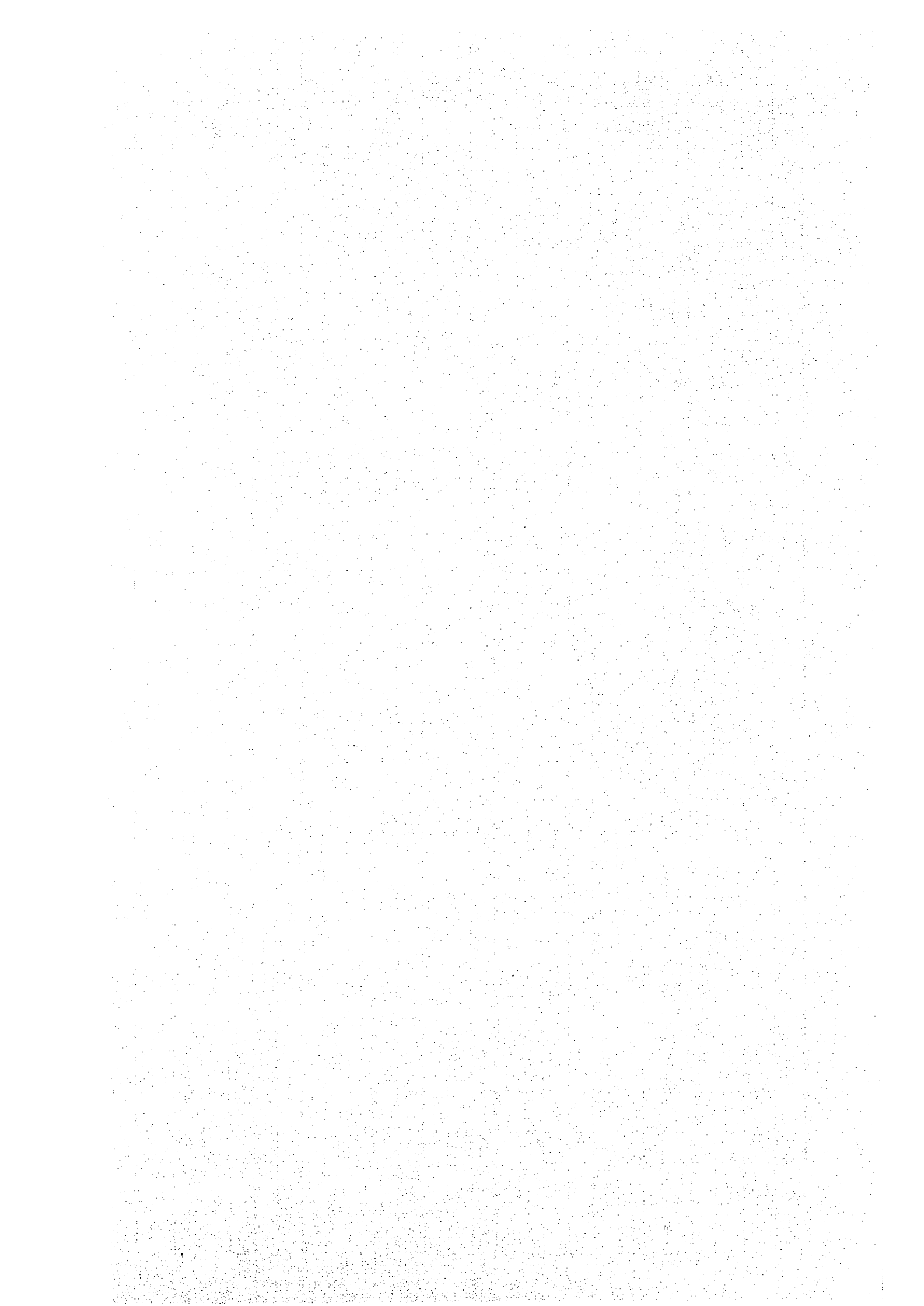



APPENDIX III 'B' ZONE POPULATION AND EMPLOYMENT

TABLE FOR 1985, 1995 AND 2005



B Zone	Population			Employment 1985						Employment 1995						Employment 2005			
	1985	1995	2005	1st	2nd	3rd	Total	1st	2nd	3rd	Total	1st	2nd	3rd	Total	1st	2nd	3rd	Total
1	223.8	297.5	360.0	2.8	25.7	232.6	261.1	2.8	18.3	292.9	314.0	2.5	14.1	363.1	379.7				
2	273.9	389.8	487.4	1.7	26.7	47.0	75.4	1.7	34.9	79.8	116.4	1.2	39.4	117.8	158.4				
3	162.8	217.3	263.4	1.5	7.3	30.4	39.2	1.3	20.3	56.4	78.0	1.2	27.6	86.7	115.5				
4	79.1	96.2	110.6	0.2	4.2	14.8	19.2	0.2	4.9	17.8	22.9	0.2	5.3	21.3	26.8				
5	132.4	251.2	351.8	1.1	11.1	27.8	40.0	1.1	20.5	48.2	69.8	0.8	25.8	72.1	98.7				
6	219.0	359.3	478.7	1.0	20.3	31.3	52.6	1.0	40.9	54.1	96.0	0.9	52.0	80.7	133.6				
7	124.0	158.7	188.1	1.3	7.2	45.4	53.9	1.3	14.3	71.7	87.3	1.2	18.1	102.0	121.3				
K.L.	1215.0	1770.0	2240.0	9.6	102.5	429.3	541.4	9.4	154.1	620.9	784.4	8.0	182.3	843.7	1034.0				
8	154.9	315.3	550.5	5.9	17.7	13.5	37.1	5.7	38.3	42.9	86.9	4.8	77.9	94.9	177.8				
9	88.1	128.7	195.5	1.1	10.9	8.2	20.2	1.1	15.1	12.0	28.2	1.1	23.1	18.8	42.9				
Gombak	243.0	444.0	746.0	7.0	28.6	21.7	57.3	6.8	53.4	54.9	115.1	5.9	101.0	113.7	220.7				
10	136.3	176.1	242.3	3.3	6.2	5.4	14.9	3.2	7.0	20.3	30.5	2.8	8.2	44.8	55.8				
11	103.7	209.9	387.7	3.8	7.4	12.4	23.6	3.7	22.2	36.1	62.0	3.1	50.2	75.2	128.5				
H. Langat	240.0	386.0	630.0	7.1	13.6	17.8	38.5	6.9	29.2	56.4	92.5	5.9	58.4	120.0	184.3				
12	290.1	363.8	427.8	0.7	55.4	74.6	130.7	0.7	55.8	117.0	173.5	0.0	56.2	164.6	220.8				
13	52.1	259.4	436.8	3.0	22.2	18.0	43.2	3.0	41.9	75.5	120.4	2.5	65.6	139.7	207.8				
14	109.3	162.1	207.0	3.4	15.2	10.8	29.4	3.5	18.0	26.1	47.6	2.9	21.4	43.0	67.3				
15	39.5	64.7	86.2	6.3	4.0	9.2	19.5	6.0	5.0	18.9	29.9	5.8	6.1	28.8	40.7				
Petaling	491.0	850.0	1157.0	13.4	96.8	112.6	222.8	13.2	120.7	237.5	371.4	11.2	149.3	576.1	536.6				
16	236.5	287.3	353.0	0.5	16.9	42.2	59.6	0.5	18.5	70.6	89.6	0	19.9	101.4	121.3				
17	37.1	56.0	80.3	3.0	2.0	1.5	6.5	3.0	3.2	4.8	11.0	2.9	4.5	8.2	15.6				
18	71.4	146.7	243.7	5.7	8.9	9.3	23.9	5.5	21.4	23.2	50.1	4.8	35.1	37.6	77.5				
Klang	345.0	490.0	677.0	9.2	27.8	53.0	90.0	9.0	43.1	98.6	150.7	7.7	59.5	147.2	214.4				
Total	2534.0	3940.0	5450.0	46.3	269.3	634.4	950.0	45.3	400.5	1068.3	1514.1	38.7	550.5	1600.8	2190.0				




APPENDIX IV SUMMARY OF KUKAKU

SEIRI PILOT STUDY



## 1. OBJECTIVES AND STUDY APPROACH

### 1.1 Objectives

The Land Readjustment Project, one of the most effective method for current urban development, should be examined for possible application in Kuala Lumpur and its Conurbation area where high land price is a disadvantage in the promotion of urban development.

It is rational to apply the Land Readjustment Project to the existing urbanized area because this method has the provision in securing land for the development or upgrading of urban facilities such as roads, parks, water supply, sewerage system, drainage system and so on.

The objectives of the Land Readjustment Pilot Project Study are summarized as follows:—

- (1) Formulation of basic concept and project planning for the pilot study area by land readjustment project approach
- (2) Project evaluation on the pilot study area from the feasibility point of view
- (3) Identification of general merits and problems of adopting the land readjustment project approach for urban development in Klang Valley.

### 1.2 Study Approach

The study approach of the Land Readjustment Pilot Project Study is shown in the flowchart of Figure 1. The Pilot Project Study is composed of these five steps:—

#### I. Selection of Pilot Study Area

Certain areas are chosen as alternatives for the Pilot Project Study Area from the view points of necessity and possibility of improvement to the area.

The identification and selection of the Pilot Study Area is made simultaneously using a set of criteria.

#### II. Survey

This step is the essence of the study which is initiated by an inventory survey on the existing conditions of the pilot study area such as physical features, landuse and housing conditions, traffic conditions, urban facilities and so on.

#### III. Analysis

The assessment of the existing conditions in comparison with the desirable conditions of urban facilities is conducted in this step. This is necessary for the formulation of the basic concept plan.

#### IV. Planning

The basic concept for the conceptual layout plan in the project area is then formulated in this step. Based on the formulated basic concept, the conceptual layout plan showing the required urban facilities and the future landuse is established here.

The conceptual layout plan is designed in accordance with the proposed and committed facilities in the City or District Development Plans (if any) taking into account the land ownership condition.

Based on the designed conceptual layout plan, the preliminary implementation plan is established for an economic evaluation of the project.

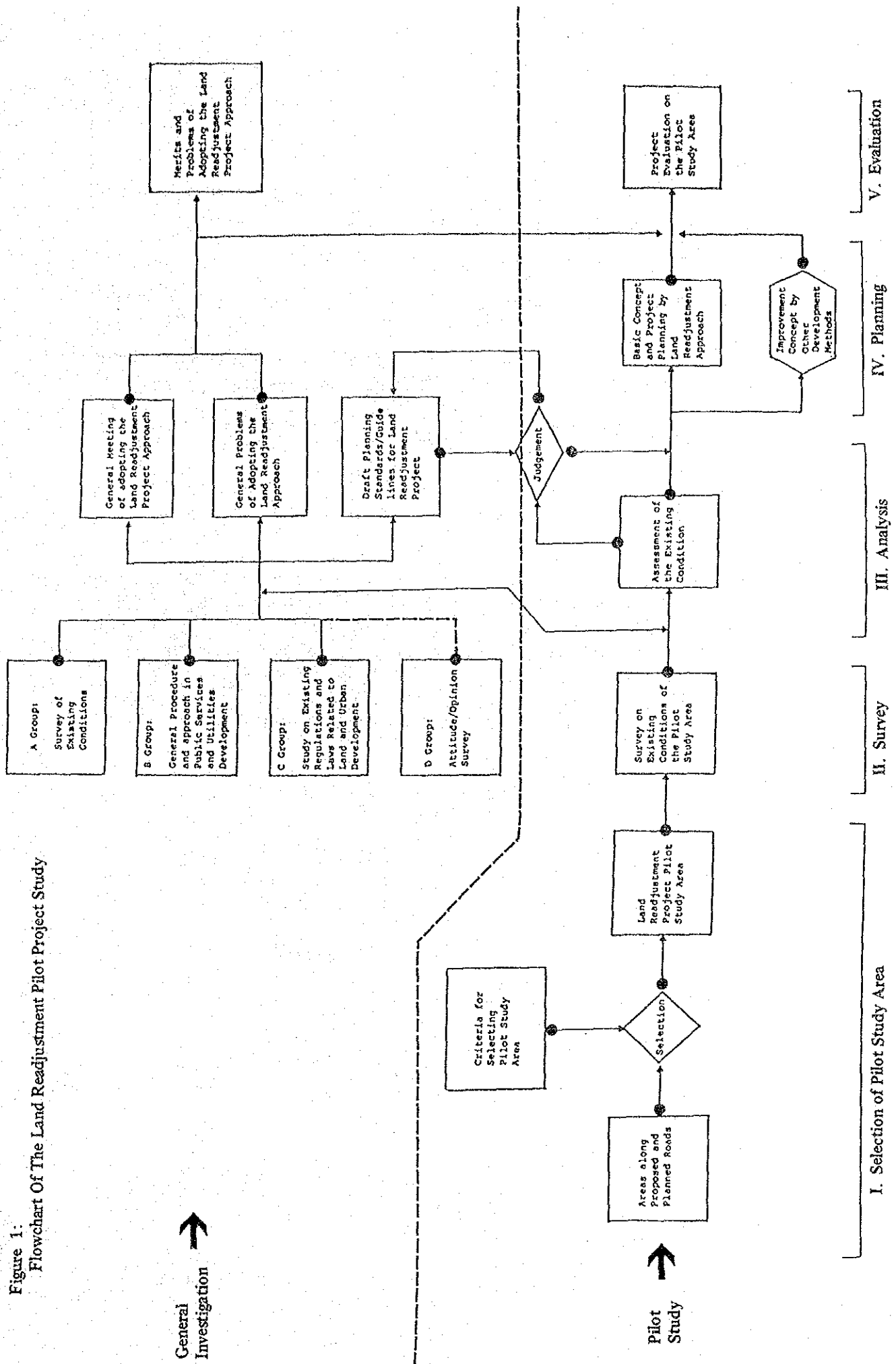
#### V. Evaluation

The final step is to evaluate the Pilot Project Study Area from the feasibility point of view.

Parallel to the Pilot Study, a general investigation is also made to identify and to classify the general merits and problems of adopting the Land Readjustment Project approach to urban development in the Klang Valley.



Figure 1:  
Flowchart Of The Land Readjustment Pilot Project Study



## 2. THE PILOT STUDY AREA

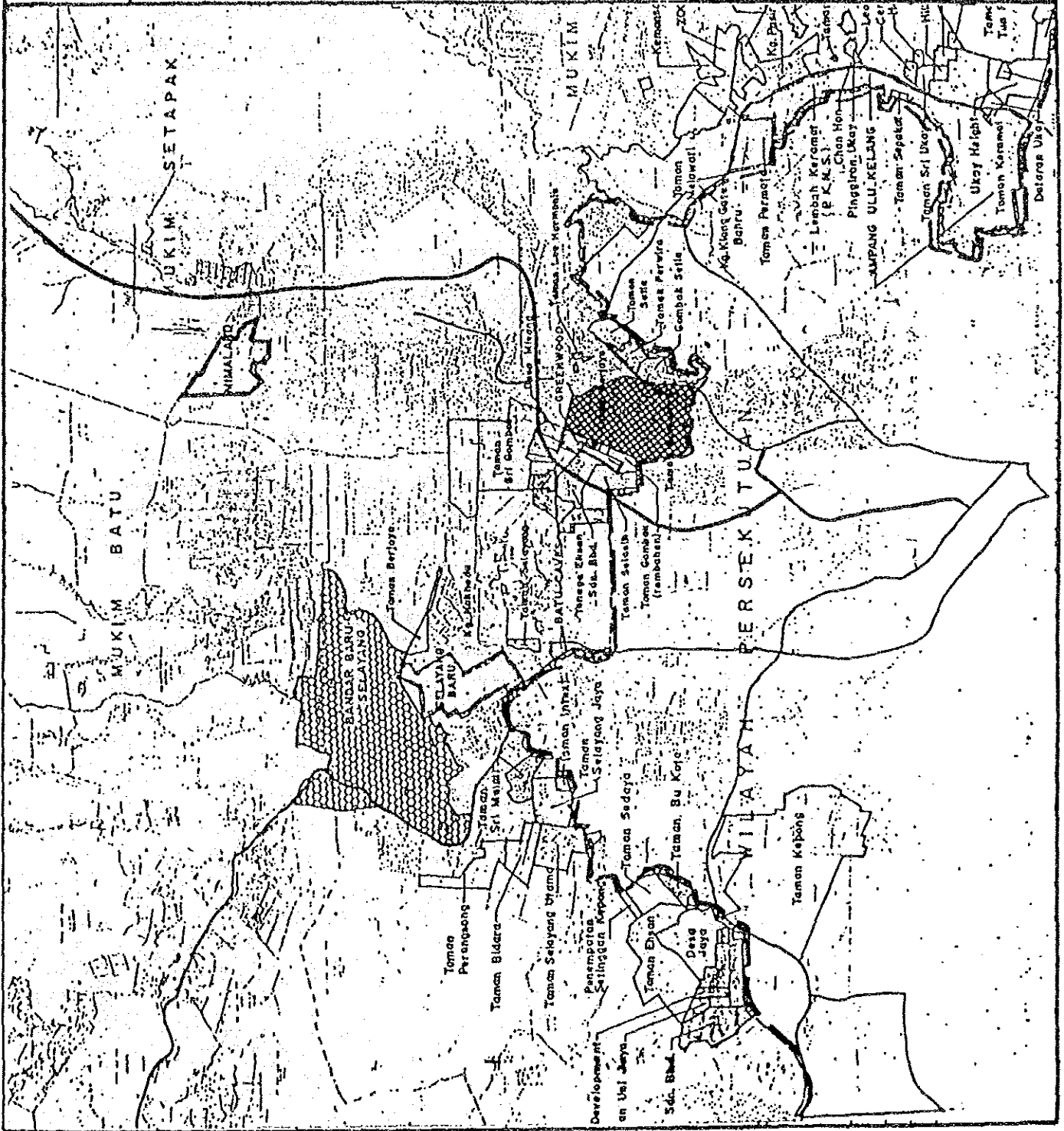
An area measuring about 204 ha. in the District of Gombak called Kampung Kerdas is selected as an appropriate Study Area.

The reasons for its selection are summarized as follows:—

- (1) The provision of urban facilities such as access roads, power, water supply and drainage for all lots is urgently required.
- (2) The Middle Ring Road II that is having a great impact on the development in the corridor would most likely pass through or near this area.
- (3) This area is sandwiched and bypassed by all the preceding housing development on its four(4) sides.
- (4) It is an advantage that this area is not only under low density but also under some form of low return landuse such as unwork padi fields, orchard or even vacant.
- (5) As this area is a Malay Reserve Land, it infact faces some restriction in urban development. Moreover this area is made up of small, irregular lots without proper facilities or accesses. From these view points, the owner of each individual lot in this area would encounter problems in developing his land.
- (6) This area is located at the existing northern fringe area where urban development should be strategically prompted as the demand for housing for example is high.

Figure 2 shows the location of this pilot study area.

FIG. 2 : Location of Pilot Study Area



LEGEND



Pilot Study Area

N



KLANG VALLEY TRANSPORTATION STUDY

### 3. SURVEY

A survey on the existing conditions of the Pilot Study Area was carried out.

#### (1) Physical Features

The area is drained by the Gombak River and the topography is flat except for areas along Jalan Gombak which are 2-3 m higher than the inner area.

#### (2) Landuse and Housing Conditions

Most of the area is covered with fruit trees or rubber on the well drained area while a large section is apparently unwork padi fields which are now covered with lalang. Housing units are crowded along the access road and along Jalan Gombak and Batu Caves. There are about 840 houses of which 60% are wooden structures.

#### (3) Traffic Conditions

There is a lack of access roads in the area which renders a large part of the interior area inaccessible except on foot. Traffic on Jalan Gombak and Batu Caves is high and a large section of Jalan Gombak is very narrow.

#### (4) Urban facilities

Public facilities only occupied 8% of the area. Although most of the houses are served with piped water and electricity, drainage and waste disposal are not satisfactory and in certain areas, possible health hazards.

#### (5) Land Ownership

Although there are about 200 registered lots giving an average lot size of about 1 ha, there are many multiple ownership lots and some illegally subdivided lots. All the lots are irregular in shape making them difficult to be developed individually.

#### (6) Land Price

Land price in the area varies from about M\$350/sq.m for commercial use and M\$150/sq.m for residential use along the fringe bordering Jalan Gombak to M\$15/sq.m for agriculture land in the interior. Developed urban land around the study area however fetches some M\$800/sq.m for commercial land and M\$250/sq.m for residential land.

#### 4. MAJOR PROBLEMS ON THE EXISTING CONDITIONS

The major issues on the existing environmental conditions of the Study Area are summarized as follows:—

- (1) Gombak River should be improved in accordance with the River Improvement Plan which is to be prepared by the Drainage and Irrigation Department with proper alignment and embankment to prevent future flooding or erosion.
- (2) Jalan Gombak and Jalan Batu Caves bordering the Study Area should be improved in accordance with the proposed Road Network Plan in the Klang Valley as a whole.
- (3) Access road network system should be established so as to encourage urban development in this area. In particular are major east-west access roads connecting the west district of the Study Area with Jalan Gombak.
- (4) Park and open space network system should be established for the amenity of urban life and the recreational activities of residents.
- (5) Primary school should be provided within the Study Area for the residents so as not to force the children to walk far distances to attend lessons.
- (6) Water and power supply and the drainage system should be improved by their respective jurisdictions for all the lots.
- (7) Existing landuse should be changed to promote more efficient use of land.
- (8) Each lot may be changed to regular shape and serviced with access road so as to improve on the accessibility to urban facilities and ensure better living environment.

Table 1 : Assessment on the Existing Conditions

	Items	Assessment	Necessity of Improvement
Safety	(a) Flood and erosion	* Gombak River should be improved	●
	(b) Steep Inclined Plane	* Nil	-
	(c) Danger Facilities	* Nil (The electricity transmission line was dismantled)	-
Accessibility	(a) Major Roads	* Jalan Gombak and Jalan Caves bordering the Study Area should be improved	●
	(b) Access Roads	* Access road network system should be established	●
	(c) Public Transport	* More effective services should be promoted corresponding with establishment of the access road network	○
Amenity of Urban Life	(a) Park/Open Space	* Park/Open Space network system should be established	●
	(b) Community Facilities	* Primary school should be set up for the residents	●
		* Neighbouring community centre (library, assembly hall, religious facilities etc.) is necessary for the community	○
(c) Supply and Disposition	* Water and Electricity supply can be improved by their jurisdiction	○	
	* Drainage system should be improved	●	
	* Sewerage system should be improved in accordance with the City Plan in future	○	
Potential for Urban Development	(a) Landuse and Housing	* Existing landuse should be changed to more effective use	●
	(b) Land Ownership	* Each lot should be changed to regular shape and serviced with access road	●
	(c) Land Price	* (Land Price would be higher because of improvement of urban facilities)	

Notes: ● - Very High Necessity  
 ○ - High Necessity  
 - - No Necessity

## 5. PLANNING

### 5.1 Conceptual Plan

In accordance with the basic concept, the conceptual plan which is expressed by the layout plan showing the urban facilities and desirable future land use is formulated as follows: -

#### (1) Population

The ultimate targetted population in the Project Area is estimated at 10,000 - 15,000 person.

Except those areas along the major roads, it is desirable to create medium-low density residential areas within the neighbourhood in helping to preserve some of the traditional values and environment.

In the Reserve Land along the major road however, it is possible to develop medium to high density housing and commercial use because of its high accessibility to the urban centre.

#### (2) Neighbourhood

In view of the targetted population, the formation of one neighbourhood is reasonable in the Study Area.

The primary school, the neighbourhood library, the neighbourhood open space, etc. should be prepared for improving the amenity of urban life.

These community facilities should be so arranged that they will form the neighbourhood centre and encourage urban development in the surrounding area of the neighbourhood centre.

#### (3) Land use

Within the planned neighbourhood, it is basically desirable to encourage low residential development to ensure a good living environment.

For areas along the major roads, commercial high density residential development may be allowed.

#### (4) Road Network

It is recognized that the major roads have already been approved on district development plans. At the time of this study, the exact alignment for the Middle Ring Road II (MRR II) which is due to pass through or pass-by the study area has not being fixed by the Selangor JKR. As such the alignment in the concept plan is assumed.

Therefore the task on Road Network System planning here is to plan the access road network connecting the planned major roads.

It is basically desirable to adopt the T-Cross Type in the residential area and the Grid Type in the commercial area.

It should have a minimum width of 20 m for the major access roads that connect the residential area with the major roads forming the framework for the residential and a width of 8 m for the normal access road from the view points of traffic function and urban amenity (10 and 5 m wide roads are allowed in special cases).

(5) Park/Open Space/Green Network

Playlots and children playgrounds should be distributed to ensure easy access within walking distance.

It is desirable that neighbourhood open space with sufficient facilities and extent be designed at the neighbourhood central area.

Furthermore, the formation of a Green Network connecting those open spaces with each other by the road side trees and river side green area is necessary.

(6) Drainage System

The improvement of Gombak River should be implemented as the drainage system and flood control measure in the Project Area.

The drainage in this area would hence be improved by Gombak River and the gutters of the access roads.

(7) Land Parcel and Building

It is desirable that the rectangular shape with the shorter side of 40 – 70 m be adopted in anticipation for the need for sub-division in the future considering the multiple ownership phenomenon and illegally sub-divided lots in the area.

Within the commercial and higher density residential areas along the major roads, the development of shop houses and apartments are desirable. The latter should be so arranged that a good living environment can be ensured from traffic noise such as the provision of a buffer zone.

Besides these areas, bungalow, semidetached and link houses would be expected.

5.2 Contents of Proposed Project

(1) Existing and Proposed Landuse

(a) Project Area	.....	2,043,680 sq.m	
(b) Comparison of land for public facilities			
Before Project	.....	161,760 sq.m	7.9%
After Project	.....	620,950 sq.m	30.4%

(2) Reduction Ratio and Land Value

(a) Reduction Ratio	.....	32.7%	
(b) Comparison of unit land price			
Before Project	.....	20.0 M\$/sq.m	
After Project	.....	150.0 M\$/sq.m	
Improvement Ratio	..	7.5	
(c) Reserve Land	.....	155,310 sq.m	
			(7.6% of the project area)



(3) Public Facilities Improvement Plan

(a) Road

Primary Distributor (MRRH)	Length – 1,260 m
	Width – 50 m
District Distributor (Jln. Gombak, Jln. Batu Caves)	Length – 1,615 m
	Width – 30 m
Major Access Road	Length – 8,290 m
	Width – 20 m
Access Road	Length – 26,665 m
	Width – 10,8,5 m

(b) Park

Neighbourhood Open Space (1)	Acreage – 25,880 sq.m
Children Playground (13)	Acreage – 45,990 sq.m
Play Lot (1)	Acreage – 1,370 sq.m
Green Area (3)	Acreage – 5,880 sq.m

(c) River

Main River (Gombak River)	Length – 1,915 m
	Width – 50 m

(4) Expenditures and Revenues

(a) Expenditures (in '000 M\$)

Public Facilities	44,080
Construction cost/ Removal Cost	4,335
Other Cost	12,871
<hr/>	
Total	61,286

(b) Revenues (in '000 M\$)

Disposal of Reserve land	75,789
From jurisdiction of major facilities	20,253
<hr/>	
Total	96,042

(5) Implementation Plan

- (a) Project Term 10 Years
- (b) Comparison of Cost and Revenue by Year

Year	Cost ('000 M\$)	Revenue ('000 M\$)
1st Year	11,789	4,414
2nd Year	12,561	4,414
3rd Year	12,729	4,415
4th Year	12,102	3,505
5th Year	12,105	3,505
6th Year	0	15,157
7th to 10th Year	0	15,158
<b>Total</b>	<b>61,286</b>	<b>96,042</b>

The proposed Layout Plan is shown in Figure 3

## 6. EVALUATION

Tables 2 and 3 show the implementation plan of this project as well as the estimated revenue.

The project term on this implementation plan is ten(10) years. All construction works will be completed in the first five years and in the second half, the revenue from the sale of reserve land will be obtained.

Result of the financial analysis based on the abovementioned assumption is shown in Table 4. Financial Rate of Return on the investment is expected to be 13.2%. Moreover, if the implementation body of this project could arrange for a lower interest fund, this new approach of urban development would be even more feasible.

Table 5 shows the contents and results of the alternatives. Financial Rate of Return is 14.1% in Case 3. This proves that this project is financially possible if the Reserve Land is disposed off within the last two(2) years of the project period even if there is no provision for the major facilities.

Table 2 : Implementation Plan

Item	1st Year	2nd Year	3rd Year	4th Year	5th Year	Total Cost	
Public Facilities Construction	Road	7,149	7,150	7,150	7,150	7,150	35,749
	Park				910	910	1,820
	River	2,170	2,170	2,171			6,510
Removal Cost		1,083	1,084	1,084	1,084	4,335	
	Site Clearing	896					896
Other Cost	Land Arrangement		1,584	1,584	1,584	1,585	6,338
	Other Construction Cost				633	634	1,267
	Compensation for Losses and Damage			166	167	167	500
	Office Cost	574	574	574	574	575	2,871
	Study and Design	1,000					1,000
<b>Total Cost by Year</b>	<b>11,789</b>	<b>12,561</b>	<b>12,729</b>	<b>12,102</b>	<b>12,105</b>	<b>61,286</b>	

Unit: M\$1,000

Table 3 : Estimated Revenues

Item	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Amount
Disposal of Reserve Land						15,157	15,158	15,158	15,158	15,158	75,789
MRR II	1,585	1,585	1,585	1,585	1,585						7,925
From Jurisdiction of Major Facilities											
Jalan Gombak Jalan Batu Cave	659	659	659	660	660						3,297
Gombak River	2,170	2,170	2,171								6,511
Primary School				1,260	1,260						2,520
Revenue by Year	4,414	4,414	4,415	3,505	3,505	15,157	15,158	15,158	15,158	15,158	96,042

Unit: M\$1,000

Table 4 : Expectation of Financial Rate of Return

Item	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
Implementation Cost	11,789	12,561	12,729	12,102	12,105	0	0	0	0	0	61,286
Estimated Revenue	4,414	4,414	4,415	3,005	3,505	15,157	15,158	15,158	15,158	15,158	96,042
Discounted Cost	9,200	8,659	7,752	6,511	5,753	0	0	0	0	0	37,875
Discounted Revenue	3,445	3,043	2,689	1,886	1,666	6,363	5,622	4,966	4,387	3,876	37,941
Net Income	-5,755	-5,616	-5,063	-4,615	-4,887	6,363	5,622	4,966	4,387	3,876	66
Cumulative Net Income	-5,755	-11,371	-16,434	-21,059	-25,146	-18,783	-13,161	-8,195	-3,808	68	-

\* A Discount Rate is 13.2%

Remarks

\* Unit: M\$1,000

Table 5 : Results of the Financial Analysis

Case	Provision from Jurisdiction			Disposal Period of Reserve Reserve Land			Disposal of Reserve Land		Financial Rate of Return (%)
	Provided	Not Provided	Partly Provided	*4th Year 5th Year	6th Year 7th Year 8th Year	6th-10th Year	** Revenue A	** Revenue B	
1	•					•	•		13.2
2		•			•		•		5.4
3		•		•			•		14.1
4	•					•		•	8.2
5			•		•			•	6.8
6			•	•				•	18.6

Remarks Note \* MRR II and Gombak River  
\*\* Revenue A . . . M\$ 75,789,000  
\*\*\* Revenue B . . . M\$ 60,631,000

## 7. GENERAL MERITS AND PROBLEMS OF ADOPTING THE LAND RE-ADJUSTMENT PROJECT APPROACH

### 7.1 Merits

- (1) In contrast to the conventional method of urban development, the Land Readjustment Approach would help the local authority in implementing urban facility improvement as well as housing development with very little or no capital outlay necessary.
- (2) The Land Readjustment Approach is an effective and appropriate approach for urban development in the Malay Reserve Land which faces problems as lack of access road, small and irregular lot sizes and insufficient individual development fund, difficulty in developing each individual lot by private developers. This approach could be regarded as one of the ways to develop the urban or urban fringe Malay Reserve Land which could not be easily developed under the prevailing method of urban development by the private sector.
- (3) The Land Readjustment Approach hence will provide the solution in solving the non-continuity of the present urban development pattern and promote more efficient urban structure through the development of the scattered Malay Reserve Lands in the Klang Valley for New Urban Centres and Residential Development.
- (4) Another advantage of the Land Readjustment Approach is the creation of employment opportunity for the residents in the Malay Reserve Areas through the allocation of the Reserve Land for commercial and industrial development.
- (5) Residents in the Malay Reserve Land are able to enjoy the various urban and community facilities, job opportunities in the area itself and the upgrading of living environment.

### 7.2 Problems

- (1) Without the provision of very specific or concrete advantage as a reward for the contribution of their land, it might be difficult to obtain the cooperation or support of the individual land owner in the project area. In this respect, certain advantages that provide specific merits to the landowner should be carefully planned. Possible ways are the provision of 'preference' to the land owners or residents in allocating commercial or industrial enterprises in the Reserve Land or the possibility of redistributing the profit obtained from the project (i.e. through the sale of the Reserve Land).

The Land Readjustment Approach should not be regarded as simply an approach in providing basic urban facilities but rather a comprehensive approach for the social development of the target community. The contents and body of the project have to be carefully planned with built-in flexibility and capability in solving all the anticipated social as well as physical problems.

- (2) In the pilot study, it was observed that sub-division of land and building of permanent structures were common among land owners without legal registration with the authority so as to avoid the payment of property taxes. The implementation of the Land Readjustment Project requires the registration of all owners, lessee and lessor of land and structures. As such, there is a possibility that these interested parties will object to the implementation of Land Readjustment.
- (3) In the Readjustment Project, replotting of land is done based on the present registered lots. Although the relocation of building structures will be included in the project programme, the likely sub-division needs in future has to be provided. The replotted land hence has to be designed in such a way as to facilitate sub-division yet does not jeopardise the original plan and ensuring that all future sub-divided land would have direct access to a local access road.
- (4) The existing land law allows only the Malays to own land in a designated Malay Reserve area. The sale of the Reserve Land in the project in generating profit for the project is somehow constrained. Special provisions might have to be devised to deregulate the ownership of the Reserve Land so that such land may realise a higher market value.
- (5) The general and popular land assessment method used in Malaysia is the "Comparison Method" of valuation. The market price of similar properties are collected and through comparison, applied to a target property.

In a Land Readjustment Project a more systematic and rational method of computing land values of the land lots has to be devised in order that a 'fair assessment' is presented to the land owners to obtain their consensus.

- (6) Other foreseeable problems include :-
  - \* The preservation of community groups and their activities
  - \* The maintenance of Open spaces planned in the project
  - \* Confirmation of the major facility plans with the relevant agency like JKR, DID
  - \* The clarification of existing lot boundaries (many existing boundary stones might be non-existent).

## 8. CONCLUSION

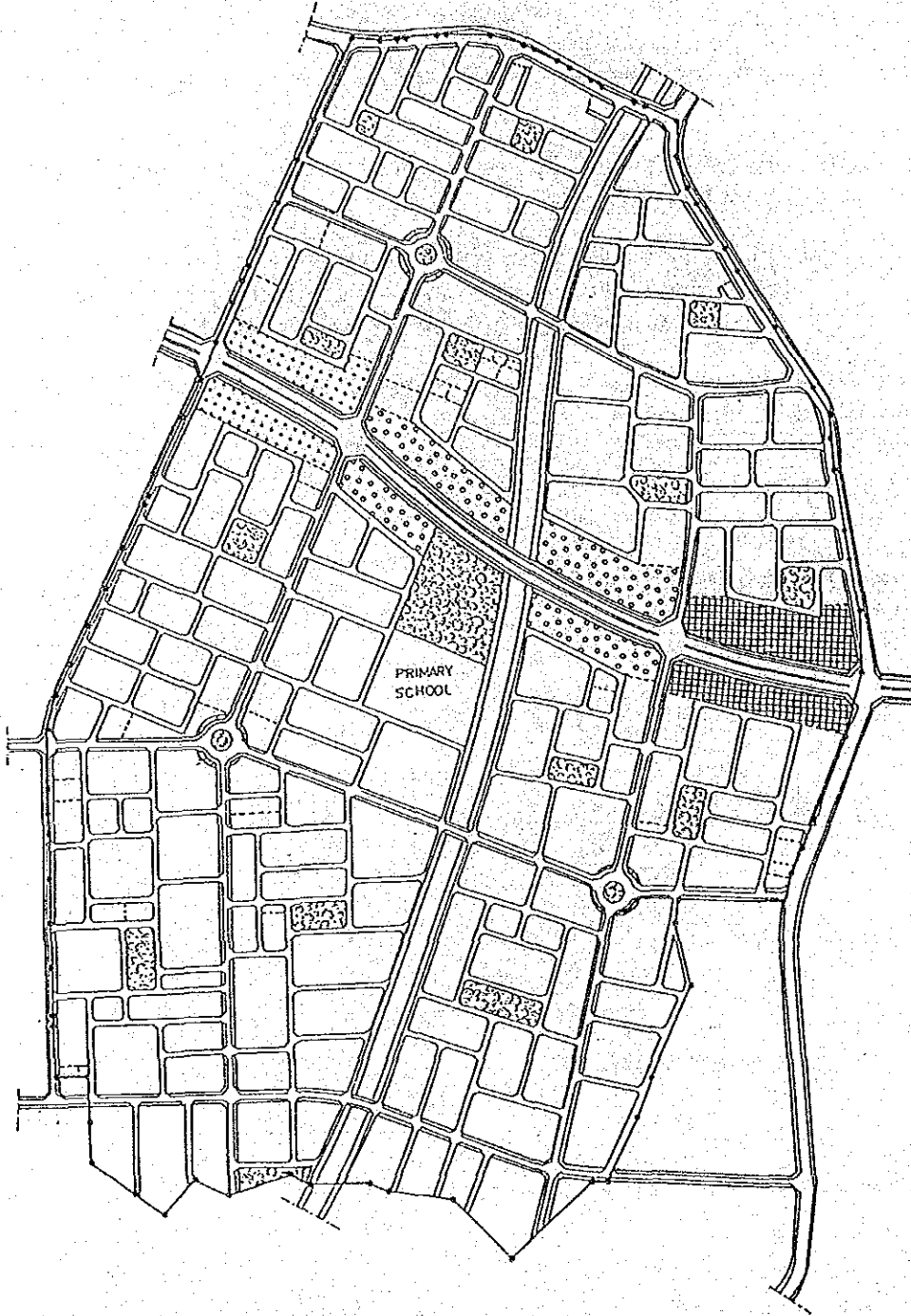
- (1) Besides the central downtown areas that have complete plotting and sub-division, urban land utilization process in Malaysian urban areas can be largely categorised into three(3) patterns.
  - (a) Sub-division of large estate land (in units of 10's ha)
  - (b) Sub-division of land in specific areas for housing development by private enterprises
  - (c) Irregular sub-division in the Malay Reserve Land






Although a few problems remain in areas (a) and (b), the basic urban facility improvements have been carried out. The acceptability in the application of Land Readjustment Approach to these areas as an urban development approach is not high. Its application to the Malay Reserve Land which presently faces problems like irregular and haphazard development, small lot size and absence of basic facilities is however practical and effective.







- (2) The results of the Pilot Study on a selected area of about 200 ha in the District of Gombak shows that the Financial Rate of Return is 13.2% in the case where there is provision by the various jurisdiction for implementing the major facilities and the Reserve Land is disposed off within five(5) years after the project and 14.1% in the case where there is no provision for the major facilities and the Reserve Land disposed off within the last two(2) years of the project period. This financial analysis results indicate that this project is financially feasible. Moreover, the unutilized land will benefit tremendously from an increase in land value and utilization opportunity, hence upgrading the economy of the community in question. When the project is completed, the average land value is estimated to increase by 7-15 times the present value.
- (3) The above Study results show that the Land Readjustment Approach could be an effective approach for the Malay Reserve Land where the lack of an appropriate development approach has caused urban development frontiers to 'by-pass' these areas. The substantial amount of Malay Reserve Land and their advantageous location warrant the examination of this Approach for developing these valuable land.
- (4) However, in adopting the Land Readjustment Approach to the Development of Malay Reserve Land, the following problems will have to be overcome first.
  - (a) Specific and concrete merits or rewards for the contribution of land has to be skillfully provided for the land owners.
  - (b) The main body and contents of the project have to be planned to ensure that the approach can function as a comprehensive economic and social development project.
  - (c) Special care need to be taken in registering all the sub-divided land or other rights so as not to discourage the support from land owners for the Land Readjustment Project.
  - (d) The replotting of land has to take appropriate consideration for the need of sub-division after the project is completed.
  - (e) The need to deregulate land ownership in the Reserve Land.
  - (f) A systematic land assessment method is necessary in order to obtain full consensus from all land owners.

- (5) The promotion of urban development in the Malay Reserve Land is a development issue encountered by the Government of Malaysia. The possibility of adopting the Land Readjustment Approach in this respect should be keenly considered.
- (6) However, the following continuation in survey or study are deemed necessary.
  - (a) Detail Feasibility Study to be conducted based on the results of the Pilot Project Study.
  - (b) In examining the possibility of adopting the Land Readjustment Approach on a large scale, a wider and comprehensive study need to be carried out focusing on the problems identified above.

Figure 3 : LAYOUT PLAN



-  PRIMARY DISTRIBUTOR
-  DISTRICT DISTRIBUTOR
-  MAJOR ACCESS ROAD
-  ACCESS ROAD
-  PARK, OPEN SPACE, AND GREEN AREA

-  RIVER
-  HOUSING LOT
-  RESIDENTIAL AREA (LOW DENSITY)
-  RESIDENTIAL AREA (HIGH DENSITY)
-  COMMERCIAL AREA
-  INDUSTRIAL AREA

KLANG VALLEY  
TRANSPORTATION STUDY

0 100 200 300M






APPENDIX V GLOSSARY OF TERMS



## GLOSSARY OF ABBREVIATIONS

ATC	:	Area Traffic Control.
C.I.S.	:	Cordon Line Interview Survey.
CPA	:	Central Planning Area of Kuala Lumpur and this is taken as the area within the Middle Ring Road.
DCA	:	Department of Civil Aviation.
FoMP	:	Fourth Malaysia Five Year Development Plan (1981 – 1985).
FMP	:	Fifth Malaysia Five Year Development Plan (1986 – 1990).
HB Trips	:	Home Based Trips.
H.I.S.	:	Home Interview Person Trip Survey.
H.O.V.	:	High Occupancy Vehicle.
I.I.U.	:	International Islamic University.
IRR	:	Inner Ring Road.
ITM	:	Institute Technology MARA.
JKR	:	Jabatan Kerja Raya (Public Works Department).
Jln.	:	Jalan (Road, Street).
JPJ	:	Jabatan Pengangkutan Jalan (Road Transport Department).
KTM	:	Keretapi Tanah Melayu (Malayan Railway).
KVPP	:	Klang Valley Perspective Plan.
KVPS	:	Klang Valley Planning Secretariat.
KVR	:	Klang Valley Regional Development Planning Study Review, 1979.
KVS	:	Klang Valley Regional Development Planning Study, 1973.
LLM	:	Lembaga Lebuhraya Malaysia (Malaysian Highway Authority).
LPK	:	Lembaga Pelabuhan Klang (Port Klang Authority).
LRT	:	Light Rail Transit.
MRR	:	Middle Ring Road.
MRR (II)	:	Middle Ring Road (II).
MRT	:	Mass Rapid Transit.
NHB Trip	:	Non Home Based Trip.
OD Survey	:	Origin Destination Survey.

O.I.S.	: Lorry Owner Interview Survey.
PCU	: Passenger Car Unit.
PCU.km	: Passenger Car Unit Kilometer.
TMP	: Third Malaysia Five Year Development Plan (1976 – 1980).
TSM	: Transport System Management.
UKM	: Universiti Kebangsaan Malaysia (National University of Malaysia).
UM	: University Malaya.
UPM	: Universiti Pertanian Malaysia (Agricultural University of Malaysia).
UTM	: Universiti Teknologi Malaysia (Technology University of Malaysia).

#### GLOSSARY OF TRANSPORT PLANNING TERMINOLOGY

Aggregate Model	: Transport Model used in most of the current transport planning studies where model is developed or calibrated using the traffic zoning system. Each traffic zone is used as an unit of analysis.
Area Traffic Control (ATC) System	: Traffic signals over an area are linked to a centralised computer for monitoring and hence controlling traffic flows at intersections in achieving an overall optimal time phasing performance.
Benefit Cost (B/C) Ratio	: An economic index commonly used for economic evaluation of projects. Total benefits of a particular project is divided by the total costs and a value of greater than 1.0 hence indicates economic feasibility.
Binary Mode Choice	: Choice of choosing a mode among two exclusive modes given the parameters of both travel modes.
Bus Priority Lane	: Specific designated lane on roads with priority of use given to buses throughout the day or any designated time periods such as morning and evening rush hours. The objective is to improve bus travel speed and hence service level.
Congestion Degree	: Degree indicating the level of congestion on roads. Also referred to as V/C ratio, it measures the ratio of assigned or surveyed traffic volume over the designed capacity of road. A value of over 1.0 hence indicates that the capacity of the road has been exceeded.
Cordon Line Interview Survey (CLS)	: Survey conducted at points of entry into the Study Area. Interviews are conducted on the drivers of randomly selected vehicles on their origins, destinations, trip purposes and for trucks, the nature of the freight carried. The survey hence will capture the external traffic which other surveys are incapable of.

Cordon Pricing	: Also called Area Licensing Scheme, this traffic management measure is aimed at reducing low occupancy private vehicles in the congested city area (normally the CBD area) during peak hours by 'cordon' off a specific 'restricted zone' or 'area' whereby private vehicles with low occupancy rate will have to pay a penalty or a price or tax in the form of a licence in order to enter the restricted zone.
Demand Modification	: A transport planning strategy attempting to modify the traffic demand pattern through measures such as landuse changes, employment location, modal shift induction measures, etc.
Desire Line	: Lines drawn between pairs of traffic zones representing the traffic demand between each pair of traffic zones. The volume of such a demand is normally represented by the thickness of the lines.
Disaggregate Model	: In contrast to the aggregate model, this model uses each individual traveller as an unit of analysis. Disaggregate model is usually probabilistic.
Do-Nothing Alternative	: A do-nothing alternative assumes the continuance of the existing growth trend in the traffic demand while nothing is done to increase the supply side. This hypothetical alternative can be said to be the worst possible situation and is hence used as a yardstick or quantum to which performances of other alternatives can be assessed.
Exclusive Bus Lane	: Lanes designated on roads for the exclusive use of buses. To prevent the encroachment of other vehicles, this type of public transport facility is normally separated from the other road space by a raised curb or other physical barriers.
External Traffic	: These are those traffic going in or out of the Study Area and those passing through the Study Area. These are captured by the Cordon Line Survey.
Gravity Model	: Based on Newton's Gravitational Theory, demand in travel between zone 'i' and 'j' is taken as directly proportional to their attractiveness (using parameters as population sizes, employment, etc.) and indirectly proportional to their impedance measured by distance or travel time or travel cost or a combination of these.
Home Based Trips	: Trip that has 'home' as one of its trip ends. It therefore includes all trips that start from Home (either to work, school, etc) and trips ending at Home (ie. To Home trips).
H.O.V. Lane	: Designated Lane where priority is given to high occupancy vehicles such as buses, cars with 4 passengers.
Internal Rate of Return (IRR)	: This is a discount rate computed at which the benefits of a project at present value breaks even with the costs. A project with an IRR value that is larger than the prevailing capital investment opportunity cost in the Study Area indicates its financial feasibility.

Internal Traffic	:	These are traffic starting and ending within the Study Area.
Intrazonal Trips	:	Trips that start and end in the same traffic zone.
Lorry Owner Interview Survey (OIS)	:	Survey conducted to find out freight traffic movement and volume through the execution of interviews with selected truck owners/operators. Queries include the size of establishment, trip movement of the vehicle and types, volume of the freight carried.
Modal Split	:	One of the step in future transport demand forecasting where the forecasted traffic demand is split into the various transport modes available. This step however may be carried out prior to or after Trip Distribution.
Multiple Linear Regression Model	:	Linear regression involving multiple parameters. This model is most applicable if a dependent variable is found to be linearly related to a multiple of independent variables.
Net Present Value (NPV)	:	This is the net value of the benefits or costs of a project discounted to the present value at the prevailing discount rate in the Study Area.
Non Home-Based Trips	:	Trips that has neither of its trip ends terminating at Home. It therefore includes trips from office to business, private purposes, etc.
OD Matrix	:	Matrix containing traffic volume (either vehicle or person) between origin and destination zones and could be presented in a square or triangle matrix form.
Person Trip	:	Person trip is taken as trips make by an individual traveller (normally taken as person 6 years (school going age) and above).
Person Trip Interview Survey	:	Survey aimed at collecting information on person trip movement pattern, mode, travel time as well as the socio-economic characteristics of the selected sample of travellers within the Study Area.
Road Pricing	:	Similar in objective to the cordon pricing measure, this measure requires vehicles to equip with a meter which will record the distance the vehicle travelled on the 'restricted' or 'priced' roads from sensors installed on such roads and activated during the desired time periods such as morning and evening peak hours. Owners of vehicle will have to pay their meter bills say every month.
Screen Line Survey (SLS)	:	Survey conducted on points crossing a 'Screen Line' such as rail road, river that obviously bisect the Study Area. Traffic movement between the two segments of the Study Area can therefore determined. This information is essential in checking the results of traffic simulations (trip assignment).

Sensitivity Analysis	:	Analysis carried out to test the 'sensitivity' or 'elasticity' of parameters (cost, fare, revenue, etc) of specific transport project on its economic or functional performance.
Supply Augmentation	:	Contrary to the demand modification, this strategy attempts to solve traffic problems by expanding its supply side ie, constructing more roads, widening of existing streets and introduction of new travel modes.
Traffic Counting Survey	:	Counting of traffic volume, normally by the types of vehicles and directions at a particular point over a time period depending on the road/traffic conditions and the accuracy of data required.
Traffic Volume	:	The volume of traffic on the road expressed either simply as vehicles/day, or/hr or Passenger Car Unit (pcu)/day or/hr.
Transport System Management (TSM)	:	An approach in efficient management of transport facilities in achieving the maximum number of persons/goods transported per unit of time and energy by the transport system which often comprises of a multiple of modes and various infrastructure facilities.
Trip	:	Moving either by a person or vehicle from the point of origin to a specific point of destination is referred to as a trip.
Trip Assignment	:	Assigning traffic volume onto a network (roads or public transport routes) in simulating traffic flow pattern.
Trip Attraction	:	The attraction of trips to a particular zone by virtue of its 'attractiveness' e.g. employment centre, shopping centre, recreation centre, etc. The CBD hence would be a major trip attraction zone.
Trip Distribution	:	The distribution of trips generated from each zone to all other zones in the study Area given the total amount of trips generated and attracted by each zone. Trip distribution hence involve the 'filling-in' of cells of a OD matrix. Specific computational methods or models are used such as Present Pattern Method, Gravity Model and Probability Model in distributing the trips.
Trip Generation	:	The generation of trips from a particular zone which is often dependent on the landuses or activity of the zone. A residential zone will therefore generates more trips than say an industrial zone or commercial zone.
Trip Length	:	The distance of a trip in km or miles. Average trip length often differs among trip purposes or travel modes and hence is commonly used as a parameter in mode choice analysis.
Trip Purpose	:	The objective or purpose of making that particular trip e.g. to work, to school, to home, to shopping, etc.






APPENDIX VI LIST OF TECHNICAL REPORTS



## LIST OF TECHNICAL REPORTS

### A. SURVEYS

- A-1: Home Interview Person Trip Survey (HIS)
- A-2: Lorry Owner Interview Survey (OIS)
- A-3: Traffic Survey
- A-4: Parking Study in Kuala Lumpur
- A-5: Travellers Attitude Survey

### B. PREVIOUS TRANSPORTATION STUDY

- B-1: Review of Past Transportation Planning in Klang Valley (I) and (II)

### C. SOCIO-ECONOMIC AND LANDUSE STUDY

- C-1: Population Study
- C-2: Socio-Economic Framework
- C-3: Regional Development Study
- C-4: Landuse Study
- C-5: Transportation Cost Study

### D. METHODOLOGY OF TRANSPORT DEMAND PROJECTION

- D-1: Analysis of Travel Demand Characteristics in Klang Valley
- D-2: Transport Demand Forecasting Model
- D-3: Methodology of Evaluation for Alternative Transportation Plans

### E. TRANSPORTATION FACILITY PLANS

- E-1: Highway Planning
- E-2: Railway Study
- E-3: Public Transport Study
- E-4: Land Readjustment Pilot Study

### F. DATA AND PROGRAMMES

- F-1: User's Guide to Computerised Data on Transport Surveys and on Transport Demand Projection
- F-2: List of Programmes used for Transport Demand Projection

### G. TRAFFIC CONTROL

- G-1: Traffic Surveillance and Control (TSC) System in Kuala Lumpur Conurbation





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