

Appendix 2.A

SURVEY FORMS USED

FOR THE

PWD OFFICIALS TRANSPORT SURVEY

CONDUCTED IN 1987



Form C - Assessment of Feeder Bus Services

9. This form is designed to gather feedback on the feeder bus system in HDB housing estates. If you are a regular user of the feeder bus services or have used it at least once in the last 1 week, please proceed to fill up the form. Otherwise proceed to Section 7 directly to give us your views on the trunk bus services.

Queries

10. If you have any queries, please contact any one of the following Roads Division officers:

Mr Lam Chuen Fong (P&D Branch) - 2220044 x 201

Mr Leo Chin Jian (P&D Branch) - 2220044 x 223

Mr Tang Weng Yen (P&D Branch) - 2220044 x 228

Mr Chang Siew Chian (Transportation Branch) - 2220044 x 218

TSF2  
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# FEEDER TRANSPORT SURVEY FOR PWD OFFICIALS

Your information will be kept strictly confidential.

## FORM A GENERAL INFORMATION

GENERAL INSTRUCTION :  Tick  Fill in the figure, address, etc.

1. Office Location: N.D.BLOG  SIA BLDG

2. Position: Professional Staff  Administrative/Clerical Staff  Technical Staff

3. Sex: Male  Female  4. Age

5. Home Address : State full address (Block/House No., Building name, street, etc)

6. Composition of Household

No. of Household members: Under 4 years  4 years and above  Total

No. of wage Earner

No. of helpers/tenants other than household members

## 7. Vehicle Ownership

| Type of vehicle        | No. of units | Who is the main user? (You/Other Family Member) | Parking Place (On Road/Off Road) |
|------------------------|--------------|-------------------------------------------------|----------------------------------|
| 1. Bicycle             |              |                                                 |                                  |
| 2. Motorcycle/Scooter  |              |                                                 |                                  |
| 3. Car (180cc or less) |              |                                                 |                                  |
| 4. Car (Above 1600cc)  |              |                                                 |                                  |
| 5. Van/Pick-up         |              |                                                 |                                  |
| 6. Others (Specify)    |              |                                                 |                                  |

8. What is the average total Household Income per month?

9. Do you have Driving Licence? Yes  No

10. Any Pass Owned

Area Licence Scheme Pass:

Bus Concession Pass:

(Shareholder)

11. Do you practise kiss and ride? If yes, pls answer to the following question.

1) Frequency: Daily  3-4 days  1-2 days  5-6 days  7-8 days  9-10 days  11-12 days  13-14 days  15 days  16-20 days  21 days  22-30 days  31 days  More than 30 days

2) Mainly for what purpose: To/from school  To/from office  To/from other purpose  To/from work  To/from shopping  To/from social  To/from part of work  To/from other

3) Who gives you ride: Family member  Friend  Neighbor  Other  Intentionally  Unintentionally

12. This question is for car owners of those who can use cars regularly. Do you practise park and ride?

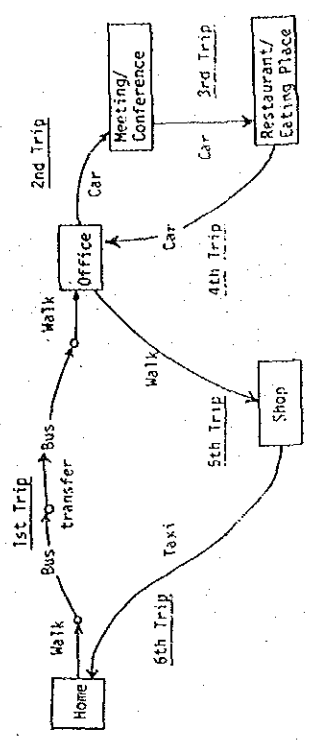
1) Frequency: Daily  3-4 days  1-2 days  5-6 days  7-8 days  9-10 days  11-12 days  13-14 days  15 days  16-20 days  21 days  22-30 days  31 days  More than 30 days

2) Mainly for what purpose: work  school  other purpose  shopping  social  part of work  other

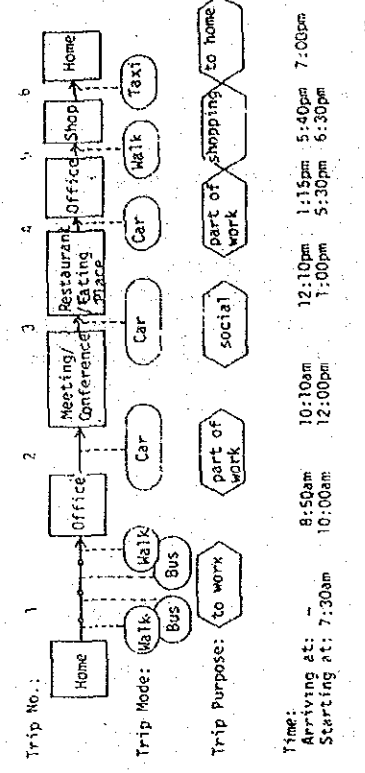
3) Where do you park: At fringe  At roadside  At car park  At interchange

Guideline on how to fill up Form B "Trip Information Form"

A trip is defined as a "one-way movement from one place to another for a single general purpose". If you, therefore, took your trips as shown in the following:



The above trips can be interpreted as follows:



**DEFINITION OF "KISS AND RIDE" AND "PARK AND RIDE"**

**Kiss and Ride :** In case that a person who is sent by car to bus-stop/interchange where he/she transfer to public transport to continue the journey.

**Park and Ride :** In case that a person who drive his/her car to certain parking place from where he/she transfer to carpool/to public transport to continue the journey.

TRIP INFORMATION  
Please give details of your tomorrow's complete trip information.

Date of Survey: \_\_\_\_\_ Weather: Fine  Cloudy  Rain  Drizzle  Heavy

**FIRST TRIP**

ORIGIN: \_\_\_\_\_  
The place you started your travel.

DESTINATION: \_\_\_\_\_  
The place you finish travel.

TRIP PURPOSE: \_\_\_\_\_  
The purpose of your travel.

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street etc.) \_\_\_\_\_

Type of Facilities/Activities (Enter a number from Table A) \_\_\_\_\_  
Time Starting \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM  PM

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street etc.) \_\_\_\_\_

Type of Facilities/Activities (Enter a number from Table A) \_\_\_\_\_  
Time Arriving \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM  PM

To Work  To School  To Home  Part of \_\_\_\_\_ Personal   
Work  Business

Shopping  Recreation  Eating/Social

DID YOU WALK FROM ORIGIN TO DESTINATION: YES  NO  Thank you, proceed to the next trip.

**TRIP MODE/MODE OF TRAVEL**

All means of transport you took for your travel. Choose one of those listed below.

1. Walk
2. Bicycle
3. Motorcycle/Scooter
4. Car
5. Car-pool passenger
6. Taxi
7. Van/Pick-up/Truck
8. Bus
9. School/Company Operated
10. School/Company Operated
11. Others \_\_\_\_\_

1st Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

2nd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

3rd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

4th Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

Where did you change? State name of location: \_\_\_\_\_  
How long did you wait for next mode? \_\_\_\_\_ mins.

You were: Driver  Passenger   
No. of Passenger excluding driver? \_\_\_\_\_

Were seats available? YES  NO   
Walking time to Bus-stop \_\_\_\_\_ mins.

Taxi: Fare \$ \_\_\_\_\_  
Bus: Out of pocket \$ \_\_\_\_\_ Concession Pass \_\_\_\_\_/month  
Parking/out of pocket \$ \_\_\_\_\_ Monthly Rentals \_\_\_\_\_  
Area Licence Fee: Daily \$ \_\_\_\_\_ Monthly \$ \_\_\_\_\_

OFFICIAL USE ONLY.

Seq. No. \_\_\_\_\_ Page \_\_\_\_\_  
Date \_\_\_\_\_ weather \_\_\_\_\_

TABLE A

|                                                   |
|---------------------------------------------------|
| 1. Residence                                      |
| 2. Office                                         |
| 3. Concession Site/Restaurant                     |
| 4. Club/Hotel/Restaurant                          |
| 5. Shop/Market                                    |
| 6. Bank/post Office                               |
| 7. Air Transport/Bus Station/Highway Station/Port |
| 8. Sports/Recreation                              |
| 9. Church/Mosque/Temple                           |
| 10. Factory                                       |
| 11. School/Other Educational Facility             |
| 12. Other Public Facilities                       |
| 13. Others (Specify)                              |

**3RD TRIP**

Weather: Fine  Cloudy  Rain  Drizzle  Heavy

Same as the destination of the former trip.

Time Starting \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM  PM

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street etc.) \_\_\_\_\_

Type of Facilities/Activities (Enter a number from Table A) \_\_\_\_\_  
Time Arriving \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM  PM

To Work  To School  To Home  Part of \_\_\_\_\_ Personal   
Work  Business

Shopping  Recreation  Eating/Social

DID YOU WALK FROM ORIGIN TO DESTINATION: YES  NO  Thank you, proceed to the next trip.

1st Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

2nd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

3rd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

4th Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

Where did you change? State name of location: \_\_\_\_\_  
How long did you wait for next mode? \_\_\_\_\_ mins.

You were: Driver  Passenger   
No. of Passenger excluding driver? \_\_\_\_\_

Were seats available? YES  NO   
Walking time to Bus-stop \_\_\_\_\_ mins.

Taxi: Fare \$ \_\_\_\_\_  
Bus: Out of pocket \$ \_\_\_\_\_ Concession Pass \_\_\_\_\_/month  
Parking/out of pocket \$ \_\_\_\_\_ Monthly Rentals \_\_\_\_\_  
Area Licence Fee: Daily \$ \_\_\_\_\_ Monthly \$ \_\_\_\_\_

OFFICIAL USE ONLY.

Seq. No. \_\_\_\_\_ Page \_\_\_\_\_  
Date \_\_\_\_\_ weather \_\_\_\_\_

FORM B TRIP INFORMATION (Continued)

**TABLE A**

| Type of Facilities/Activities         |
|---------------------------------------|
| 1. Residence                          |
| 2. Office                             |
| 3. Concession stand/Work Site         |
| 4. Eating (Canteen/restaurant)        |
| 5. Shop/Market                        |
| 6. Bank/post Office                   |
| 7. Bus Interchange/Art Station        |
| 8. Airport/Airway Station/Port        |
| 9. Sports/Recreation                  |
| 10. Church/Place of Temple            |
| 11. Factory                           |
| 12. School/Other Educational Facility |
| 13. Other Public Facility             |
| 14. users (Specify)                   |

**6TH TRIP**

Weather: Fine  Cloudy  Rain  Drizzle  Heavy

Same as the destination of the former trip

Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM \_\_\_\_\_ PM

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name, Street etc.)

Type of Facilities/Activities (Enter a number from Table A)

Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM \_\_\_\_\_ PM

To Work  To School  To Home  Part of Work  Personal  Business

Shopping  Recreation  Eating/Social

**5TH TRIP**

Weather: Fine  Cloudy  Rain  Drizzle  Heavy

Same as the destination of the former trip

Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM \_\_\_\_\_ PM

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name, Street etc.)

Type of Facilities/Activities (Enter a number from Table A)

Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM \_\_\_\_\_ PM

To Work  To School  To Home  Part of Work  Personal  Business

Shopping  Recreation  Eating/Social

**4TH TRIP**

Weather: Fine  Cloudy  Rain  Drizzle  Heavy

Same as the destination of the former trip

Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM \_\_\_\_\_ PM

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name, Street etc.)

Type of Facilities/Activities (Enter a number from Table A)

Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM \_\_\_\_\_ PM

To Work  To School  To Home  Part of Work  Personal  Business

Shopping  Recreation  Eating/Social

NO  YES  Thank you, proceed to the next trip

**First Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**2nd Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**3rd Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**4th Mode of Travel**

NO  YES  Thank you, proceed to the next trip

**First Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**2nd Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**3rd Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**4th Mode of Travel**

NO  YES  Thank you, proceed to the next trip

**First Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**2nd Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**3rd Mode of Travel**

Have you changed mode? NO  YES

Where did you change? State name of location: \_\_\_\_\_

How long did you wait for next mode? \_\_\_\_\_ mins.

**4th Mode of Travel**

You were: Driver  Passenger

No. of Passenger excluding driver? \_\_\_\_\_

Were seats available? Yes, all  No  Yes, but partly

Walking time to Bus-stop \_\_\_\_\_ mins.

Taxi: Fare \$ \_\_\_\_\_

Bus: Out of pocket \$ \_\_\_\_\_ Concession Pass \$ \_\_\_\_\_/month

Parking/out of pocket \$ \_\_\_\_\_ Monthly Rentals \_\_\_\_\_

Area Licence Fee: Daily Sticker \$ \_\_\_\_\_ Monthly Sticker \$ \_\_\_\_\_

You were: Driver  Passenger

No. of Passenger excluding driver? \_\_\_\_\_

Were seats available? Yes, all  No  Yes, but partly

Walking time to Bus-stop \_\_\_\_\_ mins.

Taxi: Fare \$ \_\_\_\_\_

Bus: Out of pocket \$ \_\_\_\_\_ Concession Pass \$ \_\_\_\_\_/month

Parking/out of pocket \$ \_\_\_\_\_ Monthly Rentals \_\_\_\_\_

Area Licence Fee: Daily Sticker \$ \_\_\_\_\_ Monthly Sticker \$ \_\_\_\_\_

This column is to be filled by car user.

This column is to be filled by bus user.

Expenses for the Trip: This column is to be filled both by bus passengers and cars users.

Taxi: Fare \$ \_\_\_\_\_

Bus: Out of pocket \$ \_\_\_\_\_ Concession Pass \$ \_\_\_\_\_/month

Parking/out of pocket \$ \_\_\_\_\_ Monthly Rentals \_\_\_\_\_

Area Licence Fee: Daily Sticker \$ \_\_\_\_\_ Monthly Sticker \$ \_\_\_\_\_

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Seq. No. \_\_\_\_\_ Page \_\_\_\_\_

Date \_\_\_\_\_ weather \_\_\_\_\_

\_\_\_\_\_

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Date \_\_\_\_\_ weather \_\_\_\_\_

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APPENDICES

- 3.A BUS SURVEY FORM
- 3.B BUS SURVEY MANUAL
- 3.C EDITING/CODING MANUAL  
FOR BUS SURVEY





APPENDIX 3.A  
SURVEY FORM



BUS PASSENGERS INTERVIEW SURVEY SHEET (1988)

SHEET NO /

DATE SURVEYED: \_\_\_\_\_ WEATHER: \_\_\_\_\_ NAME OF SURVEYOR: \_\_\_\_\_

|                                  |                         | 1                    | 2            | 3            | 4            | 5            |
|----------------------------------|-------------------------|----------------------|--------------|--------------|--------------|--------------|
| Interview Made                   | Bus Berth No.           |                      |              |              |              |              |
|                                  | Time Surveyed           | AM<br>PM             | AM<br>PM     | AM<br>PM     | AM<br>PM     | AM<br>PM     |
|                                  | Bus Service No. To Take |                      |              |              |              |              |
| Interviewee                      | Sex/Age                 | 1. Male<br>2. Female | Sex: Age:    | Sex: Age:    | Sex: Age:    | Sex: Age:    |
|                                  | Resident of Ang Mo Kio  | 1. Yes 2. No         | 1. Yes 2. No | 1. Yes 2. No | 1. Yes 2. No | 1. Yes 2. No |
|                                  | Occupation              |                      |              |              |              |              |
| Origin of Travel                 |                         |                      |              |              |              |              |
| Block, Bldg No./Name Street      |                         |                      |              |              |              |              |
| Destination of Travel            |                         |                      |              |              |              |              |
| Block, Bldg No./Name Street      |                         |                      |              |              |              |              |
| Trip Purpose                     |                         |                      |              |              |              |              |
| Mode Taken before this bus trip  |                         |                      |              |              |              |              |
| If bus, Bus Service No.          |                         |                      |              |              |              |              |
| If walk/walk?                    |                         |                      |              |              |              |              |
| How long did you                 |                         |                      |              |              |              |              |
| Mode to take after this bus trip |                         |                      |              |              |              |              |
| Car Ownership                    |                         | 1. Yes 2. No         | 1. Yes 2. No | 1. Yes 2. No | 1. Yes 2. No | 1. Yes 2. No |
| Remarks :                        |                         |                      |              |              |              |              |

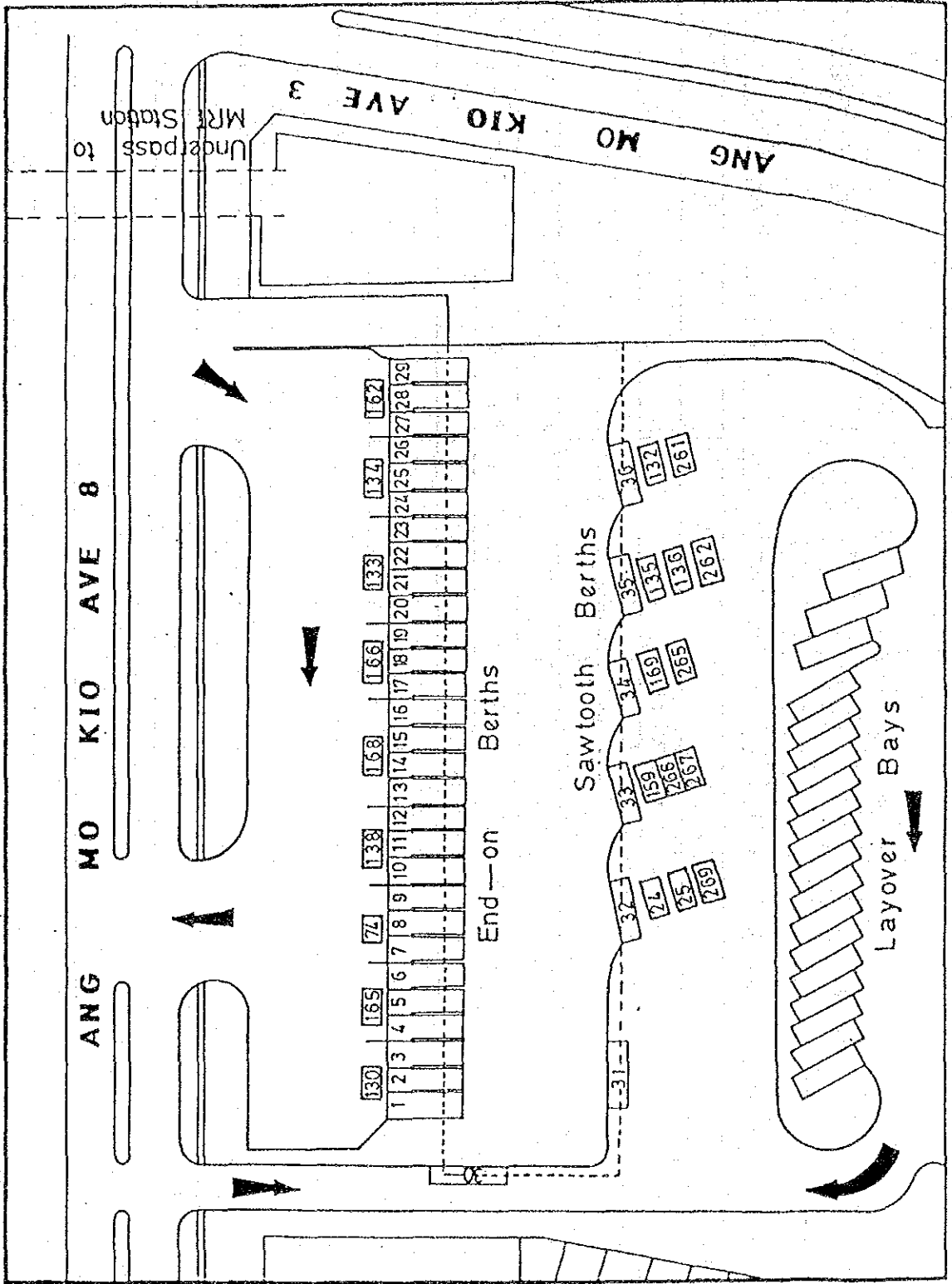
- OCCUPATION
- Professional, Technical Worker
  - Administrative and Managerial Worker
  - Clerical Worker
  - Sales Worker
  - Service Worker
  - Agricultural Worker and Fisherman
  - Production, Transport and Other Manual Worker
  - Workers not classifiable
  - Primary Student
  - Secondary Student
  - Pre-University Student
  - Vocational Ins. Student
  - Tertiary Student
  - Housewife
  - Others

- TRIP PURPOSE
- To work
  - To school
  - To home
  - Part of work
  - Personal business
  - Shopping
  - Recreation
  - Eating/Social

- MODE OF TRAVEL
- Walk
  - Bicycle
  - Motorcycle/Scooter
  - Car
  - Car-pool Pass
  - Taxi
  - Van/Pick-up/Truck
  - MRT
  - Feeder Bus
  - Trunk Bus
  - Scheme B/CSS
  - School/Company bus
  - Others

Layout of Bus Berths at Ang Mo Kio Bus Interchange

ANG MO KIO BUS INTERCHANGE







APPENDIX 3.B  
BUS SURVEY MANUAL





BUS SURVEY MANUAL

7TH APRIL 1988

PUBLIC WORKS DEPARTMENT  
MINISTRY OF NATIONAL DEVELOPMENT

JICA SINGAPORE URBAN TRANSPORT  
IMPROVEMENT STUDY TEAM



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## 1. INTRODUCTION

### 1.1 Objectives

The objectives of the Bus Survey is to obtain information on needs and operational characteristics of present bus services, especially feeder services, of HDB New Towns after the opening of MRT.

### 1.2 Outline of the Survey

The Bus Survey consist of the following two field survey works :-

#### (1) Bus Survey

Number of departing/arriving buses and boarding/alighting passengers will be counted at bus interchange by a group of surveyors by time period, by bus type and service (route) number.

#### (2) Bus Passengers Interview Survey

Sample passengers will be interviewed by interviewers at bus interchange to determine the origin and destination of their trip, characteristics of bus passengers and use of feeder bus services. Items to be asked include sex, age, occupation, car ownership, bus service number, origin/destination, transfer and purpose of their travel.

#### (3) Waiting Time Survey at Bus Stop/Interchange

Sample passengers will be observed by surveyors to determine their actual waiting time at bus stop/interchange. Survey forms and details instruction will be given later.

### 1.3 Survey Schedule

The Field-Survey will be conducted at Ang Mo Kio Bus Interchange during 4 days from 8 Apr to 13 Apr (exclude Saturday and Sunday) for 16 hours (6:00 am to 10:00 pm).

### 1.4 Surveyors

Twenty-four (24)/surveyors, of which twelve (12) are assigned in morning period (8 hours) and others in evening period, are required for both Traffic count and interview surveys.

## 2. SURVEYORS DUTIES/ACTIVITIES

### 2.1 General Duties/Activities of Surveyors

- (1) Surveyors should confirm their assignment and move into the survey points at least five minutes before the survey work starts.
- (2) Surveyors should fill up the following items before they start the survey work.
  - (1) Bus Berth No.
  - (2) Date and weather (enter roughly every hour)
  - (3) Name of Surveyor
  - (4) Sheet Number
- (3) After finishing their work, Surveyors should immediately check their survey results and submit them to the Supervisor with other equipment.

### 2.2 Duties/Activities for Bus Traffic Survey

- (1) Surveyors should count all boarding/alighting bus passengers and enter the figures on the survey sheet with service number, type and time bus in/out when the bus depart/arrive at bus berth.
- (2) If necessary, the counting machines (counters) will be available for counting the bus passengers.
- (3) During the peak period, one bus service (route) should be assigned for every Surveyors. At least one Surveyor will be able to take a recess by turn during the peak period.

|                 |                 |                    |
|-----------------|-----------------|--------------------|
| Peak Period     | : Morning Shift | 6:30 am - 8:30 am  |
|                 | Evening Shift   | 4:30 pm - 7:00 pm  |
| Off-Peak Period | : Morning Shift | 8:30 am - 2:00 pm  |
|                 | Evening Shift   | 2:00 pm - 4:30 pm  |
|                 |                 | 7:00 pm - 10:00 pm |

### 2.3 Duties/Activities for Bus Passengers Interview Survey

- (1) Every Surveyor should interview at least to ten (10) bus passengers of their assigned bus service berth per hour.
- (2) Sample of the interviewee should be chosen one for every 20 passengers in a bus waiting queue during the peak period and one for 10 passengers during the off-peak period.

- (3) Basically one interviewer will be allocated to 2 bus services (for ordinary berth) or 2 interviewers for a bus berth (saw-tooth berth) during the peak period. During the off-peak period, however, 2 interviewers will be assigned for 3 bus services (for ordinary) or 8 interviewers for 2 berthes (for saw-tooth berth), as one interviewer is able to take a recess by turn.

#### 2.4 Duties/Activities for Supervisor

The Supervisor are expected to undertake the following activities :-

- (1) Prepare the necessary survey materials for the Surveyors
- (2) Allocate the Surveyors the proper survey point
- (3) Give proper instruction to the Surveyors on change for the recess
- (4) Give instruction to the Surveyors on change for the recess
- (5) Monitor the survey activities of Surveyors
- (6) Assist the survey when the Surveyors will not be able to continue the survey
- (7) Collect the survey results and equipments after the finishing the survey and keep or send them to the Consultants.

### 3. ASSIGNMENT OF SURVEYORS

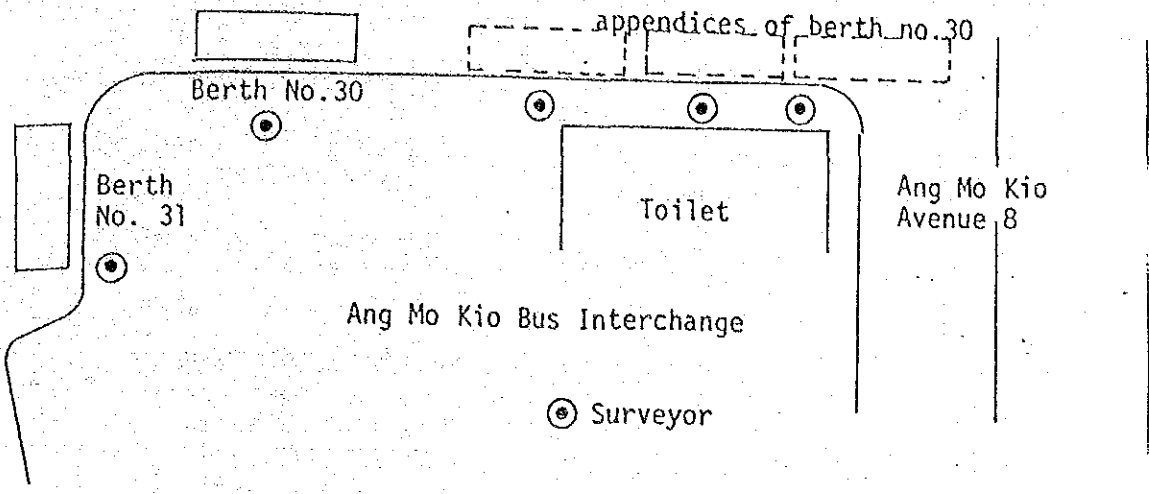
#### 3.1 Bus Traffic Count Survey

##### (a) Assignment of Surveyors per shift

| <u>Date/Day</u>              | <u>Bus Service No.</u> | <u>Bus Berth No.</u> | <u>No. of Surveyors Assigned Per Shift</u> | <u>Type of Counting Work</u>         |
|------------------------------|------------------------|----------------------|--------------------------------------------|--------------------------------------|
| 1st day                      | 130                    | 1-3                  | 1                                          | Boarding & Alighting Pass            |
| 8th Apr                      | 165                    | 4-6                  | 1                                          | --- ditto ---                        |
| (Friday)                     | 74                     | 7-9                  | 1                                          | --- ditto ---                        |
|                              | 138                    | 10-12                | 1                                          | --- ditto ---                        |
|                              | 24                     | 32                   | 1                                          | Boarding Pass only                   |
|                              | 25                     | 32                   | 1                                          | --- ditto ---                        |
|                              | 269                    | 32                   | 1                                          | --- ditto ---                        |
| <b>Total</b>                 |                        |                      | <b>7</b>                                   |                                      |
| 2nd day                      | 168                    | 13-16                | 1                                          | Boarding & Alighting Pass            |
| 11th April (incl Aircon 168) | 166                    | 17-19                | 1                                          | --- ditto ---                        |
| (Monday)                     | 159                    | 33                   | 1                                          | Boarding Pass Only                   |
|                              | 266                    | 33                   | 1                                          | --- ditto ---                        |
|                              | 267                    | 33                   | 1                                          | --- ditto ---                        |
|                              | 169                    | 34                   | 1                                          | --- ditto ---                        |
|                              | 265                    | 34                   | 1                                          | --- ditto ---                        |
| <b>Total</b>                 |                        |                      | <b>7</b>                                   |                                      |
| 3rd day                      | 133                    | 20-23                | 1                                          | Boarding & Alighting Pass            |
| 12th April                   | 134                    | 24-26                | 1                                          | --- ditto ---                        |
| (Tuesday)                    | 162                    | 27-29                | 1                                          | --- ditto ---                        |
|                              | 135                    | 35                   | 1                                          | Boarding Pass Only                   |
|                              | 136                    | 35                   | 1                                          | --- ditto ---                        |
|                              | 262                    | 35                   | 1                                          | --- ditto ---                        |
|                              | 132                    | 36                   | 1                                          | --- ditto ---                        |
|                              | 261                    | 36                   | 1                                          | --- ditto ---                        |
| <b>Total</b>                 |                        |                      | <b>8</b>                                   |                                      |
| 4th day                      | Alighting              | 30 & appendices      | 6                                          | Alighting Pass Only                  |
| 13th April                   |                        | 31                   |                                            |                                      |
| (Wednesday)                  | Waiting Time Survey    |                      | 6                                          | Waiting Time at Bus Stop/Interchange |
| <b>Total</b>                 |                        |                      | <b>12</b>                                  |                                      |



(b) Allocation of Surveyors at Alighting Berth



### 3.2 Bus Passenger Interview Survey

| <u>Date/Day</u>                    | <u>Bus Service No.</u> | <u>Bus Berth No.</u> | <u>No. of Surveyors Assigned Per Shift</u> |
|------------------------------------|------------------------|----------------------|--------------------------------------------|
| 1st day<br>8th April<br>(Friday)   | 130                    | 1-3                  | )                                          |
|                                    | 165                    | 4-6                  | ) 1                                        |
|                                    | 74                     | 7-9                  | )                                          |
|                                    | 138                    | 10-12                | ) 2                                        |
|                                    | 24                     | 32                   | )                                          |
|                                    | 25                     | 32                   | ) 2                                        |
|                                    | 269                    | 32                   | )                                          |
|                                    | <b>Total</b>           |                      | <b>5</b>                                   |
| 2nd day                            | 168                    | 13-16                | )                                          |
|                                    | (incl Aircon 168)      |                      | ) 1                                        |
|                                    | 166                    | 17-19                | )                                          |
|                                    | 159                    | 33                   | )                                          |
|                                    | 266                    | 33                   | ) 2                                        |
|                                    | 267                    | 33                   | )                                          |
|                                    | 169                    | 34                   | )                                          |
|                                    | 265                    | 34                   | ) 2                                        |
|                                    | <b>Total</b>           |                      | <b>5</b>                                   |
| 3rd day<br>12th April<br>(Tuesday) | 133                    | 20-23                | )                                          |
|                                    | 134                    | 24-26                | ) 2                                        |
|                                    | 162                    | 27-29                | )                                          |
|                                    | 135                    | 35                   | )                                          |
|                                    | 136                    | 35                   | ) 2                                        |
|                                    | 262                    | 35                   | )                                          |
|                                    | 132                    | 36                   | )                                          |
|                                    | 261                    | 36                   | ) 2                                        |
|                                    | <b>Total</b>           |                      | <b>6</b>                                   |

#### 4. SURVEY FORM

Two survey forms are provided for Bus Survey :-

- Form 1 Bus/Passengers Traffic Count Sheet
- Form 2 Bus/Passengers Interview Survey Sheet

The sample of forms are attached in Appendix 1.

#### 5. HOW TO CONDUCT AN INTERVIEW

- 5.1 Choose an interviewee from every 20 persons (Peak Period) or every 10 persons (Off-Peak) in a bus waiting queue.
- 5.2 Introduce yourself politely, "Good morning Sir/Madam. We are conducting a Bus Survey for PWD". Show your ID card or letter, if necessary.
- 5.3 Proceed with the interview. Be prompt in your interview. If an interviewee refuse to answer the questions, explain to him/her that information is used only for the study of transport. However, never force him/her to answer. Proceed immediately to the next interviewee, if necessary.

#### 6. HOW TO FILL UP THE QUESTIONNAIRES

- 6.1 Fill up the following items before your interview work starts.

Date  
Weather  
Name of Surveyor  
Sheet No.

- 6.2 Specific instruction for each questionnaire items :-

(a) Interview made

- Berth No. : Enter berth no. where the interviewee is waiting
- Time Surveyed : Enter the time period with am/pm when the interview is made
- Bus Service No. to Take : Enter Bus Service no. which the interviewee expect to take



APPENDIX 3.C

EDITING/CODING MANUAL FOR BUS SURVEY



## EDITING/CODING MANUAL FOR BUS SURVEY

### 1. EDITING FOR BUS/PASSENGER TRAFFIC COUNT SHEET.

1) Make sure of the following data:

Date, Weather, Name of surveyor, Bus Berth Number and Bus Service Number.

2) Encircle the corresponding number for type of berth.

As a rule: End of berth for 1. Boarding and Alighting  
Sawtooth Berth for 2. Boarding Only or  
3. Alighting Only  
(refer Survey Manual)

3) Make sure of the sequence of the sheet number.

4) Make sure whether the arrival/departure time are in sequence. If not, rearrange the survey sheet.

5) Delete the data for private buses from survey sheets, if any.

6) Service Number 138 has been changed to Service Number 22.

### 2. EDITING FOR BUS PASSENGERS INTERVIEW SURVEY SHEET.

1) Confirm the following data:

Date, Weather, Name of Surveyor, Sheet Number and Bus Berth.

2) Change the "Time Surveyed" record into 24 hours system.

3) Rewrite unclear records with a red pen.

4) Put code number for origin and destination of travel. The coding list is attached to this manual.

### 3. EDITING FOR BUS WAITING TIME SURVEY.

1) Confirm the following records:

Date, Weather, Location of Bus Stop, Direction and Shelter at Bus Stop.

2) Change "Time Surveyed" records into 24 hours system.

3) Standardize "Waiting Time" records into whole numbers. For example:

0.5., 1/2 mins. -----> 1 mins

1 1/2 mins. -----> 2 mins etc.





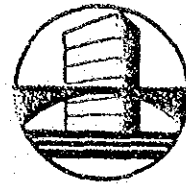
APPENDIX 4.A

SURVEY FORMS FOR 1987 HIS



# PUBLIC WORKS DEPARTMENT

ROADS DIVISION, 9th Storey National Development Building  
P.O. Box 262, Maxwell Road Post Office, Singapore 9005  
Tel: 2220044 • Cable: Works Singapore



PWD/RD/27/85

TEL NO : 2220044 x 221  
TELEBOX : GVT246  
FAX : 2220044 x 240

29 Oct 87

Dear Householder

## HOME INTERVIEW SURVEY IN ANG MO KIO

The PWD has just commissioned a study to examine the changing traffic patterns in HDB new towns. The study is called the "Singapore Urban Transport Improvement Study" (SUTIS).

2 SUTIS would, among other things, examine the efficiency of the present transport systems and travel patterns in HDB new towns and the expected shifts in travel patterns after the impending commencement of the MRT system. The Study would also examine the feasibility of the introduction of new transportation systems into selected HDB development areas.

3 To gather information, a Home Interview Survey will be conducted on selected households in Ang Mo Kio. 1000 households in Ang Mo Kio New town will be randomly selected. The survey will be conducted from Friday, 30 October to Friday, 6 November.

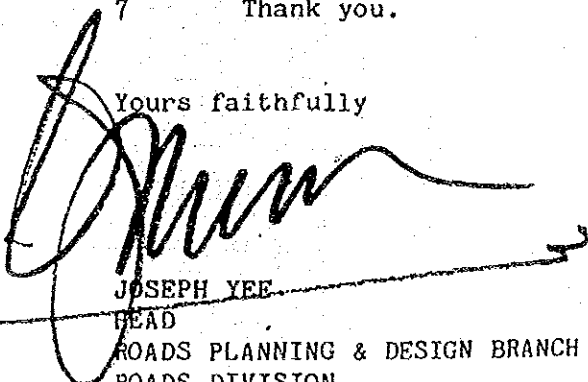
4 A second series of similar surveys will be carried out in January and February next year.

5 Interviewers, employed by the Study, will visit selected homes during the survey periods. Interviewers will carry official identification cards.

6 As the data collected is essential to the success of the Study and would give a useful insight into our changing travel patterns, the PWD would like to request Ang Mo Kio residents to give the Study their support and cooperation.

7 Thank you.

Yours faithfully

  
JOSEPH YEE  
HEAD  
ROADS PLANNING & DESIGN BRANCH  
ROADS DIVISION  
PWD SINGAPORE

CT7  
(J. YEE)

**VISITING SHEET**

|                    |          |                   |                |     |     |                       |
|--------------------|----------|-------------------|----------------|-----|-----|-----------------------|
| BLOCK <sup>b</sup> | BUILDING | ROOM <sup>d</sup> | NAME OF FAMILY | TEL | C/O | Seq. NO. <sup>a</sup> |
|--------------------|----------|-------------------|----------------|-----|-----|-----------------------|

| VISIT             | VISIT DATE | APPOINT. | RESULT       | NO. OF FORMS DISTRIBUTED/COLLECTED |   |   |   |   | REMARKS           |
|-------------------|------------|----------|--------------|------------------------------------|---|---|---|---|-------------------|
|                   |            |          |              | 1                                  | 2 | 3 | 4 | 5 |                   |
| FIRST (DISTRIB.)  | / Hrs      | /        | <sup>e</sup> |                                    |   |   |   |   | Sign. if accepted |
| SECOND (COLLECT.) | / Hrs      | / Hrs    | <sup>f</sup> |                                    |   |   |   |   |                   |
| THIRD (COLLECT.)  | / Hrs      | / Hrs    | <sup>g</sup> |                                    |   |   |   |   |                   |
| FOURTH (COLLECT.) | / Hrs      | / Hrs    | <sup>h</sup> |                                    |   |   |   |   |                   |

|                                                                                                                         |                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <p><u>On Distribution:</u></p> <p>1. Accepted;</p> <p>2. Refused;</p> <p>3. No contact established;</p> <p>4. Other</p> | <p><u>On Collection:</u></p> <p>1. Successful;</p> <p>2. Partially successful</p> <p>3. Need to visit again;</p> <p>4. Impossible.</p> |
|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|

|                                   |                                                                               |                    |                              |                    |                     |
|-----------------------------------|-------------------------------------------------------------------------------|--------------------|------------------------------|--------------------|---------------------|
| ADDRESS <sup>i</sup>              |                                                                               |                    |                              |                    |                     |
| NAME OF CONSTITUENCY <sup>j</sup> |                                                                               |                    | POSTAL DISTRICT <sup>k</sup> |                    |                     |
| PERSONS                           | FAMILY MEMBER                                                                 |                    | HOUSEMAID                    | TENANTS            |                     |
|                                   | UNDER 4 YRS                                                                   | 4 YRS & ABOV       | /HELPER                      |                    |                     |
|                                   | MALE <sup>l</sup>                                                             |                    |                              |                    |                     |
|                                   | FEMALE <sup>m</sup>                                                           |                    |                              |                    |                     |
| ETHNIC GROUP <sup>n</sup>         | CHINESE <sup>o</sup>                                                          | MALAY <sup>p</sup> | INDIAN <sup>q</sup>          | MIXED <sup>r</sup> | OTHERS <sup>s</sup> |
| RESIDENCE                         | 1. BUNGALOWS/TERRACE HOUSE <input type="checkbox"/> <sup>1</sup> <sup>o</sup> |                    |                              |                    |                     |
|                                   | 2. PUBLIC FLAT <input type="checkbox"/> <sup>2</sup>                          |                    |                              |                    |                     |
|                                   | 3. PRIVATE FLAT <input type="checkbox"/> <sup>3</sup>                         |                    |                              |                    |                     |
|                                   | 4. SHOPHOUSE <input type="checkbox"/> <sup>4</sup>                            |                    |                              |                    |                     |
|                                   | 5. OTHERS <input type="checkbox"/> <sup>5</sup>                               |                    |                              |                    |                     |
|                                   | NUMBER OF BEDROOM _____ <sup>p</sup>                                          |                    |                              |                    |                     |
|                                   | NUMBER OF ROOMS AIR CONDITIONED _____ <sup>q</sup>                            |                    |                              |                    |                     |

|              |                          |                          |                          |                          |
|--------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <sup>a</sup> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>b</sup> | <input type="checkbox"/> | <sup>c</sup>             | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>d</sup> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>e</sup> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>f</sup> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>g</sup> | <input type="checkbox"/> | <sup>j</sup>             | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>h</sup> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>i</sup> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>m</sup> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>n</sup> | <input type="checkbox"/> | <sup>o</sup>             | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>p</sup> | <input type="checkbox"/> | <sup>q</sup>             | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>r</sup> | <input type="checkbox"/> | <sup>s</sup>             | <input type="checkbox"/> | <input type="checkbox"/> |

|                               |                          |                                 |                          |
|-------------------------------|--------------------------|---------------------------------|--------------------------|
| NAME OF SURVEYOR <sup>r</sup> | <input type="checkbox"/> | NAME OF SUPERVISOR <sup>s</sup> | <input type="checkbox"/> |
|-------------------------------|--------------------------|---------------------------------|--------------------------|

**GENERAL INSTRUCTIONS FOR ANSWERING QUESTIONNAIRE FORMS**

You should have five survey forms, they are :

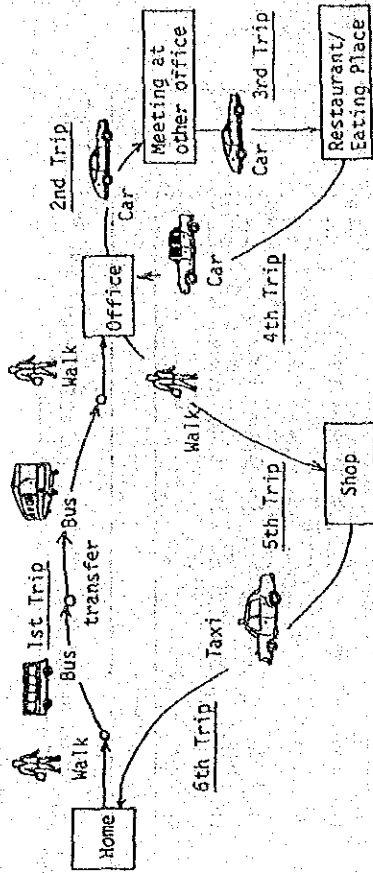
- Form 1. Household Information;
- Form 2. Household Members Information;
- Form 3. Trip Information;
- Form 4. Assessment of Bus Services; and
- Form 5. Assessment of Living/Environmental Condition of New Town.

1. Form 1 should be completed by the "head" of the household. The head of the household is Father, Mother or a member of the household who is responsible for the economic well-being of the household.
2. Forms 2 to 5 should be completed for every member of the household who is aged 4 years and above.
3. Please answer all the questions one by one according to its numbering.
4. Print the information in the space provided, or a tick in the appropriate box.
5. If you have doubts in answering any point in the questionnaire, please consult the interviewer.

**SPECIAL INSTRUCTIONS ON FORM 3. Trip Information**

1. Provide the required information about ALL THE TRIPS (including trips which are not made from/to home) during the survey date indicated in Form 3. The survey data covers 24-hours (one day) beginning at 3:00 a.m. and ending at 3:00 a.m. of the following day. For example, if the survey date is Oct. 23(Friday), the information requested relates to the period from 3:00 a.m. Friday to 3:00 a.m. Saturday.
2. Start with the first trip (TRIP NO. 1) and proceed sequentially to the next trip. Give all information on each trip.
3. If more than 3 trips were made on the survey date, record the information of TRIP 4, TRIP 5, TRIP 6, etc., on another sheet and number the trips accordingly.

If you took trips as follows :

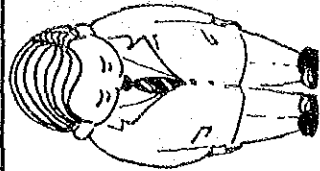


your trips made on the day can be arranged as :

| Trip No.      | 1          | 2                       | 3                       | 4                       | 5                | 6      |
|---------------|------------|-------------------------|-------------------------|-------------------------|------------------|--------|
| Home          | Home       | Meeting at Other Office | Meeting at Other Office | Restaurant/Eating Place | Office           | Home   |
| Trip Mode:    | (Walk) Bus | Bus                     | Walk                    | Car                     | Car              | Car    |
| Trip Purpose: | to work    | part of work            | social                  | part of work            | shopping to home |        |
| Time:         |            |                         |                         |                         |                  |        |
| arriving at   | -          | 8:50am                  | 10:10am                 | 12:10pm                 | 1:15pm           | 5:40pm |
| starting at   | 7:30am     | 10:00am                 | 12:00pm                 | 1:00pm                  | 5:30pm           | -      |

5. Please do not record the following trips.

1. Walk trips such as:
  - (1) walk trips within the same building.
  - (2) walk trips within the same property.
  - (3) short walk trips for transfer. ex. at Bus interchange.
2. Trips made by a Taxi/Bus driver during his or her work.



Thank you in advance for your cooperation

**CONFIDENTIAL**

HOUSEHOLD INFORMATION

FORM 1

For THE HEAD OF HOUSEHOLD

FOR OFFICIAL USE ONLY

1. Do you own the residence?

Yes  1 No  2

1

2. How long have you been residing at this residence?

\_\_\_\_\_ Years

2

3. Are there any vehicles used by household members?

Yes  1 No  2

3

Please answer on the TYPE of Vehicles and the PARKING PLACE.

| Type of Vehicle         | b. No. of Units |        | c. Ownership |        | d. Parking Placed |
|-------------------------|-----------------|--------|--------------|--------|-------------------|
|                         | Self            | Others | Self         | Others |                   |
| 1. Bicycle              |                 |        |              |        |                   |
| 2. Motorcycle/Scooter   |                 |        |              |        |                   |
| 3. Car (1600cc or less) |                 |        |              |        |                   |
| 4. Car (above 1600cc)   |                 |        |              |        |                   |
| 5. Van/Pick-up          |                 |        |              |        |                   |
| 6. Truck                |                 |        |              |        |                   |
| 7. Others (Specify)     |                 |        |              |        |                   |

|   | b | c | d |
|---|---|---|---|
| 1 |   |   |   |
| 2 |   |   |   |
| 3 |   |   |   |
| 4 |   |   |   |
| 5 |   |   |   |
| 6 |   |   |   |
| 7 |   |   |   |

4. What is the total HOUSEHOLD INCOME per month?

|                  |                            |                    |                             |
|------------------|----------------------------|--------------------|-----------------------------|
| 1. Below \$ 500  | <input type="checkbox"/> 1 | 7. 3,000 - 3,499   | <input type="checkbox"/> 7  |
| 2. 500 - 999     | <input type="checkbox"/> 2 | 8. 3,500 - 3,999   | <input type="checkbox"/> 8  |
| 3. 1,000 - 1,499 | <input type="checkbox"/> 3 | 9. 4,000 - 4,999   | <input type="checkbox"/> 9  |
| 4. 1,500 - 1,999 | <input type="checkbox"/> 4 | 10. 5,000 - 5,999  | <input type="checkbox"/> 10 |
| 5. 2,000 - 2,499 | <input type="checkbox"/> 5 | 11. 6,000 and over | <input type="checkbox"/> 11 |
| 6. 2,500 - 2,999 | <input type="checkbox"/> 6 |                    |                             |

4

1. Name of Interviewer \_\_\_\_\_ No.

Seq. No.

2. Study Area No.

3. Household Members No.

FOR OFFICIAL USE ONLY

2

3

4

5

6

7)

8)

9)

1. Relationship to the head of household: \_\_\_\_\_

2. Sex : Male  Female

3. Age : \_\_\_\_\_ years old

4. Occupation:

|                                                  |                          |
|--------------------------------------------------|--------------------------|
| 1. Administrative and Managerial Worker          | <input type="checkbox"/> |
| 2. Agricultural Worker and Fisherman             | <input type="checkbox"/> |
| 3. Clerical Worker                               | <input type="checkbox"/> |
| 4. Housewife                                     | <input type="checkbox"/> |
| 5. Production, Transport and Other Manual Worker | <input type="checkbox"/> |
| 6. Professional, Technical Worker                | <input type="checkbox"/> |
| 7. Sales Worker                                  | <input type="checkbox"/> |
| 8. Service Worker                                | <input type="checkbox"/> |
| 9. Student (Primary, Pre-primary, Kindergarten)  | <input type="checkbox"/> |
| 10. Student (Secondary)                          | <input type="checkbox"/> |
| 11. Student (Pre-university)                     | <input type="checkbox"/> |
| 12. Student (Vocational institute)               | <input type="checkbox"/> |
| 13. Student (Tertiary)                           | <input type="checkbox"/> |
| 14. Workers not classifiable by occupation       | <input type="checkbox"/> |
| 15. Others                                       | <input type="checkbox"/> |

5. Do you have a DRIVING LICENCE? YES  NO

What is the class?

Class  1  2B  2A  2  3  4A  4  5  6

6. Does someone drive you to a Bus-stop/Bus interchange?

Yes  No

1) Frequency per week : 5-7 days  3-4 days  1-2 days  Seldom

2) Mainly for what purpose: To/from Work  To/from School  Others

3) Who drives you? : Family members  Friends/Office mates  Neighbours  Others

7. Do you drive to a certain place to park your car before transferring to Bus/Car-pool?

Yes  No

1) Frequency per week : 5-7 days  3-4 days  1-2 days  Seldom

2) Mainly for what purpose: To/from Work  To/from School  Others

3) Where do you park? : At fringe car park  Private car park outside CBO  Near bus interchange  Others

8. Did you use car last week? (from \_\_\_\_\_ to \_\_\_\_\_, 1987)

YES  NO

Mainly as driver  Mainly as Passenger  Both driver and passenger

Please tick the purpose and frequency during the week:

| Purpose     | To/from School           | Personal work            | Shopping                 | Recreation               | Social                   |
|-------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1day-2days  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3days-4days | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5days-6days | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Everyday    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

9. Do you have a BUS CONCESSION PASS? YES  NO

Please tick the type of pass:

|                                       |                          |
|---------------------------------------|--------------------------|
| 1. Primary student pass               | <input type="checkbox"/> |
| 2. Secondary student pass             | <input type="checkbox"/> |
| 3. Student "A" pass                   | <input type="checkbox"/> |
| 4. Full-time national serviceman pass | <input type="checkbox"/> |
| 5. Shareholder pass                   | <input type="checkbox"/> |
| 6. SBS employee pass                  | <input type="checkbox"/> |
| 7. Senior citizen pass                | <input type="checkbox"/> |

10. Work address (if you are working) \_\_\_\_\_ Postal district \_\_\_\_\_

11. School address (if you are student) \_\_\_\_\_ Street \_\_\_\_\_ Postal district \_\_\_\_\_

12. What is your MONTHLY INCOME? \_\_\_\_\_ where you visited on \_\_\_\_\_ Nov., 87

|                    |                          |
|--------------------|--------------------------|
| 1. None            | <input type="checkbox"/> |
| 2. Below \$250     | <input type="checkbox"/> |
| 3. 250-499         | <input type="checkbox"/> |
| 4. 500-749         | <input type="checkbox"/> |
| 5. 750-999         | <input type="checkbox"/> |
| 6. 1,000-1,499     | <input type="checkbox"/> |
| 7. 1,500-1,999     | <input type="checkbox"/> |
| 8. 2,000-2,499     | <input type="checkbox"/> |
| 9. 2,500-2,999     | <input type="checkbox"/> |
| 10. 3,000-3,999    | <input type="checkbox"/> |
| 11. 4,000-4,999    | <input type="checkbox"/> |
| 12. 5,000-5,999    | <input type="checkbox"/> |
| 13. 6,000 and over | <input type="checkbox"/> |

13. Please list ALL PLACES where you visited on \_\_\_\_\_ Nov., 87

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

14. Mass Rapid Transit (MRT) will be in operation between Yio Chu Kang and Outram Park at the end of this year. Will you be using MRT? YES  NO

For what purposes do you expect to use MRT?

To work  To school  Shopping  Others

How often do you expect to use MRT per week?

5-7 days  3-4 days  1-2 days  Seldom

FOR OFFICIAL USE ONLY

8)

9)

10) address  postal district

11) address  postal district

12)

13)

14)

INSTRUCTION: 1. Please give details of your trip information made on Nov. \_\_\_\_\_, 1987.  
 2. If you are Taxi/Bus driver, no need to fill up trip information while you work.

**Table A**  
 Type of Facilities/Activities

1. Residence
2. Office
3. Construction Site/Work Site
4. Eating (Canteen/Restaurant)
5. Shops/Market
6. Bank/Post Office
7. Bus Interchange/MRT Station
8. Airport/Railway Station/Port
9. Sports/Recreation
10. Church/Mosque/Temple
11. Factory
12. School/Other Educational Facilities
13. Other Public Facilities
14. Others

**3RD TRIP**

Weather:  Fine  Cloudy  Rain  Drizzle  Heavy

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A): \_\_\_\_\_  
 Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A): \_\_\_\_\_  
 Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating  Social

YES  NO Thank you, proceed to the next trip.

**2ND TRIP**

Weather:  Fine  Cloudy  Rain  Drizzle  Heavy

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A): \_\_\_\_\_  
 Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A): \_\_\_\_\_  
 Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating  Social

YES  NO Thank you, proceed to the next trip.

**1st TRIP**

Weather:  Fine  Cloudy  Rain  Drizzle  Heavy

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A): \_\_\_\_\_  
 Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A): \_\_\_\_\_  
 Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating  Social

YES  NO Thank you, proceed to the next trip.

**MODE OF TRAVEL**  
 ALL means of transport you took for your travel. Choose one of those listed below.

1. Walk
2. Bicycle/Scooter
3. Motorcycle/Scooter
4. Taxi
5. Car-pool passenger
6. Van/pick-up/Truck
7. Bus
8. Scheme B or CSS
9. School/Company Contract bus
10. Others

0 First Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

1 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

2 2nd Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

3 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

4 3rd Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

5 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

6 4th Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

7 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

**MODE OF TRAVEL**  
 ALL means of transport you took for your travel. Choose one of those listed below.

1. Walk
2. Bicycle/Scooter
3. Motorcycle/Scooter
4. Taxi
5. Car-pool passenger
6. Van/pick-up/Truck
7. Bus
8. Scheme B or CSS
9. School/Company Contract bus
10. Others

0 First Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

1 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

2 2nd Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

3 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

4 3rd Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

5 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

6 4th Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

7 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

**MODE OF TRAVEL**  
 ALL means of transport you took for your travel. Choose one of those listed below.

1. Walk
2. Bicycle/Scooter
3. Motorcycle/Scooter
4. Taxi
5. Car-pool passenger
6. Van/pick-up/Truck
7. Bus
8. Scheme B or CSS
9. School/Company Contract bus
10. Others

0 First Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

1 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

2 2nd Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

3 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

4 3rd Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

5 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

6 4th Mode of Travel: \_\_\_\_\_  
 Have you changed mode? YES  NO

7 Where did you change? State name of location: \_\_\_\_\_  
 How long did you wait for next mode? \_\_\_\_\_ mins.

a You were: Driver  Passenger

b No. of Passenger excluding driver? \_\_\_\_\_

c Were seats available? YES  NO   
 the way: Yes  Partly  No

d Walking time to Bus-stop from ORIGIN \_\_\_\_\_ mins.

e Walking time from the last Bus-Stop to DESTINATION \_\_\_\_\_ mins.

f Taxi: \_\_\_\_\_ \$

g Bus: \_\_\_\_\_ \$  
 Out of pocket \$ \_\_\_\_\_  
 Concession Pass \_\_\_\_\_ /month

h Parking at: \_\_\_\_\_ \$  
 DESTINATION: \_\_\_\_\_ \$  
 Monthly Rental \$ \_\_\_\_\_

i Area Licence Fee: \_\_\_\_\_ \$  
 Daily Sticker \$ \_\_\_\_\_  
 Monthly Sticker \$ \_\_\_\_\_

a You were: Driver  Passenger

b No. of Passenger excluding driver? \_\_\_\_\_

c Were seats available? YES  NO   
 the way: Yes  Partly  No

d Walking time to Bus-stop from ORIGIN \_\_\_\_\_ mins.

e Walking time from the last Bus-Stop to DESTINATION \_\_\_\_\_ mins.

f Taxi: \_\_\_\_\_ \$

g Bus: \_\_\_\_\_ \$  
 Out of pocket \$ \_\_\_\_\_  
 Concession Pass \_\_\_\_\_ /month

h Parking at: \_\_\_\_\_ \$  
 DESTINATION: \_\_\_\_\_ \$  
 Monthly Rental \$ \_\_\_\_\_

i Area Licence Fee: \_\_\_\_\_ \$  
 Daily Sticker \$ \_\_\_\_\_  
 Monthly Sticker \$ \_\_\_\_\_

a You were: Driver  Passenger

b No. of Passenger excluding driver? \_\_\_\_\_

c Were seats available? YES  NO   
 the way: Yes  Partly  No

d Walking time to Bus-stop from ORIGIN \_\_\_\_\_ mins.

e Walking time from the last Bus-Stop to DESTINATION \_\_\_\_\_ mins.

f Taxi: \_\_\_\_\_ \$

g Bus: \_\_\_\_\_ \$  
 Out of pocket \$ \_\_\_\_\_  
 Concession Pass \_\_\_\_\_ /month

h Parking at: \_\_\_\_\_ \$  
 DESTINATION: \_\_\_\_\_ \$  
 Monthly Rental \$ \_\_\_\_\_

i Area Licence Fee: \_\_\_\_\_ \$  
 Daily Sticker \$ \_\_\_\_\_  
 Monthly Sticker \$ \_\_\_\_\_

FOR OFFICIAL USE ONLY

1

2

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6

7

8

9

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Table A

|                                            |
|--------------------------------------------|
| 1. Residence                               |
| 2. Office                                  |
| 3. Construction Site/<br>Work Site         |
| 4. Eating (Canteen/<br>Restaurant)         |
| 5. Shops/Market                            |
| 6. Bank/Post Office                        |
| 7. Bus Interchange/<br>BRT Station         |
| 8. Airport/Railway<br>Station/Port         |
| 9. Sports/Recreation                       |
| 10. Church/Mosque/<br>Temple               |
| 11. Factory                                |
| 12. School/Other<br>Educational Facilities |
| 13. Other Public<br>Facilities             |
| 14. Others                                 |

4TH TRIP

Weather:  Fine  Cloudy  Rain  Drizzle  Heavy

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  Hours  Minutes  AM  PM

Time Starting

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  Hours  Minutes  AM  PM

Time Arriving

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating/Social

DID YOU WALK ALL THE WAY FROM ORIGIN TO DESTINATION? YES  NO

Thank you, proceed to the next trip.

**MODE OF TRAVEL**  
ALL means of Transport you took for your travel. Choose one of those listed below.

1. Bicyclet
2. Motorcycle/Scooter
3. Car
4. Taxi
5. Van/pick-up/Truck
6. Bus
7. Scheme B or CSS
8. School/Company
9. Contract bus
10. Others

This column is to be filled by CAR user

You were: Driver  Passenger

No. of Passenger excluding driver? Yes  No

Were seats available? Yes  No

Walking time to Bus-stop from ORIGIN

Walking time from the last Bus-Stop to DESTINATION

Taxi: \$

Bus: \$ Out of pocket \$ Concession Pass \$/month

Parking at DESTINATION: \$ Out of pocket \$ Monthly Rental \$

Area Licence Fee: \$ Daily Sticker \$ Monthly Sticker \$

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5TH TRIP

Weather:  Fine  Cloudy  Rain  Drizzle  Heavy

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  Hours  Minutes  AM  PM

Time Starting

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  Hours  Minutes  AM  PM

Time Arriving

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating/Social

DID YOU WALK ALL THE WAY FROM ORIGIN TO DESTINATION? YES  NO

Thank you, proceed to the next trip.

**MODE OF TRAVEL**  
ALL means of Transport you took for your travel. Choose one of those listed below.

1. Bicyclet
2. Motorcycle/Scooter
3. Car
4. Taxi
5. Van/pick-up/Truck
6. Bus
7. Scheme B or CSS
8. School/Company
9. Contract bus
10. Others

This column is to be filled by BUS user

You were: Driver  Passenger

No. of Passenger excluding driver? Yes  No

Were seats available? Yes  No

Walking time to Bus-stop from ORIGIN

Walking time from the last Bus-Stop to DESTINATION

Taxi: \$

Bus: \$ Out of pocket \$ Concession Pass \$/month

Parking at DESTINATION: \$ Out of pocket \$ Monthly Rental \$

Area Licence Fee: \$ Daily Sticker \$ Monthly Sticker \$

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6TH TRIP

Weather:  Fine  Cloudy  Rain  Drizzle  Heavy

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  Hours  Minutes  AM  PM

Time Starting

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  Hours  Minutes  AM  PM

Time Arriving

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating/Social

DID YOU WALK ALL THE WAY FROM ORIGIN TO DESTINATION? YES  NO

Thank you, proceed to the next trip.

**MODE OF TRAVEL**  
ALL means of Transport you took for your travel. Choose one of those listed below.

1. Bicyclet
2. Motorcycle/Scooter
3. Car
4. Taxi
5. Van/pick-up/Truck
6. Bus
7. Scheme B or CSS
8. School/Company
9. Contract bus
10. Others

This column is to be filled by CAR user

You were: Driver  Passenger

No. of Passenger excluding driver? Yes  No

Were seats available? Yes  No

Walking time to Bus-stop from ORIGIN

Walking time from the last Bus-Stop to DESTINATION

Taxi: \$

Bus: \$ Out of pocket \$ Concession Pass \$/month

Parking at DESTINATION: \$ Out of pocket \$ Monthly Rental \$

Area Licence Fee: \$ Daily Sticker \$ Monthly Sticker \$

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6TH TRIP

Weather:  Fine  Cloudy  Rain  Drizzle  Heavy

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  Hours  Minutes  AM  PM

Time Starting

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  Hours  Minutes  AM  PM

Time Arriving

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating/Social

DID YOU WALK ALL THE WAY FROM ORIGIN TO DESTINATION? YES  NO

Thank you, proceed to the next trip.

**MODE OF TRAVEL**  
ALL means of Transport you took for your travel. Choose one of those listed below.

1. Bicyclet
2. Motorcycle/Scooter
3. Car
4. Taxi
5. Van/pick-up/Truck
6. Bus
7. Scheme B or CSS
8. School/Company
9. Contract bus
10. Others

This column is to be filled by CAR user

You were: Driver  Passenger

No. of Passenger excluding driver? Yes  No

Were seats available? Yes  No

Walking time to Bus-stop from ORIGIN

Walking time from the last Bus-Stop to DESTINATION

Taxi: \$

Bus: \$ Out of pocket \$ Concession Pass \$/month

Parking at DESTINATION: \$ Out of pocket \$ Monthly Rental \$

Area Licence Fee: \$ Daily Sticker \$ Monthly Sticker \$

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1. ACTIVITY, ACCESSIBILITY AND YOUR SATISFACTION

In the first column of the table below, a number of representative activities are listed, and in the following columns, the relevant questions of how you usually perform the activity are prepared. Please answer these questions by indicating the appropriate numbers (for questions of columns 2, 4, 5, 7 and 8) or by fulfilling the appropriate figures (for questions of columns 3 and 6).

Table with 8 columns: 1. ACTIVITIES, 2. How often?, 3. How long does it take from your house to the place?, 4. Are you satisfied with the nearness to the place?, 5. Mainly by what mean?, 6. How many times do you transfer bus?, 7. Are you satisfied with the convenience?, 8. How do you think about the transport cost you expend? Below the table are rows for activities like 'Go to work/school', 'Go to CBD for shopping', etc., with corresponding input boxes.

FOR OFFICIAL USE ONLY. A grid for recording data with columns numbered 1 through 9.

2. How do you assess the living/environmental conditions listed below?

Table with 4 columns: A (Good/No problem at all), B (Acceptable), C (Bad/Dissatisfied), D (Very bad/serious problem). Rows list environmental issues like 'Cost of living', 'Availability of goods at market and shop', 'Utility Services', etc.

2-1 Among the above items to which you have answered C or D, which two of them do you think should be given priority in their being solved? Please indicate the numbers of the corresponding items.

3. Please answer the questions regarding bicycle utilization.

3.1 Do you usually use a bicycle? (Yes/No/Not in possession)
3.2 For what purpose? (Work, business, shopping, etc.)
3.3 What is the main reason that you do not use a bicycle? (Weather, danger, etc.)
3.4 Do you desire development/improvement of streets exclusively for bicycle traffic? (Yes/No)

1. Do you use the FEEDER BUS SERVICES?  
 a Yes  1  No  2 Please proceed to Question 7.

How often did you use the FEEDER BUS SERVICES for the LAST ONE WEEK? -

|         |                |  |                  |  |                             |  |            |  |              |  |          |  |
|---------|----------------|--|------------------|--|-----------------------------|--|------------|--|--------------|--|----------|--|
| Purpose | b To/From Work |  | c To/From School |  | d part of personal business |  | e Shopping |  | f Recreation |  | g Social |  |
|         | No. of Times   |  |                  |  |                             |  |            |  |              |  |          |  |

2. Location of the nearest BUS STOP from your residence: Please give also STREET and LAND MARK/OTHER FEATURES (eg. HDB Block Number)

3. What do you think of the journey to the NEAREST BUS STOP?

| PRESENT CONDITION                                                                                  | Your Assessment of Present Condition |     |            |      |
|----------------------------------------------------------------------------------------------------|--------------------------------------|-----|------------|------|
|                                                                                                    | Very Bad                             | Bad | Acceptable | Good |
| 1. Path to Bus Stop                                                                                |                                      |     |            |      |
| 1) Walking Time _____ mins                                                                         |                                      |     |            |      |
| 2) Is it paved? <input type="checkbox"/> Unpaved? <input type="checkbox"/>                         |                                      |     |            |      |
| 3) Are there any street lights? Yes <input type="checkbox"/> No <input type="checkbox"/>           |                                      |     |            |      |
| 4) Are there any streetlights? Yes <input type="checkbox"/> No <input type="checkbox"/>            |                                      |     |            |      |
| 5) Are there any streetlights? Yes <input type="checkbox"/> No <input type="checkbox"/>            |                                      |     |            |      |
| 2. Waiting Condition at Bus Stop                                                                   |                                      |     |            |      |
| 1) Average Waiting Time _____ mins                                                                 |                                      |     |            |      |
| 2) Are there any shelters? Yes <input type="checkbox"/> No <input type="checkbox"/>                |                                      |     |            |      |
| 3) Are there any seats? Yes <input type="checkbox"/> No <input type="checkbox"/>                   |                                      |     |            |      |
| 4) Are there any bus service information? Yes <input type="checkbox"/> No <input type="checkbox"/> |                                      |     |            |      |

4. How do you find the existing BUS INTERCHANGE?

| ITEM                                               | Your Assessment of Present Condition |     |            |      |
|----------------------------------------------------|--------------------------------------|-----|------------|------|
|                                                    | Very Bad                             | Bad | Acceptable | Good |
| 1) Average Waiting Time                            |                                      |     |            |      |
| Peak Hours' Feeder Trunk                           |                                      |     |            |      |
| Off-peak Feeder Trunk                              |                                      |     |            |      |
| 2) Transfer Condition between Feeder and Trunk Bus |                                      |     |            |      |
| 3) Waiting Condition/Facilities                    |                                      |     |            |      |
| 4) Environment                                     |                                      |     |            |      |
| Cleanliness                                        |                                      |     |            |      |
| Noise                                              |                                      |     |            |      |
| Air Pollution                                      |                                      |     |            |      |
| Space                                              |                                      |     |            |      |
| 5) Others (Specify) _____                          |                                      |     |            |      |

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1)  2)  3)  4)  5)  6)  7)  8)  9)  10)

1)  2)  3)  4)  5)

1)  2)  3)  4)

1)  2)  3)  4)  5)

5. How do you assess the present FEEDER BUS OPERATION?

| ITEM                             | Your Assessment of Present Condition |     |            |      |
|----------------------------------|--------------------------------------|-----|------------|------|
|                                  | Very Bad                             | Bad | Acceptable | Good |
| 1) Service Frequency             |                                      |     |            |      |
| a) Peak Hours                    |                                      |     |            |      |
| b) Off-peak Hours                |                                      |     |            |      |
| 2) Operation Hours               |                                      |     |            |      |
| a) Morning                       |                                      |     |            |      |
| b) Night                         |                                      |     |            |      |
| 3) Attitudes of Driver/Conductor |                                      |     |            |      |
| 4) Availability of seats         |                                      |     |            |      |
| 5) Riding Comfort                |                                      |     |            |      |
| 6) Cleanliness                   |                                      |     |            |      |
| 7) Discomfort in Bus             |                                      |     |            |      |
| a) Air Pollution                 |                                      |     |            |      |
| b) Noise                         |                                      |     |            |      |
| c) Heat/Temperature              |                                      |     |            |      |
| 8) Step/Door                     |                                      |     |            |      |
| a) Steps                         |                                      |     |            |      |
| b) Width of door                 |                                      |     |            |      |
| c) Safety                        |                                      |     |            |      |

6. What do you think of current FEEDER BUS FARE LEVEL compared with the service provided?  
 Cheap  1 Reasonable  2 Expensive  3

7. How do you assess the present TRUNK BUS SERVICES (other than feeder bus services)?

| ITEM                        | Your Assessment of Present Condition |     |            |      |
|-----------------------------|--------------------------------------|-----|------------|------|
|                             | Very Bad                             | Bad | Acceptable | Good |
| 1) Waiting Time at bus-stop |                                      |     |            |      |
| Peak Hours                  |                                      |     |            |      |
| Off-peak Hours              |                                      |     |            |      |
| 2) Riding Comfort           |                                      |     |            |      |
| Peak Hours                  |                                      |     |            |      |
| Off-peak Hours              |                                      |     |            |      |
| 3) Seat Availability        |                                      |     |            |      |
| Peak Hours                  |                                      |     |            |      |
| Off-peak Hours              |                                      |     |            |      |
| 4) Travel Time              |                                      |     |            |      |
| Peak Hours                  |                                      |     |            |      |
| Off-peak Hours              |                                      |     |            |      |
| 5) Fare Level/System        |                                      |     |            |      |

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1)  2)  3)  4)  5)  6)  7)  8)

1)  2)  3)  4)  5)

1)  2)  3)  4)  5)

1)  2)  3)  4)  5)



APPENDIX 4.B  
HOME INTERVIEW SURVEY MANUAL



SINGAPORE URBAN TRANSPORT IMPROVEMENT STUDY

HOME INTERVIEW SURVEY MANUAL

April 22, 1988

PUBLIC WORKS DEPARTMENT  
MINISTRY OF NATIONAL DEVELOPMENT

JAPAN INTERNATIONAL COOPERATION AGENCY STUDY TEAM

# 1 OUTLINE

## 1-1 Introduction

The purpose of <sup>the</sup> Home Interview Survey (HIS) is to obtain information on the present travel demand characteristics in the study area. The survey normally covers movements of people in terms of trip purpose, travel mode, origin and destination of each trip, travel time, cost and so on. It also covers the socio-economic characteristics of the sample household and household members such as household size, income, vehicle availability, sex, age and occupation.

The information is collected through interviewing each sample household by interviewers. It forms the basis not only for analysing present travel demand, but also for establishing travel demand forecasting models.

## 1-2 Survey Process

### 1) Sampling

Sample households which are to be surveyed are selected using a two-stage sampling technique.

### 2) Field Survey

#### a) Distribution of Questionnaire Forms/Interview

Surveyors will visit each sample household <sup>and fill out the</sup> to ~~distribute~~ HIS Questionnaire Forms ~~are to be filled up by the~~ ~~Surveyors~~ during the interview. For household members who are not present during the first successful visit, sufficient Forms 2 & 3 are to be left with that household.



b) Collection of Questionnaire Forms

If necessary, Surveyors will visit each household again to collect Questionnaire Forms on the appointed date. Surveyors should assist sample household members to complete the Forms if these are still incomplete.

3) Editing/Coding

The Questionnaire Forms collected by surveyors are to be inspected by Editors, and are sent to Coders who will code the Forms for computer processing.

1-3 Field Survey

- a) visit indicated sample household
- b) explain on the purpose of the survey
- c) ask for cooperation on the survey
- d) obtain household information and record it on "Visiting Sheet"
- e) interview household head and fill up FORM 1 by asking questions to him or her. If he or she is not there, make an appointment for the next visit
- f) interview each household member (including the household head) and fill up FORM 2 and FORM 3. If he or she is not there, leave sufficient forms and make an appointment for the next visit
- g) record the results of visit and the appointment on "Visiting Sheet"
- h) Return to household, if necessary, and collect the rest of the forms
- i) check the number of Forms collected by referring to the number distributed recorded on "Visiting Sheet"
- j) return the completed Forms and the corresponding "Visiting Sheet"

1-4 Questionnaire Forms and "Visiting Sheet"

Questionnaire Forms and Instruction sheet consists of three sets, which are set A and set B. Set A is distributed to each household, while set B is distributed to each household member. The contents of each set are as follows :

|         |                                       |          |
|---------|---------------------------------------|----------|
| Set A : | A LETTER TO HOUSEHOLDER               | 1 Sheet  |
|         | FORM 1 HOUSEHOLD INFORMATION          | 1 Sheet  |
|         | INSTRUCTION SHEET                     | 2 Sheets |
| Set B : | FORM 2 HOUSEHOLD MEMBER INFORMATION   | 1 Sheet  |
|         | FORM 3-1 TRIP INFORMATION             | 1 Sheet  |
|         | FORM 3-2 TRIP INFORMATION (CONTINUED) | 1 Sheet  |

"Visiting Sheet" is prepared to manage the survey.

# VISITING SHEET

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|       |   |       |   |      |   |                |     |     |         |   |
|-------|---|-------|---|------|---|----------------|-----|-----|---------|---|
| BLOCK | b | BUILD | c | ROOM | d | NAME OF FAMILY | TEL | C/O | Seq No. | a |
|-------|---|-------|---|------|---|----------------|-----|-----|---------|---|

| VISIT             | VISIT DATE | APPOINT. | RESULT | REMARKS           |
|-------------------|------------|----------|--------|-------------------|
| FIRST (DISTRIBT.) | / Hrs      | /        | e      | Sign. if accepted |
| SECOND (COLLECT.) | / Hrs      | / Hrs    | f      |                   |
| THIRD (COLLECT.)  | / Hrs      | / Hrs    | g      |                   |
| FOURTH (COLLECT.) | / Hrs      | / Hrs    | h      |                   |

|                                                                                                                                                                          |                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>On Distribution:</b></p> <ol style="list-style-type: none"> <li>1. Accepted;</li> <li>2. Refused;</li> <li>3. No contact established;</li> <li>4. Other</li> </ol> | <p><b>On Collection:</b></p> <ol style="list-style-type: none"> <li>1. Successful;</li> <li>2. Partially successful;</li> <li>3. Need to visit again;</li> <li>4. Impossible.</li> </ol> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                      |                                                                   |                    |                          |                    |                     |
|----------------------------------------------------------------------|-------------------------------------------------------------------|--------------------|--------------------------|--------------------|---------------------|
| ADDRESS <span style="float: right;">i</span>                         |                                                                   |                    |                          |                    |                     |
| NAME OF CONSTITUENCY<br>( j )                                        |                                                                   |                    | POSTAL DISTRICT<br>( k ) |                    |                     |
| PERSONS                                                              | FAMILY MEMBER                                                     |                    | HOUSEMAID                | TENANTS            |                     |
|                                                                      | UNDER 4 YRS                                                       | 4 YRS & ABOVE      | /HELPER                  |                    |                     |
|                                                                      | MALE <sup>j</sup>                                                 |                    |                          |                    |                     |
|                                                                      | FEMALE <sup>m</sup>                                               |                    |                          |                    |                     |
| ETHNIC GROUP <sup>n</sup>                                            | CHINESE <sup>1</sup>                                              | MALAY <sup>2</sup> | INDIAN <sup>3</sup>      | MIXED <sup>4</sup> | OTHERS <sup>5</sup> |
| RESIDENCE                                                            | 1. BUNGALOWS/TERRACE HOUSE <span style="float: right;">1 b</span> |                    |                          |                    |                     |
|                                                                      | 2. PUBLIC FLAT <span style="float: right;">2</span>               |                    |                          |                    |                     |
|                                                                      | 3. PRIVATE FLAT <span style="float: right;">3</span>              |                    |                          |                    |                     |
| 4. SHOPHOUSE <span style="float: right;">4</span>                    |                                                                   |                    |                          |                    |                     |
| 5. OTHERS <span style="float: right;">5</span>                       |                                                                   |                    |                          |                    |                     |
| NUMBER OF ROOMS <span style="float: right;">p</span>                 |                                                                   |                    |                          |                    |                     |
| NUMBER OF ROOMS AIR CONDITIONED <span style="float: right;">q</span> |                                                                   |                    |                          |                    |                     |

|   |  |
|---|--|
| a |  |
| b |  |
| c |  |
| d |  |
| e |  |
| f |  |
| g |  |
| h |  |
| i |  |
| j |  |
| k |  |
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| m |  |
| n |  |
| o |  |
| p |  |
| q |  |
| r |  |
| s |  |

|                  |   |  |                    |   |  |
|------------------|---|--|--------------------|---|--|
| NAME OF SURVEYOR | r |  | NAME OF SUPERVISOR | s |  |
|------------------|---|--|--------------------|---|--|

1-5 Survey Zones

The survey area is divided into six Survey Zones as illustrated on attached figure and the survey is to be conducted by six survey teams. Each team is responsible for the distribution and the collection of Questionnaire Forms within the assigned Survey Zone.

The sample buildings in each Survey Zones are shown in Table 1.

Table 1 Survey Zones and Sample Building in Ang Mo Kio New Town

| Survey Zone | Building Number                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| A<br>(18)   | 153, 155, 163, 603, 607, 612, 622,<br>627, 629, 634, 639, 642, 643, 644,<br>645, 646, 649, Chip Thye Garden                                 |
| B<br>(19)   | 101, 104, 105, 110, 112, 115, 117,<br>172, 176, 177, 182, 245, 246, 250,<br>255, 258, Mayflower Garden, Shangri-<br>La Park, Ellington Park |
| C<br>(15)   | 121, 123, 124, 132, 133, 201, 206,<br>211, 214, 218, 221, 224, 226, 229,<br>235                                                             |
| D<br>(20)   | 304, 308, 309, 312, 313, 316, 320,<br>323, 324, 329, 330, 333, 334, 343,<br>347, 704, 710, 714, 722, 728                                    |
| E<br>(16)   | 503, 507, 510, 520, 524, 538, 540,<br>546, 551, 557, 558, 565, 576, 581,<br>583, 585                                                        |
| F<br>(18)   | 401, 406, 411, 415, 417, 424, 426,<br>434, 437, 439, 444, 451, 454, 459,<br>463, 469, 476                                                   |

Note : Figures in parenthesis are total number of sample building/estate of each zone

## 2 PROCEDURE

### 2-1 Materials for HIS Survey

Materials for the survey will be provided to supervisors at Ang Mo Kio site office.

They are :

- a) "Visiting Sheet"
- b) Questionnaire Set A
- c) Questionnaire Set B
- d) Map of the survey area
- e) Clipboard for "Visiting Sheet"

### 2-2 Work in Ang Mo Kio Site Office

#### 1) Supervisor's task

- a) Distribute materials to Surveyors by referring to sample list.
- b) Receive collected forms from Surveyors and inspect the number of forms, whether they are completed or not. If incomplete forms are submitted by Surveyor, Supervisors should return them to be completed, if necessary.
- c) Submit completed forms to Study Team at Ang Mo Kio site office at Ang Mo Kio Avenue 3/JICA Office.
- d) Assist Surveyors to make the survey successful.

#### 2) Surveyor's task

- a) "Visiting Sheet"  
Fill Surveyor name, no., Supervisor name and his no.  
Fill sample household's block/building and room no.  
referring to "Sample household list".
- b) Plan your visit to all the sample household
- c) Return the completed forms and the corresponding "Visiting Sheet" to Supervisor as soon as they are collected.
- d) Consult Supervisor when he or she encounters any kind of problem

2-3 Field Survey

- a) Visit sample household, explain the purpose of the survey, ask for cooperation.
- b) Obtain and fill "Visiting Sheet" with household information, family name, telephone no.
- c) Interview household head and fill up FORM 1 by asking questions politely to him or her. If he or she is not there, make an appointment for the next visit, and record the appointed date/time and the result of visit in the "Visiting Sheet".

Do not forget to indicate in FORM 1 Surveyor name, no., and sequential no. of the household. In the interview use the "Instruction Sheet" effectively.

- d) Prepare one questionnaire set B for each household member 4 years and above. The number of sets must tally with the number of household members recorded on the "Visiting Sheet". Do not forget to include head of the household.
- e) Interview each household member including the household head and fill up FORM 2 and FORM 3 by asking questions and guiding him or her. If he or she is not there, leave questionnaire forms (set B) for him or her and ask the other household members to assist him or her in filling up the forms.
- f) In filling up FORM 2 and FORM 3, do not forget to indicate the sequential no. and member no. Be sure that the sequential no. is the same as that of the household and the member number should be allocated sequentially for that household. The member number can be determined by Surveyor arbitrarily, but once determined it cannot be changed during the survey.
- g) The date indicated on top of FORM 3 must be the latest normal weekday and be specified by Surveyor.
- h) Arrange the filled up forms and check the number and whether they are complete or not. If they are not completed or missing, interview household members again to fill up the forms completely.
- i) Get interviewee's signature on the "Visiting Sheet" when survey is complete. Record the result of visit on the "Visiting Sheet".
- j) If survey is not completed, make an appointment for the next visit and record it on the "Visiting Sheet".

- k) When a household must be visited again to complete the survey, the same procedure should be repeated.
- l) As a general instruction, use telephone effectively to get an appointment, to check whether household head is there, to check whether left forms are filled up, and so on.
- m) If a selected household is, or expected to be, very difficult to interview, change to the next nearest household.

### 3 SPECIAL INSTRUCTION ON FORM 3

#### 3-1 General

- 1) A "trip" is defined as a one way journey from origin to destination for a particular purpose. It is counted by trip purpose and not by number of mode for the journey. For instance, there are two means of going to your office from your home, one is by private car and the other is by public bus. The former is considered as one trip as you obviously have to drive straight to work from your home. In the case of public bus, you may walk from your home to the bus stop to take the bus and then change bus services at the bus stop/interchange and proceed to your office. This may look like two trips, however, since there is only one purpose for both mode of travel - "from home to work" - you have made only one trip. In this case, the transfer of the mode should be considered within a trip. Use the columns for "mode of travel and transfer" in the trip information form.
- 2) All trips for a day have to be considered no matter how short they are. However, trips such as :
  - a) within the same building
  - b) within the same property
  - c) short distance walking for transfer at bus stop/interchangeare to be excluded.
- 3) For the trip information, six "trip columns" are provided in Form 3-1 and 3-2. If the interviewee made more than six trips, request them to use the spare form provided (Form 3-1 or 3-2).
- 4) Usually the first trip is expected to start at home and the last trip is expected to end at home. If the trip information provided is not the case, you will have to confirm that the trip information is complete.

3-2 Questionnaire items

1) Origin

This means the place where the trip started. The following information is necessary :

a) Address of Origin

In most cases, the origin of the first trip will be the interviewee's residence. However, one may have stayed in a friend's house or hotel, as the case may be. The origin of the second trip has to be the destination of the first trip.

b) Type of Facilities/Activities of Origin

Enter the corresponding number from Table A.

c) Time started from Origin

Enter the approximate time the trip started. The time should be given in hours and minutes with a.m. or p.m. recorded. Do not forget to enter "time starting" for every trip.

2) Destination

This means the place where the trip ended. The following information is necessary.

a) Address of Destination

In some cases, interviewee does not know the exact address of destination. Request them to give street name and well-known building/place name close to their destination. (eg. Maxwell Road, Opposite to MND Building)

b) Type of Facilities/Activities at Destination

Enter the corresponding number from Table A.

c) Time arriving at destination

Enter the approximate time the trip ended



3) Trip Purpose

Tick the corresponding items.

"Part of Work" refers to the trip purpose of the interviewee when he or she make a journey during the course of their work.

"Personal Business" refers to the trip purpose of the interviewee when he or she make a journey for their private matter (eg. going to the bank, post office, etc.)

4) For Walking Trip

If interviewee walked all the way from origin to destination, then it is not necessary to fill up questionnaire items under "MODE OF TRAVEL". Proceed to next trip.

5) Mode of Travel

Enter the corresponding number listed on the left side of questionnaire.

6) Transfer

If interviewee have changed mode (transfer) for the journey, request them to give name of location (eg. name of bus stop/interchange) where they changed the mode and the waiting time for transfer. Proceed to next mode. Change of mode includes transfer from one bus to another. After the last mode of each trip, proceed to next question.

7) For Car User

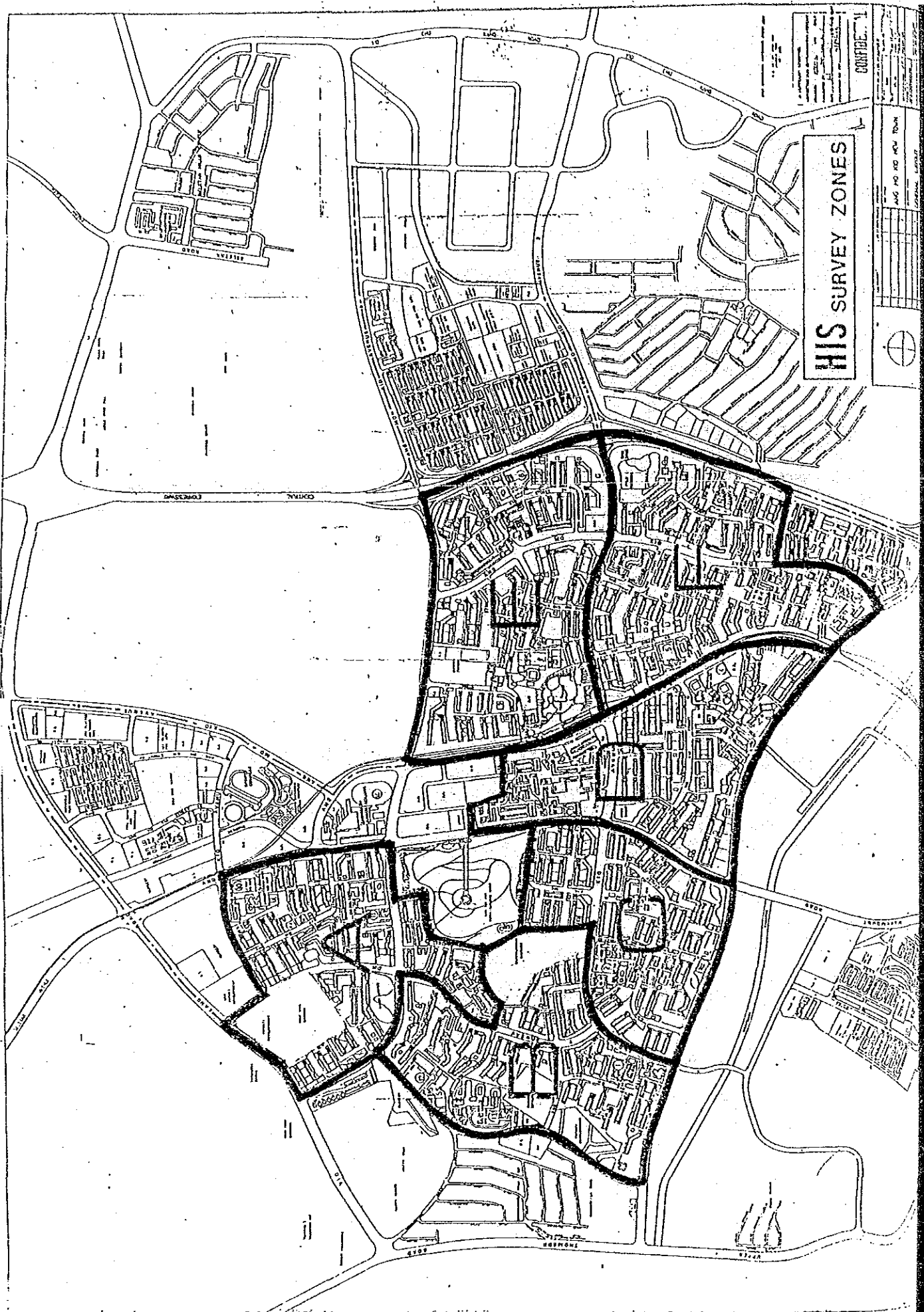
If interviewee used the car for this trip, find out and request them whether they were drivers or passengers. Also note the number of passengers in the car.

8) For Passengers of Public Transport

If interviewee used Public Transport, find out if they were seated and their walking time to/from bus stop.

9) Expenses for the Trip

Enter the amount the interviewee paid for the trip.



APPENDIX 4.C  
PRESS RELEASE FOR HIS SURVEY



PRESS STATEMENT ON THE SINGAPORE URBAN TRANSPORT  
IMPROVEMENT STUDY (SUTIS)

The PWD has just commissioned a study to examine the changing traffic patterns in HDB new towns. The study, called the "Singapore Urban Transport Improvement Study" (SUTIS) is being done with the assistance of the Japanese Government through the Japan International Cooperation Agency (JICA).

2 SUTIS would, among other things, examine the efficiency of the present transport systems and travel patterns in HDB new towns and the expected shifts in travel patterns after the impending commencement of the MRT system. The Study would also examine the feasibility of the introduction of new transportation systems into selected HDB development areas.

3 Two surveys will be conducted by the Study in Ang Mo Kio. Ang Mo Kio has been selected because it is a "matured" new town and it will be served by the MRT system from November this year.

4 The 1st survey will be a Bus Passenger Interview Survey. This will be conducted from Tuesday, 27 Oct to Thursday, 29 Oct at the Ang Mo Kio Bus Interchange. Selected bus commuters would be interviewed and bus passenger movements will be counted.

5 The 2nd survey is a Home Interview Survey. 1000 households in Ang Mo Kio New Town will be randomly selected. The survey will be conducted from Friday, 30 October to Friday, 6 November.

PS1  
JY(3)  
/dc

6 A second series of similar surveys will be carried out in January and February next year.

7 Interviewers, employed by the Study, will be meeting bus passengers at the interchange and visit selected homes during the survey periods. Interviewers will carry official identification cards.

8 As the data collected is essential to the success of the Study and would give a useful insight into our changing travel patterns, the PWD would like to request Ang Mo Kio residents to give the Study their support and cooperation.

Issued by:

PUBLIC WORKS DEPARTMENT  
MINISTRY OF NATIONAL DEVELOPMENT

26 OCTOBER 1987

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For clarification during office hours, please contact:

Mr Joseph Yee  
Head, Roads Planning & Design Branch  
Roads Division  
Public Works Department  
Tel No. 2220044 Ext 221

In the event that the contact officer listed above cannot be reached, please call:

Mr Richard Ong  
Liaison Officer, PWD  
Tel No: 2220044 Ext 522

FS2  
JY(3)  
/dc

PUBLIC WORKS DEPARTMENT  
MINISTRY OF NATIONAL DEVELOPMENT  
PRESS RELEASE

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PWD CONDUCTS TRANSPORT SURVEY AT ANG MO KIO

The Public Works Department (PWD) will conduct a transport survey at Ang Mo Kio New Town from 23 Apr 88 to 9 May 88. This is a follow-up survey of the previous one done in October last year. It forms part of the Singapore Urban Transport Improvement Study (SUTIS). The survey aims to find out the influence of the MRT system on travel patterns of residents in Ang Mo Kio New Town.

Some 1,100 households in HDB flats and nearby private housing estates in Ang Mo Kio New Town will be randomly selected for the survey. A total of 102 HDB blocks in the various neighbourhoods are included. The private housing estates involved are Mayflower Gardens, Shangri-la Park, Ellington Park and Chip Thye Garden.

The survey is a home interview survey. Interviewers, employed by the study, will visit the selected households to conduct interviews during the survey period. They will carry with them official identification cards.

The residents will be asked to give details on the trips they make a day. These include trip purpose, start and end points as well as the mode of transport used.

PRO2 PR14

/ycg

Last October, the PWD conducted a similar home interview survey at Ang Mo Kio New Town. That was before the commencement of passenger service of the MRT system. Now that the MRT is running smoothly, this follow-up survey would reveal the shifts in travel patterns of the residents in Ang Mo Kio New Town. Such information collected would be useful for SUTIS to examine the feasibility of introducing new transport systems to selected HDB development areas.

The PWD seeks the support and co-operation of residents to make the survey a success.

ISSUED BY  
PUBLIC WORKS DEPARTMENT  
MINISTRY OF NATIONAL DEVELOPMENT  
22 APR 88

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For clarification during office hours, please contact:

Mr Lam Chuen Fong  
Head, Roads Planning & Design Branch  
Roads Division  
Public Works Department  
Tel No: 2220044 Ext 221

In the event that the contact officer listed above cannot be reached, please call:

Mr Lee Hock Guan  
Senior Public Relations Officer, PWD  
Tel No: 2220044 Ext 129

PRO2 PR14-14.1

/ycg



APPENDIX 4.D  
HIS EDITING AND CODING MANUAL



HOUSEHOLD INTERVIEW SURVEY

EDITING AND CODING MANUAL

General Information

Coding boxes are provided at the side of the questions in the questionnaire. These boxes are at the bottom of the page for Forms 3-1 and 3-2.

These boxes are related to the questions by numbers or alphabets printed at the side of the boxes. For example, question 10 must be filled into the boxes labelled 10.

1. General Instructions

(i) Confirm ticked numbers and fill into the relevant boxes at the side of the questions with a red pen.

In Forms 3-1 and 3-2, the boxes are at the bottom of the page.

Why have you started using MRT?

|                              | Decreased                             | Same                                  | Increased                             | Increased/Decreased<br>by how much                                                     |
|------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------|
| Travel Time has              | 1 <input checked="" type="checkbox"/> | 2 <input type="checkbox"/>            | 3 <input type="checkbox"/>            | <u>40</u> minutes                                                                      |
| Fare has                     | 1 <input type="checkbox"/>            | 2 <input type="checkbox"/>            | 3 <input checked="" type="checkbox"/> | \$ <u>        </u> cts <u>60</u>                                                       |
| Instances of Punctuality has | 1 <input type="checkbox"/>            | 2 <input checked="" type="checkbox"/> | 3 <input type="checkbox"/>            | 1 <input type="checkbox"/> Slightly 2 <input type="checkbox"/> Considerably            |
| Walking Distance has         | 1 <input type="checkbox"/>            | 2 <input checked="" type="checkbox"/> | 3 <input type="checkbox"/>            | <u>        </u> meters or <u>        </u> minutes                                      |
| Reliability has              | 1 <input type="checkbox"/>            | 2 <input type="checkbox"/>            | 3 <input checked="" type="checkbox"/> | 1 <input type="checkbox"/> Slightly 2 <input checked="" type="checkbox"/> Considerably |

|    |   |  |  |    |
|----|---|--|--|----|
| 10 | 1 |  |  | 40 |
|    | 3 |  |  | 60 |
|    | 2 |  |  |    |
|    | 2 |  |  |    |
|    | 3 |  |  | 2  |

(ii) If you find any questions without answers (blank), supply an answer which is within logical estimation.

(iii) The time in Form 3-1 and Form 3-2 must be changed from the 12 hours system to the 24 hours system. This is done by adding 12 hours to any time after 12.00 p.m.

(iv) In Forms 2( question 5 and 6), 3-1 and 3-2, find the zone for the destination and origin of travel from the map supplied. Fill these in the corresponding boxes.

- (v) In Form 3-1, Form 3-2 and Q12 Form 2, the transport facilities indicated must be coded. The list of code numbers for the facilities are available on page 7 and 8.

The following indicates the changes to be made when coding. A red pen is used for this purpose.

(i) Form 1

- (a) Refer to page 6 for the code. Then fill all the forms according to the example shown below.

9. How is your residence affected by the following environmental problems? If you have to move your residence away to avoid such problems how much are you willing to pay, assuming that you have enough money?

|                                              | Traffic Noise                         | Other Noise                | Dust                                  | Air Polluted                          | Litter/Garbage             | Unpleasant View            | Others (Specify)                      |
|----------------------------------------------|---------------------------------------|----------------------------|---------------------------------------|---------------------------------------|----------------------------|----------------------------|---------------------------------------|
| 1. Slight Problem                            | 1 <input checked="" type="checkbox"/> | 1 <input type="checkbox"/> | 1 <input type="checkbox"/>            | 1 <input type="checkbox"/>            | 1 <input type="checkbox"/> | 1 <input type="checkbox"/> | 1 <input type="checkbox"/>            |
| 2. Bad                                       | 2 <input type="checkbox"/>            | 2 <input type="checkbox"/> | 2 <input checked="" type="checkbox"/> | 2 <input checked="" type="checkbox"/> | 2 <input type="checkbox"/> | 2 <input type="checkbox"/> | 2 <input type="checkbox"/>            |
| 3. Very Bad<br>(Please tick (✓) ONE)         | 3 <input type="checkbox"/>            | 3 <input type="checkbox"/> | 3 <input type="checkbox"/>            | 3 <input type="checkbox"/>            | 3 <input type="checkbox"/> | 3 <input type="checkbox"/> | 3 <input checked="" type="checkbox"/> |
| How much are you willing to pay to avoid it? | \$5/00000                             | \$5                        | \$53000                               | \$5100500                             | \$5                        | \$5                        | \$51000                               |

|    |   |   |   |  |  |
|----|---|---|---|--|--|
| 10 | 1 | 2 | 2 |  |  |
|    |   |   |   |  |  |
|    |   |   |   |  |  |
|    |   |   |   |  |  |
|    |   |   |   |  |  |
|    |   |   |   |  |  |
|    |   |   |   |  |  |
|    |   |   |   |  |  |
|    |   |   |   |  |  |
|    |   |   |   |  |  |

(ii) Form 2

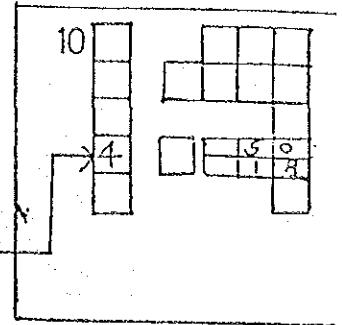
- (a) Question 5:  
 Fill in the zone numbers in the coding boxes labelled address.  
 Fill in the postal district code in the boxes labelled postal district. The code is listed in the telephone book and the street directory.

(b) Question 10:

If the respondent indicates both metres and minutes in 4., then the corresponding coding boxes are divided and filled as shown.

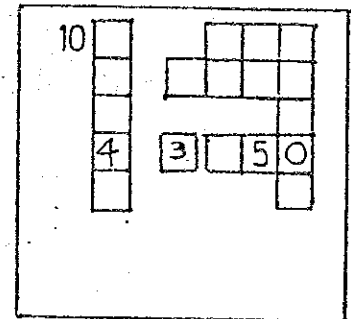
Why have you started using MRT?

|                                 | Decreased                    | Same                       | Increased                             | Increased/Decreased by how much                                             |
|---------------------------------|------------------------------|----------------------------|---------------------------------------|-----------------------------------------------------------------------------|
| 1. Travel Time has              | : 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/>            | _____ minutes                                                               |
| 2. Fare has                     | : 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/>            | \$ _____ cts _____                                                          |
| 3. Instances of Punctuality has | : 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/>            | 1 <input type="checkbox"/> Slightly 2 <input type="checkbox"/> Considerably |
| 4. Walking Distance has         | : 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input checked="" type="checkbox"/> | _____ 50 meters or _____ 18 minutes                                         |
| 5. Reliability has              | : 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/>            | 1 <input type="checkbox"/> Slightly 2 <input type="checkbox"/> Considerably |



If either minutes or metres are given, then fill in as shown by the example below:  
(metres is coded as 1 and minutes is coded as 2)

4. Walking Distance has : 1  2  3  \_\_\_\_\_ meters or \_\_\_\_\_ 50 minutes



(c) Question 12:

The codes for MRT stations are given in 3 digit numbers. Add two extra boxes as shown when coding.

12 How do you find the existing MRT station and facilities at the one nearest to your home? Please specify the name of the MRT station : ORCHARD

12

108

(d) Question 13:  
Add 4 extra boxes when coding as shown.

If you could use the MRT, can you use it as an alternative to your present mode of transport?

1.  Yes      2.  Yes, but not so convenient      3.  not at all

|    |   |   |   |
|----|---|---|---|
| 13 | 1 |   |   |
|    | 1 | 3 | 4 |
|    | 6 |   |   |

Why do you not use the MRT?

1.  access to station is too far away  
 2.  fare is more expensive  
 3.  travel time is longer  
 4.  do not like MRT  
 5.  MRT does not serve your area/intended destination  
 6.  others

When editing, take note of the following:

- (a) Some information are given more than once in the questionnaires. For example, the address of the respondent are given in the visiting sheet and Forms 3-1 and 3-2. Check that these particular tally with one another.
- (b) There are certain questions in the questionnaire which leads to other questions. For example, in Q4 Form1, if the respondent answers Yes to this question, then 5, 6 and 7 but not question 8 and 9. Make sure each respondent answers all required questions in all cases like this.
- (c) Check that the starting time and arriving time is in a logical sequence. Arriving time should always be preceded by starting time.
- (d) Household Income per month in form 1, Q3 should equal to the sum of the monthly incomes of all the household members given in Form 2, Q7.
- (e) In filling Forms 3-1 and 3-2, respondents always neglect to fill in walking trips to the bus stop. This should be filled in if found missing from the questionnaire.

(vi) Choose valid sample after editing/coding.

Invalid samples will be checked by consultants again.

Invalid samples are:-

- a) No sequential numbers
- b) All forms are blank
- c) Logical error in questions
- d) Certain questions not answered and the answer cannot be logically estimated

After the process of coding and editing is finished, the forms will be separated into different piles; visiting sheet, Form 1, Form 2, Form 3-1 and Form 3-2. The forms on each pile will be given a sequential number starting from 0001.

The information in these forms are then entered into the computer.

Guideline for filling up question 10 (Form 1)

1. To facilitate the surveyors to extract information from the household heads, the following ranges are recommended for cost they willing to pay to avoid the environmental problems:

|    |                   |   |         |
|----|-------------------|---|---------|
| 01 | below 1,000       |   |         |
| 02 | 1,001             | - | 3,000   |
| 03 | 3,001             | - | 5,000   |
| 04 | 5,001             | - | 10,000  |
| 05 | 10,001            | - | 30,000  |
| 06 | 30,001            | - | 50,000  |
| 07 | 50,001            | - | 100,000 |
| 08 | 100,001           | - | 300,001 |
| 09 | 300,001 and above |   |         |



FEEDER TRANSPORT SURVEY FOR HOME INTERVIEW SURVEY (HIS) CODING

Code Number for Name of Transport Facilities

Code number has 3 digits

1. MRT Station

|                  | Code No. |                    | Code No. |
|------------------|----------|--------------------|----------|
| (1) Yio Chu Kang | 101      | (11) City Hall     | 111      |
| (2) Ang Mo Kio   | 102      | (12) Raffles Place | 112      |
| (3) Bishan       | 103      | (13) Tanjong Pagar | 113      |
| (4) Braddell     | 104      | (14) Outram Park   | 114      |
| (5) Toa Payoh    | 105      | (15) Tiong Bahru   | 115      |
| (6) Novena       | 106      | (16) Redhill       | 116      |
| (7) Newton       | 107      | (17) Queenstown    | 117      |
| (8) Orchard      | 108      | (18) Commonwealth  | 118      |
| (9) Somerset     | 109      | (19) Buona Vista   | 119      |
| (10) Dhoby Ghaut | 110      | (20) Clementi      | 120      |

2. Bus Interchange

|                 |     |                   |     |
|-----------------|-----|-------------------|-----|
| (1) Ang Mo Kio  | 201 | (7) Jurong East   | 207 |
| (2) Bedok       | 202 | (8) Jurong (West) | 208 |
| (3) Bukit Batok | 203 | (9) Serangoon     | 209 |
| (4) Bukit Merah | 204 | (10) Tampines     | 210 |
| (5) Clementi    | 205 | (11) Toa Payoh    | 211 |
| (6) Hougang     | 206 | (12) Woodlands    | 212 |
|                 |     | (13) Yishun       | 213 |

3. Bus stop/terminal

All bus stops/terminal ----- 200  
(exclude bus interchange)

4. Others

Other place ----- 300  
(including Car-pool Pickup Place, Parking etc)

APPENDIX 4.E  
SURVEY FORMS FOR 1988 HIS



# VISITING SHEET

CONFIDENTIAL

|       |   |       |   |      |   |                |     |     |         |   |
|-------|---|-------|---|------|---|----------------|-----|-----|---------|---|
| BLOCK | b | BUILD | c | ROOM | d | NAME OF FAMILY | TEL | C/O | Seq No. | a |
|-------|---|-------|---|------|---|----------------|-----|-----|---------|---|

| VISIT             | VISIT DATE | APPOINT. | RESULT | REMARKS           |
|-------------------|------------|----------|--------|-------------------|
| FIRST (DISTRIBT.) | / Hrs      | /        | e      | Sign. if accepted |
| SECOND (COLLECT.) | / Hrs      | / Hrs    | f      |                   |
| THIRD (COLLECT.)  | / Hrs      | / Hrs    | g      |                   |
| FOURTH (COLLECT.) | / Hrs      | / Hrs    | h      |                   |

|                                                                                                  |                                                                                                                  |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>On Distribution:</b><br>1. Accepted;<br>2. Refused;<br>3. No contact established;<br>4. Other | <b>On Collecting:</b><br>1. Successful;<br>2. Partially successful;<br>3. Need to visit again;<br>4. Impossible. |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|

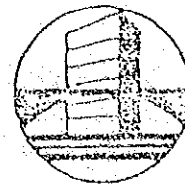
|                                              |                                                       |                                     |                                      |                                     |                                      |
|----------------------------------------------|-------------------------------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|--------------------------------------|
| ADDRESS <span style="float: right;">j</span> |                                                       |                                     |                                      |                                     |                                      |
| NAME OF CONSTITUENCY<br>( i )                |                                                       |                                     | POSTAL DISTRICT<br>( k )             |                                     |                                      |
| PERSONS                                      | FAMILY MEMBER                                         |                                     | HOUSEMAID                            | TENANTS                             |                                      |
|                                              | UNDER 4 YRS                                           |                                     | 4 YRS & ABOVE                        | HELPER                              |                                      |
|                                              | MALE l                                                |                                     |                                      |                                     |                                      |
| FEMALE m                                     |                                                       |                                     |                                      |                                     |                                      |
| ETHNIC GROUP n                               | CHINESE<br><input type="checkbox"/> 1                 | MALAY<br><input type="checkbox"/> 2 | INDIAN<br><input type="checkbox"/> 3 | MIXED<br><input type="checkbox"/> 4 | OTHERS<br><input type="checkbox"/> 5 |
| RESIDENCE                                    | 1. BUNGALOWS/TERRACE HOUSE <input type="checkbox"/> 1 |                                     |                                      |                                     | o                                    |
|                                              | 2. PUBLIC FLAT <input type="checkbox"/> 2             |                                     |                                      |                                     |                                      |
|                                              | 3. PRIVATE FLAT <input type="checkbox"/> 3            |                                     |                                      |                                     |                                      |
| 4. SHOPHOUSE <input type="checkbox"/> 4      |                                                       |                                     |                                      |                                     |                                      |
| 5. OTHERS <input type="checkbox"/> 5         |                                                       |                                     |                                      |                                     |                                      |
| NUMBER OF ROOMS                              |                                                       |                                     |                                      | <input type="text"/>                | p                                    |
| NUMBER OF ROOMS AIR CONDITIONED              |                                                       |                                     |                                      | <input type="text"/>                | q                                    |

|   |   |   |
|---|---|---|
| a | b | c |
| d | e |   |
| f | g | h |
| i | j | k |
| l | m |   |
| n | o | p |
| q | r | s |

|                  |   |                      |                    |   |                      |
|------------------|---|----------------------|--------------------|---|----------------------|
| NAME OF SURVEYOR | r | <input type="text"/> | NAME OF SUPERVISOR | s | <input type="text"/> |
|------------------|---|----------------------|--------------------|---|----------------------|

# PUBLIC WORKS DEPARTMENT

ROADS DIVISION, 9th Storey National Development Building  
P.O. Box 262, Maxwell Road Post Office, Singapore 9005  
Tel: 2220044 • Cable: Works Singapore



PKD(R)27/85

23 Apr 88

TEL NO: 2220044 X 221  
TELEBOX: 6VT246  
FAX : 2220044 X 240

Dear Residents

## SINGAPORE URBAN TRANSPORT IMPROVEMENT STUDY (SUTIS) - HOME INTERVIEW SURVEY IN ANG MO KIO NEW TOWN

In October last year, a home interview survey was conducted in Ang Mo Kio New Town. It was part of the Singapore Urban Transport Improvement Study (SUTIS) undertaken by the Public Works Department (PWD). The cooperation from the residents involved was good.

2 The MRT system is now in operation. To find out its influence on travel patterns, another home interview survey will be similarly carried out. This is a follow-up of the last survey.

3 This home interview survey will be carried out from 23 Apr 88 to 9 May 88. Like the last survey, some 1,100 households will be randomly selected from 102 blocks of buildings and some households in the private estates.

4 Student interviewers, employed by SUTIS, will visit selected homes during the survey period. They will carry official identification cards with them.

5 The data collected is essential to SUTIS. It would give useful insight into our changing travel patterns after the operation of the MRT system.

6 The PWD would like to request Ang Mo Kio residents to give SUTIS their cooperation once again. We look forward to your continued support.

Thank you.

Yours faithfully

LAM CHUEN FONG  
HEAD  
ROADS PLANNING & DESIGN BRANCH  
ROADS DIVISION  
PWD SINGAPORE

LTS/st  
LM-LTS2

SINGAPORE



You should have five survey forms, they are :

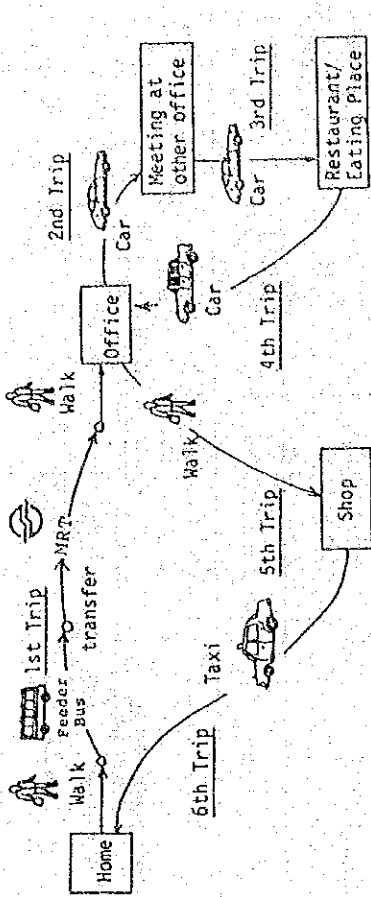
- Form 1. Household Information;
- Form 2. Household Members Information;
- Form 3. Trip Information;

1. Form 1 should be completed by the "head" of the household. The head of the household is Father, Mother or a member of the household who is responsible for the economic well-being of the household.
2. Forms 2 and 3 should be completed for every member of the household including the household head who is aged 4 years and above.
3. Please answer all the questions one by one according to its numbering.
4. Print the information in the space provided, or a tick in the appropriate box.
5. If you have doubts in answering any point in the questionnaire, please consult the interviewer.

SPECIAL INSTRUCTIONS ON FORM 3. Trip Information

1. Provide the required information about ALL THE TRIPS (including trips which are not made from/to home) during the survey date indicated in Form 3. The survey data covers 24-hours (one day) beginning at 3:00 a.m. and ending at 3:00 a.m. of the following day. For example, if the survey date is Apr. 29(Friday), the information requested relates to the period from 3:00 a.m. Friday to 3:00 a.m. Saturday.
2. Start with the first trip (TRIP NO. 1) and proceed sequentially to the next trip. Give all information on each trip.
3. If more than 3 trips were made on the survey date, record the information of TRIP 4, TRIP 5, TRIP 6, etc., on another sheet and number the trips accordingly.

If you took trips as follows:

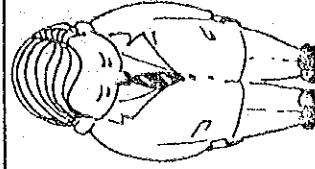


your trips made on the day can be arranged as :

| Trip No.      | 1              | 2                       | 3                       | 4            | 5                | 6      |
|---------------|----------------|-------------------------|-------------------------|--------------|------------------|--------|
| Home          | Office         | Meeting at Other Office | Restaurant/Eating Place | Office       | Shop             | Home   |
| Trip Mode:    | Walk, MRT, Bus | Walk, Car               | Car                     | Car          | Walk, Car        | Taxi   |
| Trip Purpose: | to work        | part of work            | social                  | part of work | shopping to home |        |
| Time:         |                |                         |                         |              |                  |        |
| arriving at   | -              | 8:50am                  | 10:10am                 | 12:10pm      | 1:15pm           | 5:40pm |
| starting at   | 7:30am         | 10:00am                 | 12:00pm                 | 1:00pm       | 5:30pm           | 6:30pm |

5. Please do not record the following trips.

1. Walk trips such as:
  - (1) walk trips within the same building.
  - (2) walk trips within the same property.
  - (3) short walk trips for transfer. ex. at Bus interchange.
2. Trips made by a Taxi/Bus driver during his or her work.



Thank you in advance for your cooperation

**HOUSEHOLD INFORMATION**

**FOR THE HEAD OF HOUSEHOLD**

1. Do you own the residence?  
 1 Yes  2 No

2. How long have you been residing at this residence?  
 \_\_\_\_\_ Years

3. What is the total HOUSEHOLD INCOME per month?  

|                  |                          |                    |                          |    |
|------------------|--------------------------|--------------------|--------------------------|----|
| 1. Below \$ 500  | <input type="checkbox"/> | 7. 3,000 - 3,499   | <input type="checkbox"/> | 7  |
| 2. 500 - 999     | <input type="checkbox"/> | 8. 3,500 - 3,999   | <input type="checkbox"/> | 8  |
| 3. 1,000 - 1,499 | <input type="checkbox"/> | 9. 4,000 - 4,999   | <input type="checkbox"/> | 9  |
| 4. 1,500 - 1,999 | <input type="checkbox"/> | 10. 5,000 - 5,999  | <input type="checkbox"/> | 10 |
| 5. 2,000 - 2,499 | <input type="checkbox"/> | 11. 6,000 and over | <input type="checkbox"/> | 11 |
| 6. 2,500 - 2,999 | <input type="checkbox"/> |                    |                          |    |

4. Are there any vehicles used by household members?  
 1 Yes  2 No

5. Who uses the vehicle(s)?  

| User                   | Frequency                |                          |                          |                          |                          | No. at all               |
|------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                        | 5-7                      | 3-4                      | 1-2                      | Seldom                   | all                      |                          |
| 1. Yourself            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Other Family Member | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

6. Please indicate the amount spent monthly for ownership and utilization of the vehicle(s)? If your household does not own the vehicle(s) please proceed to Q10, without answering to Q6 and Q7.  

|                         |                          |
|-------------------------|--------------------------|
| 1. Less than \$ 200     | <input type="checkbox"/> |
| 2. \$ 201 to \$ 300     | <input type="checkbox"/> |
| 3. \$ 301 to \$ 500     | <input type="checkbox"/> |
| 4. \$ 501 to \$ 1,000   | <input type="checkbox"/> |
| 5. \$ 1,001 to \$ 2,000 | <input type="checkbox"/> |
| 6. \$ 2,001 and over    | <input type="checkbox"/> |

7. Is vehicle ownership a financial burden to your household?  
 1 Yes, very much  2 Yes, but not much  3 Not at all

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1

2

3

4

5

6

7

8. What are the factors which restrict you/your household from car ownership? (You may tick (✓) as many as you wish)

1.  Too expensive to own

2.  Too expensive to use

3.  Don't feel that it is necessary because there are other transport modes

4.  No car parking facilities

5.  Others

9. If you or your household owns a car, for what purposes would you be mainly using it for? (Please tick (✓) ONE only)

1.  to/from work

2.  to/from school

3.  family activities (recreation, shopping, etc)

4.  private business

5.  others

10. How is your residence affected by the following environmental problems? If you have to move your residence away to avoid such problems how much are you willing to pay, assuming that you have enough money?

| Problem                                      | Traffic Noise            | Other Noise              | Dust                     | Air Polluted             | Litter/ Garbage          | Unpleasant View          | Others (Specify)         |
|----------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                                              | 1 2 3                    | 1 2 3                    | 1 2 3                    | 1 2 3                    | 1 2 3                    | 1 2 3                    | 1 2 3                    |
| 1. Slight                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Bad                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Very Bad (Please tick (✓) ONE)            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| How much are you willing to pay to avoid it? | \$ \$                    | \$ \$                    | \$ \$                    | \$ \$                    | \$ \$                    | \$ \$                    | \$ \$                    |

Srg. No.

1. Name of Interviewer \_\_\_\_\_ No.

2. Study Area No.

3. Household Members No.

10

|                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|



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11. How do you compare the MRT with the previous mode (the one you were using before MRT as indicated in Q9)?

MRT is:

|             |        |      |       |            |
|-------------|--------|------|-------|------------|
| Much Better | Better | Same | Worse | Much Worse |
| 1           | 2      | 3    | 4     | 5          |

12. How do you find the existing MRT station and facilities at the one nearest to your home? Please specify the name of the MRT station:

12.1 If you walk between home and the MRT station directly, please give your assessment of the following:

|                                                |                                                                                                                  |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| a. Walking distance/time is                    | _____ meters/_____ minutes (one-way)                                                                             |
| b. Walking distance is                         | 1 <input type="checkbox"/> too long 2 <input type="checkbox"/> little long 3 <input type="checkbox"/> no problem |
| c. Walking condition is                        | 1 <input type="checkbox"/> bad 2 <input type="checkbox"/> acceptable 3 <input type="checkbox"/> good             |
| d. Location of entrance/exit of MRT station is | 1 <input type="checkbox"/> bad 2 <input type="checkbox"/> acceptable 3 <input type="checkbox"/> good             |

12.2 If you walk between bus stop/interchange and the MRT station, please give your assessment of the following:

|                                                    |                                                                                                                  |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| a. Walking distance is                             | 1 <input type="checkbox"/> too long 2 <input type="checkbox"/> little long 3 <input type="checkbox"/> no problem |
| b. Walking condition is                            | 1 <input type="checkbox"/> bad 2 <input type="checkbox"/> acceptable 3 <input type="checkbox"/> good             |
| c. Waiting condition of bus is                     | 1 <input type="checkbox"/> bad 2 <input type="checkbox"/> acceptable 3 <input type="checkbox"/> good             |
| d. Location/facilities of bus stop/interchange are | 1 <input type="checkbox"/> bad 2 <input type="checkbox"/> acceptable 3 <input type="checkbox"/> good             |

12.3 If you use a car between your home and the MRT station, please give your assessment of the following:

|                                          |                                                                                                      |
|------------------------------------------|------------------------------------------------------------------------------------------------------|
| a. Parking or stopping at the station is | 1 <input type="checkbox"/> bad 2 <input type="checkbox"/> acceptable 3 <input type="checkbox"/> good |
| b. Better facilities are                 | 1 <input type="checkbox"/> needed 2 <input type="checkbox"/> not needed                              |

13. If you could use the MRT, can you use it as an alternative to your present mode of transport?

1. Yes  2. Yes, but not so convenient  3. Not at all

Why do you not use the MRT?

- 
- access to station is too far away
- fare is more expensive
- travel time is longer
- do not like MRT
- MRT does not serve your area/intended destination
- others

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2.

3.

4.

5. address \_\_\_\_\_ postal district \_\_\_\_\_

6. address \_\_\_\_\_ postal district \_\_\_\_\_

7.

8.

9.

10.

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1. Relationship to the Head of Household: \_\_\_\_\_

2. Sex: 1  Male 2  Female

3. Age: \_\_\_\_\_ years old

4. Occupation:

- Administrative and Managerial Worker
- Agricultural Worker and Fisherman
- Clerical Worker
- Housewife
- Production, Transport and Other Manual Worker
- Professional, Technical Worker
- Sales Worker
- Service Worker
- Student (Primary, Pre-primary, Kindergarten)
- Student (Secondary)
- Student (Pre-university)
- Student (Vocational Institute)
- Student (Tertiary)
- Workers not Classifiable by occupation
- Others

5. Work address (if you are working) \_\_\_\_\_ Postal district \_\_\_\_\_

6. School address (if you are a student) \_\_\_\_\_ Street \_\_\_\_\_ Postal district \_\_\_\_\_

7. Name of school \_\_\_\_\_ Street \_\_\_\_\_ Postal district \_\_\_\_\_

8. What is your MONTHLY INCOME?

|                  |                            |                     |                             |
|------------------|----------------------------|---------------------|-----------------------------|
| 1. None          | 1 <input type="checkbox"/> | 7. 1,500 - 1,999    | 7 <input type="checkbox"/>  |
| 2. Below \$250   | 2 <input type="checkbox"/> | 8. 2,000 - 2,499    | 8 <input type="checkbox"/>  |
| 3. 250 - 499     | 3 <input type="checkbox"/> | 9. 2,500 - 2,999    | 9 <input type="checkbox"/>  |
| 4. 500 - 749     | 4 <input type="checkbox"/> | 10. 3,000 - 3,999   | 10 <input type="checkbox"/> |
| 5. 750 - 999     | 5 <input type="checkbox"/> | 11. 4,000 - 4,999   | 11 <input type="checkbox"/> |
| 6. 1,000 - 1,499 | 6 <input type="checkbox"/> | 12. 5,000 - 5,999   | 12 <input type="checkbox"/> |
|                  |                            | 13. 6,000 and above | 13 <input type="checkbox"/> |

9. Do you regularly use the MRT? 1  Yes 2  No

10. What mode of travel were you using before the MRT started running? (Please tick (✓) ONE only)

|                 |                          |
|-----------------|--------------------------|
| 1. Walk Only    | 6. Taxi                  |
| 2. Bicycle Only | 7. Trunk Bus (SSB, TBS)  |
| 3. Motorcycle   | 8. Feeder Bus (SSB, TBS) |
| 4. Scooter      | 9. Scheme B/C/D/S        |
| 5. Car          | 10. School/Company       |
|                 | 11. Contract Bus         |
|                 | 12. Others               |

11. What are the bus service No. or Nos that you were using \_\_\_\_\_

12. Why have you started using MRT?

|                            |                            |                            |                                                                             |
|----------------------------|----------------------------|----------------------------|-----------------------------------------------------------------------------|
| Decreased                  | Same                       | Increased                  | Increased/Decreased by how much                                             |
| 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | _____ minutes                                                               |
| 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | _____ cts                                                                   |
| 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 1 <input type="checkbox"/> Slightly 2 <input type="checkbox"/> Considerably |
| 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | _____ meters or _____ minutes                                               |
| 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> | 1 <input type="checkbox"/> Slightly 2 <input type="checkbox"/> Considerably |

INSTRUCTION: 1. Please give details of your trip information made on April [ ] 1968  
2. If you are Taxi/Bus driver, there is no need to fill up trip information while you are working.

Table A

| Type of Facilities/Activities           |
|-----------------------------------------|
| 1. Residence                            |
| 2. Office                               |
| 3. Construction Site/Work Site          |
| 4. Eating (Canteen/Restaurant)          |
| 5. Shops/Market                         |
| 6. Bank/Post Office                     |
| 7. Bus Interchange/RTI Station          |
| 8. Airport/Railway Station/Port         |
| 9. Sports/Recreation                    |
| 10. Church/Mosque/Temple                |
| 11. Factory                             |
| 12. School/Other Educational/Facilities |
| 13. Other Public Facilities             |
| 14. Others                              |

1st TRIP

2nd TRIP

3rd TRIP

Weather:  Fine  Cloudy  Rain  Drizzle  Mist  Hazy

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  PH  PM

Time Starting  Hours  Minutes  Part of  Personal  Business

ADDRESS: STATE FULL ADDRESS (Block/House No./Building Name/Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  PH  PM

Time Arriving  Hours  Minutes  Part of  Personal  Business

To Work  To School  To Home  Eating/Work  Social  Shopping  Recreation  Other

Did you walk all the way from origin to destination? YES  NO  Thank you, proceed to the next trip.

MODE OF TRAVEL

ALL means of Transport you took for your travel. Choose one of those listed below.

1. Walk
2. Motorcycle/Scooter
3. Car-pool passenger
4. Taxi
5. Train Bus (SBS, TBS)
6. Feeder Bus (SBS, TBS)
7. School Bus
8. Contract Bus
9. Others

1st Mode of Travel:  Have you changed mode? YES  NO  Where did you change? State name of location: \_\_\_\_\_ How long did you wait for next mode? \_\_\_\_\_ mins.

2nd Mode of Travel:  Have you changed mode? YES  NO  Where did you change? State name of location: \_\_\_\_\_ How long did you wait for next mode? \_\_\_\_\_ mins.

3rd Mode of Travel:  Have you changed mode? YES  NO  Where did you change? State name of location: \_\_\_\_\_ How long did you wait for next mode? \_\_\_\_\_ mins.

4th Mode of Travel:  Have you changed mode? YES  NO  Where did you change? State name of location: \_\_\_\_\_ How long did you wait for next mode? \_\_\_\_\_ mins.

You were: Driver  Passenger

No. of Passenger excluding driver? \_\_\_\_\_

Were seats available? YES  NO  Partly

Walking time to Bus-stop from ORIGIN \_\_\_\_\_ mins.

Walking time from the last Bus-stop to DESTINATION \_\_\_\_\_ mins.

Taxi: \_\_\_\_\_

Bus: \_\_\_\_\_

Concession Pass: \_\_\_\_\_ /month

Parking at: \_\_\_\_\_

DESTINATION: \_\_\_\_\_

Area Licence Fee: <sup>a)</sup> Daily Sticker \$ \_\_\_\_\_ <sup>b)</sup> Monthly Sticker \$ \_\_\_\_\_

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MEMO: \_\_\_\_\_

CONFIDENTIAL

Table A

|                                            |
|--------------------------------------------|
| 1. Residence                               |
| 2. Office                                  |
| 3. Construction Site/<br>Work Site         |
| 4. Eating (Canteen/<br>Restaurant)         |
| 5. Shops/Market                            |
| 6. Bank/Post Office                        |
| 7. Bus Interchange/<br>MRT Station         |
| 8. Airport/Railway<br>Station/Port         |
| 9. Sports/Recreation                       |
| 10. Church/Mosque/<br>Temple               |
| 11. Factory                                |
| 12. School/Other<br>Educational Facilities |
| 13. Other Public<br>Facilities             |
| 14. Others                                 |

4TH TRIP

Weather:  Fine  Cloudy  Rain  Drizzle  Hazy  Rainy

ADDRESS: STATE FULL ADDRESS (Block/House No., Building Name, Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  
Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

ADDRESS: STATE FULL ADDRESS (Block/House No., Building Name, Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  
Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating/Social

NO  YES

Thank you, proceed to the next trip.

DID YOU WALK ALL THE WAY FROM ORIGIN TO DESTINATION?

MODE OF TRAVEL  
All means of transport you took for your travel. Choose one of those listed below.

- Walk
- Bicycle
- Motorcycle/scooter
- Car
- Car-pool passenger
- Tram
- Trunk Bus (SBS, T185)
- Feeder Bus (SBS, T185)
- Shuttle Bus or OSS
- Company/Company
- MRT
- Other

FIRST Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

2nd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

3rd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

4th Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

Where did you change? State name of location: \_\_\_\_\_  
How long did you wait for next mode? \_\_\_\_\_ mins.

You were: Driver  Passenger

No. of Passenger excluding driver? \_\_\_\_\_

Were seats available? YES  PARTLY  NO

Walking time to Bus-stop from ORIGIN \_\_\_\_\_ mins.

Walking time from the last Bus-Stop to DESTINATION \_\_\_\_\_ mins.

Taxi: \_\_\_\_\_ \$  
Bus Parking at: \_\_\_\_\_ \$  
DESTINATION: \_\_\_\_\_ \$  
Concession Pass: \_\_\_\_\_ /month  
Monthly Rental: \_\_\_\_\_ \$

Area Licence Fee: \_\_\_\_\_ \$  
Daily Sticker: \_\_\_\_\_ \$  
Monthly Sticker: \_\_\_\_\_ \$

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5TH TRIP

Weather:  Fine  Cloudy  Rain  Drizzle  Hazy  Rainy

ADDRESS: STATE FULL ADDRESS (Block/House No., Building Name, Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  
Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

ADDRESS: STATE FULL ADDRESS (Block/House No., Building Name, Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  
Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating/Social

NO  YES

Thank you, proceed to the next trip.

DID YOU WALK ALL THE WAY FROM ORIGIN TO DESTINATION?

MODE OF TRAVEL  
All means of transport you took for your travel. Choose one of those listed below.

- Walk
- Bicycle
- Motorcycle/scooter
- Car
- Car-pool passenger
- Tram
- Trunk Bus (SBS, T185)
- Feeder Bus (SBS, T185)
- Shuttle Bus or OSS
- Company/Company
- MRT
- Other

FIRST Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

2nd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

3rd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

4th Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

Where did you change? State name of location: \_\_\_\_\_  
How long did you wait for next mode? \_\_\_\_\_ mins.

You were: Driver  Passenger

No. of Passenger excluding driver? \_\_\_\_\_

Were seats available? YES  PARTLY  NO

Walking time to Bus-stop from ORIGIN \_\_\_\_\_ mins.

Walking time from the last Bus-Stop to DESTINATION \_\_\_\_\_ mins.

Taxi: \_\_\_\_\_ \$  
Bus Parking at: \_\_\_\_\_ \$  
DESTINATION: \_\_\_\_\_ \$  
Concession Pass: \_\_\_\_\_ /month  
Monthly Rental: \_\_\_\_\_ \$

Area Licence Fee: \_\_\_\_\_ \$  
Daily Sticker: \_\_\_\_\_ \$  
Monthly Sticker: \_\_\_\_\_ \$

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6TH TRIP

Weather:  Fine  Cloudy  Rain  Drizzle  Hazy  Rainy

ADDRESS: STATE FULL ADDRESS (Block/House No., Building Name, Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  
Time Starting: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

ADDRESS: STATE FULL ADDRESS (Block/House No., Building Name, Street, etc.)

Type of Facilities/Activities (Enter a number from Table A)  
Time Arriving: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes \_\_\_\_\_ AM/PM

To Work  To School  To Home  Part of  Personal  Business

Shopping  Recreation  Eating/Social

NO  YES

Thank you, proceed to the next trip.

DID YOU WALK ALL THE WAY FROM ORIGIN TO DESTINATION?

MODE OF TRAVEL  
All means of transport you took for your travel. Choose one of those listed below.

- Walk
- Bicycle
- Motorcycle/scooter
- Car
- Car-pool passenger
- Tram
- Trunk Bus (SBS, T185)
- Feeder Bus (SBS, T185)
- Shuttle Bus or OSS
- Company/Company
- MRT
- Other

FIRST Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

2nd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

3rd Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

4th Mode of Travel: \_\_\_\_\_  
Have you changed mode? YES  NO

Where did you change? State name of location: \_\_\_\_\_  
How long did you wait for next mode? \_\_\_\_\_ mins.

You were: Driver  Passenger

No. of Passenger excluding driver? \_\_\_\_\_

Were seats available? YES  PARTLY  NO

Walking time to Bus-stop from ORIGIN \_\_\_\_\_ mins.

Walking time from the last Bus-Stop to DESTINATION \_\_\_\_\_ mins.

Taxi: \_\_\_\_\_ \$  
Bus Parking at: \_\_\_\_\_ \$  
DESTINATION: \_\_\_\_\_ \$  
Concession Pass: \_\_\_\_\_ /month  
Monthly Rental: \_\_\_\_\_ \$

Area Licence Fee: \_\_\_\_\_ \$  
Daily Sticker: \_\_\_\_\_ \$  
Monthly Sticker: \_\_\_\_\_ \$

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APPENDIX 4.F

LIST OF SAMPLE BLOCK AND NO. OF SAMPLES



HIS NO. OF SAMPLE HOUSEHOLDS BY BLOCK

Zone A

| Block No.        | No. of Sample Households |            |            |
|------------------|--------------------------|------------|------------|
|                  | Fixed Rm No.             | Additional | Total      |
| 153              | 12                       | -          | 12         |
| 155              | 15                       | -          | 15         |
| 163              | 9                        | -          | 9          |
| 603              | 15                       | -          | 15         |
| 607              | 19                       | -          | 19         |
| 612              | 17                       | -          | 17         |
| 622              | 7                        | -          | 7          |
| 629              | 4                        | -          | 4          |
| 634              | 4                        | 1          | 5          |
| 639              | 12                       | -          | 12         |
| 643              | 16                       | -          | 16         |
| 644              | 17                       | -          | 17         |
| 646              | 9                        | -          | 9          |
| 649              | 22                       | -          | 22         |
| 627              | -                        | 11         | 11         |
| 642              | -                        | 8          | 8          |
| 645              | -                        | 20         | 20         |
| Chip Thye Garden | -                        | 3          | 3          |
| <b>TOTAL</b>     | <b>173</b>               | <b>43</b>  | <b>221</b> |

Zone B

| Block No.        | No. of Sample Households |            |            |
|------------------|--------------------------|------------|------------|
|                  | Fixed Rm No.             | Additional | Total      |
| 101              | 13                       | -          | 13         |
| 105              | 7                        | -          | 7          |
| 110              | 8                        | -          | 8          |
| 112              | 8                        | -          | 8          |
| 117              | 12                       | 1          | 13         |
| 172              | 10                       | -          | 10         |
| 177              | 5                        | 2          | 7          |
| 246              | 6                        | 2          | 8          |
| 250              | 2                        | -          | 2          |
| 255              | 27                       | -          | 27         |
| 258              | 6                        | -          | 6          |
| 104              | -                        | 10         | 10         |
| 115              | -                        | 9          | 9          |
| 176              | -                        | 4          | 4          |
| 245              | -                        | 17         | 17         |
| Mayflower Garden | -                        | 5          | 5          |
| Shangri-La Park  | -                        | 2          | 2          |
| Ellington Park   | -                        | 3          | 3          |
| <b>TOTAL</b>     | <b>104</b>               | <b>55</b>  | <b>159</b> |

HIS NO. OF SAMPLE HOUSEHOLDS BY BLOCK

Zone C

| Block No.    | No. of Sample Households |            |            |
|--------------|--------------------------|------------|------------|
|              | Fixed Rm No.             | Additional | Total      |
| 121          | 18                       | -          | 18         |
| 124          | 7                        | 4          | 11         |
| 133          | 4                        | -          | 4          |
| 201          | 11                       | -          | 11         |
| 206          | 6                        | -          | 6          |
| 211          | 10                       | -          | 10         |
| 214          | 14                       | -          | 14         |
| 218          | 16                       | -          | 16         |
| 224          | 4                        | -          | 4          |
| 226          | 9                        | -          | 9          |
| 229          | 7                        | -          | 7          |
| 235          | 9                        | 4          | 13         |
| 132          | -                        | 4          | 4          |
| 221          | -                        | 17         | 17         |
| 123          | -                        | 17         | 17         |
| <b>TOTAL</b> | <b>115</b>               | <b>46</b>  | <b>161</b> |

Zone D

| Block No.    | No. of Sample Households |            |            |
|--------------|--------------------------|------------|------------|
|              | Fixed Rm No.             | Additional | Total      |
| 304          | 7                        | -          | 7          |
| 308          | 22                       | -          | 22         |
| 312          | 7                        | -          | 7          |
| 313          | 17                       | -          | 17         |
| 316          | 18                       | -          | 18         |
| 320          | 11                       | -          | 11         |
| 324          | 6                        | -          | 6          |
| 329          | 17                       | -          | 17         |
| 330          | 24                       | -          | 24         |
| 333          | 11                       | -          | 11         |
| 334          | 6                        | -          | 6          |
| 343          | 13                       | -          | 13         |
| 347          | 2                        | -          | 2          |
| 710          | 6                        | -          | 6          |
| 714          | 6                        | -          | 6          |
| 722          | 2                        | -          | 2          |
| 728          | 2                        | -          | 2          |
| 309          | -                        | 13         | 13         |
| 323          | -                        | 11         | 11         |
| <b>TOTAL</b> | <b>177</b>               | <b>24</b>  | <b>201</b> |



HIS NO. OF SAMPLE HOUSEHOLDS BY BLOCK

Zone E

| No. of Sample Households |              |            |            |
|--------------------------|--------------|------------|------------|
| Block No.                | Fixed Rm No. | Additional | Total      |
| 503                      | 9            | 7          | 16         |
| 507                      | 3            | 10         | 13         |
| 510                      | 3            | 1          | 4          |
| 520                      | 7            | -          | 7          |
| 524                      | 7            | 9          | 16         |
| 538                      | 10           | 7          | 17         |
| 540                      | 12           | 3          | 15         |
| 546                      | 5            | 5          | 10         |
| 551                      | 8            | -          | 8          |
| 557                      | 7            | 9          | 16         |
| 558                      | 5            | 11         | 16         |
| 565                      | 15           | -          | 15         |
| 576                      | 10           | 3          | 13         |
| 581                      | 6            | 5          | 11         |
| 585                      | 6            | 6          | 12         |
| 583                      | -            | 5          | 5          |
| <b>TOTAL</b>             | <b>113</b>   | <b>81</b>  | <b>194</b> |

Zone F

| No. of Sample Households |              |            |            |
|--------------------------|--------------|------------|------------|
| Block No.                | Fixed Rm No. | Additional | Total      |
| 426                      | 4            | 8          | 12         |
| 444                      | 7            | 14         | 21         |
| 454                      | 5            | 12         | 17         |
| 463                      | 8            | 16         | 24         |
| 469                      | 12           | 4          | 16         |
| 401                      | -            | 6          | 6          |
| 411                      | -            | 8          | 8          |
| 415                      | -            | 16         | 16         |
| 417                      | -            | 20         | 20         |
| 420                      | -            | 5          | 5          |
| 424                      | -            | 17         | 17         |
| 434                      | -            | 10         | 10         |
| 439                      | -            | 6          | 6          |
| 459                      | -            | 5          | 5          |
| 476                      | -            | 16         | 16         |
| <b>TOTAL</b>             | <b>36</b>    | <b>163</b> | <b>199</b> |



Appendix 5.A

Manual for Bus Waiting Time Survey



## MANUAL FOR BUS WAITING TIME SURVEY

### 1. ACTIVITIES OF SURVEYORS

- 1) Surveyors should choose sample bus passengers who arrived at the bus stop to wait for a bus.
- 2) Surveyors should observe the actual waiting time of the sample passengers, including how many buses (including the service number) he let pass before arrival before he gets to a ride.
- 3) Each surveyor should observe at least ten passengers per hour in their assigned survey station.

### 2. HOW TO FILL OUT THE SURVEY SHEET

- 1) Fill out the following items before your survey work starts.

- a) Date  
Weather  
Name of Surveyor  
Sheet No.

- b) Location of Bus Stop : Fill out

Avenue/Street name and block number where bus stop is located, as follows :

Bus stop  
location : Ang Mo Kio Ave 6  
Outside Blk. 123

---

Block 123

---

---

Ang Mo Kio Avenue 6

---

Bus stop  
location : Ang Mo Kio Ave 6  
Opposite Blk 123

c) Direction : Fill out the nearest Avenue/Street name towards which the bus is headed.

d) Shelter at Bus Stop: Encircle the code number as to a shelter exists or not.

2) Instruction for each item:

a) Time Surveyed : Enter the time when the sample passenger arrived at the bus stop.

b) Waiting Time : Enter the waiting time until the sample passenger goes on board a bus.

c) Number of Bus : Encircle the corresponding bus number which the sample passenger boarded.

d) Remarks : Fill out any unusual occurrence, e.g. Accident, shower, etc.

3) Bus stops to be surveyed

1) Ang Mo Kio Street 61  
Outside Block 649

Bus Service No. 269

2) Ang Mo Kio Street 52  
Outside Block 578

Bus Service No. 265

3) Ang Mo Kio Avenue 10  
Outside Block 443

Bus Service No. 261

4) Allocation of Surveyors

Three surveyors will be allocated for each bus stop.

BUS WAITING TIME SURVEY SHEET (1988)

DATE : \_\_\_\_\_ WEATHER : \_\_\_\_\_  
 LOCATION : Avenue/Street \_\_\_\_\_ (Outside/Opposite) BLOCK \_\_\_\_\_  
 DIRECTION : Towards \_\_\_\_\_ SHEET NO. \_\_\_\_\_  
 SHELTER AT BUS-STOP : 1. Yes 2. No NAME OF SURVEYOR: \_\_\_\_\_

| SAMPLE NUMBER                                                       | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|---------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| TIME SURVEYED                                                       | AM PM | AM PM | AM PM | AM PM | AM PM | AM PM | AM PM | AM PM | AM PM | AM PM |
| WAITING TIME                                                        | MINS  | MINS  | MINS  | MINS  | MINS  | MINS  | MINS  | MINS  | MINS  | MINS  |
| BUS SERVICE NO. TAKEN                                               |       |       |       |       |       |       |       |       |       |       |
| WHICH BUS DID HE/SHE TAKE AFTER ARRIVING AT BUS - STOP/ INTERCHANGE | 1st   | 1st   | 1st   | 1st   | 1st   | 1st   | 1st   | 1st   | 1st   | 1st   |
|                                                                     | 2nd   | 2nd   | 2nd   | 2nd   | 2nd   | 2nd   | 2nd   | 2nd   | 2nd   | 2nd   |
|                                                                     | 3rd   | 3rd   | 3rd   | 3rd   | 3rd   | 3rd   | 3rd   | 3rd   | 3rd   | 3rd   |
|                                                                     | 4th   | 4th   | 4th   | 4th   | 4th   | 4th   | 4th   | 4th   | 4th   | 4th   |
|                                                                     | 5th   | 5th   | 5th   | 5th   | 5th   | 5th   | 5th   | 5th   | 5th   | 5th   |
|                                                                     | 6th   | 6th   | 6th   | 6th   | 6th   | 6th   | 6th   | 6th   | 6th   | 6th   |
|                                                                     | 7th   | 7th   | 7th   | 7th   | 7th   | 7th   | 7th   | 7th   | 7th   | 7th   |
|                                                                     | 8th   | 8th   | 8th   | 8th   | 8th   | 8th   | 8th   | 8th   | 8th   | 8th   |
|                                                                     | 9th   | 9th   | 9th   | 9th   | 9th   | 9th   | 9th   | 9th   | 9th   | 9th   |
|                                                                     | 10th  | 10th  | 10th  | 10th  | 10th  | 10th  | 10th  | 10th  | 10th  | 10th  |

REMARKS



APPENDIX 6.A

PEDESTRIAN TRAFFIC COUNT SURVEY SHEET



PEDESTRIAN TRAFFIC COURT SURVEY SHEET

| Name of Surveyor : _____ |         |        |      | Survey Station : _____             |                         |          |                       |                         |      |
|--------------------------|---------|--------|------|------------------------------------|-------------------------|----------|-----------------------|-------------------------|------|
| _____                    |         |        |      | From _____                         |                         | To _____ |                       |                         |      |
| Time                     | Weather |        |      | With Shopping Bag<br>or Heavy Load |                         |          | Without<br>Heavy Load |                         |      |
|                          | Sunny   | Cloudy | Rain | Old                                | Adult<br>(Young/Middle) | Kids     | Old                   | Adult<br>(Young/Middle) | Kids |
| 7:00 - 7:30              |         |        |      |                                    |                         |          |                       |                         |      |
| 7:30 - 8:00              |         |        |      |                                    |                         |          |                       |                         |      |
| 8:00 - 8:30              |         |        |      |                                    |                         |          |                       |                         |      |
| 8:30 - 9:00              |         |        |      |                                    |                         |          |                       |                         |      |
| 9:00 - 9:30              |         |        |      |                                    |                         |          |                       |                         |      |
| 9:30 - 10:00             |         |        |      |                                    |                         |          |                       |                         |      |
| 10:00 - 10:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 10:30 - 11:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 11:00 - 11:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 11:30 - 12:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 12:00 - 12:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 12:30 - 13:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 13:00 - 13:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 13:30 - 14:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 14:00 - 14:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 14:30 - 15:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 15:00 - 15:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 15:30 - 16:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 16:00 - 16:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 16:30 - 17:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 17:00 - 17:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 17:30 - 18:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 18:00 - 18:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 18:30 - 19:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 19:00 - 19:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 19:30 - 20:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 20:00 - 20:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 20:30 - 21:00            |         |        |      |                                    |                         |          |                       |                         |      |
| 21:00 - 21:30            |         |        |      |                                    |                         |          |                       |                         |      |
| 21:30 - 22:00            |         |        |      |                                    |                         |          |                       |                         |      |



APPENDIX 6.B

PEDESTRIAN INTERVIEW SURVEY SHEET



PEDESTRIAN INTERVIEW SURVEY SHEET

Location Code

Serial No.

|                                                                                       |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                  |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| 1. Nationality                                                                        |                                                                                                                                                                                                                                                                                                                                                             | <input type="text"/>                                                                                                             |
| 2. Residence in Singapore                                                             |                                                                                                                                                                                                                                                                                                                                                             | <input type="text"/> <input type="text"/> <input type="text"/>                                                                   |
| 3. Purpose of Walking<br>(What are you doing here?)                                   | 1. <input type="checkbox"/> Shopping/Window Shopping<br>2. <input type="checkbox"/> Eating/Social/Recreational<br>3. <input type="checkbox"/> Working/Business<br>4. <input type="checkbox"/> Going to work/going home<br>5. <input type="checkbox"/> Others                                                                                                | <input type="text"/>                                                                                                             |
| 4. Mode of Transport<br>(Before starting walking what mode of transport did you use?) | 1. <input type="checkbox"/> Staying in Orchard Road<br>2. <input type="checkbox"/> Car<br>3. <input type="checkbox"/> Bus (SBS/TIBS)<br>4. <input type="checkbox"/> City Tour Bus<br>5. <input type="checkbox"/> Other Bus/Company Bus etc.<br>6. <input type="checkbox"/> MRT<br>7. <input type="checkbox"/> Walking<br>8. <input type="checkbox"/> Others | <input type="text"/>                                                                                                             |
| 5. Origin of Walking Trip<br>(Where did you start walking?)                           |                                                                                                                                                                                                                                                                                                                                                             | <input type="text"/> <input type="text"/>                                                                                        |
| 6. Destination of Walking Trip.<br>(Where are you going on foot?)                     |                                                                                                                                                                                                                                                                                                                                                             | <input type="text"/> <input type="text"/><br><input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| 7. Sex                                                                                | 1. <input type="checkbox"/> Male    2. <input type="checkbox"/> Female                                                                                                                                                                                                                                                                                      | <input type="text"/>                                                                                                             |
| 8. With or Without Shopping Bag/Heavy Load                                            | 1. <input type="checkbox"/> With Load    2. <input type="checkbox"/> Without Load                                                                                                                                                                                                                                                                           | <input type="text"/>                                                                                                             |
| 9. Type of Pedestrian                                                                 | 1. <input type="checkbox"/> Alone    2. <input type="checkbox"/> Couple<br>3. <input type="checkbox"/> Group                                                                                                                                                                                                                                                | <input type="text"/>                                                                                                             |
| 10. Time of Interview                                                                 |                                                                                                                                                                                                                                                                                                                                                             | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>                                              |
| 11. Weather                                                                           | 1. <input type="checkbox"/> Sunny    2. <input type="checkbox"/> Cloudy<br>3. <input type="checkbox"/> Rainy                                                                                                                                                                                                                                                | <input type="text"/>                                                                                                             |
| SURVEYOR NAME                                                                         |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                  |





APPENDIX 6.C

CODING AND EDITING MANUAL FOR  
THE PEDESTRIAN SURVEY



## EDITING AND CODING MANUAL FOR PEDESTRIANS SURVEY

### 1 Editing Works

#### 1.1 Editing work for Pedestrian Traffic Count Survey Sheets.

- 1) Confirm the following records:
  - . Survey station name/number
  - . Direction of pedestrian traffic flow
  - . Time surveyed
  - . Weather records ticked for each survey period
- 2) Check the figures of pedestrian traffic record and rewrite unclear figures with a red pen.

#### 1.2 Editing work for Pedestrian Interview Survey Sheets.

- 1) Confirm that all records are filled up.
- 2) If there are blank records, supply an answer within the limits of logical estimation. To take an example: As an interviewee used the MRT before starting walking in Question 4, the origin of his/her walking trip in Question 5 must be the nearest MRT station.
- 3) The time of interview in Question 10 must be changed to the 24 hours system, if it is recorded in the 12 hours system.

2. Coding work for Pedestrian Interview Survey Sheets.

- 1.1 Coding boxes are prepared at the right side of the questions in the questionnaire form. The boxes for Location Code and Serial Number are at the top of the questionnaire form.
- 1.2 Fill the location code number in the coding box. The code is listed in attached paper.
- 1.3 Fill the ticked or written number into the relevant boxes at the side of Question 3, 4 and 7 to 11.
- 1.4 Fill the nationality code into the box at the side of Question 1. The code is listed below.

| <u>Code Number</u> | <u>Nationality</u>                                                 |
|--------------------|--------------------------------------------------------------------|
| 1                  | Singapore                                                          |
| 2                  | Malaysia                                                           |
| 3                  | ASEAN countries (exclude Singapore and Malaysia)                   |
| 4                  | Japan                                                              |
| 5                  | Other Countries in Asia                                            |
| 6                  | America (USA, Canada, Mexico, and other countries in the Americas) |
| 7                  | Europe (including Soviet Union and Eastern Europe)                 |
| 8                  | Other countries                                                    |

1.5 Fill the code number of Residence Type and Residential Area into the boxes in Question 2. The code is listed as follows:

| <u>Code Number</u> | <u>Residence Type</u> | <u>Area</u>                     |
|--------------------|-----------------------|---------------------------------|
| 11                 | Hotel                 | Within Orchard area             |
| 12                 | Hotel                 | CBD area (exclude Orchard area) |
| 13                 | Hotel                 | East Sector                     |
| 14                 | Hotel                 | North Sector                    |
| 15                 | Hotel                 | West Sector                     |
| 21                 | Other Residence       | Within Orchard area             |
| 22                 | Other Residence       | CBD area (exclude Orchard area) |
| 23                 | Other Residence       | East Sector                     |
| 24                 | Other Residence       | North Sector                    |
| 25                 | Other Residence       | West Sector                     |

1.6 In Question 5 and 6, find the zone number for the origin and destination of walking trip from the zoning map of Orchard area supplied. Fill these numbers in the coding boxes.

CODE NUMBER FOR SURVEY STATIONS

| <u>Code Number</u> | <u>Survey Station</u>            |
|--------------------|----------------------------------|
| 11                 | Front of Hyatt Regency           |
| 12                 | Front of Royal Holiday Inn       |
| 21                 | Front of International Building  |
| 22                 | Front of Liat Tower              |
| 31                 | Front of C. K. Tang              |
| 32                 | Front of Wisma Atria             |
| 41                 | Front of Paragon                 |
| 42                 | Opposite Paragon                 |
| 51                 | Front of Centrepoint             |
| 52                 | Front of Specialists' Centre     |
| 61                 | Front of Plaza Singapura         |
| 62                 | Front of Dhoby Ghaut MRT Station |

APPENDIX 6.D

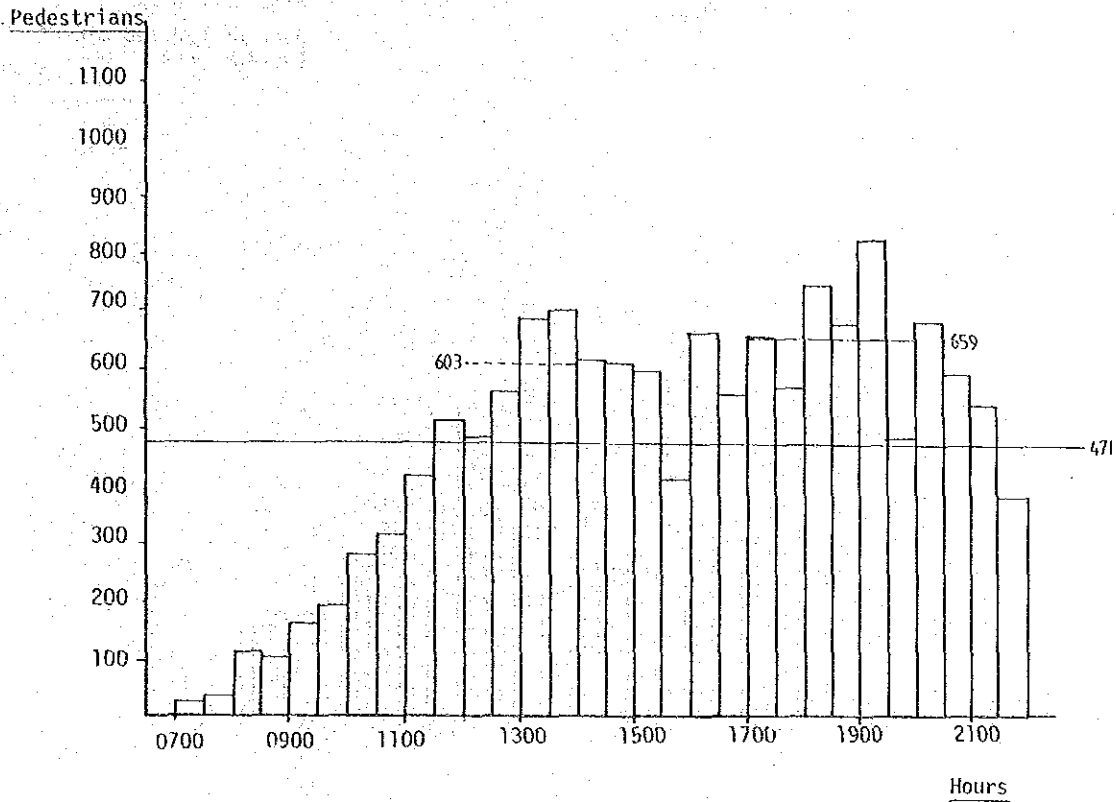
DISTRIBUTION OF PEDESTRIAN TRAFFIC VOLUME  
BY TIME PERIOD





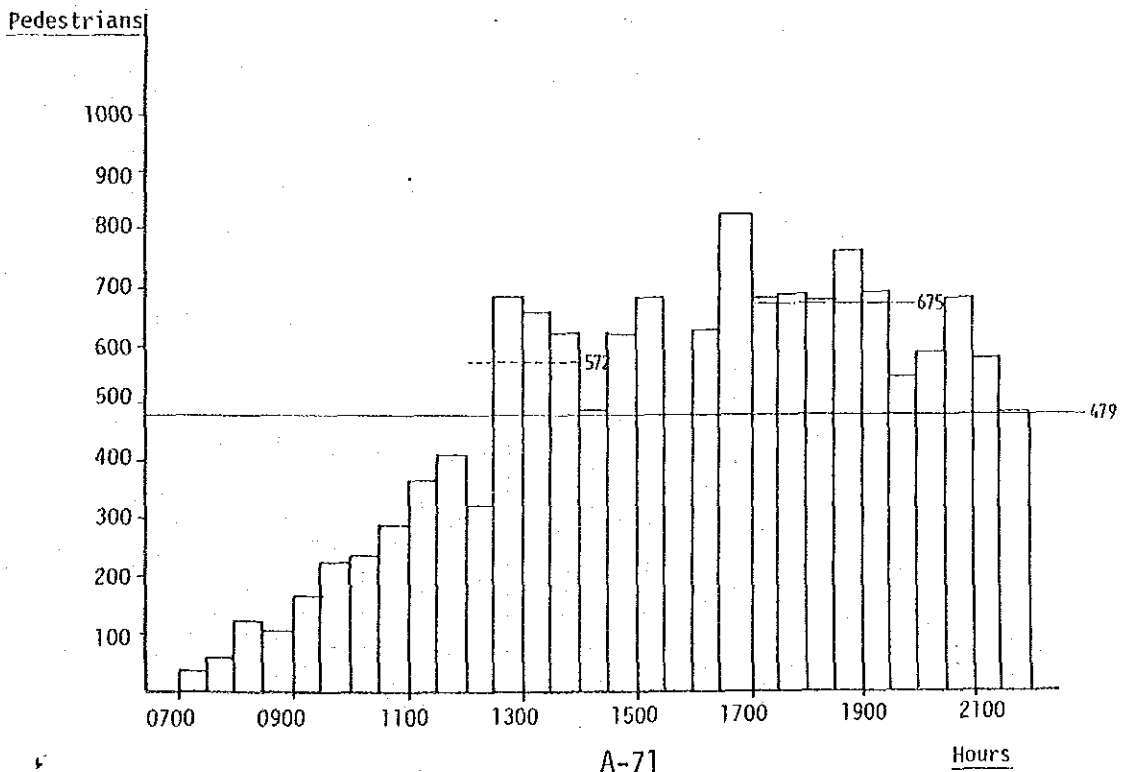
FRONT OF HYATT REGENCY  
STATION 11 (1)

- Average Peds/30 min of 15 hours
- - - Average Peds/30 min of Afternoon peak
- - - - Towards Orchard



STATION 11 (2)

- - - - Away from Orchard

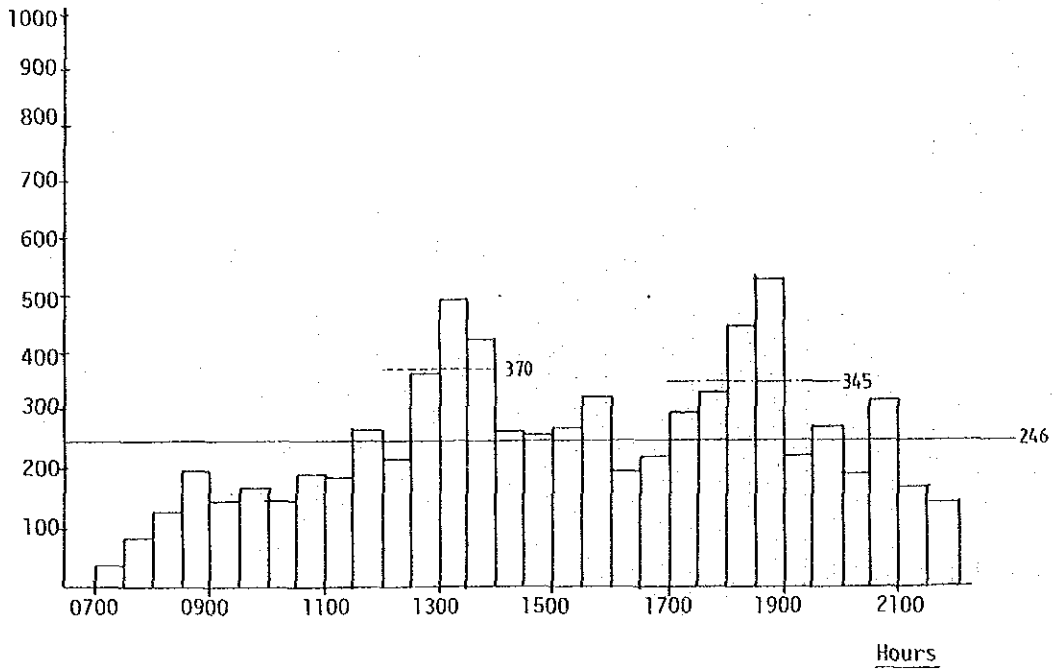


FRONT OF ROYAL HOLIDAY INN  
STATION 12 (1)

●----- Towards Orchard

- Average Peds/30 min of 15 hours
- Average Peds/30 min of Afternoon peak
- Average Peds/30 min of Evening peak

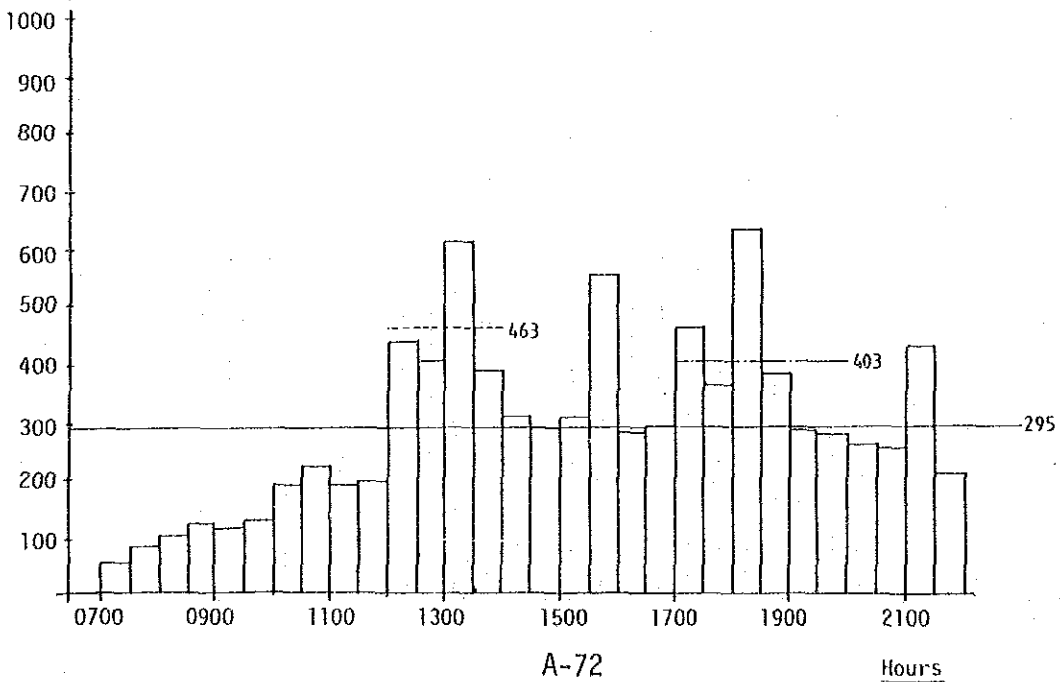
Pedestrians



STATION 12 (2)

●----- Away from Orchard

Pedestrians



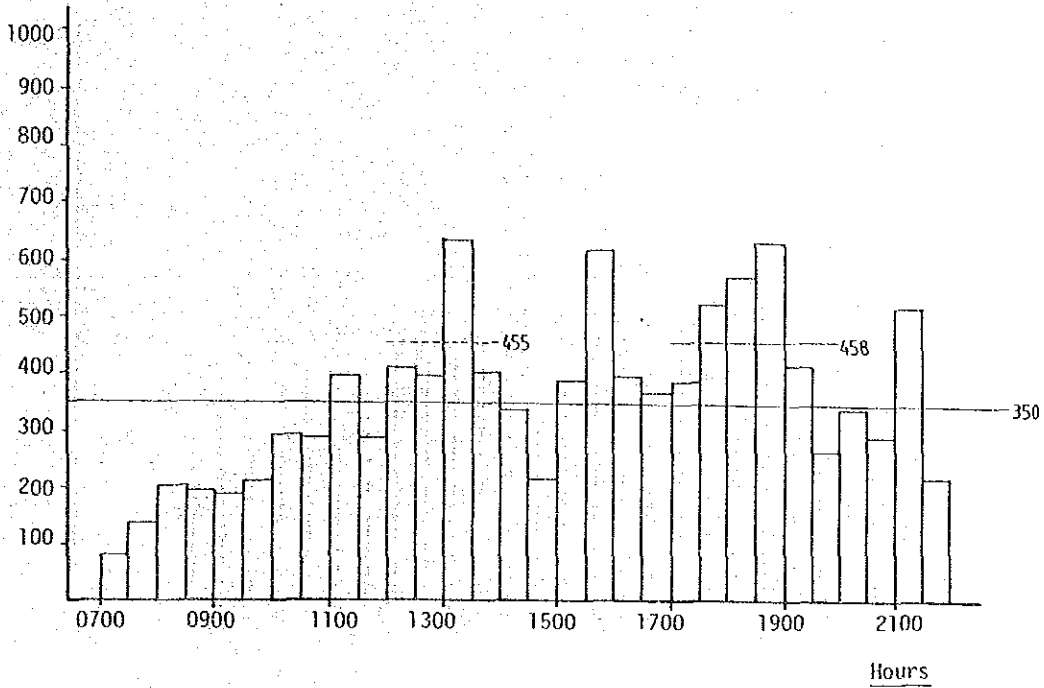
FRONT OF INTERNATIONAL BUILDING

STATION 21 (1)

•----- Towards Bras Basah Road

- Average Peds/30 min of 15 hours
- Average Peds/30 min of Afternoon peak
- Average Peds/30 min of Evening peak

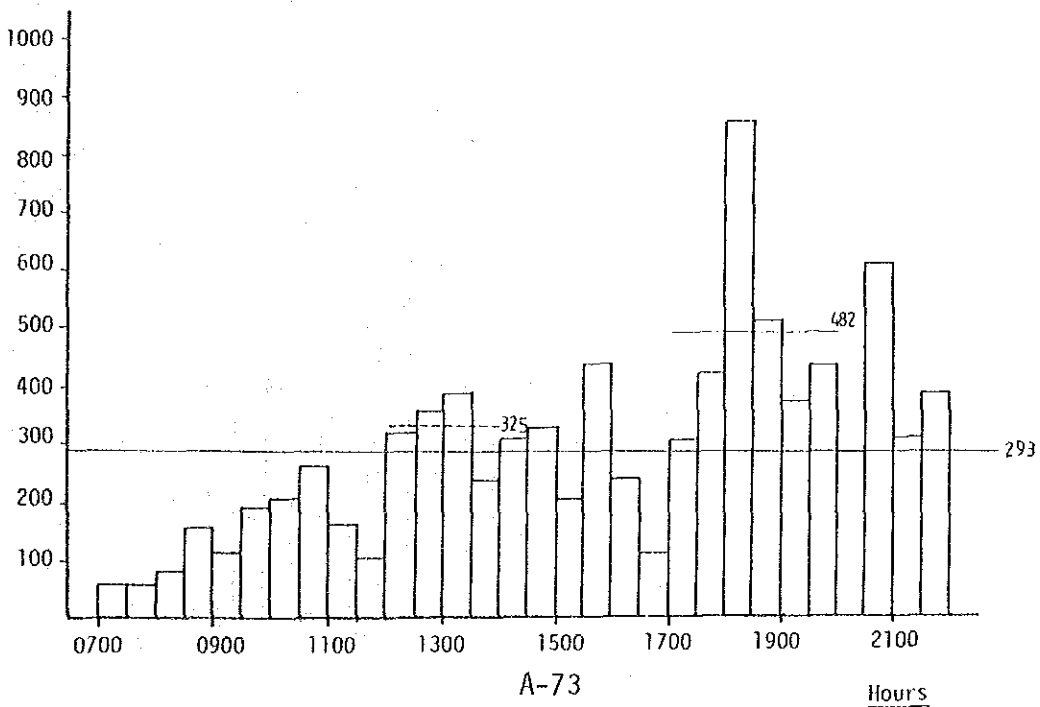
Pedestrians



STATION 21 (2)

•----- Towards Tanglin Road

Pedestrians

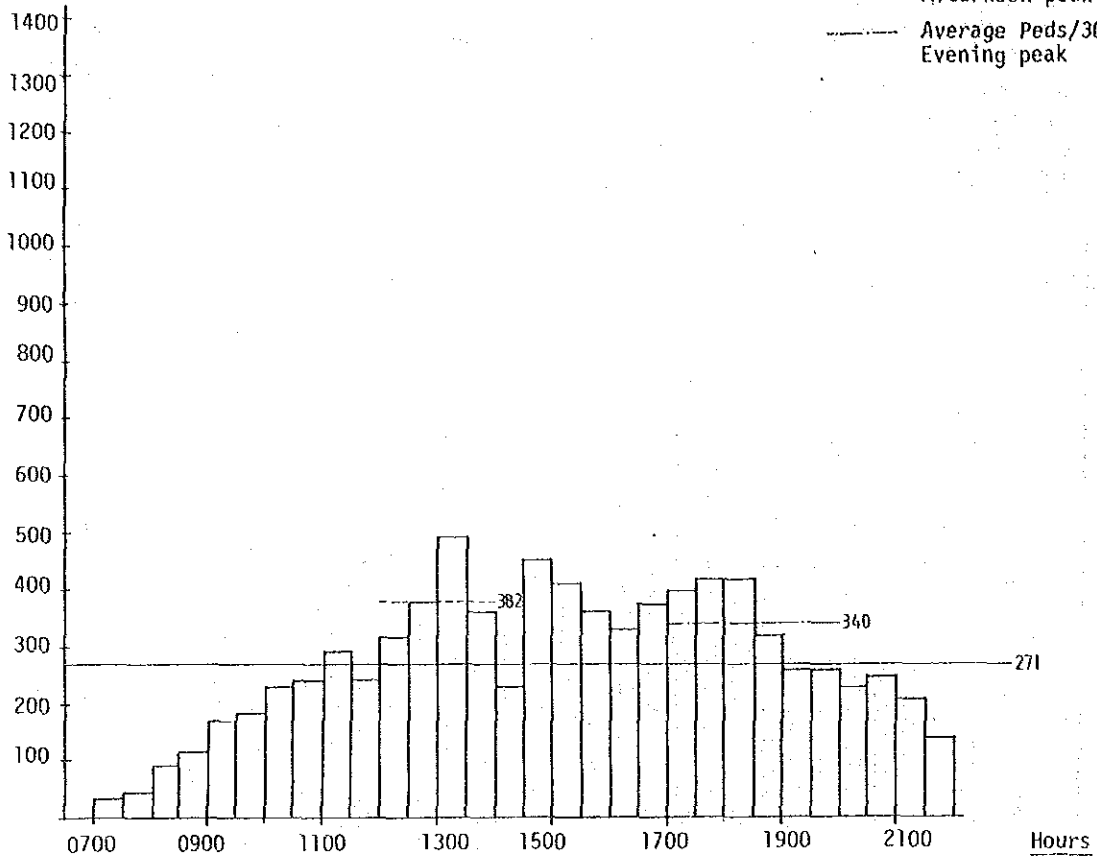


FRONT OF LIAT TOWER  
STATION 22 (1)

Pedestrians

o----- Towards Bras Basah Road

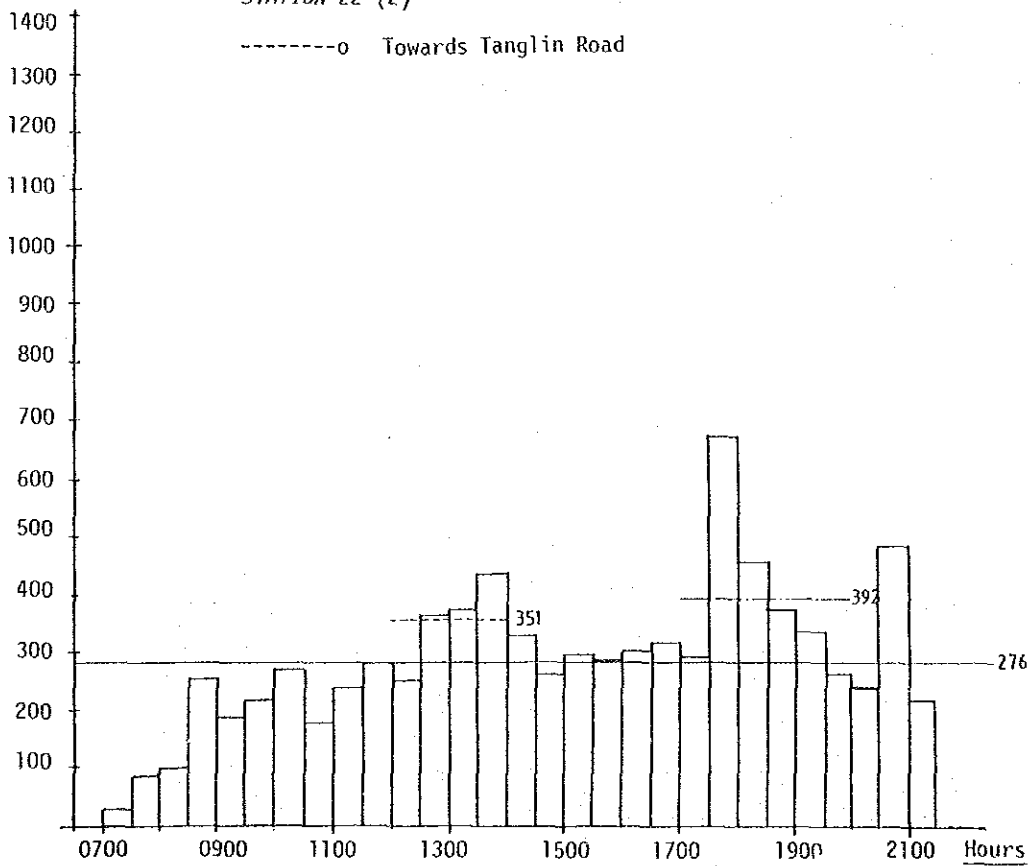
- Average Peds/30 min of 15 hours
- Average Peds/30 min of Afternoon peak
- Average Peds/30 min of Evening peak



Pedestrians

STATION 22 (2)

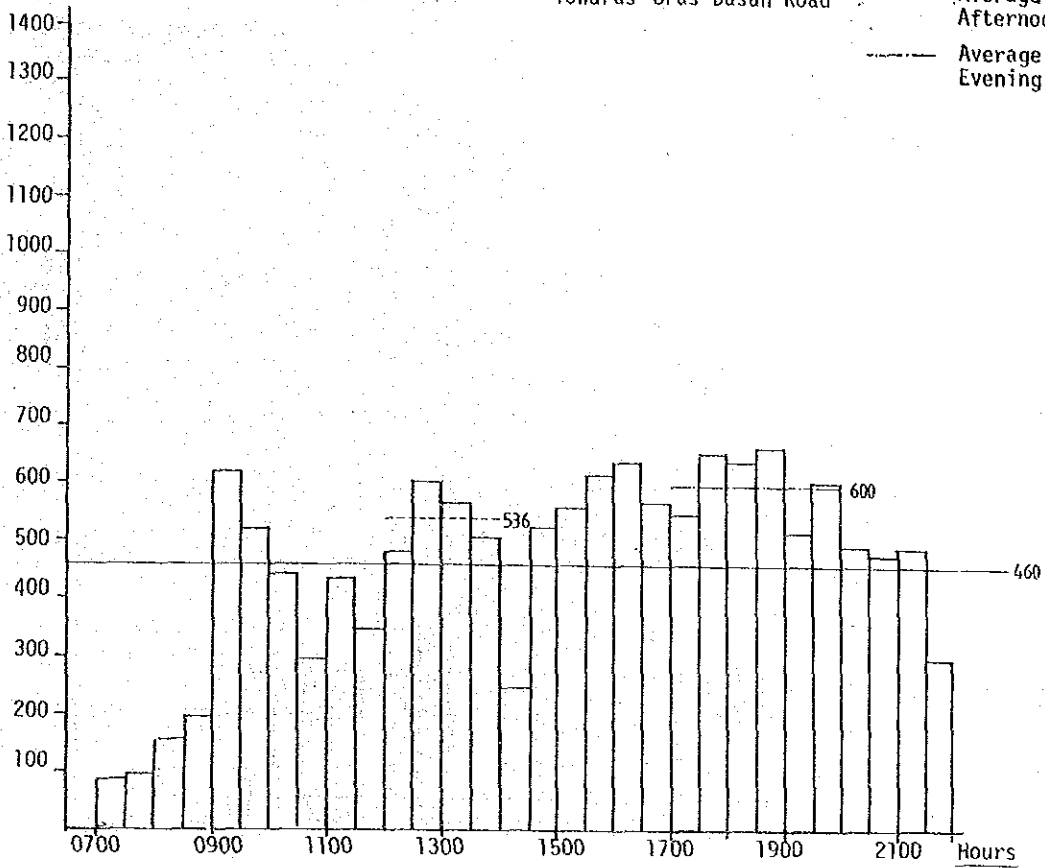
o----- Towards Tanglin Road



FRONT OF CK TANGS

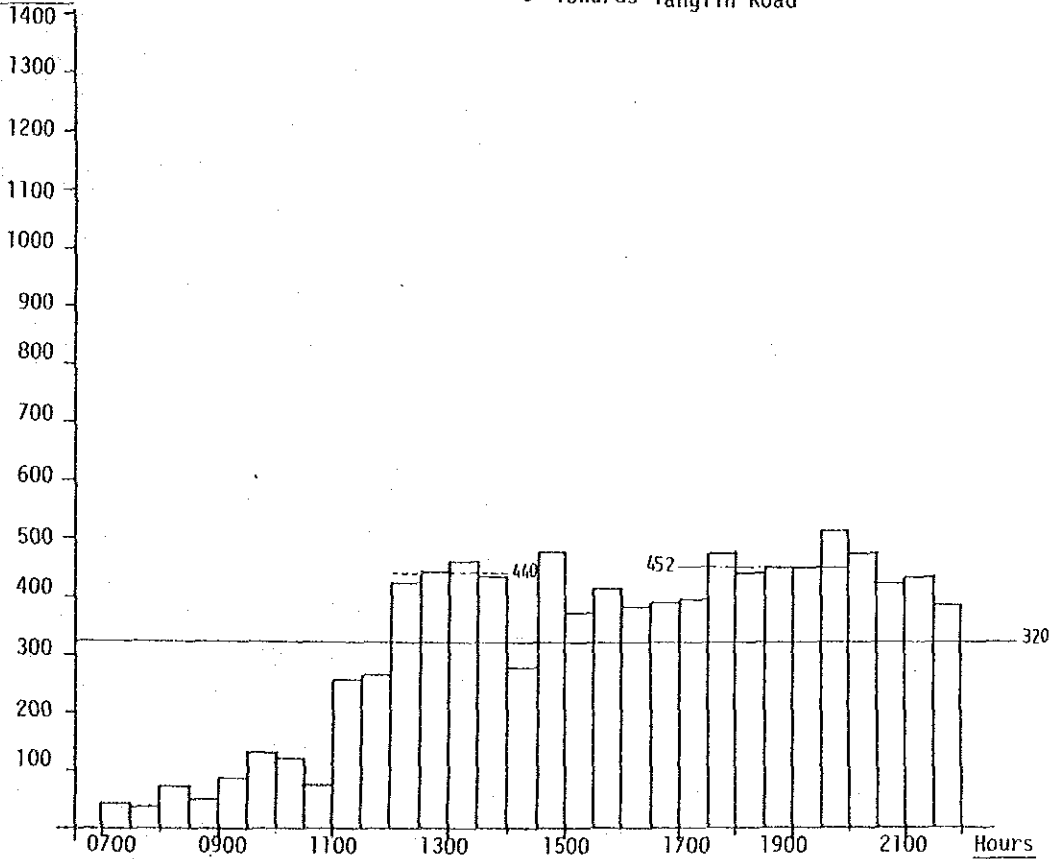
STATION 31 (1)

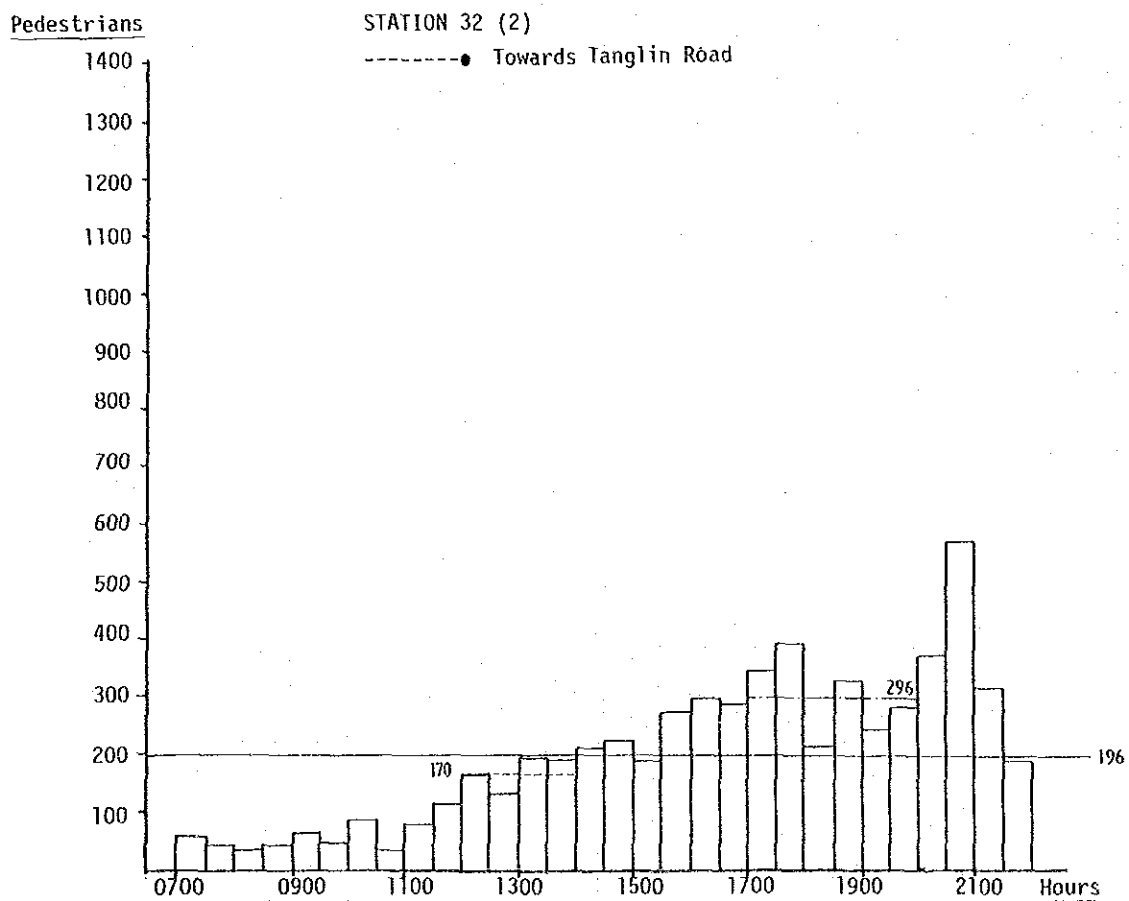
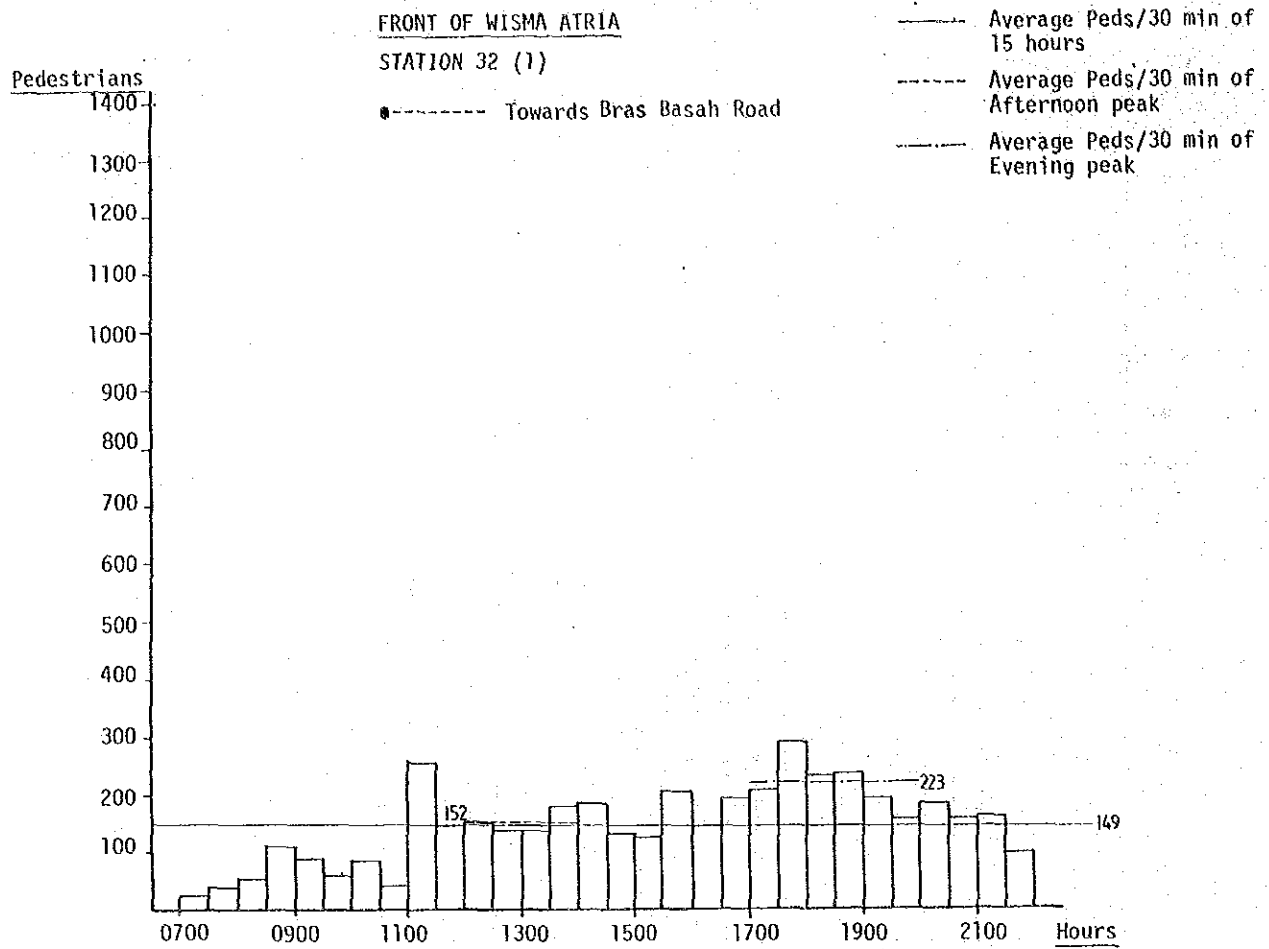
Pedestrians



STATION 31 (2)

Pedestrians



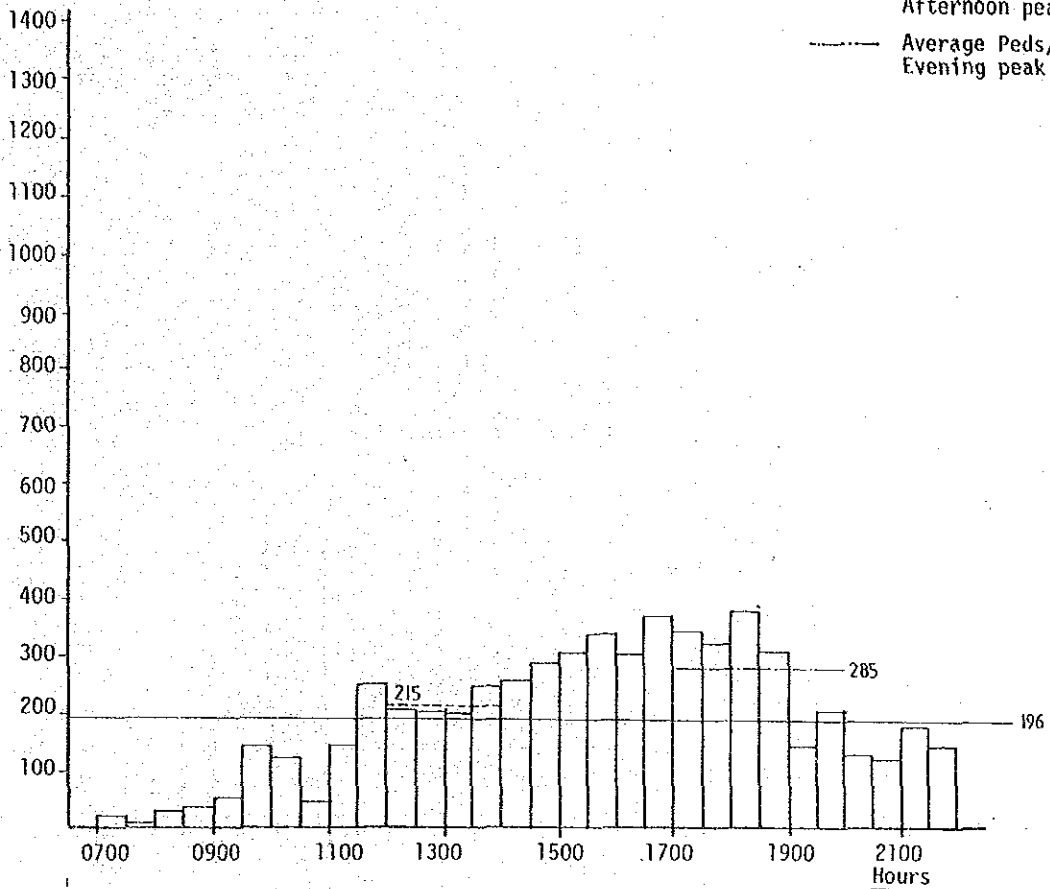


FRONT OF PARAGON  
STATION 41 (1)

Pedestrians

● ----- Towards Bras Basah Road

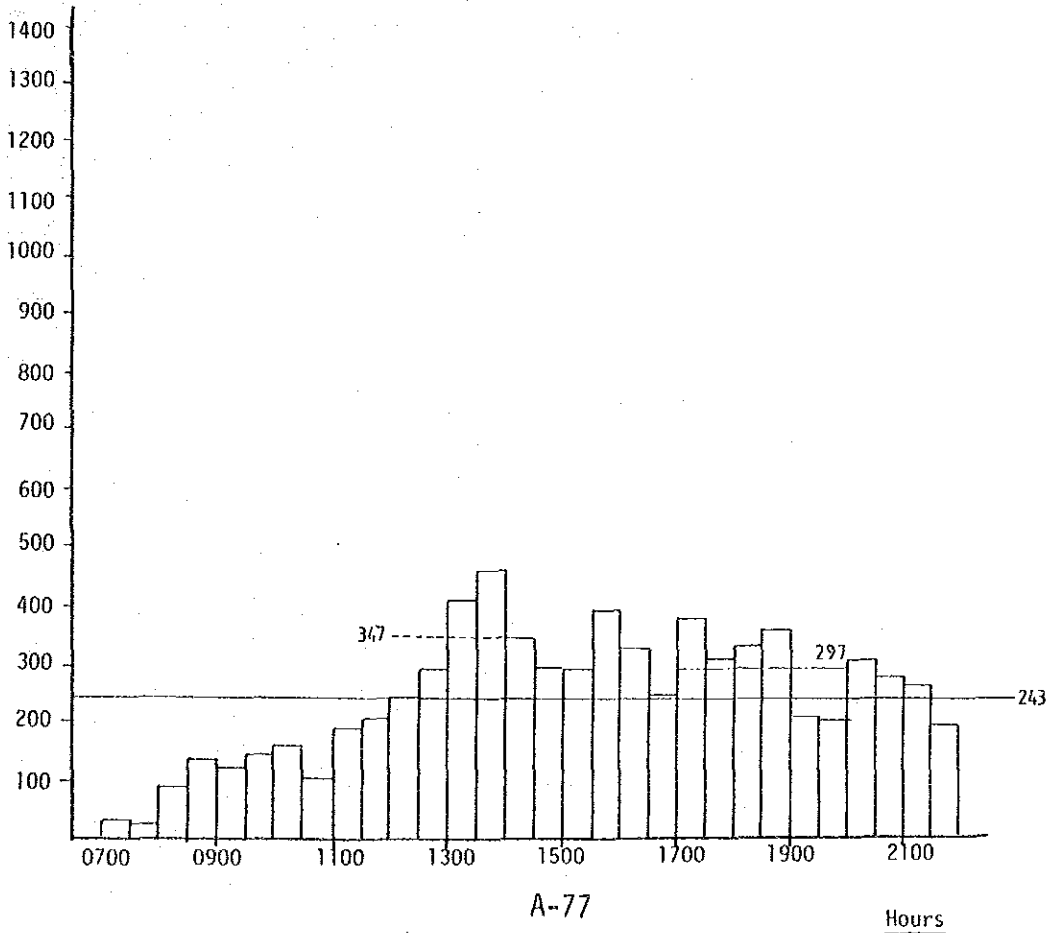
- Average Peds/30 min of 15 hours
- Average Peds/30 min of Afternoon peak
- Average Peds/30 min of Evening peak



STATION 41 (2)

Pedestrians

● ----- Towards Tanglin Road



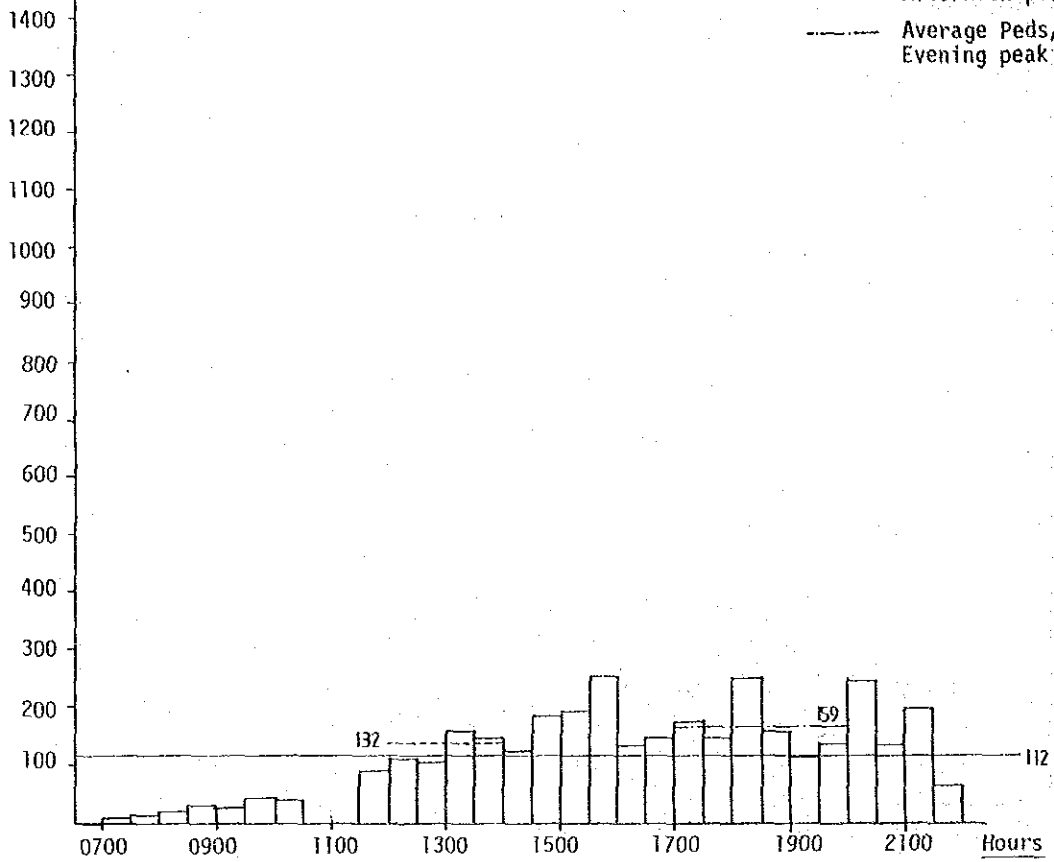
OPPOSITE PARAGON

STATION 42 (1)

Pedestrians

●----- Towards Bras Basah Road

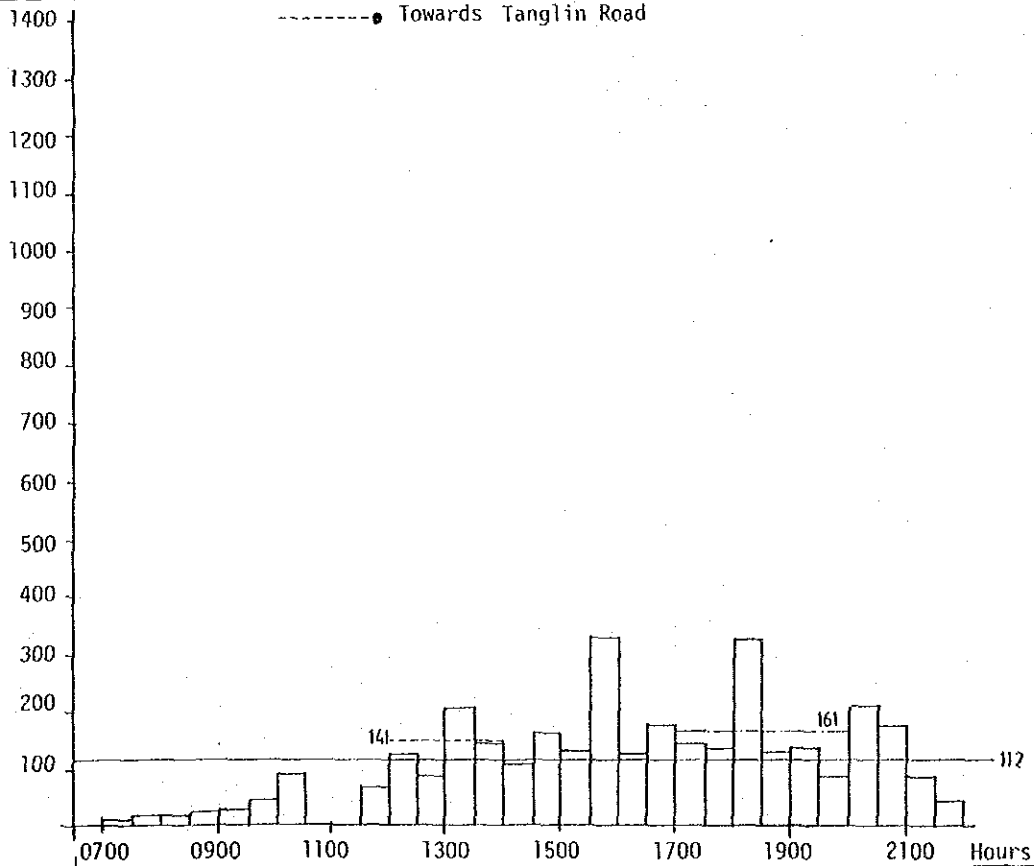
- Average Peds/30 min of 15 hours
- Average Peds/30 min of Afternoon peak
- Average Peds/30 min of Evening peak



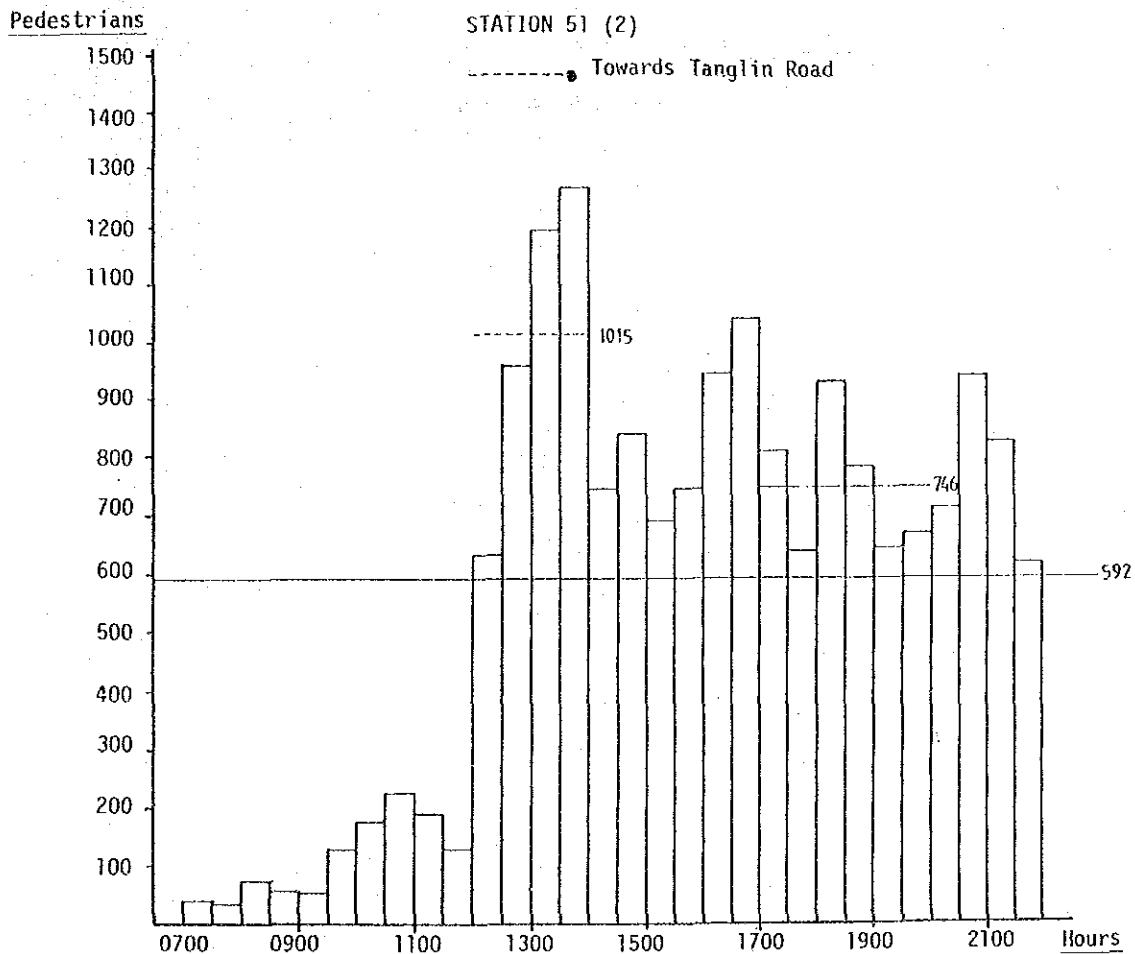
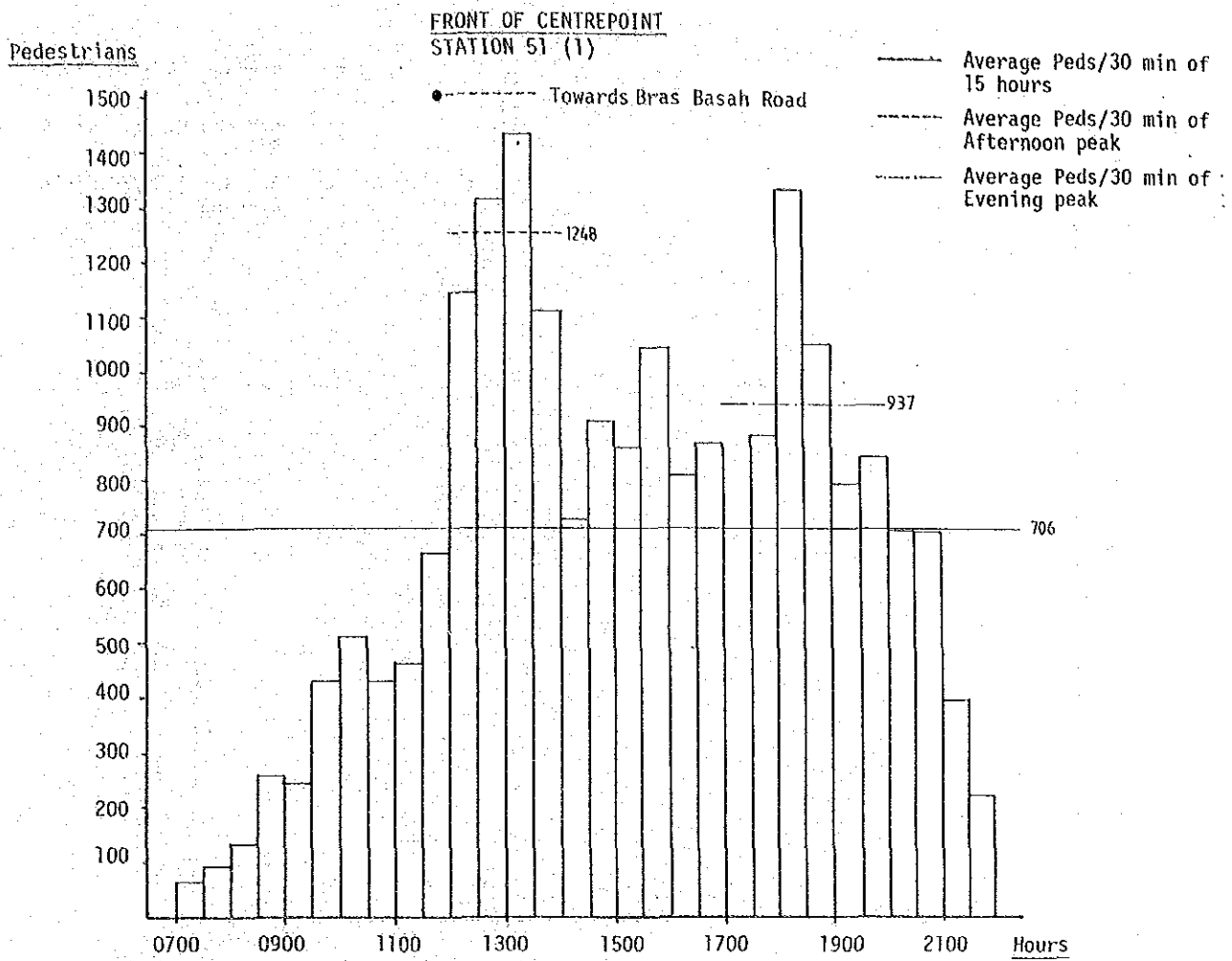
STATION 42 (2)

Pedestrians

●----- Towards Tanglin Road



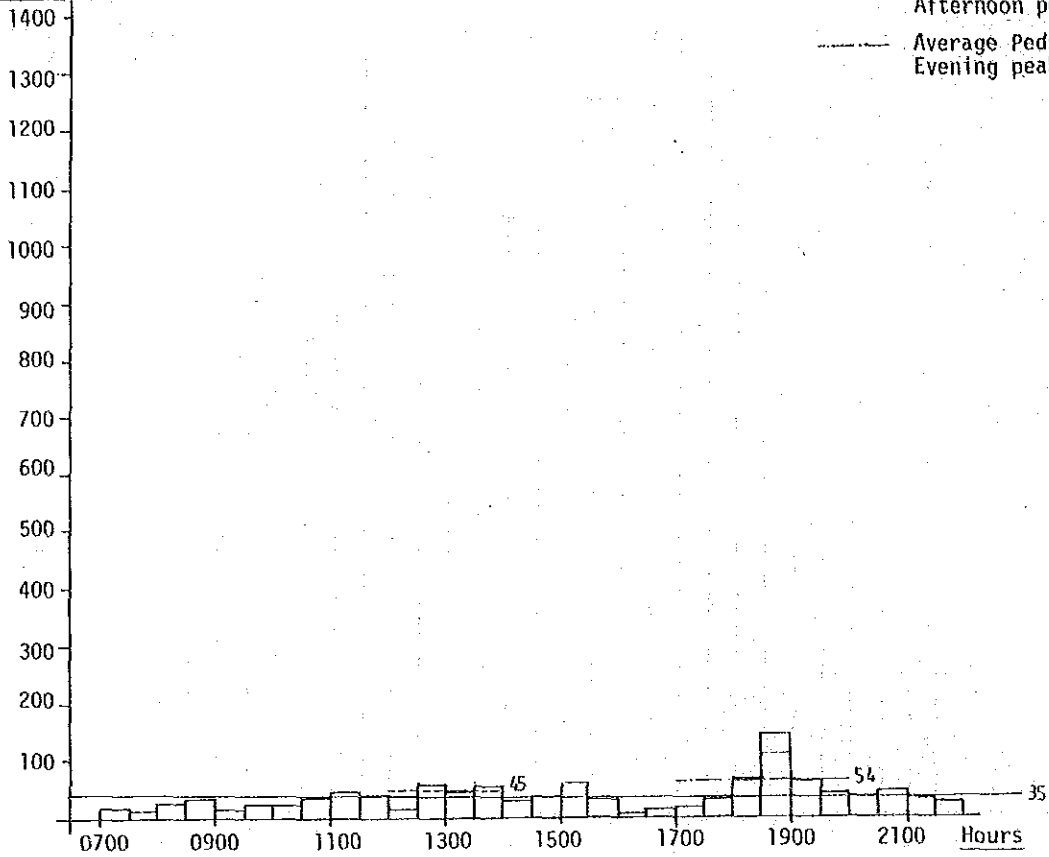




FRONT OF SPECIALIST CENTRE

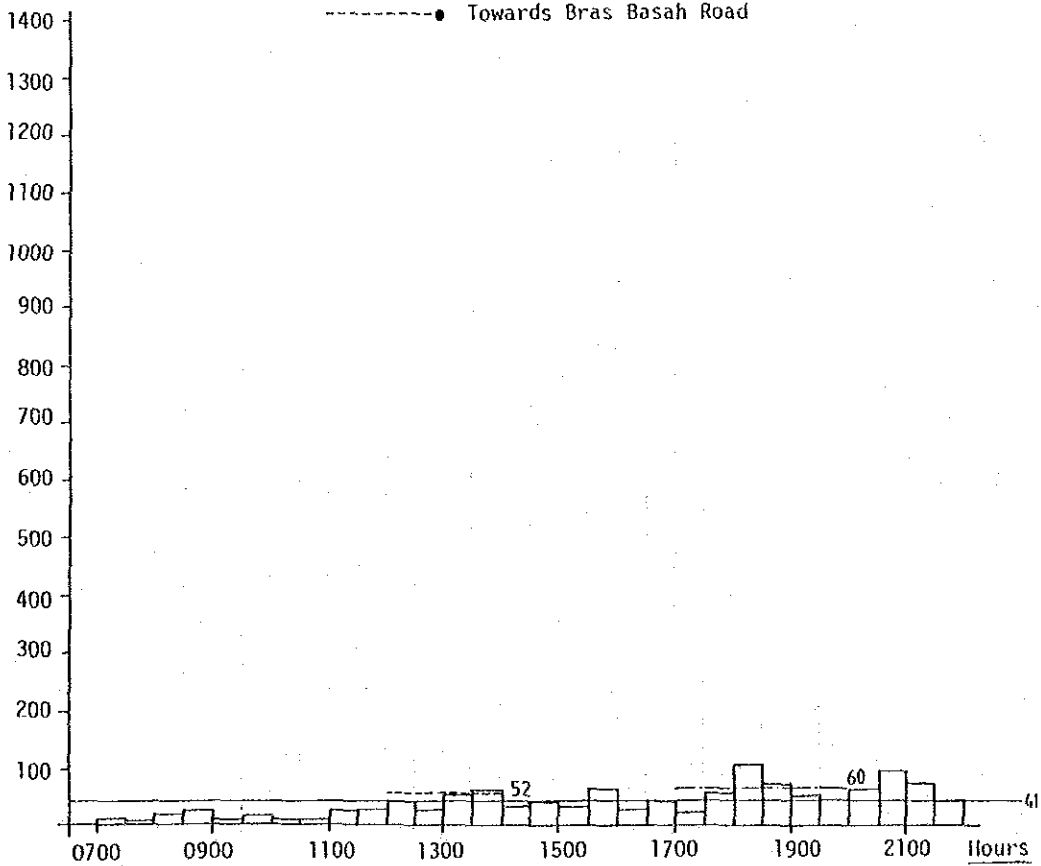
STATION 52 (1)

Pedestrians



STATION 52 (2)

Pedestrians



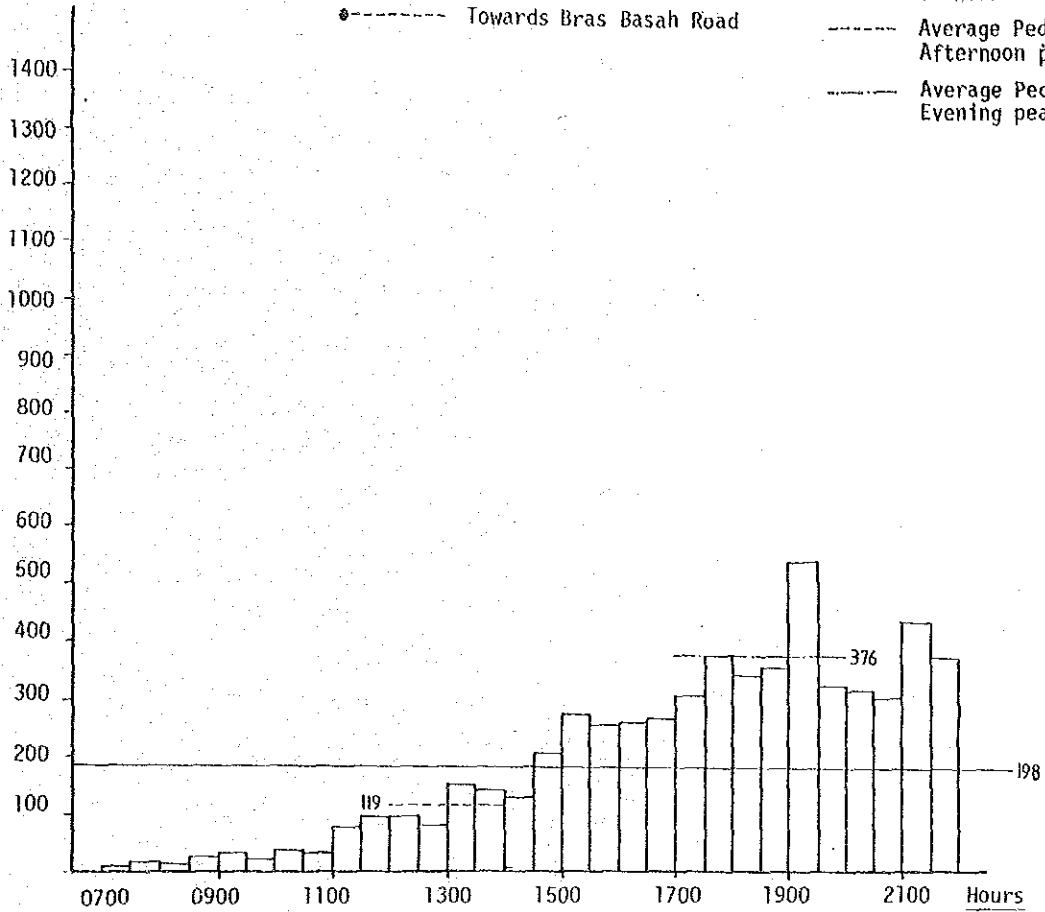
FRONT OF PLAZA SINGAPURA

Pedestrians

STATION 61 (1)

•----- Towards Bras Basah Road

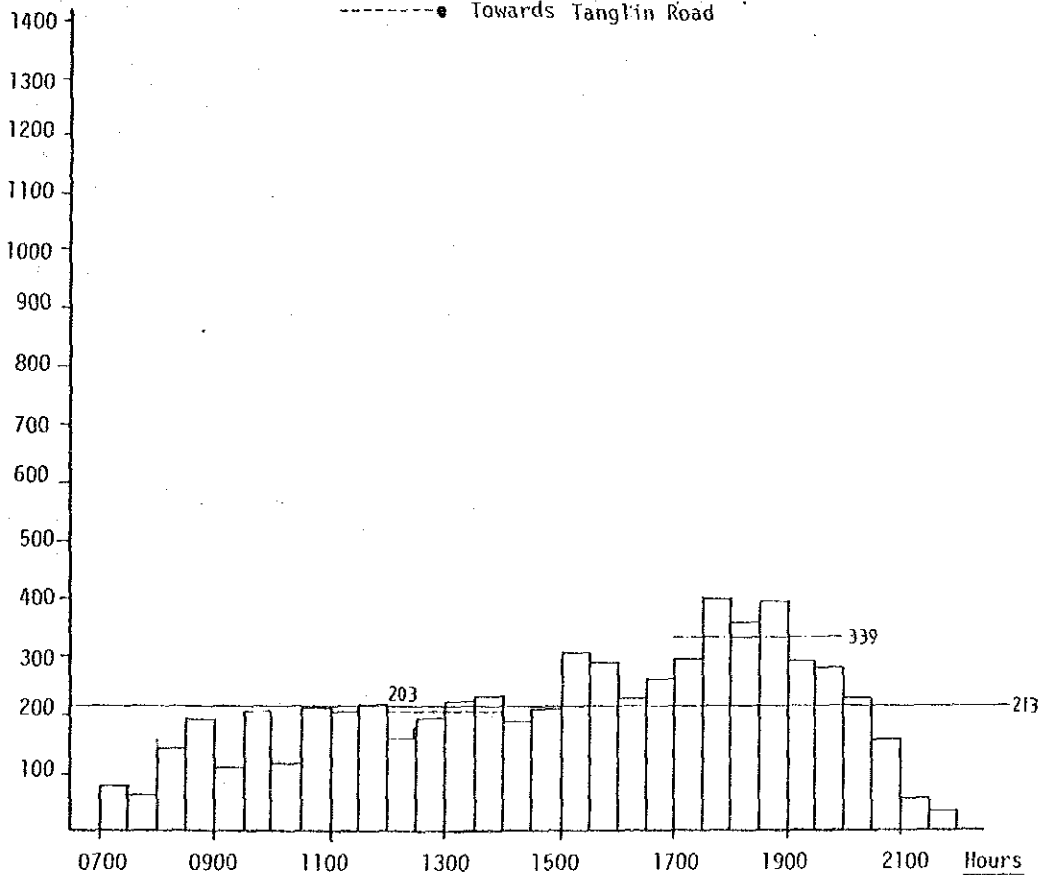
- Average Peds/30 min of 15 hours
- Average Peds/30 min of Afternoon peak
- Average Peds/30 min of Evening peak



Pedestrians

STATION 61 (2)

•----- Towards Tanglin Road







JICA