						
85	76	66	115						
86	82	67	112						
87	116	68	111						
88	102	69	101						
89	120	70	131						
90	120	71	106						
91	99	72	93						
92	120	73	116						
		74	66						

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ
MPJB			75 114	105 36				108 40	72 65
	263	0128	44 45 46 47 48 49 50 56	74 59 180 66 214 38 118 194	311	0108	1 19 20 21 22 23 24 25 26 27 28 29 30 31 32 112 113 114 115 116 117 18	91 39 10 60 39 20 147 26 106 66 101 105 155 141 97 61 284 155 59 37 120 84	
	264	0128	42 43 51 52	71 33 208 24	312	0108	2	83	
	265	0128	91 92 93 118 119 41	49 105 114 71 79 1106	313	0108	17 125	427 37	
	271	0109	94 103 104 105	154 114 120 101	314	0108	3 4 5 6 7 8 9 10 11 12 13 14 15 16 119	68 110 124 113 145 57 161 109 146 99 80 47 114 126 39	
	272	0109	95 96 97 98 99 100 101 102 121	128 73 68 143 136 148 48 53 195	315	0108	38 39 40 41	61 87 65 97	
	281	0128	53 54 31 32 33 34 110 111 112 113 109 107	60 86 48 65 62 48 94 191 73 77 53 71					

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ		
MPJB		0109	42	86				87	126		
			43	73				88	158		
			44	150				90	48		
45			100	93				46			
46			136	323				0127	3	215	
47			150						27	162	
48			91						28	110	
49			98						47	106	
50			91						48	83	
51			100						49	139	
52			102						50	108	
120			76						64	165	
38			61						324	0127	4
321	0127	67	110		5	157					
		69	108		25	95					
		70	94		26	107					
		71	100		89	1					
		72	169	325	0127	1	186				
		73	89			2	126				
		74	41			30	143				
		75	85			31	125				
		76	62			32	129				
		77	110			35	111				
		78	86			331	0109	24			236
		79	71					28			76
		83	135					29	128		
84	128	30	96								
85	124	31	100								
86		32	103								
91	98	33	65								
92	133	34	73								
322	0127	29	59	352	0128			3	76		
		33	75					4	124		
		34	138					5	101		
		36	53					8	94		
		37	117					98	92		
		38	126			99	95				
		39	110			100	3				
		40	117			101	59				
		41	91			353	0128	6	163		
		42	108					7	73		
		43	101								
		44	126								
		45	117								
46	95										
65	61										
66	116										
68	85										
80	158										
81	153										
82	147										

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ
MPJB	354	0128	28	73				113	349
			29	59			114	349	
			30	65			115	349	
							116	349	
	351	0127	7	122		333	0127	6	98
			8	148				22	71
			9	116				23	127
			10	101				24	158
			11	27				51	155
			12	107				52	132
			13	120				53	142
			14	121				54	110
			15	100				55	150
			16	95				56	101
			17	102					
			18	103					
			19	121					
			20	125					
			21	99					
			57	122					
			58	216					
			59	112					
			60	100					
			61	89					
	62	110							
	63	103							
	332	0109	1	2739		341	0128	17	109
			2	2739				18	144
			3	2739				21	156
			4	2739				22	199
			5	2739				23	155
			6	2739				24	88
			7	2739				25	94
			8	2739				26	66
			9	2739				27	62
			10	2739				35	110
			11	2739				36	90
			12	2739				37	111
			13	2739				38	135
			14	2739				39	96
			15	2739				102	81
			16	2739				103	51
			17	2739				104	110
			18	2739				105	58
			19	2739				106	121
			20	2739					
			21	2739					
			22	2739					
			23	2739					
			25	108					
			26	79					
			27	122					
								2	465
								9	1032
								10	1032
								11	1032
								12	1032
								13	1032
								14	1032
								15	1032
								16	1032
								19	99
								20	98
					() Sub-total				

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ
			66	63	SG TIRAM	461	0106	73	133
			67	93				74	67
			68	92				75	67
			69	128				76	101
			70	63				77	115
			71	189				78	101
			72	144				79	110
								80	115
	371	0106	27	88				81	92
			28	129				82	112
			29	77				83	85
			30	87				84	126
			31	79				85	90
			32	79					
			33	114					
	372	0106	01	120		462	0106	86	133
			02	92				87	78
			03	133				88	67
			04	141				89	106
			05	137				90	80
			06	57				91	143
			07	83				92	89
			08	155				93	106
			09	102				94	87
			10	129				96	87
			11	81	()		Sub-Total		
			12	140					
			13	121	ULU SG	451	0114	20	1897
			14	109	JOHOR			21	1897
			15	98				22	1897
			16	109				23	1897
								24	1897
								25	1897
	373	0106	25	94				26	1897
			26	66				27	1897
			36	99				28	1897
			46	124				29	1897
								30	1897
	374	0106	17	129				31	1897
			18	76				32	1897
			19	60				33	1897
			20	63				34	1897
			21	65				35	1897
			22	71				36	1897
			23	57				37	1897
			24	67				38	1897
			47	68				39	1897
			48	88				40	1897
()		Sub-Total			()		Sub-Total		

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ																																
TANJONG KUPANG	411	0105	47	75				15	75																																
			48	192			16	78																																	
			49	99			17	58																																	
			50	106			18	86																																	
			51	99			33	81																																	
			52	117			34	60																																	
			53	155			35	92																																	
			54	107			36	110																																	
			55	135			37	119																																	
			56	92			38	80																																	
			57	75			39	129																																	
							40	131																																	
							41	112																																	
				42	99																																				
()		Sub-total																																							
JELUTONG / PULAI	412	0105	29	132	()			1	93																																
			43	165						3	67																														
			44	66								5	60																												
			45	137										6	99																										
			46	165												109	90																								
	413	0105	19	132				119	38																																
			20	80						121	54																														
			21	84								122	72																												
			22	73										120	46																										
			23	89														123	75																						
			24	97																146	59																				
			25	70																		125	55																		
			26	73																				126	18																
			27	126																						127	90														
			28	75																								128	61												
																														129	70										
																																130	99								
			131	95																																					
																																		132	80						
																																				133	103				
																																						134	90		
																																								135	60
																137	88																								
								138	37																																
										139	76																														
												140	71																												
		141			137																																				
414	0105					2	90							46	54																										
						4	100											47	104																						
						7	77													49	95																				
						8	83															50	86																		
						9	77																	51	98																
						10	324																			66	86														
						11	90																					67	109												
						12	83																							68	72										
13	146		69	141																																					
14	92																																								
														422	0107			46	54																						
																		47	104																						
																		49	95																						
																		50	86																						
																51	98																								
														66	86																										
								67	109																																
								68	72																																
						69	141																																		

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ
			144 } 48 } 70 } 71 } 72 } 73 } 74 } 75 } 76 } 77 } 78 } 79 } 80 } 81 } 82 } 83 } 84 } 85 } 86 } 87 } 89 } 90 } 91 } 92 } 93 } 94 } 95 } 96 } 97 } 98 } 99 } 100 } 101 } 102 } 103 } 104 } 105 } 106 } 107 } 65 } 147 }	57 47 119 80 103 81 104 164 133 113 155 64 69 124 70 108 63 122 81 69 87 238 97 109 80 88 81 106 78 89 150 80 70 105 80 78 92 54 87 54				63 } 145 } 64 }	82 132
						424	0107	110 111 112 113 114 115 116 117 118	91 70 90 95 72 77 85 108 161
					()			Sub-total	
					SEDENAK	431	0107	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	142 84 88 76 75 61 87 92 23 84 89 102 74 96 47 73 82 116 69 102 76 69 124 81 49 67 109 63 64 181 129 98 76 110 86 82
	423	0107	52 53 54 55 56 57 58 59 60 61 62	166 76 93 114 61 148 152 127 106 85 134					

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ	
			37	81				62	77	
			38	70				63	113	
			39	71				64	121	
			40	83				65	72	
			41	73				66	83	
			42	87				67	89	
			43	72				68	125	
			44	79				69	107	
			45	65				70	310	
								71	90	
								72	100	
	432	0107	4	76				73	124	
			5	75				74	112	
			6	61						
			7	87						
			8		(Sub-total			
			142	56)					
			9			PELENTONG	361	0106	34	134
			143	16					35	90
			10	84					37	150
			11	89					38	149
			12	102					41	131
									42	158
									43	155
()	Sub-total							44	132
									45	
TEBRAU	441	0105	87	202				95	136	
			88	105				51	127	
			89	96				52	90	
			90	96						
			91	88						
					m					
	442	0105	75	89		362	0106	39	113	
			86	103				40	110	
			92	81				50	47	
								53	132	
	443	0105	71	90		363	0106	-		
			76	77						
			77	60						
			78	51						
			79	89						
			80	105						
			81	119						
			82	132						
			83	95						
			84	129						
			85	106						
			93	53						
	444	0105	58	105		364	0106	49	116	
			59	103				54	74	
			60	62				55	96	
			61	199				56	64	
								57	125	
								58	129	
								59	76	
								60	128	
								61	114	
								62	128	
								63	96	
								64	96	
								65	128	

MUKIM	ZONE	CD*	EB*	LQ	MUKIM	ZONE	CD*	EB*	LQ			
KOTA TINGGI	452	0113	48	147				43	105 103			
			49	146			44					
			50	65			45					
			51	168			46					
			52	107			47					
			54				53					
			55									
			56				()					
			57				Sub-Total					
			58									
			59			1325	JOHOR LAMA	521				
			60				PANTAI TIMUR					
			61				PENGERANG					
			62				SEDELI KECIL					
			63				TG. SURAT					
			64									
			65									
				453	0113	1		AYER MASIN		511		
	2		SERKAT									
	3		SG. KARANG									
	4		API-API									
	5		1108									
	6											
	7											
	8											
	9											
	10											
	11					790	JERAM BATU	512				
	20						P. RAJA					
	21						PONTAIN					
	22						RIMBA TERJUN					
	23			852								
	24											
	25											
	26											
	27											
	28											
	29			484	AYER BALOI	513						
	30				BENUT							
	31				SG. PINGGAN							
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