

**SCOPE OF WORK
FOR
THE FEASIBILITY STUDY ON
TRANSPORTATION FACILITIES PROJECTS
IN
KLANG VALLEY**

**ECONOMIC PLANNING UNIT
PRIME MINISTER'S DEPARTMENT
MALAYSIA**

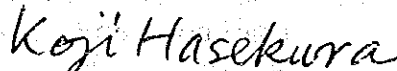
SCOPE OF WORK
FOR
THE FEASIBILITY STUDY ON
TRANSPORTATION FACILITIES PROJECTS
IN
KLANG VALLEY

AGREED UPON BETWEEN
THE ECONOMIC PLANNING UNIT
OF
THE PRIME MINISTER'S DEPARTMENT
ON BEHALF OF
THE GOVERNMENT OF MALAYSIA
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

Kuala Lumpur,
March 17, 1987



(Tan Sri Radin Soenarno Alhaj)
Director General
Economic Planning Unit,
Prime Minister's Department
on behalf of
The Government of Malaysia



(Mr. Koji Hasekura)
Leader of the Preliminary
Study Team
on behalf of
Japan International
Cooperation Agency

I. INTRODUCTION

In response to the request of the Government of Malaysia, the Government of Japan has decided to conduct a Feasibility Study on Transportation Facilities Projects in Klang Valley (hereinafter referred to as "the Study"), and in accordance with the relevant laws and regulations in force in Japan, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, will undertake the Study in close cooperation with the relevant Malaysian authorities.

The present document sets forth the Scope of Work with regard to the Study.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are:

- (a) To carry out a preliminary engineering study including economic and financial studies on the following road construction projects.
 - i) Southern part of Middle Ring Road (II) and Shah Alam Highway.
 - ii) North-South Expressway Link.
- (b) To carry out an engineering study on the traffic control and surveillance system in Kuala Lumpur Conurbation.
- (c) To carry out an engineering study including economic and financial studies for constructing freight terminals in Klang Valley.

III. STUDY AREA

(a) The road construction projects are:

(i) The Southern part of Middle Ring Road (II) and Shah Alam Highway starts at the intersecting point of Jalan Cheras with this road, runs parallel to Federal Route II and terminates at the intersecting point of Jalan Telok Gong with Shah Alam Highway.

(ii) North-South Expressway which can form part of the North-South (Toll) Expressway Network starts at intersection with the New Klang Valley Expressway and terminates at the intersecting point with the Seremban (Toll) Expressway.

(b) The Study Area for the traffic control and surveillance system is mainly Kuala Lumpur and its Conurbation areas.

(c) The freight terminal projects consist of the North Terminal and South Terminal located in Kuala Lumpur and West Terminal in Port Klang.

IV. SCOPE OF THE STUDY

In order to achieve the objectives, the Study shall cover the following items:

a) Items of the Study on Road Construction Projects:

(1) Landuse study along the corridor of the road projects.

(2) Traffic volumetric survey.

- (3) Future traffic demand forecast of alternative plans.
- (4) Engineering Surveys.
 - Topographic survey
 - Geotechnical survey
 - Other related surveys
- (5) Establishment of Design standards.
- (6) Alternative routes and alignment study.
- (7) Preliminary Design.
- (8) Preparation of corridor plan.
- (9) Estimation of quantity and costs.
- (10) Economic analysis and financial analysis.
- (11) Implementation programme and recommendation.

b) Items of the Study on Traffic Control and Surveillance Project:

- (1) Review of the existing Area Traffic Control (ATC) System.
- (2) Turning movement traffic count survey, traffic queue survey, etc.
- (3) Conceptual system plan.
 - Identification of requirement to the system.
 - Identification of functions and equipment.
 - Preparation of alternative conceptual systems and its selection.
- (4) Engineering design for the system
- (5) Estimation of the installation cost for the system.
- (6) Analysis and evaluation of effectiveness of the system.

c) Items of the Study of Freight Terminals:

- (1) Review and proposal of Freight Terminal Plans and projects.

- (2) Collection of information from various agencies concerned.
- (3) Site survey of the proposed freight terminals.
- (4) Future freight terminal demand forecast.
- (5) Conceptual freight terminal plans.
 - Requirement for freight terminals.
 - Identification of location, scale, function and major facilities at freight terminals.
 - Preparation of alternative conceptual plans and its selection.
- (6) Engineering design for freight terminals.
- (7) Estimation of the quantity and costs.
- (8) Economic analysis and financial analysis.
- (9) Implementation programme and recommendation.

V. STUDY SCHEDULE

The whole work will be conducted in accordance with the attached tentative schedule.

The Study will be divided into two (2) phases:

Phase I; (1) Route study with the preparation of corridor plan for the southern part of Middle Ring road (II) and Shah Alam Highway and the North-South Expressway Link.

(2) Engineering Study on traffic control and surveillance system.

(3) Engineering Study on the freight terminal projects.

Phase II; Preliminary Engineering Study for the southern part of Middle Ring Road (II), Shah Alam Highway and North-South Expressway Link.

The Phase I will be completed within ten (10) months, while Phase II within twenty (20) months after commencement of the Study.

VI. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Malaysia.

1. Inception Report

Thirty (30) copies within one (1) month after commencement of the Study.

2. Progress Report (I)

Thirty (30) copies within five (5) months after commencement of the Study.

3. Interim Report

Thirty (30) copies within ten (10) months after commencement of the Study.

4. Progress Report (II)

Thirty (30) copies within fourteen (14) months after commencement of the Study.

5. Draft Final Report

Thirty (30) copies within seventeen (17) months after commencement of the Study.

The Government of Malaysia will provide JICA with its comments within one (1) month after the receipt of the Draft Final Report.

6. Final Report

Fifty (50) copies within two (2) months after the receipt of the Government of Malaysia's comments on the Draft Final Report.

The Study team should ensure that all data, information, maps, materials and findings connected with the Study are kept confidential and not disposed of or revealed to any third party except with the prior written consent of the Government of Malaysia. Such maps and aerial photographs are to be returned to the Government of Malaysia immediately upon completion of the Study. All reports when finalized and submitted to the Government of Malaysia shall remain the property of the Government of Malaysia.

VII. UNDERTAKINGS OF THE GOVERNMENT OF MALAYSIA

To facilitate the smooth conduct of the Study, the Government of Malaysia shall take the following necessary measures:

1. To inform the members of the Study team of any existing risk in the Study area and to take any measures deemed necessary to secure the safety of the Study team.
2. To secure the necessary entry permits for the Study team to conduct field surveys in Malaysia and exempt them from consular fees.
3. To exempt the members of the Study team from taxes and duties as normally accorded under the provision of Malaysian General Circular No. 1 of 1979, on equipment, machinery and other materials brought into and out of Malaysia for the conduct of the Study.

4. To exempt the members of the Study team from Malaysian income tax on their officials emoluments in respect of their period of assignment in Malaysia in connection with the conduct of the Study, but the Government of Malaysia shall retain the right to take such emoluments into account for the purpose of assessing the amount to be applied to income from other sources.
5. To provide the necessary facilities to the Study team for remittance as well as utilization of funds introduced into Malaysia from Japan in connection with the conduct of the Study.
6. To secure permission for entry into private properties or restricted areas for the conduct of the Study.
7. To provide the Study team with medical services when needed, but the expenses will be chargeable to the members of the Study team.
8. To make arrangements for the Study team to take back to Japan the data, maps and materials connected with the Study subject to the approval of the Government of Malaysia, in order to prepare the reports.
9. To provide the Study team with available data, maps and information necessary for the execution of the Study.
10. To appoint counterpart personnel to the Study team during the Study period.
11. To provide the Study team with suitable office space with clerical service and necessary office equipment in Kuala Lumpur.

12. To provide the Study team with adequate means of local transport for official travel only.
13. To indemnify any member of the Study team in respect of damages arising from any legal action against him in relation to any act performed or omissions made in undertaking the Study except when the two Governments agree that such a member is guilty of gross negligence or wilful misconduct.
14. To nominate Klang Valley Planning Secretariate to act as counterpart agency for the Study and Economic Planning Unit as the main coordinating body in relation to other relevant Governmental and non-Governmental organizations.

VIII. UNDERTAKINGS OF JICA

In order to conduct the Study, JICA shall take the following measures:

1. To dispatch, at its own expense, the Study team to Malaysia.
2. To pursue technology transfer to the Malaysian counterpart personnel in the course of the Study.

IX. CONSULTATION

JICA and the Government of Malaysia shall consult each other in respect of any matter that is not agreed upon in this document and which may arise from or in connection with the Study.

ATTACHMENT

TENTATIVE SCHEDULE

| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
|------------------------|----------|---|---|-------|---|---|---|---|------|----|----|----|----|--------|----|----|------|----|----|----|-----|
| Work in Malaysia | Phase I | | | | | | | | | | | | | | | | | | | | |
| | Phase II | | | | | | | | | | | | | | | | | | | | |
| Work in Japan | | | | | | | | | | | | | | | | | | | | | |
| REPORT PRESENTATION | Ic/R | | | PR(I) | | | | | It/R | | | | | PR(II) | | | DE/R | | | | F/R |

Ic/R --- Inception Report
 PR(I)--- Progress Report I
 It/R --- Interim Report
 PR(II)--- Progress Report II
 DE/R ---- Draft Final Report
 F/R ---- Final Report

MINUTES OF MEETING

Between

the Economic Planning Unit of
the Prime Minister's Department on
behalf of the Government of Malaysia


and

the Preliminary Study Team of
Japan International Cooperation Agency


on

THE FEASIBILITY STUDY ON TRANSPORTATION FACILITIES PROJECTS
IN
KLANG VALLEY

Kuala Lumpur
17th March 1987



.....
(DR. MOHD. NOOR B.H.J. HARUN)
Director
Economic Planning Unit
Prime Minister's Department
Kuala Lumpur



.....
(MR. KOJI HASEKURA)
Leader of the Preliminary
Study Team
on behalf of
Japan International
Cooperation Agency

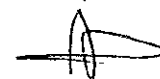
MINUTES OF MEETING
ON
THE FEASIBILITY STUDY ON TRANSPORTATION FACILITIES PROJECTS
IN
KLANG VALLEY

The Government of Japan, at the request of the Government of Malaysia, dispatched the preliminary Study Team, headed by Mr. Koji Hasekura, from 8th March to 18th March, 1987 through Japan International Cooperation Agency, to conduct a Preliminary Study on the Feasibility Study on Transportation Facilities Projects in Klang Valley. The Preliminary Study Team had a series of discussion with the relevant Malaysian Authorities.

The attendance list is as per Attachment I.

Main items which were agreed upon by both sides are as follows :-

1. The Study should be conducted in accordance with the Scope of Work, duly signed on 17th March, 1987.
2. The Study Areas of
 - (a) the Road Construction Projects and
 - (b) the Traffic Control and Surveillance System,were confirmed as per the attached maps hereto. The related access/egress roads are included for (a).
3. The Malaysian side requested to hold a seminar in Malaysia, preferably by December 1987, on this Study. The Study Team promised to convey this request to the Government of Japan.



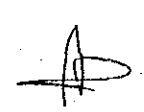
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4. Both sides confirmed that the importance and necessity for conducting the Study on Rail-based Commuter services in Klang Valley Region have been unchanged and are still valid. In addition, taking into consideration the close relationship among the :

- (a) Road Construction projects ;
- (b) Traffic Control and Surveillance System ;
- (c) Freight Terminal Projects and
- (d) Rail-based Commuter services in Klang Valley,

both sides also confirmed that it is unchanged to be reasonable for the Study to be conducted in the packaged manner. However, since the items related with (d) rail-based commuter services are uncertain including the perspective of privatization of the Malayan Railway, the Scope of Work duly signed has embodied (a), (b) and (c).

Therefore, further discussion on the rail-based commuter services should be continued along with the implementation of the Study of (a), (b) and (c), in order to commence the Study of (d) as early as possible.



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ATTACHMENT I

ATTENDANCE LIST

Japanese Side

Japanese Mission (Preliminary Study Team)

1. Mr. Koji Hasekura
(Mission Leader -
Urban Transportation
Planning) - Deputy Director
Urban Redevelopment
Department, Housing and
Urban Development
Corporation.
2. Mr. Masahito Mizoguchi
(Vice Leader -
Railway Facilities
Planning) - Director
Planning Division
Chubu District Transport
Bureau, Ministry of
Transport
3. Mr. Makoto Mizoguchi
(Member - Road
Planning) - Director
Planning Division,
Planning and Development
Department, Honshu- Shikoku
Bridge Authority
4. Mr. Hisatada Shinohara
(Member - Railway
Transport Planning) - Deputy Director
Transport Promotion
Division, Regional
Transport Bureau,
Ministry of Transport
5. Mr. Keijiro Nakatomi
(Member - Traffic
Management Planning) - Director
Planning Division,
Urban Development Department,
Housing and Urban Development
Corporation
6. Mr. Hiroshi Sato
(Member - Commodity
Flow Planning) - Assistant Director
Land Transport Division,
Cargo Transport and
Distribution Bureau,
Ministry of Transport
7. Mr. Takeshi Nakano
(Member - Coordination) - Deputy Head
First Development Survey
Division, Social Development
Cooperation Department,
Japan International
Cooperation Agency

Embassy of Japan

Mr. Hirofumi Ohnishi

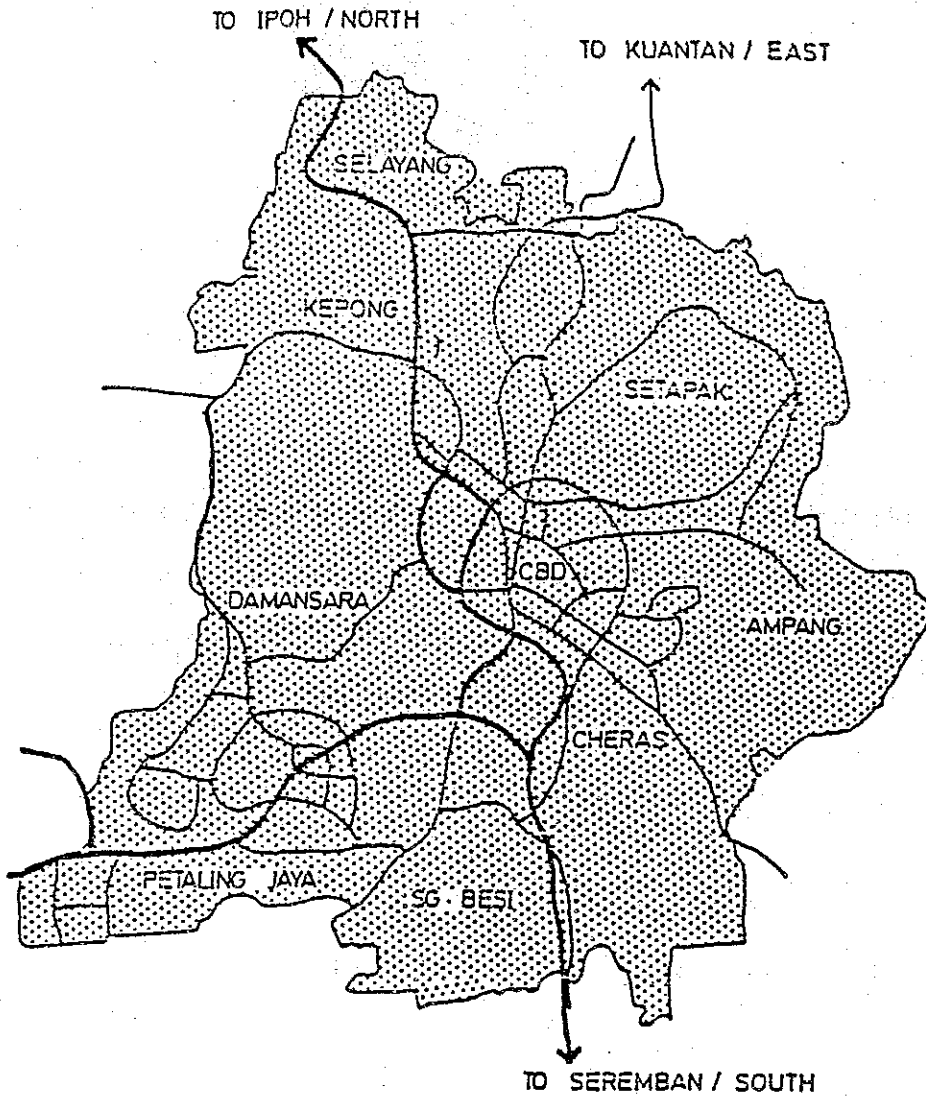
JICA Malaysia Office

Mr. Keizo Kagawa

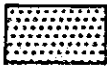
Malaysian Side

1. Dr. Mohd Noor B. Hj. Harun - Economic Planning Unit
(EPU)
Chairman
2. Dr. Johari bin Mat - Klang Valley Planning
Secretariat (KVPS)
(Technical Committee -
Chairman)
3. Mrs. Siti Rohana Abdul - Ministry of Federal
Wahab Territory
4. Mr. Wahid Selamat - Ministry of Transport
5. Ir. Ghazali Md Noor - Malaysian Highway Authority
6. Mr. Teru Fukui - Highway planning Unit
(HPU) - (JICA Expert)
7. Mr. Yokota - KVPS - (JICA Expert)
8. Mr. Ong Eng Poe - HPU
9. Mr. Ahmad Kamaruddin - KVPS
Abd Rashid
10. Mr. Zulkifli Othman - KVPS
11. Mr. Mahfix Omar - City Hall, Kuala Lumpur
12. Mr. Annuar Maarof - EPU
13. Mr. Ismail Mohamed - EPU
14. Ir. Afzal Ditali - EPU
15. Mrs. Wan Norma Wan Daud - EPU
16. Mrs. Faridatul Akmar Taib - EPU

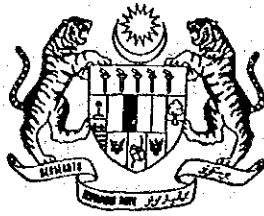




LEGEND:

- MAJOR TRUNCK ROADS
-  AREA COVERAGE FOR TRAFFIC SURVEILLANCE SYSTEM

ATTACHED MAP 2: AREA COVERAGE FOR TRAFFIC SURVEILLANCE AND CONTROL SYSTEM

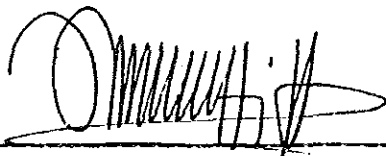


**SUMMARY OF DISCUSSION BETWEEN
THE JICA SCOPE OF WORK MISSION AND THE STEERING COMMITTEE
ON THE SCOPE OF WORK FOR THE FEASIBILITY STUDY
ON TRANSPORTATION FACILITIES PROJECTS
IN KLANG VALLEY**

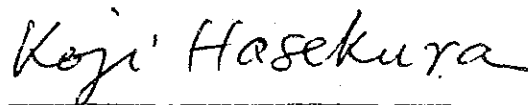
**ECONOMIC PLANNING UNIT
PRIME MINISTER'S DEPARTMENT
MALAYSIA**

SUMMARY OF DISCUSSION BETWEEN THE
JICA SCOPE OF WORK MISSION AND THE STEERING COMMITTEE
ON THE SCOPE OF WORK FOR THE FEASIBILITY
STUDY ON TRANSPORTATION FACILITIES
PROJECTS IN KLANG VALLEY

Kuala Lumpur,
March 16, 1987



(Dr. Mohd Noor B. Hj. Harun)
Chairman of the Steering
Committee,
for The Director General,
Economic Planning Unit
Prime Minister's Department
Kuala Lumpur



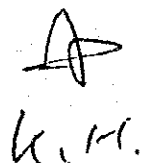
(Mr. koji Hasekura)
Leader of the Preliminary
Study Team
on behalf of
Japan International
Cooperation Agency

A Steering Committee meeting was convened on March 13, 1987 at the Economic Planning Unit to consider the Draft Scope of Work (See Attachment I) for the Feasibility Study on Transportation Facilities Projects in the Klang Valley. The attendance list is as in Attachment II.

At the meeting, the Mission was informed that since December 1986, when a request was transmitted to the Japanese Government to ammend the Terms of Reference to include a study on the Mass Transit Railway System in the Klang Valley as one of the study items, the situation has since changed. This includes the commissioning of a study on the proposed commuter services by Metrolink Sdn. Bhd., a private company which is given the sole right by the Government to operate and manage a rail-based commuter system in the Klang Valley. Further, a number of actions in pursuance of the Government's decision to privatise the Malayan Railway is being taken. These events, therefore, merit a reevaluation of the necessity for the proposed Mass Transit Railway System Study. In view of the above, the Steering Committee decides that the Mass Transit Railway System Study be deferred or carried out in Phase II, and a decision made later. For the present time, developments associated with the privatisation of the Malayan Railway and the implementation of the commuter services by the Metrolink Sdn. Bhd. will be monitored to enable a final decision to be made on the need or otherwise for the Mass Transit Railway System Study.

The main items that were agreed upon by both sides at the meeting are as follows:

- i) Items (a), (b) and (c) of the objectives of the Study will be carried out as proposed in the Scope of Work.


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- ii) The Steering Committee's request that item (c) be carried out in Phase I is referred to Tokyo by the JICA Mission for the confirmation of the Japanese Government.
- iii) The Steering Committee's request that item (d) be deferred or done in Phase II is referred to Tokyo by the JICA Mission for the confirmation of the Japanese Government.
- iv) Subject to the confirmation by the Japanese Government, the final Agreement will be made either by (i) signing the Scope of Work for the study which embodies items (a), (b) and (c) with the Minutes of the Meeting as an attachment to the Agreement, or (ii) signing the Minutes of the Meeting which indicate that items (a), (b) and (c) are agreed upon while the Scope of Work is not signed but attached to the Minutes of the Meeting. The inclusion of item (d) will be subjected to consideration at a later date.

A

K.H.

SCOPE OF WORK
FOR
THE FEASIBILITY STUDY ON
TRANSPORTATION FACILITIES PROJECTS
IN
KLANG VALLEY

AGREED UPON BETWEEN
THE ECONOMIC PLANNING UNIT
OF
THE PRIME MINISTER'S DEPARTMENT
ON BEHALF OF
THE GOVERNMENT OF MALAYSIA
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

Kuala Lumpur,
th March, 1987

Director General
Economic Planning Unit,
Prime Minister's Department
on behalf of
The Government of Malaysia

Leader of the Preliminary
Study Team
on behalf of
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I. INTRODUCTION

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II. OBJECTIVES OF THE STUDY

The objectives of the Study are:

- (a) To carry out a preliminary engineering study including economic and financial studies on the following road construction projects.
 - i) Southern part of Middle Ring Road (II) and Shah Alam Highway.
 - ii) North-South Expressway Link.
- (b) To carry out an engineering study on the traffic control and surveillance system in Kuala Lumpur Conurbation.
- (c) To carry out an engineering study including economic and financial studies for constructing freight terminals in Klang Valley.

- (d) To carry out a preliminary engineering study including economic and financial studies on the Mass Transit Railway System in Klang Valley, including related urban development and landuse in the vicinity of the Mass Transit Railway stations.

III. STUDY AREA

- (a) The road construction projects are:
- (i) The Southern part of Middle Ring Road (II) and Shah Alam Highway starts at the intersecting point of Jalan Cheras with this road, runs parallel to Federal Route II and terminates at the intersecting point of Jalan Telok Gong with Shah Alam Highway.
 - (ii) North-South Expressway which is a part of the North-South (Toll) Expressway Network starts at intersection with the New Klang Valley Expressway and terminates at the intersecting point with the Seremban (Toll) Expressway.
- (b) The Study Area for the traffic control and surveillance system is mainly Kuala Lumpur and its Conurbation areas.
- (c) The freight terminal projects consist of the North Terminal, South Terminal and West Terminal located in the northern and southern parts of Kuala Lumpur and Port Klang.
- (d) The Mass Transit Railway Lines to be studied are:
- (i) Kuala Lumpur-Shah Alam
 - (ii) Kuala Lumpur-Tmn Eastern
 - (iii) Kasipillay-Kepong

IV. SCOPE OF THE STUDY

In order to achieve the objectives, the Study shall cover the following items:

- a) Items of the Study on Road Construction Projects:
 - (1) Landuse study along the corridor of the road projects.
 - (2) Traffic volumetric survey.
 - (3) Future traffic demand forecast of alternative plans.
 - (4) Engineering Surveys.
 - Topographic survey
 - Geotechnical survey
 - Other related surveys
 - (5) Establishment of Design standards.
 - (6) Alternative routes and alignment study.
 - (7) Preliminary Design.
 - (8) Preparation of corridor plan.
 - (9) Estimation of quantity and costs.
 - (10) Economic analysis and financial analysis.
 - (11) Implementation programme and recommendation.

- b) Items of the Study on Traffic Control and Surveillance Project:
 - (1) Review of the existing Area Traffic Control (ATC) System.
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 - (3) Conceptual system plan.
 - Identification of requirement to the system.
 - Identification of functions and equipment.
 - Preparation of alternative conceptual systems and its selection.

- (4) Engineering design for the system
- (5) Estimation of the installation cost for the system.
- (6) Analysis and evaluation of effectiveness of the system.

c) Items of the Study of Freight Terminals:

- (1) Review and proposal of Freight Terminal Plans and projects.
- (2) Collection of information from various agencies concerned.
- (3) Site survey of the proposed freight terminals.
- (4) Future freight terminal demand forecast.
- (5) Conceptual freight terminal plans.
 - Requirement for freight terminals.
 - Identification of location, scale, function and major facilities at freight terminals.
 - Preparation of alternative conceptual plans and its selection.
- (6) Engineering design for freight terminals.
- (7) Estimation of the quantity and costs.
- (8) Economic analysis and financial analysis.
- (9) Implementation programme and recommendation.

d) Items of the Study for the Mass Transit Railway System Project:

- (1) Data collection and analysis.
- (2) Public transport demands survey.
- (3) Landuse study along the Mass Transit Railway Corridors.
- (4) Future passenger demands for the Mass Transit Railway System.
- (5) Engineering surveys.
 - Topographic survey
 - Geotechnical survey
 - Other related surveys

- (6) Assessment of the Malayan Railway.
- (7) Formulation of the Mass Transit Railway System Plan.
- (8) Preliminary Design.
 - Track and Structures
 - Stations, Car Depots and Workshops
 - Power Supply, Signalling and Telecommunication
 - Vehicles
 - Operation and Maintenance System
 - Construction and Improvement plans
- (9) Estimation of quantity and costs
- (10) Provisional Planning related with the Mass Transit Railway System.
 - Layout plan of station plazas
 - Rerouting plan of bus feeder services to the Mass Transit Railway System
 - Commercial and Housing Development along the surrounding areas of the stations
- (11) Management System of the Mass Transit Railway
- (12) Economic analysis and financial analysis
- (13) Implementation programme and recommendation

V. STUDY SCHEDULE

The whole work will be conducted in accordance with the attached tentative schedule.

The Study will be divided into two (2) phases:

Phase I; (1) Route study with the preparation of corridor plan for the southern part of Middle Ring road (II) and Shah Alam Highway and the North-South Expressway Link.

- (2) Engineering Study on traffic control and surveillance system.
- (3) Study on the Mass Transit Railway System includes the lines connecting:
 - i) Kuala Lumpur-Shah Alam
 - ii) Kuala Lumpur-Tmn Eastern
 - iii) Kasipillay-Kepong

Phase II; (1) Preliminary Engineering Study for the southern part of Middle Ring Road (II), Shah Alam Highway and North-South Expressway Link.

- (2) Engineering Study on the freight terminal projects.

The projects in Phase I will be completed within ten (10) months after commencement of the Study, while the other projects under Phase II will be completed within twenty (20) months.

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2. To secure the necessary entry permits for the Study team to conduct field surveys in Malaysia and exempt them from consular fees.
3. To exempt the members of the Study team from taxes and duties as normally accorded under the provision of Malaysian General Circular No. 1 of 1979, on equipment, machinery and other materials brought into and out of Malaysia for the conduct of the Study.
4. To exempt the members of the Study team from Malaysian income tax on their officials emoluments in respect of their period of assignment in Malaysia in connection with the conduct of the Study, but the Government of Malaysia shall retain the right to take such emoluments into account for the purpose of assessing the amount to be applied to income from other sources.
5. To provide the necessary facilities to the Study team for remittance as well as utilization of funds introduced into Malaysia from Japan in connection with the conduct of the Study.
6. To secure permission for entry into private properties or restricted areas for the conduct of the Study.
7. To provide the Study team with medical services when needed, but the expenses will be chargeable to the members of the Study team.
8. To make arrangements for the Study team to take back to Japan the data, maps and materials connected with the Study subject to the approval of the Government of Malaysia, in order to prepare the reports.

9. To provide the Study team with available data, maps and information necessary for the execution of the Study.
10. To appoint counterpart personnel to the Study team during the Study period.
11. To provide the Study team with suitable office space with clerical service and necessary office equipment in Kuala Lumpur.
12. To provide the Study team with adequate means of local transport for official travel only.
13. To indemnify any member of the Study team in respect of damages arising from any legal action against him in relation to any act performed or omissions made in undertaking the Study except when the two Governments agree that such a member is guilty of gross negligence or wilful misconduct.
14. To nominate Klang Valley Planning Secretariate to act as counterpart agency for the Study and Economic Planning Unit as the main coordinating body in relation to other relevant Governmental and non-Governmental organizations.

VIII. UNDERTAKINGS OF JICA

In order to conduct the Study, JICA shall take the following measures:

1. To dispatch, at its own expense, the Study team to Malaysia.
2. To pursue technology transfer to the Malaysian counterpart personnel in the course of the Study.

IX. CONSULTATION

JICA and the Government of Malaysia shall consult each other in respect of any matter that is not agreed upon in this document and which may arise from or in connection with the Study.

ATTACHMENT

TENTATIVE SCHEDULE

| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
|------------------------|----------|-----|-----|-----|-------|-----|-----|-----|------|-----|-----|-----|-----|--------|-----|-----|-----|-----|-----|-----|-----|
| Work in MALAYSIA | Phase I | /// | /// | /// | /// | /// | /// | /// | /// | /// | | | | | | | | | | | |
| | Phase II | | | | | | | | | | | | /// | /// | /// | /// | /// | /// | | | |
| Work in Japan | | /// | | | | | | | | | | | | | | | | | | | |
| | | | | | /// | /// | /// | /// | /// | /// | /// | /// | /// | /// | /// | /// | /// | /// | /// | /// | /// |
| REPORT PRESENTATION | IC/R | | | | PR(I) | | | | IC/R | | | | | PR(II) | | | | | | | |
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IC/R --- Inception Report
 PR(I) --- Progress Report I
 IC/R --- Interim Report
 PR(II) --- Progress Report II
 DF/R --- Draft Final Report

ATTENDANCE LIST

Japanese Side

Japanese Mission (Preliminary Study Team)

1. Mr. Koji Hasekura
(Mission Leader) - Deputy Director
Urban Redevelopment
Department, Housing and
Urban Development
Corporation.
2. Mr. Masahito Mizoguti - Director
Planning Division
Chubu District Transport
Bureau, Ministry of
Transport
3. Mr. Makoto Mizoguti - Director
Planning Division,
Planning and Development
Department, Honshu-
Shikoku Bridge Authority
4. Mr. Hisatada Shinohara - Deputy Director
Transport Promotion
Division, Regional
Transport Bureau,
Ministry of Transport
5. Mr. Keijiro Nakatomi - Director
Planning Division,
Urban Development,
Housing and Urban Development
Corporation
6. Mr. Hiroshi Sato - Assistant Director
Land Transport Division,
Cargo Transport and
Distribution Bureau,
Ministry of Transport
7. Mr. Takeshi Nakano - Deputy Head
First Development Survey
Division, Social Development
Cooperation Department,
Japan International
Cooperation Agency

Embassy of Japan

Mr. Hirofumi Ohnishi

JICA Kuala Lumpur Office

Mr. Keizo Kagawa

Malaysian Side

1. Dr. Mohd Noor B. Hj. Harun- Economic Planning Unit
(EPU)
Chairman
2. Dr. Johari bin Mat - Klang Valley Planning
Secretariat (KVPS)
(Technical Committee -
Chairman)
3. Mrs. Siti Rohana Abdul - Ministry of Federal
Wahab Territory
4. Mr. Wahid Selamat - Ministry of Transport
5. Ir. Ghazali Md Noor - Malaysian Highway Authority
6. Mr. Teru Fukui - Highway planning Unit
(HPU) - (JICA Expert)
7. Mr. Yokota - HPU - (JICA Expert)
8. Mr. Ong Eng Poe - HPU
9. Mr. Ahmad Kamaruddin - KVPS
Abd Rashid
10. Mr. Zulkifli Othman - KVPS
11. Mr. Mahfix Omar - City Hall, Kuala Lumpur
12. Mr. Annuar Maarof - EPU
13. Mr. Ismail Mohamed - EPU
14. Ir. Afzal Ditali - EPU
15. Mrs. Wan Norma Wan Daud - EPU
16. Mrs. Faridatul Akmar Taib - EPU

DRAFT

SCOPE OF WORK
FOR
THE FEASIBILITY STUDY
ON
TRANSPORTATION FACILITIES PROJECTS
IN
KLANG VALLEY

AGREED UPON BETWEEN
THE ECONOMIC PLANNING UNIT OF THE
PRIME MINISTER'S DEPARTMENT
ON BEHALF OF
THE GOVERNMENT OF MALAYSIA
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

KUALA LUMPUR
th MARCH, 1987.

DIRECTOR GENERAL,
ECONOMIC PLANNING UNIT,
PRIME MINISTER'S DEPARTMENT
on behalf of
THE GOVERNMENT OF MALAYSIA

LEADER OF THE PRELIMINARY
STUDY TEAM,
on behalf of
JAPAN INTERNATIONAL
COOPERATION AGENCY

I . INTRODUCTION

In response to the request of the Government of Malaysia, the Government of Japan has decided to conduct a *Feasibility Study on Transportation Facilities Projects in Klang Valley* (hereinafter referred to as "the Study"), and in accordance with the relevant laws and regulations in force in Japan, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, will undertake the Study in close cooperation with the relevant Malaysian authorities.

The present document sets forth the Scope of Work with regard to the Study.

II .OBJECTIVES OF THE STUDY

The objectives of the Study are:

- a) To carry out a preliminary engineering study including economic and financial studies on the following road construction projects;
 - i) Southern part of Middle Ring Road (II) and Shah Alam Highway.
 - ii) North--South Expressway Link.
- b) To carry out an engineering study on the traffic control and surveillance system in Kuala Lumpur Conurbation.
- c) To carry out an engineering study including economic and financial studies for constructing freight terminals in Klang Valley
- d) To carry out a preliminary engineering study including economic and financial studies on the Mass Transit Railway System in Klang Valley, including related urban development and landuse in the vicinity of the Mass Transit Railway stations.

III. STUDY AREA

- a) The road construction projects, as shown in the attached Map 1 are;
 - i) The southern part of Middle Ring Road (II) and Shah Alam Highway starts at the intersecting point of Jalan Cheras with this road, runs parallel to Federal Route II and terminates at the intersecting point of Jalan Telok Gong with Shah Alam Highway.
 - ii) North—South Expressway which is a part of the North—South (Toll) Expressway Network starts at intersection with the New Klang Valley Expressway and terminates at the intersecting point with the Seremban (Toll) Expressway.

- b) The Study Area for the traffic control and surveillance system is mainly Kuala Lumpur and its Conurbation areas as shown in the attached Map 1.

- c) The freight terminal projects consist of the North Terminal, South Terminal and West Terminal located in the northern and southern parts of Kuala Lumpur and Port Klang.

- d) The Mass Transit Railway Lines to be studied, as shown in attached Map 2, are;
 - i) Kuala Lumpur—Shah Alam
 - ii) Kuala Lumpur—TMN Eastern
 - iii) Kasipillay—Kepong

IV. SCOPE OF THE STUDY

In order to achieve the objectives, the Study shall cover the following items:

a) Items of the Study on Road Construction Projects;

- (1) Landuse study along the corridor of the road projects.
- (2) Traffic volumetric survey.
- (3) Future traffic demand forecast of alternative plans.
- (4) Engineering Surveys.
 - Topographic survey
 - Geotechnical survey
 - Other related surveys
- (5) Establishment of Design standards.
- (6) Alternative routes and alignment study.
- (7) Preliminary Design.
- (8) Preparation of corridor plan.
- (9) Estimation of quantity and costs.
- (10) Economic analysis and financial analysis.
- (11) Implementation programme and recommendation.

b) Items of the Study on Traffic Control and Surveillance Project;

- (1) Review of the existing Area Traffic Control (ATC) System.
- (2) Turning movement traffic count survey, traffic queue survey, etc.
- (3) Conceptual system plan.
 - Identification of requirement to the system.
 - Identification of functions and equipment.
 - Preparation of alternative conceptual systems and its selection.
- (4) Engineering design for the system.
- (5) Estimation of the installation cost for the system.
- (6) Analysis and evaluation of effectiveness of the system.

c) Items of the Study of Freight Terminals;

- (1) Review and proposal of Freight Terminal Plans and projects.
- (2) Collection of information from various agencies concerned.
- (3) Site survey of the proposed freight terminals.
- (4) Future freight terminal demand forecast.
- (5) Conceptual freight terminal plans.
 - Requirement for freight terminals
 - Identification of location, scale, function and major facilities at freight terminals
 - Preparation of alternative conceptual plans and its selection
- (6) Engineering design for freight terminals.
- (7) Estimation of the quantity and costs.
- (8) Economic analysis and financial analysis.
- (9) Implementation programme and recommendation.

d) Items of the Study for the Mass Transit Railway System Project;

- (1) Data collection and analysis.
- (2) Public transport demands survey.
- (3) Landuse study along the Mass Transit Railway Corridors.
- (4) Future passenger demands for the Mass Transit Railway System.
- (5) Engineering surveys.
 - Topographic survey
 - Geotechnical survey
 - Other related surveys
- (6) Assessment of the Malayan Railway.
- (7) Formulation of the Mass Transit Railway System Plan.
- (8) Preliminary Design
 - Track and Structures
 - Stations, Car Depots and Workshops
 - Power Supply, Signalling and Telecommunication

- Vehicles
 - Operation and Maintenance System
 - Construction and Improvement plans
- (9) Estimation of quantity and costs
- (10) Provisional Planning related with the Mass Transit Railway System.
- Layout plan of station plazas
 - Rerouting plan of bus feeder services to the Mass Transit Railway System
 - Commercial and Housing Development along the surrounding areas of the stations
- (11) Management System of the Mass Transit Railway
- (12) Economic analysis and financial analysis.
- (13) Implementation programme and recommendation.

V. STUDY SCHEDULE

The whole work will be conducted in accordance with the attached tentative schedule.

The Study will be divided into two (2) phases:

- Phase-I ; (1) Route study with the preparation of corridor plan for the southern part of Middle Ring road (II) and Shah Alam Highway and the North-South Expressway Link.
- (2) Engineering study on traffic control and surveillance system.
- (3) Study on the Mass Transit Railway System includes the lines connecting,
- i) Kuala Lumpur — Shah Alam
 - ii) Kuala Lumpur — TMN Eastern
 - iii) Kasipillay — Kepong
- Phase-II ; (1) Preliminary Engineering Study for the southern part of Middle Ring Road (II), Shah Alam Highway and North-South Expressway Link.
- (2) Engineering Study on the freight terminal projects.

The projects in Phase-I will be completed within ten (10) months after commencement of the Study, while the other projects under Phase-II will be completed within twenty (20) months.

VI. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Malaysia.

1. Inception Report
Thirty (30) copies within one (1) month after commencement of the Study
 2. Progress Report (I)
Thirty (30) copies within five (5) months after commencement of the Study.
 3. Interim Report
Thirty (30) copies within ten (10) months after commencement of the Study.
 4. Progress Report (II)
Thirty (30) copies within fourteen (14) months after commencement of the Study.
 5. Draft Final Report
Thirty (30) copies within seventeen (17) months after commencement of the Study.
- The Government of Malaysia will provide JICA with its comments within one (1) month after the receipt of the Draft Final Report.
6. Final Report
Fifty (50) copies within two (2) months after the receipt of the Government of Malaysia's comments on the Draft Final Report.

The Study team should ensure that all data, information, maps, materials and findings connected with the Study are kept confidential and not disposed of or revealed to any third party except with the prior written consent of the Government of Malaysia. Such maps and aerial photographs are to be returned to the Government of Malaysia immediately upon completion of the Study. All reports when finalized and submitted to the Government of Malaysia shall remain the property of the Government of Malaysia.

VII. UNDERTAKINGS OF THE GOVERNMENT OF MALAYSIA

To facilitate the smooth conduct of the Study, the Government of Malaysia shall take the following necessary measures:

1. To inform the members of the Study team of any existing risk in the Study area and to take any measures deemed necessary to secure the safety of the Study team.
2. To secure the necessary entry permits for the Study team to conduct field surveys in Malaysia and exempt them from consular fees.
3. To exempt the members of the Study team from taxes and duties, as normally accorded under the provision of Malaysia General Circular No. 1 of 1979, on equipment, machinery and other materials brought into and out of Malaysia for the conduct of the Study.
4. To exempt the members of the Study team from Malaysian income tax on their official emoluments in respect of their period of assignment in Malaysia in connection with the conduct of the Study, but the Government of Malaysia shall retain the right to take such emoluments into account for the purpose of assessing the amount to be applied to income from other sources.
5. To provide the necessary facilities to the Study team for remittance as well as utilization of funds introduced into Malaysia from Japan in connection with the conduct of the Study.
6. To secure permission for entry into private properties or restricted areas for the conduct of the Study.

7. To provide the Study team with medical services when needed, but the expenses will be chargeable to the members of the Study team.
8. To make arrangements for the Study team to take back to Japan the data, maps and materials connected with the Study subject to the approval of the Government of Malaysia, in order to prepare the reports.
9. To provide the Study team with available data, maps and information necessary for the execution of the Study.
10. To appoint counterpart personnel to the Study team during the Study period.
11. To provide the Study team with suitable office space with clerical service and necessary office equipment in Kuala Lumpur.
12. To provide the Study team with adequate means of local transport for official travel only.
13. To indemnify any member of the Study team in respect of damages arising from any legal action against him in relation to any act performed or omissions made in undertaking the Study except when the two Governments agree that such a member is guilty of gross negligence or wilful misconduct.
14. To nominate Klang Valley Planning Secretariate to act as counterpart agency for the Study and Economic Planning Unit as the main coordinating body in relation to other relevant Governmental and non-Governmental organizations.

VIII. UNDERTAKINGS OF JICA

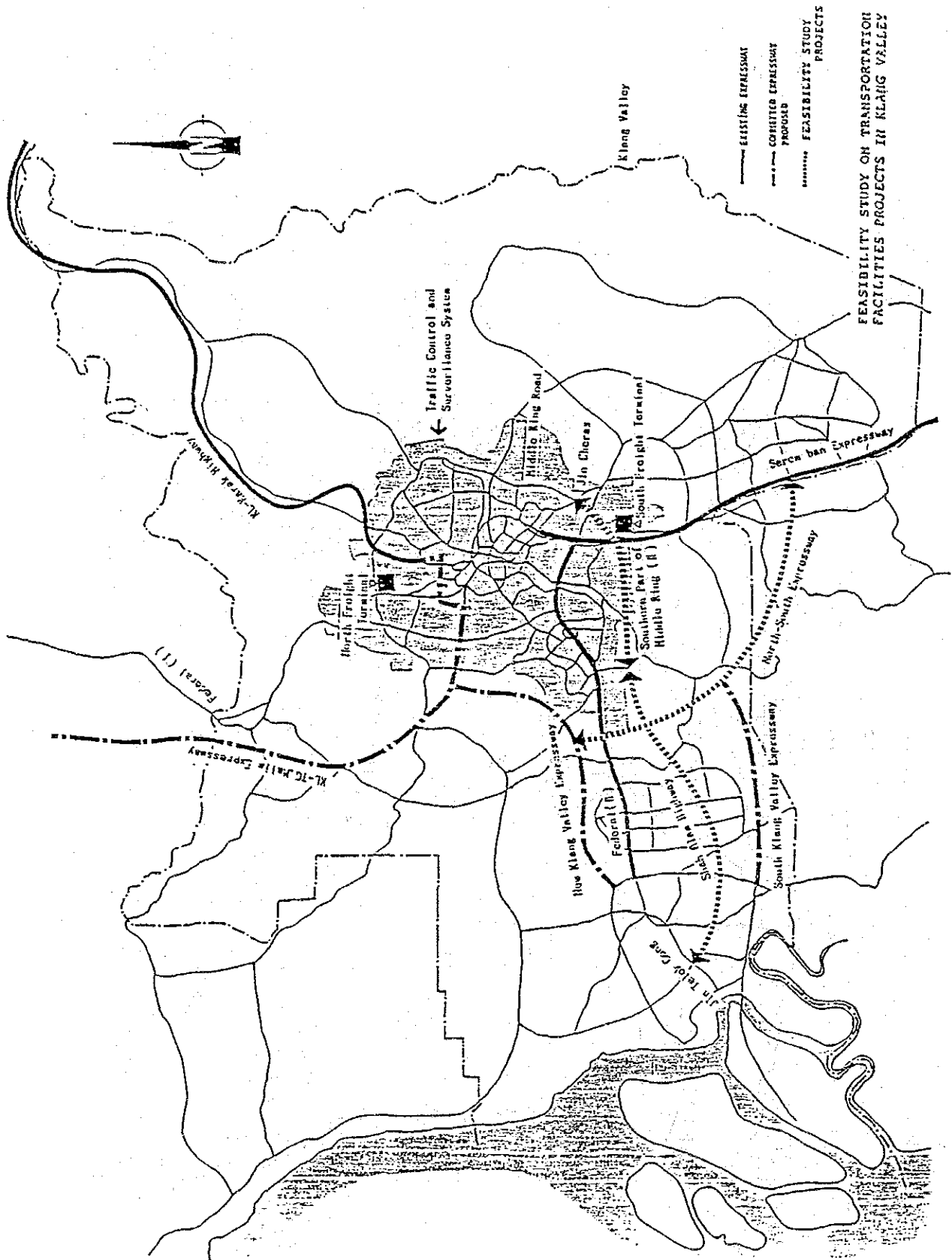
In order to conduct the Study, JICA shall take the following measures:

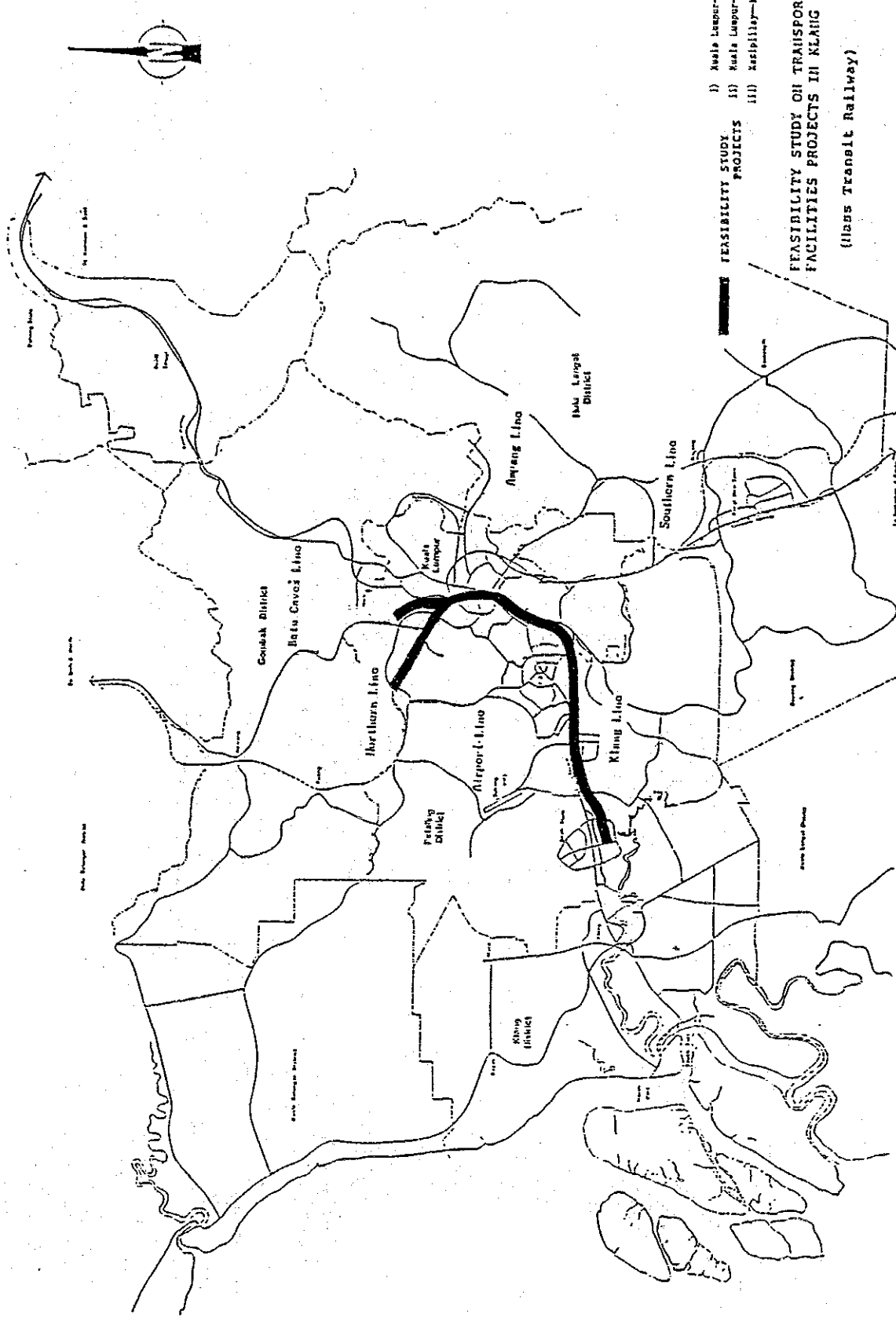
1. To dispatch, at its own expense, the Study team to Malaysia.
2. To pursue technology transfer to the Malaysian counterpart personnel in the course of the Study.

IX. CONSULTATION

JICA and the Government of Malaysia shall consult each other in respect of any matter that is not agreed upon in this document and which may arise from or in connection with the Study.

Map 1





- FEASIBILITY STUDY PROJECTS
- i) Kuala Lumpur—Shah Alam
 - ii) Kuala Lumpur—TMR Eastern
 - iii) Seremban—Kempas

FEASIBILITY STUDY ON TRANSPORTATION FACILITIES PROJECTS IN KLANG VALLEY (Mass Transit Railway)

TENTATIVE SCHEDULE

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|--------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| PHASE | | | | | | | | | | | | | | | | | | | | |
| WORK IN MALAYSIA PHASE I | | | | | | | | | | | | | | | | | | | | |
| PHASE II | | | | | | | | | | | | | | | | | | | | |
| WORK IN JAPAN | | | | | | | | | | | | | | | | | | | | |
| REPORT PRESENTATION | | | | | | | | | | | | | | | | | | | | |
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Ic/R----Inception Report
 PR(I)----Progress Report I
 It/R----Interim Report
 PR(II)--Progress Report II
 DF/R----Draft Final Report



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85 JILID: XV

Tarikh: December 1986.

URGENT/SY HAND

Mr. H. Ohnishi,
Second Secretary,
Embassy of Japan,
11, Persiaran Stonor,
Kuala Lumpur.

Dear Mr. Ohnishi,

Feasibility Study on Transportation
Facilities Projects in Klang Valley

You may recall that on 10 August 1985, this Unit had submitted a request to your Government to provide technical assistance for the above-mentioned Feasibility Study under JICA's Development Survey programme. We had also forwarded on 25 March 1986, under cover of our letter Ref.(66) in the same series, the Revised Terms of Reference (TOR) dated March 1986 for the Study.

2. The Leader of the Japanese Delegation to the Tenth Annual Consultation on Technical Cooperation held in Kuala Lumpur on 21 and 22 July 1985 had confirmed that the Government of Japan plans to undertake this Study in Fiscal Year 1986/87.


3. During the recent meeting between the Malaysian authorities and the JICA Advisory Team despatched to provide explanation on the Draft Final Report of the Klang Valley Transportation Study, further amendments and refinements were made to the TOR for the Feasibility Study on Transportation Facilities Projects in the Klang Valley.

4. I am pleased to submit herewith for the consideration of your Government, the Revised TOR of December 1986 to replace the TOR of March 1985.

5. We look forward to the early despatch of the Scope of Work Mission for this Study. Your kind assistance in this matter is much appreciated.

Thank you.

Yours sincerely,


b/p (WONG PEG HAR),
for Director General,
Economic Planning Unit.

...2/-

C.C

Mr. T. Matsuzaki,
Resident Representative,
Japan International Cooperation Agency,
25, Jalan Yap Kwan Seng,
50450 Kuala Lumpur.

TERMS OF REFERENCE (REVISED)

FEASIBILITY STUDY ON TRANSPORTATION
PROJECTS IN KLANG VALLEY

DECEMBER, 1986

1. Objectives of the Study

1.1 The Objectives of the Study are:-

- a) To undertake a feasibility and/or engineering study including economic and financial studies on the following road construction projects:-
 - i) Southern part of the Middle Ring Road (II) and Shah Alam Highway ;
 - ii) North - South Expressway Link
- b) To undertake an engineering study on the traffic control and surveillance system in Kuala Lumpur Conurbation.
- c) To undertake an engineering study including economic and financial feasibility studies for constructing freight terminals in Klang Valley.
- d) To undertake economic, financial and a preliminary engineering studies on the Mass Transit Railway System in Klang Valley, including related urban development and landuse in the vicinity of the Mass Transit Railway stations.

2. Scope of Works

- 2.1 To attain the objectives set out in Section 1, the study shall undertake all components of an engineering study including topographic survey, geotechnical survey, landuse study, traffic study, environmental study and economic and financial studies.
- 2.2 Special attention shall be made to proposals and recommendations contained in the relevant regional development study reports among which the most important are:-
 - a) Klang Valley Perspective Plan;
 - b) Klang Valley Transportation Study;
 - c) Kuala Lumpur Structure Plan, Shah Alam Extension Plan, Klang Structure Plan, Bangi Structure Plan, Gombak Interim Development Plan and Selayang New Town Structure Plan;
 - d) Kuala Lumpur Masterplan Transportation Study;
 - e) Engineering Study of Area Traffic Control System;
 - f) Urban Transport Terminal Study.

2.3 The packaged project shall be divided into two (2) phases:-

Phase I : Mass Transit Railway System Stage 1 Projects (Kepong-Kuala Lumpur-Shah Alam, KL-Batu Caves and Subang spur), route study of the road construction projects and Traffic Control and Surveillance System.

- a) The Mass Transit Railway System to be studied in the Phase I includes the lines connecting Kepong to Kuala Lumpur, Kuala Lumpur to Shah Alam with the spur from Sg.Way to Subang International Airport and from Kuala Lumpur to Batu Caves.(see Attached Map 1)
- b) Route Study with the preparation of corridor plan for the Southern part of the Middle Ring Road (II) and Shah Alam Highway as well as the North-South Expressway Link.(see Map 2)
- c) The Study Area for the traffic control and surveillance system is mainly in the Kuala Lumpur and its conurbation areas as shown in Attached Map 3.

Phase II: Preliminary Engineering study for the road construction projects, the Mass Transit Railway System Stage 2 Projects (Shah Alam-Port Klang, Kuala Lumpur-Ampang, Batu Caves-Selayang and Bangsar-Bangi New Town) and Freight Terminal Project.

- a) Preliminary Engineering Study for the Southern part of Middle Ring Road (II), Shah Alam Highway and the North-South Expressway Link.

The preliminary engineering study for the southern part of Middle Ring Road (II), Shah Alam Highway and the North-South Expressway Link are to be carried out in this Phase based on the corridor plan prepared in the Phase I study.

- b) The Mass Transit Railway Lines to be studied in Phase II are from Shah Alam to Port Klang, Kuala Lumpur to Ampang, from Batu Caves to Selayang and from Bangsar to Bangi New Town.
- c) The freight terminal project shall consist of the North Terminal, South Terminal and West Terminal located in the northern and southern parts of Kuala Lumpur and Port Klang respectively.

The projects in Phase I shall be completed within twelve (12) months after the commencement of the Study, while the other projects under Phase II shall be completed within twenty three (23) months.

2.4 Items of Study on Road Construction Projects

2.4.1 To conduct landuse study along the corridor of the road projects.

2.4.2 To conduct traffic volumetric survey and to forecast future traffic volume of alternative plans.

2.4.3 The feasibility and/or engineering study shall include:-

1) Engineering Surveys

- a) Topographic survey
- b) Geotechnical survey
- c) Other related surveys

2) Establishment of Design Standards

3) Alternative routes and alignment study

4) Identify the locations of grade separated junctions and facilities for motor cycle lanes and bus bays and rest areas including preliminary design of major bridges and other highway structures.

5) Preparation of corridor plan including preliminary land acquisition plan.

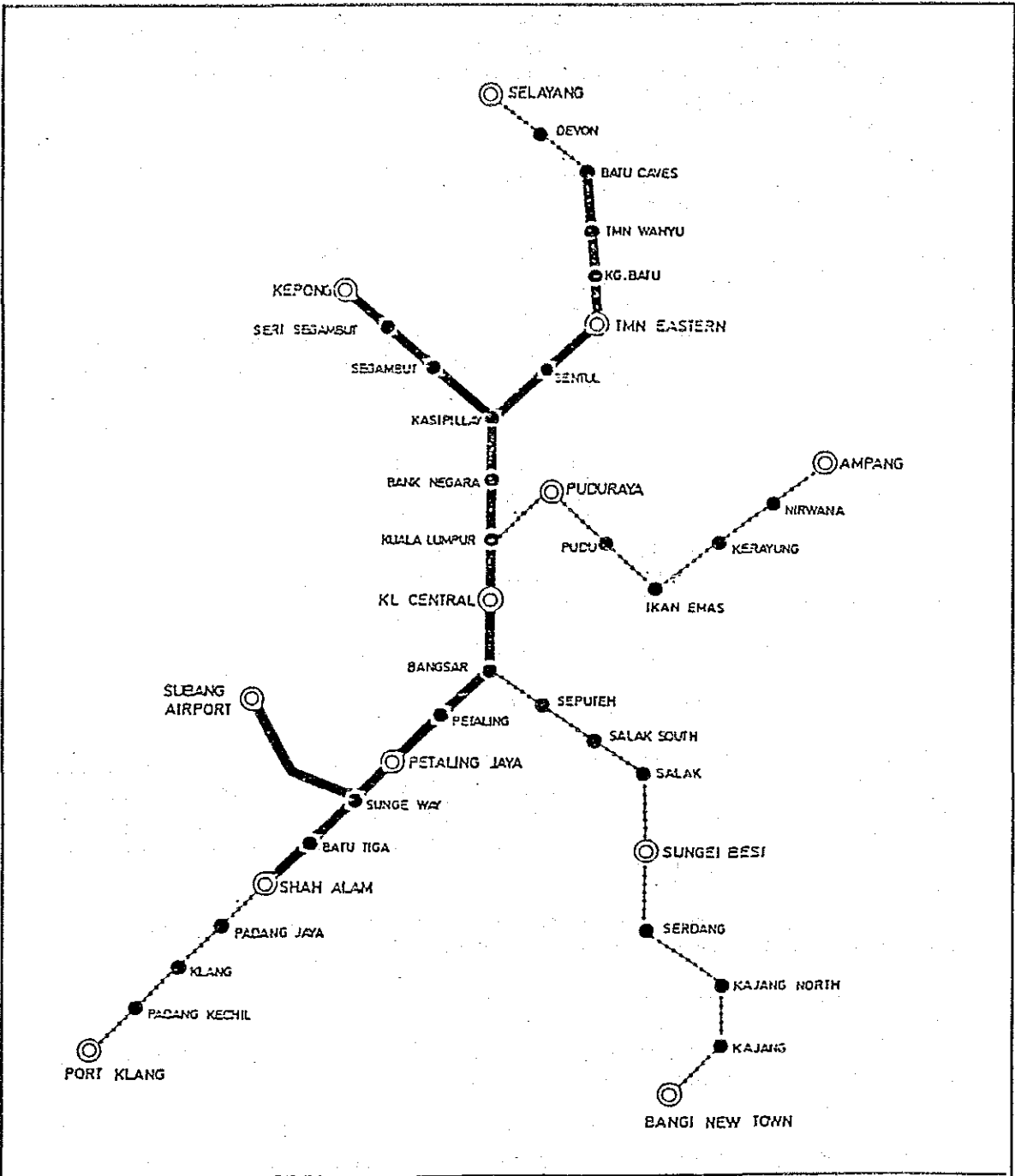
2.4.4 To estimate quantity and costs.

2.4.5 To conduct economic and financial analysis of the road projects.

2.5 Items of study for the Mass Transit Railway System in the Klang Valley

2.5.1 Data Collection and Analysis

- a) Socio-economic Data including landuse data.
- b) Engineering data
- c) Other related data



LEGEND

———— PHASE I — (51 KM)

- - - - PHASE II — (66KM)

- KL - SHAH ALAM (24 KM)
- KL - BATU CAVES (14 KM)
- KASIPILLAY - KEPONG (7 KM)
- SG. WAY - SUBANG AIRPORT (6 KM)
- KL - AMPANG (11KM)
- BATU CAVES - SELAYANG (4KM)
- S. ALAM - P. KLANG (19KM)
- KL - BANGI NEW TOWN (32KM)

MAP 1
PHASING PLAN OF
RAILWAY PROJECT



**KLANG VALLEY
TRANSPORTATION STUDY**



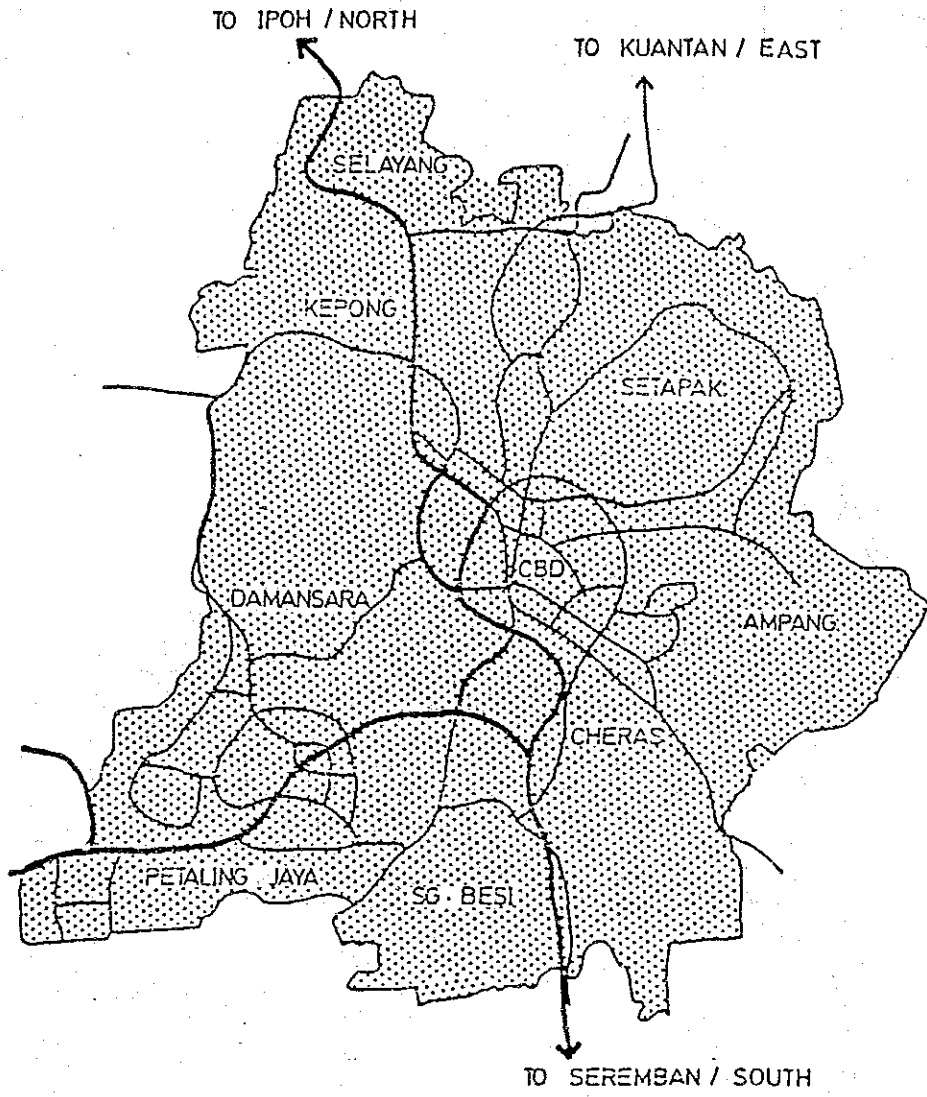
KLANG VALLEY

LEGEND

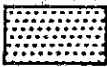
- Priority Project (New Construction)
- Priority Project (Improvement Section)
- Proposed Road
- Existing Major Road
- Existing Minor Road
- State Boundary
- District Boundary

SCALE
0 1 2 3 4 5 6 7 8 9 10 KM
0 1 2 3 4 5 MILES

MAP 2
PROPOSED MAJOR TRUNK ROAD
IN KLANG VALLEY



LEGEND:

- MAJOR TRUNCK ROADS
-  AREA COVERAGE FOR TRAFFIC SURVEILLANCE SYSTEM

MAP 3 : AREA COVERAGE FOR TRAFFIC SURVEILLANCE AND CONTROL SYSTEM

2.5.2 Engineering surveys

- a) Topographic survey
- b) Geotechnical surveys
- c) Other related surveys.

2.5.3 Assessment of the Malayan Railway (KTM)

- a) Review of the existing Malayan Railway System
- b) Assessment of the Malayan Railway System to function as the Mass Transit Railway System including the depot and workshop.

2.5.4 Formulation of the Mass Transit Railway System Plan with the following items and their alternatives if any:-

- a) Alignment and location of stations of the Mass Transit Railway System
- b) Vehicles, Car Depots and Workshop
- c) Signalling and Telecommunication systems
- d) Power supply
- e) Structural Type of Carriageway
- f) Others

2.5.5 Forecast of Transport Demands based on the followings:-

- a) Supplementary Public Transport Demands Survey
- b) Landuse Study along the Mass Transit Railway Corridors
- c) Future Transport Demand Projection
 - Trip Generation and Attraction
 - OD Distribution
 - Modal Split
 - Future Transport Demands for Mass Transit Railway System

2.5.6 Preliminary Design of the Mass Transit Railway

- a) Carriageway
- b) Stations, Car Depots, workshop
- c) Power Supply, Signalling and Telecommunication
- d) Vehicles
- e) Operation and Maintenance System
- f) Construction Plan
- g) Cost Estimation

2.5.7 Related Planning for Mass Transit Railway System

- a) Landuse Plan along the Mass Transit Railway Corridors
- b) Layout plan of station plazas
- c) Rerouting plan of the bus transport system in connection with the need to provide a bus feeder service to the MTR System
- d) Squatter Resettlement Study
- e) Commercial and Housing Development along the surrounding areas of the stations.

2.5.8 Study on the Mass Transit Railway Management System

2.5.9 Project Evaluation

- a) Economic evaluation
- b) Financial evaluation
- c) Evaluation from social and other aspects
- d) Overall evaluation

2.5.10 Preparation of Implementation Programme

- a) Priority of Mass Transit Railway System
- b) Implementation Schedule
- c) Recommendations

2.6 Items of study on the Traffic Control and Surveillance System Project

2.6.1 To review the existing Area Traffic Control (ATC) System which will provide the necessary guide to renew the existing ATC System in a more effective way.

2.6.2 To conduct turning movement traffic count survey, etc. at major roads in Kuala Lumpur Conurbation.

2.6.3 To prepare conceptual system plans, which include:-

- a) Identification of requirement to the system such as traffic, institutional, safety and social requirements.
- b) Identification of functions and equipment for data collection, control terminal equipment, transmission system and centre facility.
- c) Preparation of alternative conceptual systems and its selection.

2.6.4 To conduct engineering design for the system including technical specification

2.6.5 To estimate the installation cost for the system.

2.6.6 To analyse and evaluate effectiveness of this system.

2.7 Items of Study for Freight Terminals Project

2.7.1 To review and propose Freight Terminal Plans and projects and to collect information from various agencies concerned.

2.7.2 To conduct site survey of the proposed freight terminals.

2.7.3 To forecast future freight terminal demands.

2.7.4 To prepare conceptual freight terminal plans, which include:-

a) requirement for freight terminals

b) identification of location, scale, function, transfer facilities and other major facilities at freight terminals, as well as integration with railway systems wherever possible.

c) preparation of alternative conceptual plans and its selection

d) methods of operation and management.

2.7.5 To conduct engineering design for freight terminals.

2.7.6 To estimate the construction cost and quantity.

2.7.7 To conduct the economic analysis and financial analysis.

3. Report and Time Schedule

The proposed schedule and activities of this study are indicated in Figure 1.

- 3.1 The Study shall be completed within a total period of twenty three (23) months after the commencement date.
- 3.2 Inception Report (thirty (30) copies to Klang Valley Planning Secretariat) shall be submitted within one (1) month after commencement of the Study.
- 3.3 Progress Report (I) (thirty (30) copies to Klang Valley Planning Secretariat) shall be submitted within seven (7) months after commencement of the Study.
- 3.4 Interim Report (thirty (30) copies to Klang Valley Planning Secretariat) shall be submitted within eleven (11) months after commencement of the Study.
- 3.5 Progress Report (II) (thirty (30) copies to Klang Valley Planning Secretariat) shall be submitted within sixteen (16) months after commencement of the Study.
- 3.6 Draft Final Report (thirty (30) copies to Klang Valley Planning Secretariat) shall be submitted within twenty (20) months after commencement of the Study.
- 3.7 Final Report (fifty (50) copies to Klang Valley Planning Secretariat) within 2 months after receipt of the comments on the Draft Final Report. months after commencement of the Study.

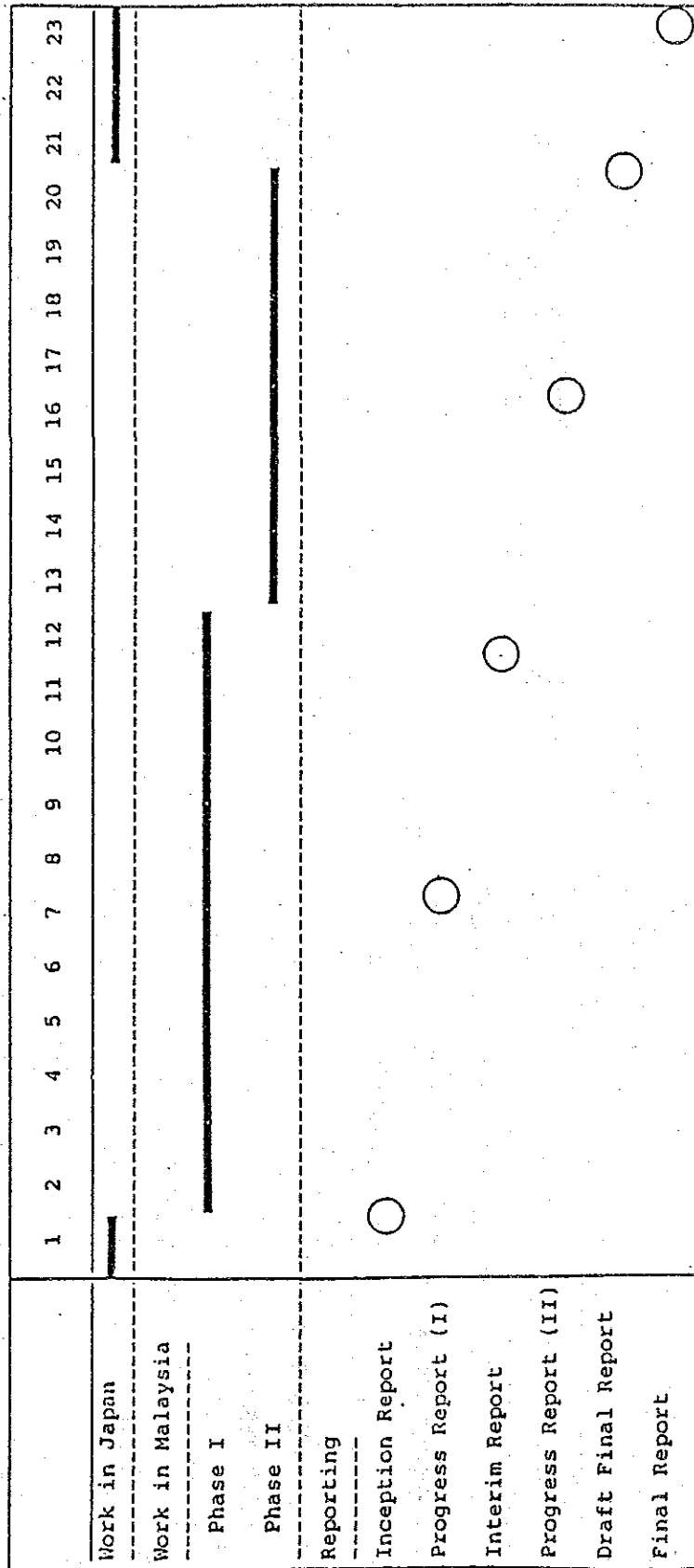
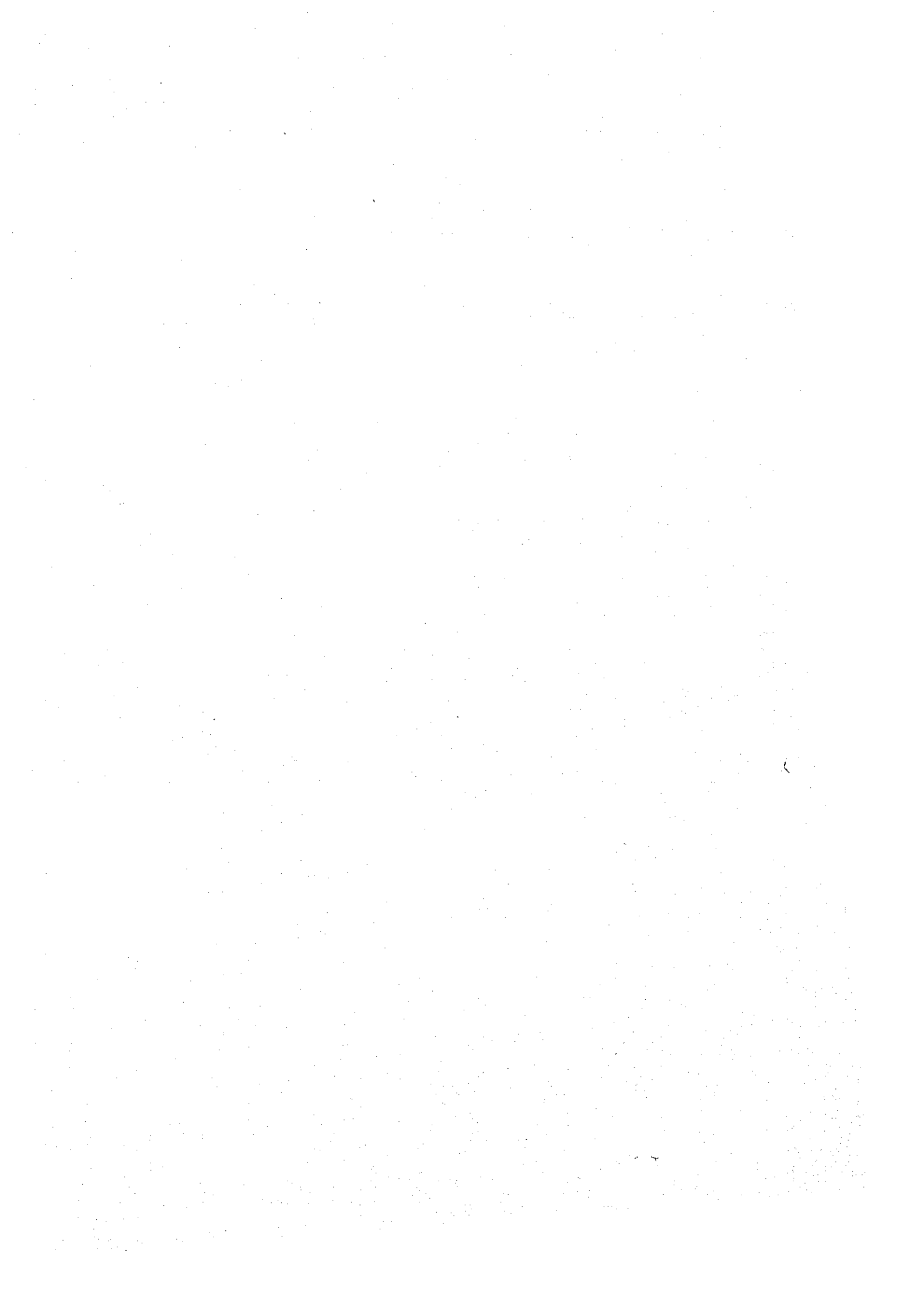


Figure 1 : Tentative Time Schedule for the Feasibility Study

マレーシア国クランバンバレー地域
都市交通施設計画調査 F/S要請の経緯

| 部 門 | 案 件 名 | 調査団提案 1985, 7月 | 「マ」側要請 1985, 8月 | 「マ」側変更要請 1986, 3月 | 「マ」側再変更要 請 1986, 12月 | 備 考 |
|---------------------|---|-------------------|--------------------|----------------------|-------------------------|------------------------------|
| 道路建設計画調査 | ① Middle Ring Road (III)とその延伸 | ○ | ○ | ○ | ○ | |
| | ② South K.V高速道路, シャーラム, North-South Expressway | ○ | ○ | ○ | ○ | |
| | ③ Klang 河の橋増設, 7交差点の立体交差化 | ○ | | | | |
| 公共輸送機関 建設・整備計画調査 | ① LRT延伸計画 | ○ | ○ | | 鉄道計画追加 | 鉄道駅集刃開発, バス輸送等の関 連計画含む |
| | ② マラヤ鉄道のComuter Service導入計画 | ○ | | | ○ | |
| | ③ LRTファイダーシステム計画 | ○ | | | | |
| 交通管理計画調査 | ① 交通監視システム計画 | ○ | ○ | ○ | ○ | |
| | ② 中心部交通サーキュレーション調査 | ○ | | | | |
| | ③ 中心地区の駐車場調査 | ○ | | | | |
| 交通ターミナル 計画調査 | ① 物流ターミナル建設計画 | ○ | ○ | ○ | ○ | |
| | ② バスターミナル建設計画 | ○ | | | | |



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