

2. 要請書 (T/R)

STUDY ON
RAIL-BASED COMMUTER SERVICES

TERMS OF REFERENCE

EPU
Kuala Lumpur
DECEMBER 1988

1. INTRODUCTION

1.1 The Klang Valley Transportation Study conducted by the Japan International Cooperation Agency (JICA) in close collaboration with the Prime Minister's Department has proposed a comprehensive Transportation Masterplan for the Klang Valley Region towards the year 2005. Among the high priority projects identified by the Masterplan Study, is the introduction of a Mass Rapid Railway System in the region. The proposed system will make full use of the presently under-utilized Malayan Railway Administration (MRA) lines together with their reserves and properties. The Malaysian side has agreed to have a study carried out on the project but with a reduced scope.

1.1.2 The population of the Greater Kuala Lumpur Area (Selangor and Federal Territory) is estimated to reach five million by the year 2000. Such a trend will necessarily give rise to a demand for the provision of a railway commuter service. The local governments/municipalities involved have urged the MRA to improve and increase the passenger train frequency of the service covering their areas, along the section: Rawang-Kuala Lumpur (KL) (32 km) and KL-Seremban (74 km). They are involved in housing development projects which would become less effective if a railway commuter service is not provided linking these areas with KL.

1.1.3 The MRA has made efforts to cope with these demands but the section is mostly single tracked, with insufficient signalling/telecom facilities to enable MRA to meet the capacity requirement. Considering

the growing demand in passenger/good traffic of long/middle distance, and the recent demand for commuter traffic, it is deemed necessary that the capacity of the track be increased on an incremental basis beginning with signal/telecom improvement and ultimately by a total double-tracking.

2. OBJECTIVES OF THE STUDY

- 2.1 The objectives of the Study are to undertake technical, economic and financial feasibility studies on the introduction of a Rail-based Commuter Service; to recommend urban development policies and strategies in the vicinity of the railway stations, and/or along the corridors of the railway line involved; to undertake organizational and management studies for the railway system's operator; and finally to suggest an implementation programme for the project including phasing in the track capacity increase covering the line involved.

3. STUDY AREA

- 3.1 The proposed Railway Line to be studied consists of two segments of about 106km in total track length (see attached Figure 1).

(a) Northern Line (32km) starts from Kuala Lumpur Central Station and terminates at Rawang Station.

(b) Southern Line (74km) starts from Kuala Lumpur Central Station passing through Sungei Besi, Bangi New Town and terminates at Seremban Station.

4. SCOPE OF WORK

4.1 In order to attain the objectives, the Study shall undertake operation and maintenance planning, landuse study, development planning, market study, transport demand study, preliminary engineering, environmental study, economic and financial studies and implementation study.

4.2 Study Items

4.2.1 Review of Past Studies and Reports

Among past studies and reports, special attention shall be paid to:-

- (a) Klang Valley Perspective Plan, 1984.
- (b) Klang Valley Transportation Study, 1980.
- (c) Kuala Lumpur Structure Plan, Bangi Structure Plan, Selayang New Town Structure Plan.

4.2.2 Data Collection and Analysis

The following data shall be collected and analysed:-

- (a) Socio-economic data including landuse.
- (b) Trip information within the area.
- (c) Marketing data by sector.
- (d) Engineering data.
- (e) Other related data.

4.2.3 Transport Demand Forecast.

The future transport demand for the Railway System shall be forecasted on the basis of the following steps:-

- (a) Supplementary public transport demand survey .
- (b) Landuse study along the corridor.
- (c) Transport demand analysis in the area.
- (d) Future transport demand projection.

4.2.4 Related Development Planning for the System.

- (a) Landuse plan along the system.
- (b) Layout plan of station plazas.
- (c) Rerouting planning of the bus transport system.
- (d) Off-rail development in the surrounding areas of station.

4.2.5 Assessment of the Malayan Railway.

- (a) Review of the existing Malayan Railway System.
- (b) Assessment of the system in relation to the introduction of commuter service including depots and workshops.
- (c) Review of the rail-bus operation.

4.2.6 Formulation of the Railway System Plan.

The Plan shall be formulated on the basis of the following:-

- (a) Alignment and location of stations of the Railway System.
- (b) Depots and workshops.
- (c) Signalling and Telecommunications.
- (d) Power Supply.
- (e) Structural Type of Carriageway.
- (f) Train operation plan including facility and rolling stock plans.
- (g) Others.

4.2.7 Preliminary Design of the System.

- (a) Carriageway covering by-passing sidings, partial and total double tracking.
- (b) Stations, depots, workshops.
- (c) Power supply, signalling and telecommunications.
- (d) Operation and maintenance system.
- (e) Construction plan.
- (f) Cost estimation.

4.2.8 Study on Railway Management.

- (a) Ownership.
- (b) Operating organization.
- (c) Operation and management.

4.2.9 Project Evaluation.

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

4.2.10 Recommendations and Implementation Programme.

- (a) Guidelines/Policies for the development of the System.
- (b) Priority among the proposed lines.
- (c) Implementation schedule.
- (d) Training programme.
- (e) Investment requirement.
- (f) Recommendations.

5. DURATION OF THE STUDY

The Study shall be completed within twelve (12) months after the commencement date.

6. REPORTS AND TIME SCHEDULE

6.1 The Study Team shall prepare and submit the following reports in English:-

(a) An Inception Report (25 copies) containing a detailed statement of the consultant's proposed procedures and work schedule which would be submitted within one (1) month of the date of commencement of the Study.

(b) Progress Report (25 copies) reporting the progress of the Study and outcomes therefrom, to be submitted within three (3) months from the date of commencement of the Study.

(c) Interim Report (25 copies) outlining the work performed during the period and giving interim findings, conclusions and recommendations on the project to be submitted within six (6) months from the date of commencement of the Study.

(d) Draft Final Report (25 copies) summarizing all works performed during the Study and the findings, conclusions and recommendations of the Study Team including maps, plans, tables and diagrams to be submitted not later than nine (9) months from the date of commencement of the Study.

The Malaysian side will provide the Study Team with their comments on the Draft Final Report within one (1) month after receipt of the Draft Final Report.

(e) A Final Report (50 copies) to be submitted within two (2) months after receipt of the comments from the Malaysian side on the Draft Final Report.

6.2 The Study Team shall ensure that all data, information, maps, drawings, materials and findings connected with the Study are kept confidential and not disposed off 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.

Economic Planning Unit.
December 1988

IM/eab

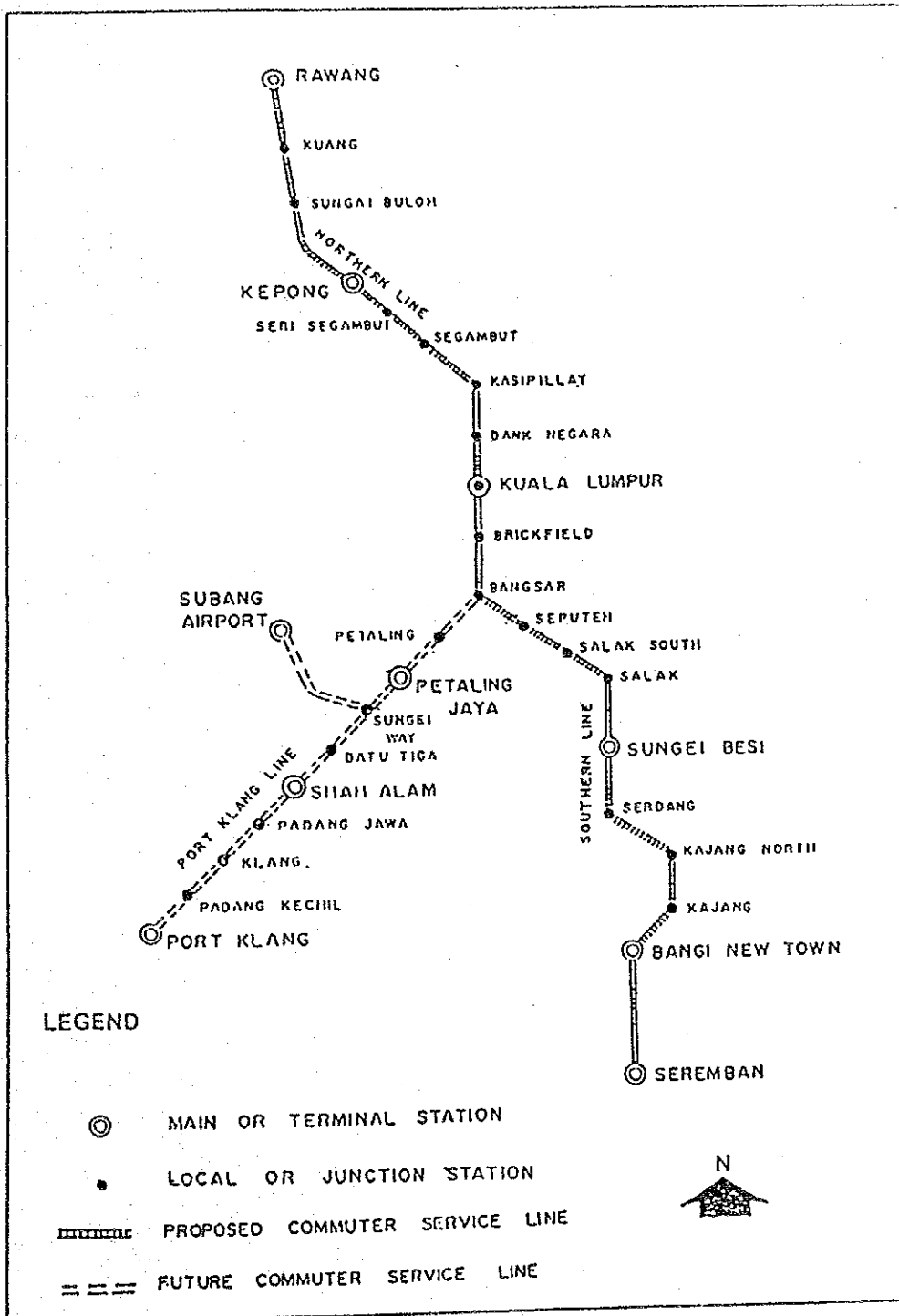


Figure 1 : Proposed Railway Commuter Services Between Rawang and Seremban

3. 対処方針

マレーシア国クランバレー地域鉄道改良計画調査（事前調査）
対処方針（案）

項 目	対 処 方 針	備 考
1. 事前調査の目的及び今後の予定	<p>次のとおり整理し、説明する。</p> <p>①先方政府の要請背景・内容及び意向の確認</p> <p>②本格調査の実施方針及びS/Wの協議</p> <p>③先方受入れ体制の確認</p> <ul style="list-style-type: none"> ・先方政府の実施すべき事項 ・先方カウンターパート機関 ・調整等を目的とする委員会（Steering Committee）の必要性の有無 ・その他 <p>(2) 今後の予定</p> <p>概略の予定について確認する。</p> <ul style="list-style-type: none"> ・1989年9月 本格調査開始 	<p>設置の方向で協議</p>
2. 要請内容及び意向の確認	<p>当方の本件調査協力に関する考え方を説明する。合意事項については、先方と事前調査団とがS/W、ミニッツに署名し、確認する。</p> <p>クランバレー地域における通勤輸送サービスを目的とした大量輸送機関（MRT）導入計画の策定とそのF/S及びMRT導入計画路線沿線と駅周辺の都市開発政策の策定</p> <ul style="list-style-type: none"> ①関連資料、情報の収集、分析及び現地踏査等による現況、問題点の把握 ②土質調査・測量 ③MRT導入計画の策定 ④MRT導入路線沿線と駅周辺の都市開発政策の策定 ⑤MRT導入計画に関するF/S ⑥MRT導入に伴う管理・運営主体に対する提言 ⑦総合評価 	<p>既存資料状況による。</p>

項 目	対 処 方 針	備 考
3. 本格調査の実施方針及びS/W内容の協議		
(1) 本格調査の目的	MRT導入計画に関するF/Sと沿線都市開発政策の策定	
(2) 本格調査の対象地域	MRT導入計画路線(Rawang~Kuala Lumpur~Seremban)沿線及びクランバレー地域	
(3) 目標年次	2000年	
(4) 本格調査の内容と項目	<p>[現況把握、分析]</p> <ul style="list-style-type: none"> ・ 関連資料、情報の収集、分析 ・ 既存調査、報告書のレビュー ・ 地域内都市交通諸問題の把握、分析 ・ マラヤ鉄道の現況、問題点、評価 ・ 沿線土地利用と通勤圏の状況及び動向 ・ 土質調査、測量 <p>[MRT導入計画の策定]</p> <ul style="list-style-type: none"> ・ 輸送需要の予測 <p>・ MRT導入計画の策定(駅・車両基地等の配置、信号・通信、構造物、車両計画、輸送計画等)</p> <p>[沿線都市開発政策の策定]</p> <ul style="list-style-type: none"> ・ 沿線土地利用、開発計画 ・ 駅広レイアウト ・ 駅周辺開発計画 ・ バス輸送再編計画 <p>[MRT導入計画のF/S]</p> <ul style="list-style-type: none"> ・ 概略設計 ・ 事業計画(実施、投資計画等) ・ 概算事業費(建設及び維持・管理) ・ プロジェクト評価(経済・財務分析、社会的) ・ 管理・運営主体に対する提言 <p>[総合評価]</p> <ul style="list-style-type: none"> ・ 提言・勧告 	<p>土質調査、測量はローカルコンの使用を基本。調査規模、内容、コンの能力を確認する。</p> <p>M/Pで予測した結果をもとに補足調査を行う。</p> <p>代替案?</p>
(5) 調査期間	12ヶ月程度(別紙参照)	第6次マレーシア計画と本プロジェ

項 目	対 処 方 針	備 考
(6) 報告書	① インセプションレポート (IC/R) ・ 本格調査開始時 ・ 調査実施方針、スケジュール等を記載 ② インテリムレポート (IT/R) ・ 本格調査開始後6ヶ月 ・ 現地調査の結果 ・ MRT導入計画 ・ 都市開発政策 ③ ドラフトファイナルレポート (DF/R) ・ 本格調査開始後9ヶ月 ・ MRT導入計画のF/S結果 ・ 総合評価、提言・勧告 ④ ファイナルレポート (F/R) ・ ③に対するコメント受領後2ヶ月	クトの関連を確認するが、89年9月開始を基本とする。 第1次現地調査終了時に調査団は調査経過をまとめた簡単な報告書を先方に提出する。
4. 先方受入れ体制の確認 (1) 先方の実施すべき事項 (2) 先方カウンターパート機関	マレーシア国の既存のS/Wにもとづいて作成した本件S/W案をもとに協議する。 ① クランバレー地域都市交通行政機構の中でのカウンターパート機関の確認 ② 関連機関の協力体制の確認 ③ 調整等を目的とする委員会の設置の必要性の有無とその役割の確認	
5. 事前調査団の各メンバーの担当事項 (1) 総括	・ 調査団の業務全般の統括 ・ 本格調査実施における調査内容、調査実施体制、調査スケジュール等の基本方針のとりまとめ ・ 調査団を代表して相手国関係機関代表者との間でS/W、ミニッツ等確認文書への署名 ・ 既存鉄道施設の状況、問題点の把握	

項 目	対 処 方 針	備 考
(2) 輸送計画	<ul style="list-style-type: none"> ・ 改良及びM R T導入の可能性の検討、方向付け ・ 輸送状況、列車運転状況の現況及び把握 	
(3) 管理・運営	<ul style="list-style-type: none"> ・ 地域内の旅客流動、通勤圏の状況 ・ 将来輸送需要の動向 ・ 既存鉄道の組織、管理・運営状況及び問題点の把握 ・ M R T導入に伴う管理・運営主体の在り方の検討 	
(4) 都市開発計画	<ul style="list-style-type: none"> ・ 地域内の都市開発現況及び動向 ・ M R T導入路線沿線、駅周辺の土地利用現況及び開発状況 ・ バス輸送システム（フィーダーサービス）の現況 ・ 将来の開発の可能性の検討 	
(5) 調査企画	<ul style="list-style-type: none"> ・ 調査実施にあつたての全体計画の作成及びその総合的な調整 	
6. 議事録等	<p>①あらかじめ作成したS/W案をもとに説明、協議し、合意の後、双方の代表者が署名する。</p> <p>②S/W及び調査の実施に関する協議内容を議事録としてとりまとめ、双方の代表者が署名、確認する。</p>	
7. 報告書	<p>目次案に従って、各担当者により作成する。</p>	
8. その他	<p>M/P提案路線と今回F/S対象路線（優先順、区間）とが相違する問題については、以下の点に関する「マ」側の考え方を確認、整理したうえで「T/R」が基本との立場で対処する。</p> <p>①同地域における鉄道を基幹とした通勤輸送に対する「マ」側の構想及びその中で南北線の役割、位置付け</p> <p>②メトロリンク社による通勤輸送計画と今回要請のあった通勤輸送計画との整合性、仕切り</p>	

項 目	対 処 方 針	備 考
	<p>③M/Pに加え、Bangi New town～Seremban間を対象とする必然性（住宅開発等の有無）</p> <p>ただし、本格調査にあつたては、各線相互の列車乗入れ、接続、旅客流動等、同地域全体の通勤フローを考慮した調査が必要との認識とする。</p>	

4. 質問書

QUESTIONNAIRE
FOR
THE PRE-FEASIBILITY STUDY
ON
RAIL-BASED COMMUTER SERVICES
IN
KLANG VALLEY

1. Mass Rapid Transit (Hereinafter referred as MRT) and General

(1) What is a present situation and schedule of the privatization of Malayan Railway (Hereinafter referred as KTM) and the development of Metrolink Sdn. Bhd.? What organization would be supposed to administrate the proposed Railway Line?

(2) Why are the Northern Line and the Southern Line proposed for this feasibility study? The proposed Railway Line is classified as the phase three plan in the Masterplan Study. Why is the section from Bangi New Town to Seremban added? The section is not included in the Masterplan.

(3) Please explain the details, if there is any improvement or development plan for railway in Klang Valley area except Northern and Southern Line.

(4) Please explain the details of which the preliminary study team (Hereinafter referred as the team) should consider regarding rerouting planning of the bus transport system.

(5) As for workshop, the team would like to recommend the feasibility study team that they should compare on financial view point to build a new exclusive workshop with to entrust inspection and repair works of rolling stocks to Sentul workshop of KTM. If you have any objection to this plan, please explain the reason.

(6) Please explain the details, if there is any established policy or plan relating MRT of which the team should consider. (For example: the location of new stations, landuse plans, the designated railway section for preferentially improvement, cubic crossings,

electrification, and so forth)

(7) Please indicate the following items of the Malaysian counterpart personnel to the feasibility study team:

Number of the personnel
Assigning organization
Title
Specialty

(8) Is MRT supposed to be incorporated in the sixth Malaysian National Plan? If it is the case, please indicate the details of which the team should consider.

(9) Please indicate every administrative organization which have the authority regarding railway license, management, construction and improvement.

(10) Please indicate every kind of law and regulations which should be taken into consideration for the MRT's feasibility study.

2. Urban Development

(1) Administrative organization:

Which administrative organizations are related to the urban development in this study? It is being understood that the involved are the central government, the Selangor state government, the state economic development corporation of Selangor, municipalities of each towns and some other organizations.

The extent of relations of each organization to the objective urban development should be clarified.

(2) Existing regulations and guidelines:

What kind of regulations and guidelines should be taken into consideration for the study on the urban development, such as zoning (land use), plot size, houses, infrastructure (water supply, sewage, drainage, disposal, road and electricity), public services (school, hospital, parks and reserved land) and so on.

(3) Existing overall plan:

The existing overall plans which are mandatory or introductory and related to this urban development scheme along the Northern and Southern MRT line should be clarified.

(4) Land:

What is the present situation of title or leasehold on the land concerned to the objective urban development in each area ?

What kind of procedures is necessary for transferring the title and leaseholds and being used in the development ?

How much does it cost to get the ownership or leasehold of the concerned land ?

What is the extent of tax related to the land title, leasehold and transfer ?

(5) Infrastructure:

What is the present situation of infrastructure, such as water supply, sewage, drainage, disposal, road and electricity in the development sites ?

Are there any schemes to develop new infrastructures in the concerned sites ?

(6) Finance:

What kind of financial support (bank or non-bank, public or private) can be expected for the new dwellers and the development bodies of this scheme ?

(7) Dwellers:

How many houses or families should be located in each development site ?

What kind of dwellers, such as family composition, income and affordability in the aspects of amount of purchasing house or rental fee ?

What kind of houses, such as rental or sale, detached houses or multi-storied houses, a house with a lot or lot only, area of a house, should be considered ?

3. Informations/Materials required

- (a) landuse map of Klang Valley
- (b) brief information of Next Five Year Plan
- (c) organization chart of KTM
- (d) geological and topographic data along the railway
- (e) railway route plan (map)
 - whole country
 - Klang Valley
- (f) railway longitudinal section
 - Klang Valley
- (g) layout plan (map) of major railway stations and depots
- (h) data of railway structure
- (i) data of signalling and communication facilities
- (j) data of rolling stocks
- (k) diagram (time-table) for train operating
- (l) transport statistics of KTM
- (m) technical standart for railway facilities
 - designing, material, construction, etc.
- (n) bus network map in Klang Valley and data of bus transport

5、質問書に対する回答

ANSWERS TO QUESTIONNAIRE FOR THE
PRE-FEASIBILITY STUDY ON THE
RAIL-BASED COMMUTER SERVICES IN
KLANG VALLEY

1. Mass Rapid Transit and General

- (1) At this stage the privatisation of KTM is still under consideration by the government. It is expected that the government will make a policy decision on the restructuring of KTM after the middle of this year. As regards Metrolink Sdn. Bhd., the company had submitted its proposal to run commuter rail service which covers some areas of Klang Valley as follows

- Phase 1: Kuala Lumpur - Ampang/Salak South
- Phase 2: Kuala Lumpur - Batu Caves
- Phase 3: Kuala Lumpur - Subang Airport
- Phase 4: Subang Jaya - Port Klang
- Phase 5: Sungai Buloh - Bangi

Although the government has already approved the phase 1 project, it has not been implemented because the company is having some difficulties in financing the project.

The proposed railway line i.e. Rawang - Kuala Lumpur and Kuala Lumpur - Seremban would be administered by KTM or its successor company (if KTM is privatised).

- (2) The Northern Line and the Southern Line have been chosen for this feasibility study because
- a) The other lines have been identified for Metrolink Project Phase 1 (Kuala Lumpur - Ampang and Kuala Lumpur - Salak South) and The Port Klang Project (Sentul - Kuala Lumpur - Port Klang) is being undertaken by KTM. Therefore the remaining routes to be considered are the Northern Line and Southern Line.
 - b) The rapid development taking place along the Rawang - Kuala Lumpur - Seremban main route renders the commuter transport infrastructure requirement be examined earlier although the Masterplan Study has classified the project under the phase 3 plan. In view of the rapid development in Seremban especially as a result of the resiting of the Universiti Kebangsaan Malaysia to Bangi it is proposed that the study be extended to Seremban also.
- (3) It has been planned that Metrolink Sdn. Bhd. will run the commuter services on Kuala Lumpur - Ampang route as well as Kuala Lumpur - Batu Caves route. On the other hand KTM will improve the commuter service Sentul - Kuala Lumpur - Port Klang by means of doubling of tracks and modernisation of signalling and communication system on this route. In addition The City Hall is planning the introduction of the Light Rail Transit (LRT) System to cater for intracity commuters in Kuala Lumpur.

- (4) It is envisaged that the proposed commuter service will not be effective unless a proper plan is designed to interface the rail based commuter service with the bus feeder service. The method of proper interfacing should not be restricted to rerouting only. The team is encouraged to propose various alternative methods as it thinks suitable.
- (5) As for the rolling stock maintenance, the study team should first evaluate whether the existing workshop is adequate to cater for such work. If the result shows that it is better to built a new exclusive workshop we have no objection to such proposal.
- (6) As regards the policy pertaining to urban development in Klang Valley please refer to the Klang Valley Masterplan Study. However regarding the location of new stations, the designated railways section for preferential improvement, crossing, electrification etc; we leave it to the study team to evaluate and recommend.
- (7) KTM is prepared to assign the Malaysian Counterpart personnel (at least two) for this study the details of whom depend on the requirement of the study team.
- (8) It is planned that the Rawang - Kuala Lumpur and Kuala Lumpur - Seremban commuter services be implemented in the Sixth Malaysia Plan (1991 to 1995). The details of the plan will depend on the outcome of the study.
- (9) The authority with regard to the management and operation of the railway in Peninsular Malaysia lies with Malayan Railway Administration. However matters pertaining to policy rest with the Ministry of Transport.
- (10) In so far as the railway operation is concerned, this is governed by the Railway Ordinance 1948.

Questionnaires For Feasibility Study On 'Rail-Based
Commuter Services In Klang Valley', (17-26 MAY 1989)

1. Urban Development

Within the Klang Valley Region, urban development is mainly undertaken by the following government agencies:-

- a) Local Authorities e.g. City Hall of Kuala Lumpur, the Gombak District Council, the Petaling District Council, the Petaling Jaya Municipal Council etc.;
 - b) The State Economic Development Corporation of Selangor Darul Ehsan (PKNS);
 - c) Urban Development Authority (UDA);
 - d) Other related government departments.(Town Planning Department) etc.
2. Development of urban infrastructure and services (housing, water and electricity supply, building etc) are governed by planning standards and regulations as provided by the local authorities. All development proposals in urban areas require the prior approval of the latter.
3. Presently several plans have already been drawn up relating to urban development in the vicinity of the proposed Northern and Southern RCBS lines. These are:-
- a) Klang Valley Perspective Plan which provides the strategic planning framework and perspectives at the regional level;
 - b) Kuala Lumpur Structure Plan;
 - c) Bangi Structure Plan;
 - d) Seremban Structure Plan;
 - e) Petaling Structure Plan (in progress);
 - f) Gombak and Ampang Interim Development Plan.

6. 収集資料リスト

収集資料リスト

	資料名称	内容	形態
1	Organization Chart of KTM	マレーシア国鉄 (KTM) の組織図	A3 コピー
2	Railway Route Plan (map)	KTMの路線図 (マレーシア全国)	A1 青焼き
3	Railway Longitudinal Section	線路縦断面図 (Rawang~K.L.~Seremban)	A4 コピー
4-1	Layout Plan of Major Railway Stations	主要駅の平面図 (Rawang~K.L.~Seremban)	A4 コピー
4-2	Layout Plan of Major Railway Stations	主要駅の平面図 (Port Klang Line)	A4 コピー
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