

To assist the Management Board the Chairman of the Board established the Implementation Unit, the tasks, organization structure and working procedures of which are regulated and stipulated by the Chairman of the Management Board.

At present the Implementation Unit consists of:

- Head,
- 3 Directors and 6 Vice Directors, and
- staff

3) Development Bodies

KCIU is responsible for the execution of the total development of Zone 1. However, Zone 1 is divided into sub-areas the development of which are entrusted to the following respective bodies.

a. KCIU

Besides the coordination of total development, KCIU will be directly responsible for the execution of infrastructure in coordination with DKI Jakarta and other government agencies concerned.

KCIU will assist to provide necessary public facilities. Execution bodies for infrastructure and public facilities are described in detail in the separate clauses.

KCIU will be responsible and directly involved in the renewal of Zone 4 area. Urban forest area will be also developed by KCIU.

b. DKI Jakarta

DKI Jakarta will be the main executing body for Jakarta Fair. Besides DKI Jakarta, KCMB,

private sector, etc. will also be involved in the development of Jakarta Fair.

DKI Jakarta as a local government, will also be involved in the development execution of the public facilities, infrastructure and renewal of Zone 4 area.

c. Perumunas

Perumunas will be the executing body for the housing of 30 ha for low and middle income groups including the development of secondary infrastructure and public facilities.

d. Sarana Jaya

Sarana Jaya will most likely be the executing body for the housing development in Zone 4.

e. Government Agencies Concerned

Within the business block an area of 11.75 ha. is reserved for the office buildings of government agencies. This area will be developed by the government agencies concerned.

f. Private Sectors

Business and commercial blocks as well as housing blocks of Zone 2, excluding Zone 3, will be developed by private sectors. Public facilities and secondary infrastructure within the development blocks will also be implemented by the private sectors.

2.2.2 Development Components and Land Use

Development components of the Kemayoran Complex mainly consist of the following four components besides public facility and road:

- 1) Housing
- 2) Commercial
- 3) Jakarta Fair
- 4) Green (urban forest)

Share of housing area in Kemayoran Complex

Development is 31% which is the largest among the four components. Housing development is classified by three income groups of high, middle and low.

Considering the housing shortage at present and expected in the year 2005, it is quite appropriate to provide a large share of the development to housing.

Because of lack of proper land in the central part of Jakarta, recently most housing development projects in DKI Jakarta take place in the east, west and south parts of the city. As a consequence, commuting distance to work place is getting longer.

Under such circumstances it is quite significant to provide a vast area for housing in the middle of the city. More details about housing development in Kemayoran Complex will be discussed in CHAPTER 3 in this report.

Share of commercial and service area in Kemayoran Complex development is 12%. This area is planned to be a tertiary growth centre in the northern part of DKI Jakarta.

Share of commercial and service area in Kemayoran Complex development is 12%. This area is planned to be a tertiary growth centre in the northern part of DKI Jakarta. Within this component, a government area of 12 ha. is included.

Share of Jakarta Fair area in Kemayoran Complex development is 13%. Jakarta Fair which is presently

Fig. 2.6 Original Landuse Plan in Kemayoran Complex
Master Plan

located in MONAS will be moved to this complex.

As an international city, DKI Jakarta intends to have a much better facility and more functions for Jakarta Fair, which will include an international trade fair facility, an Indonesian cultural center, a trade center and etc. During a fair period this will be the biggest attraction of people and activities.

Green area together with a regulating pond has a share of 18% in Kemayoran Complex. The largest parcel of this component is 46 ha. named the urban forest, including a 17 ha. pond.

The remaining 18 ha. is scattered mainly along arterial roads. This large area of green can serve not only as a pleasant recreational area for the people, but also as a reservation for future development, if necessary.

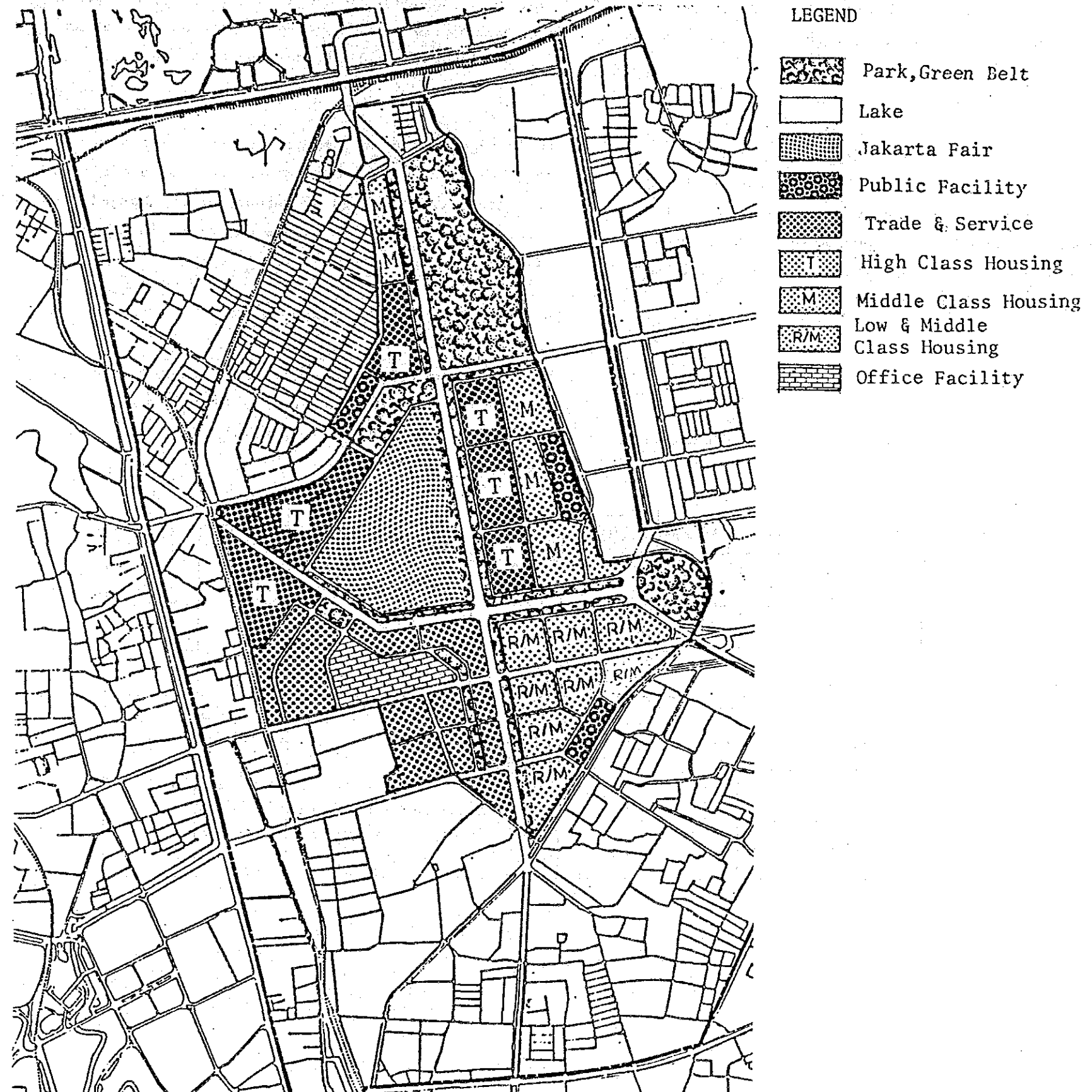
Public facilities are located in each housing block. Size of parcel varies from 2 to 5 ha. Share of public facility area in Kemayoran Complex is 2%.

These public facilities are to serve not only for the newly developed areas, but also for existing surrounding areas. Thus Kemayoran Complex development contributes to the improvement of living conditions of the surrounding area.

Land use of Kemayoran Complex Master Plan is shown in Fig. 2.6. Its land use composition is shown in Table 2.1.

Table 2.1 Land Use Composition		
Housing	138.76 ha	31 %
Commercial & services	53.54 ha	12 %
Jakarta Fair	57.40 ha	13 %
Green (Urban Forest)	81.30 ha	18 %
Public Facility	10.62 ha	2 %
Roads	102.70 ha	23 %
T o t a l	444.32 ha	100 %

Source: KC Master Plan



The land use plan in KC Master Plan was reviewed by JICA Study Team and is going to be modified by KCIU.

Areas in the vicinity of Kemayoran Complex are predominantly residential, at approximately 80%. In general, conditions in the vicinity area are not very good except for the housing of Angkasa Pura. This situation will be a problem for the development of good quality housing.

Especially adjacent to the east side of Zone 1 where high and middle class housing is planned an area of unplanned housing sprawl and rows of warehouses exists.

It is suggested that this area be redeveloped together with Zone 2 housing and the land use of the area presently occupied by warehouses be changed to residential in order to create and maintain a good living environment.

2.2.3 Implementation Schedule

The implementation of the development shall commence in 1989 and will be completed in 1998. The overall management shall be the responsibility of KCIU under the control of KCMB.

The first activity of the implementation is sale of land (lots) to the developers according to the selling schedule. The revenue from selling the lands will be a capital for the costs of roads and infrastructure development.

The construction of the Jakarta Fair, cultural center and business/commercial/Government offices will be initiated to the other components such as housing development by private sectors and neighbourhood facilities.

Fig. 2.7 shows the implementation schedule of the major components of KC Development Project.

Fig. 2.7 Implementation Schedule of Kemayoran Complex Development

YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Physical Development Components	PREPARATION			Business/Commercial/Government Offices							
				Jakarta Fair/Cultural Centre							
				Perumnas Housing							
				Housing Development by Private Sector							
				Neighbourhood Facilities							
				Urban Forest and Sport Park							
				Roads and Infrastructure							

2.3. GENERAL FINANCIAL FRAMEWORK

2.3.1 Conditions

1) Land Sale

All income is generated from land sale. The planned salable area is shown in Fig. 2.8 and Table 2.1.

2) Already Sold Land

As of February, 1989, KCIU has already sold some land to generate income in order to proceed with this project. The sold land areas and income are as follows:

- (1) Rp. 8.2 billion from commercial area (4.9 ha) and Perumnas housing area (30.0 ha)
- (2) Rp. 8.7 billion from commercial area (B4, 3.88 ha) at a unit price of Rp. 225,000/m²
- (3) Planned Revenue

KCIU will receive Rp. 33.0 billion for the land area (44.0 ha.) to be used by the Jakarta Fair, at the rate of Rp. 75,000/m², up to 1990.

4) Implementation Program

The implementation strategy is shown in Fig. 2.9.

5) Land Price

The Study Area estimates for land unit prices are Rp. 250,000/m² for residential and Rp. 400,000/m² for commercial.

6) Development Cost for Public Facilities

The cost for the development of public facilities shall be borne by DKI or private developers on the land provided by KCIU.

7) Infrastructure

Infrastructure is developed in accordance with the sales schedule for avoiding useless investment in advance. A summary of the preliminary estimation is shown in Table 2.4.

Table 2.2 Salable Area

Land Use		Salable Area (ha)	Remark
Commercial	B 13	3.00	sold for 110,000 Rp/m ²
	B 3	1.90	sold for 225,000 Rp/m ²
	B 4	3.88	About to be sold
	other B	33.88	
	Total	42.66	
Housing	A	30.00	sold for 2,000 Rp/m ² to Perumnas
		9.95	may be sold for 2,000 Rp/m ²
	D	44.92	
	C	16.64	
Total	101.51		
Jakarta Fair	C1	44.0	under process to be sold to DKI with 75,000 Rp/m ²
Trade Centre	C1	14.25	
Total		202.42	

Note : 2.0 ha of C1 will be donated to the culture centre.

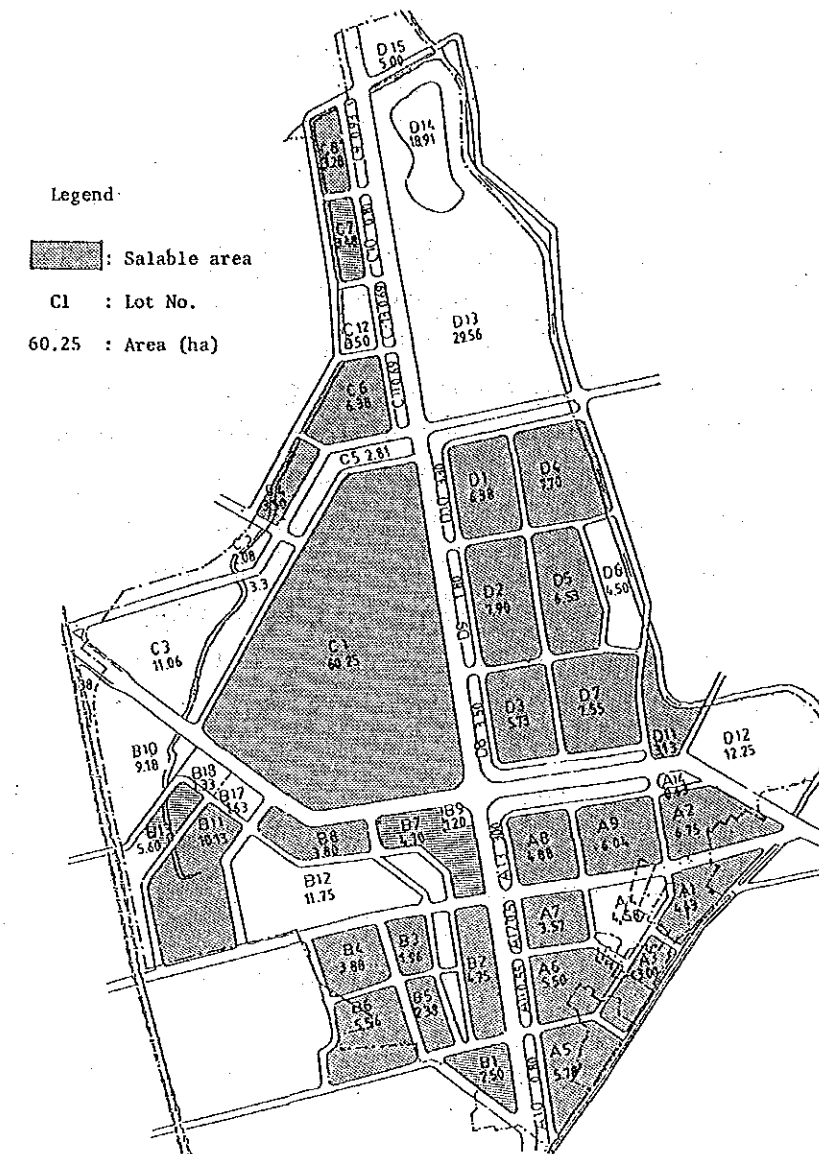


Fig. 2.8 Salable Area

2.3.2 Cash Flow Analysis

1. Financial Standing

Table 2.5 shows the comparison between the expenditure and the income which varies by land price. The figure shows that KCIU's starting position is quite good and the borrowing of capital for initial investment may not be necessary. It is also indicated that the total expenditure is nearly equal to the total income by land pricing of Rp. 150,000/m² for housing and Rp. 200,000/m² for commercial and Trade Center. This means that the higher the land is priced the more profit will be induced.

2. Cash Flow Chart

1) Expenditure

Expenditure is composed of the following elements;

- a. Payment to the Government (Rp. 17,000/m² x 421.03 ha.)
- b. Compensation and others:
These costs derive from compensation, construction and demolition in Sites A and B. Total costs amount to Rp. 11.9 billion. Although there are some revenues from housing units in Sites A and B, those amounts are not shown in Tables 2.6.
- c. Infrastructure development cost
- d. Contingency and design fee for infrastructure
- e. Cost for inventory, administration, and maintenance

2) Alternatives

The following two cases are set as alternatives. Unit prices for land sale differ in each case.

Table 2.3 Alternatives of Land Sale Unit Prices

Case No.	Land Price	Remark
Case 1	Housing : Rp. 200,000/m ² Commercial & Trade Centre : Rp. 300,000/m ²	Table 2.5
Case 2	Housing : Rp. 250,000/m ² Commercial & Trade Centre : Rp. 400,000/m ²	Table 2.5

3) Results

In both alternatives, no shortage of capital is encountered in cumulative cash flows. This means that the KCIU's financial standing is quite sound since borrowed capital is not required.

The analysis of Tables 2.5 reveals two facts. The first is the large income of Rp. 50.0 billion earned by selling land until 1990. The second is the payment to the government for obtaining the right for development of Rp. 71.0 billion which is allocated for 5 years starting from 1992.

As a strategy for earning more larger profit, it is recommended to develop commercial activity and offices in advance.

The developed commercial activity and offices strongly induce people's motivation to move into Kemayoran Complex and consequently the land price for housing increases.

2.3.3 Analysis of Land Price in Zone 1

1) Introduction

In order to set the average land price of Zone 1 in Kemayoran, the following studies are executed.

a. Kind of Studies

- Regression Analysis by REI Data
- Formal Land Price by IPEDA
- Land Price Hearing from Developers
- Spot survey about land price by Perumnas

The forecast land price is estimated from the above mentioned studies as follows.

b. Results of Estimation

- Residential use Rp. 250,000/m²
 - Commercial use Rp. 400,000/m²
- (Note) Main infrastructure is installed by KCIU

2) Regression Analysis by REI Data

a. Basic Concept

- (Housing Price) = (Housing Building Cost) + (Land Price)
- Land Price is fixed mainly by its location. One of the main factors is measured by the distance from the CBD of DKJ.

b. Data Source

Data by REI, concerning the housing price with land in DKJ.

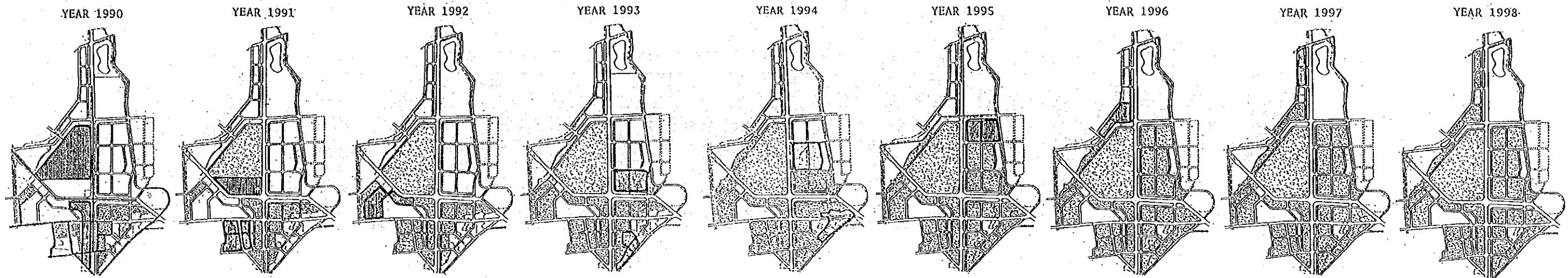


Fig. 2.9 Development Schedule

LAND TO BE SOLD
 LAND ALREADY SOLD
 ROAD DEVELOPMENT (including existing road)

Table 2.4 Infrastructure Development Cost

		(unit: million Rp)				
	Work Item	Stage I (-1992)	Stage II (1993 - 1995)	Stage III (1996 - 1988)	Total	Remark
Development Area accounted in this estimation.	1. Site Preparation	1,242	21,319	4,486	27,047	
	2. Road	13,351	9,110	10,720	33,181	
	3. Drainage	9,740	6,991	3,340	20,071	
	4. Water Supply	2,206	1,474	808	4,488	* 1)
	5. Street lighting	248	296	198	742	* 1) The other half of 4.488 mill Rp will be shared by PAM
	6. Landscape	593	477	328	1,398	
	7. Sewage treatment plan	4,600	8,050	2,045	14,695	* 2)
	Total	31,980	47,717	21,925	101,622	* 2) The other half of 14.695 mill Rp will be shared by Developers

Note : The prices used in this estimation are as of November 1988.

Table 2.5 Inflow and Outflow

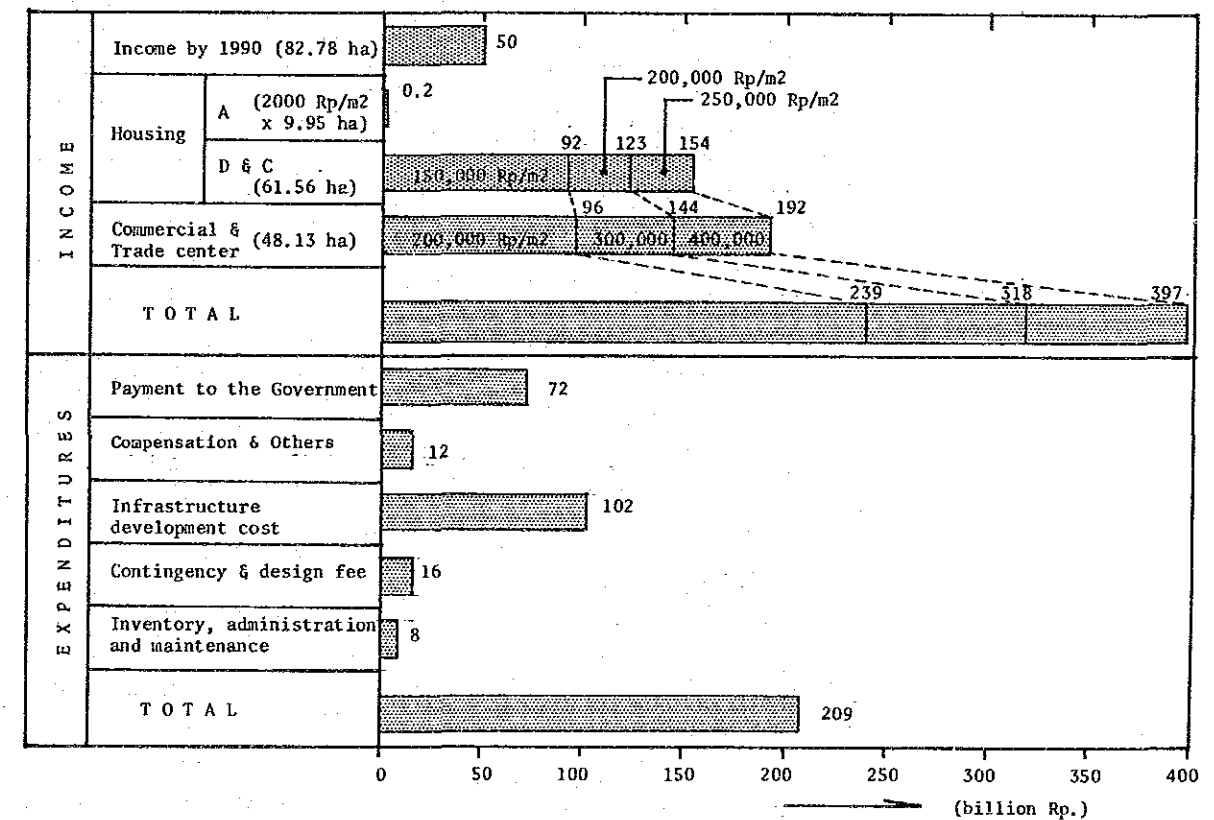


Table 2.6 Cash Flow Chart

SALES SCHEDULE OF DEVELOPED LAND

	Case 1	Case 2	(1989)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
	UNIT PRICE (RP/SQ. M.) per sq. m.	UNIT PRICE (RP/SQ. M.) per sq. m.												
1. JAKARTA FAIR	75000	75000		44.00										44.00
2. HOUSING														30.00
a) Perumnas	2000	2000	30.00				9.95							9.95
b) Zone 4(Perumnas)	2000	2000					16.41	14.43	14.08	9.88	6.76			61.56
c) Middle and High houses income	200000	250000												
d) Sub total	---	---	30.00	0.00	0.00	0.00	26.36	14.43	14.08	9.88	6.76	0.00	0.00	101.51
3. COMMERCE														3.00
a) B-13	110000	110000	3.00											5.78
b) B-3 & B-4	225000	225000	5.78											33.88
c) Other B	300000	400000		11.95	8.00	13.93								14.25
d) TRADE CENTER	300000	400000					0.00	0.00	0.00	0.00	0.00	0.00	0.00	56.91
e) Sub total	---	---	8.78	11.95	22.25	13.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	202.42
Total	---	---	38.78	55.95	22.25	13.93	26.36	14.43	14.08	9.88	6.76	0.00	0.00	

CASH FLOW (Case 1)

ITEM	(1989)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
I CASH INFLOW												
① JAKARTA FAIR		33000										33000
② HOUSING SALES exp. Perumnas Area		0	0	0	32820	28860	28160	19760	13520	0	0	123120
③ Perumnas Housing Area	600				199							799
④ COMMERSE and TRADE CENTER	16305	35850	66750	41790	0	0	0	0	0	0	0	160695
Total	16905	68850	66750	41790	33019	28860	28160	19760	13520	0	0	317614
Cumulative Total	16905	85755	152505	194295	227314	256174	284334	304094	317614	317614	317614	317614
II CASH OUTFLOW												
① Payment to the Government (17000 Rp/m ²)*(421.03 Ha)				14318	14318	14318	14318	14318				71590
② Compensation and Others		2976	2976	2976	2976							11904
③ Infrastructure Development		10121	11030	10639	16844	16524	13219	11260	11260	725		101622
④ Contingencies (10 % of ③)		1012	1103	1064	1684	1652	1322	1126	1126	73		10162
⑤ Public Facilities Development												0
⑥ Detailed study and Design	763	763	381	1118	1118	559	697	697				6097
⑦ Inventory	164											164
⑧ Administration Cost		577	577	577	577	577	577	577	577	577	577	5770
⑨ Maintenance Cost		28	64	140	177	214	264	287	309	340	340	2163
⑩ Total	927	15477	16131	30832	37694	33844	30397	28265	13272	1715	917	209473
Cumulative Total	927	16404	32536	63367	101062	134906	165304	193569	206841	208556	209473	209473
III NET CASH FLOW	15978	53373	50619	10958	-4675	-4984	-2237	-8505	248	-1715	-917	108141
Cumulative CASH FLOW	15978	69351	119970	130928	126252	121268	119030	110525	110773	109058	108141	108141

CASH FLOW (Case 2)

ITEM	(1989)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	TOTAL
I CASH INFLOW												
① JAKARTA FAIR		33000										33000
② HOUSING SALES exp. Perumnas Area		0	0	0	41025	36075	35200	24700	16900	0	0	153900
③ Perumnas Housing Area	600				199							799
④ COMMERSE and TRADE CENTER	16305	47000	89000	55720	0	0	0	0	0	0	0	208825
Total	16905	80000	89000	55720	41224	36075	35200	24700	16900	0	0	396524
Cumulative Total	16905	97705	186705	242425	283649	319724	354924	379624	396524	396524	396524	396524
II CASH OUTFLOW												
① Payment to the Government (17000 Rp/m ²)*(421.03 Ha)				14318	14318	14318	14318	14318				71590
② Compensation and Others		2976	2976	2976	2976							11904
③ Infrastructure Development		10121	11030	10639	16844	16524	13219	11260	11260	725		101622
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⑦ Inventory	164											164
⑧ Administration Cost		577	577	577	577	577	577	577	577	577	577	5770
⑨ Maintenance Cost		28	64	140	177	214	264	287	309	340	340	2163
⑩ Total	927	15477	16131	30832	37694	33844	30397	28265	13272	1715	917	209473
Cumulative Total	927	16404	32536	63367	101062	134906	165304	193569	206841	208556	209473	209473
III NET CASH FLOW	15978	65323	72869	24888	3530	2231	4803	-3565	3628	-1715	-917	187051
Cumulative CASH FLOW	15978	81301	154170	179058	182587	184818	189620	186055	189683	187968	187051	187051

- NOTES:
1. Payment to the Government : Masterplan(PENANFAATAN/KOMPLEK KEMAYORAN)
 2. Compensation and Others : JICA Study Team
 3. Public Facilities : Those facilities will be installed by each executing body.
 4. Detailed Study and Design : This outflow is allocated to each stage corresponding to the Development Schedule.
 5. Inventory : Masterplan(PENANFAATAN/KOMPLEK KEMAYORAN)
 6. Administration Cost : Masterplan(PENANFAATAN/KOMPLEK KEMAYORAN)
 7. Maintenance Cost : Masterplan(PENANFAATAN/KOMPLEK KEMAYORAN)
 8. Jakarta Fair : 44.0ha, Rp.75000/sq. m.
 9. Trade Center : 14.25ha, Price corresponds to that of commercial land.
 10. Perumnas Area : 30ha, Rp.2000/sq. m.

c. Basic Assumption

- Calculation formula

Land price = (Housing price with land) -
(Construction cost + Land development
cost + profit)

Land price = (Housing sales price) -
[(Construction cost/m²) x (Area of House)]
x 1.15

Land price/m² = (Estimated Land price)/
(Land area)

- Construction cost

House area	Const. Cost/m ²
1 - 20 m ²	Rp. 120,000/m ²
21 - 50 m ²	Rp. 150,000/m ²
51 - 100 m ²	Rp. 200,000/m ²
101 - 200 m ²	Rp. 220,000/m ²
more than 200 m ²	Rp. 300,000/m ²

- CBD area of DKI Jakarta

CBD area is assumed as the area along the
main section of Jl. M. Merdeka Barat and Jl.
M.H.Thamrin

d. Regression Formula

(Land price/m²) = (Distance of straight line
from CBD)

$$LP = \alpha \cdot Dij + \beta$$

LP = Land price/m²

Dij = Distance from area
(i) to CBD (j)

α = Regression co-effi-
cient

β = Constant

e. Estimated co-efficient

$$LP = -17.37851 \times Dij + 294.59822$$

$$r = 0.787$$

$$r^2 = 0.6188$$

$$ST = 38.138$$

Result of Regression :

- Constant	: 294.6
- Standard error	: 38.1
- R ²	: 0.619
- Coefficient of correlation	: 0.787
- Coefficient of independent variable	: -17.37

f. Estimated Land Price

Rp. 232,000/m²

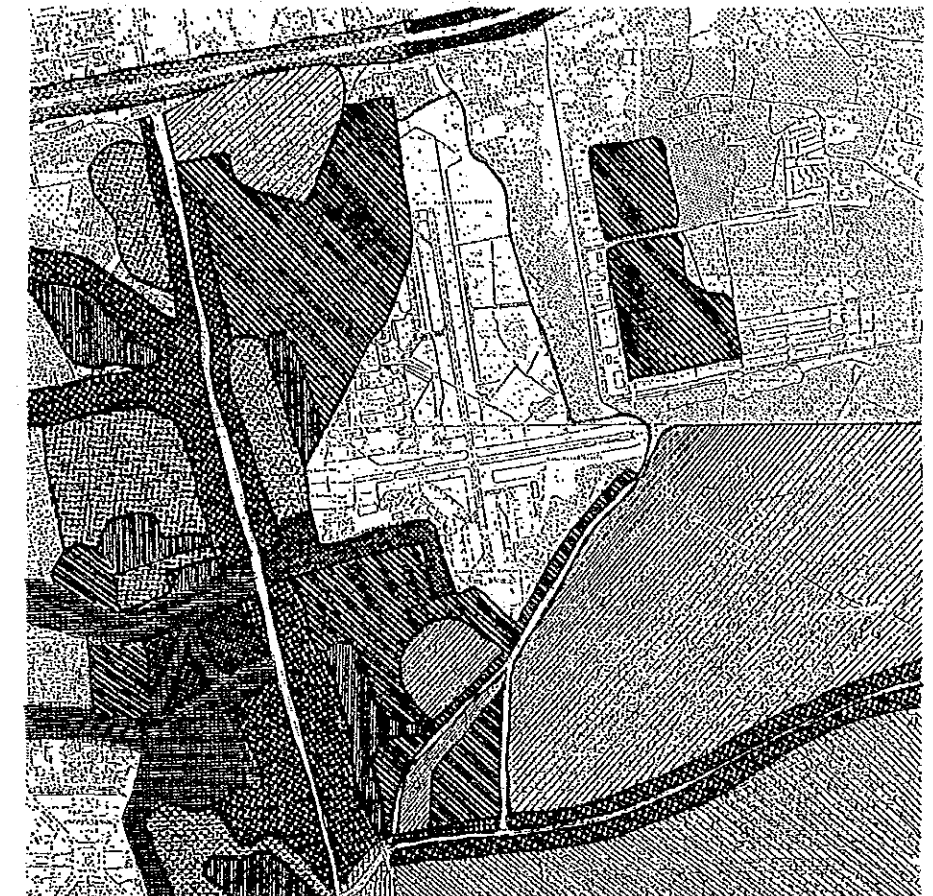
3) Formal Land Price by IPEDA

Land price is generally determined, by comparison
with the competitive area or the surrounding area.
IPEDA has standard land price for taxing around the
Study Area.

From this data, land price along each main street
surrounding the Study Area is as follows :

Jl. Angkasa	Rp. 354,000/m ²
Jl. Garuda	Rp. 116,000/m ²
Jl. Stasiun Senen	Rp. 553,000/m ²
Jl. Gunung Sahari	Rp. 553,000/m ²
Jl. L.J. Suprpto	Rp. 553,000/m ²
Jl. Tanah Tinggi	Rp. 116,000/m ²
Jl. Saman Hudi	Rp. 1,080,000/m ²
Jl. Dr. Sutomo	Rp. 1,080,000/m ²
Jl. Dr. Suratmo	Rp. 691,000/m ²
Jl. L.R. Martadinata	Rp. 283,000/m ²

With such data for the main streets as well as
included data for small streets, relation between
land price and distances from Zone 1 are figured out
as shown in Fig. 2.9a. The followings are induced
from Fig. 2.9a as findings.



Legend :

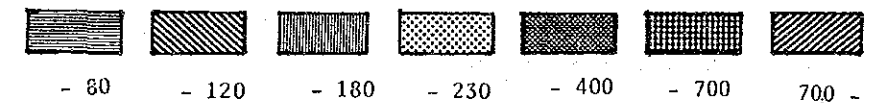


Fig. 2.9a Formal Land Price by IPEDA

a. Residential

Land price of residential use can be set at
Rp. 250,000 - Rp. 300,000 from the following
view points:

- (1) Location from Jl. Gunung Sahari
- (2) Balance of price with Com/Res. mixed area
- (3) Effect of large-scale development

b. Commercial

Land price of commercial use can be set at Rp. 400,000 - Rp. 450,000 from the following view points:

- (1) Land price along Jl. Gunung Sahari
- (2) Development with office-floor space use
- (3) Main commercial facilities are medium/large scale

In this study demolition cost is excluded in the estimated land price.

4) Hearing with Developers

With the purpose of identifying the present commercial-market prices, hearings were held with developers. The data collected was not enough to be directly used in the estimation of land price, rather it was used as supporting information.

Average land prices in areas where developers have been active are as follows:

LOCATION	CLASS	LAND PRICE
Pluit	I	Rp. 400,000/m ²
	II	Rp. 300,000/m ²
	III	Rp. 200,000/m ²
	IV	Rp. 100,000/m ²
Ancol Barat	I	Rp. 225,000/m ²
Ancol Timur	II	Rp. 200,000/m ²
Cimono-Tangerang	I	Rp. 45,000/m ²
Sunter	I	Rp. 140,000/m ²
	II	Rp. 120,000/m ²
	III	Rp. 100,000/m ²

5) Spot Survey by Perumnas

This survey is carried out to obtain the following information:

- a. Land price at which owners are willing to sell
- b. land prices for land recently sold in the neighbourhood

This survey was carried out from end of Nov. to mid. of Dec. 1988. The answers revealed very large difference among actual land sale prices in the same area. It was assumed that such differences result from the environment and/or location, etc. Compared with the formal prices of IPEDA, these actual prices are about 20% higher.

Generally, the difference between formal and market prices would be considerable by such value. Sale prices higher than Rp. 200,000 are as follows:

Gunung Sahari Selatan	Rp. 200,000
Gunung Sahari Selatan	Rp. 800,000
Kelurahan Pademangan Timur	Rp. 200,000
Kelurahan Pademangan Barat	Rp. 200,000

The land price levels in the Study Area will be higher than Rp. 200,000 and less than Rp. 400,000 for residential use.

Fig. 2.10 Jabotabek Metropolitan Development Plan

3. URBAN DEVELOPMENT

3.1 URBAN DEVELOPMENT FRAMEWORK OF KEMAYORAN AREA

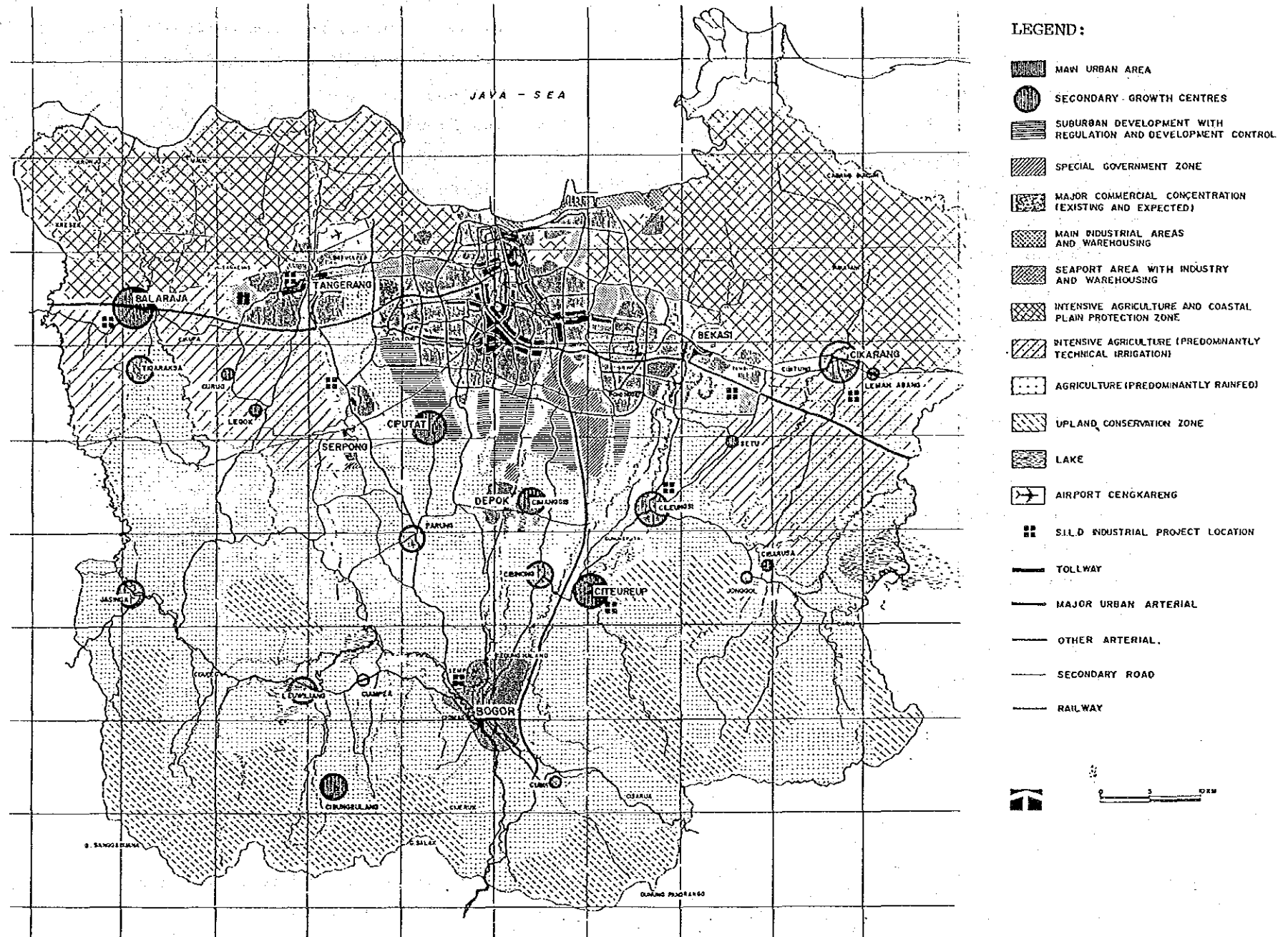
3.1.1 JABOTABEK Metropolitan Development Plan

The capital city of Jakarta keeps expanding beyond its administrative boundary of DKI Jakarta (JA) and involving neighbouring municipalities and regions such as Bogor Kabupaten along with Bogor Municipality (BO), Tangerang Kabupaten (TA) and Bekasi Kabupaten (BEK) in the West Java Province, and forming an inter-regional metropolitan city.

Increasing population, progressing transportation system and extending urban function in the above region stimulate further expansion of the metropolitan city in Jakarta.

The JABOTABEK Metropolitan Development Plan (JMDP) was prepared in 1980 aiming at establishment of development guidelines in order to control and promote the urbanization activities in the JABOTABEK Region. During the planning of development of JABOTABEK, attention was given to the following areas;

- 1) Inter-regional management, and conservation of the ecological environment especially in the quantity and quality of groundwater.
- 2) Decentralization of urban development activities in order to avoid too much concentration in the central area of DKI Jakarta.
- 3) Designation of preferred zones so as to guide and regulate urban development activities.



The above preferred zones are characterized as follows:

Zone I : Avoid Urban Development

- low lying coastal strip
- flat with poor drainage
- subject to flooding
- agriculture suited to fishponds
- groundwater saline and undrinkable
- poor soil for building upon
- this area is affected by saline intrusion increase

Zone II : Agricultural Intensification (Irrigation) and Limited Urban Development

- low lying plains
- flat with poor drainage
- subject to flooding
- excellent rice growing, especially if irrigated
- groundwater fresh but easily polluted
- poor soil for building upon

Zone III: Major Urban Development and Agricultural Intensification

- higher land rising from coastal plains
- reasonable gradient so good natural drainage
- low flooding risk
- groundwater fresh and leaching soil limits pollution
- poor agriculture
- reasonable soils for building upon

Zone IV : Limited Urban Development and Agricultural Intensification

- steeper sloping zone
- good natural drainage
- no flooding
- limited groundwater and no deep aquifers
- reasonable agriculture because more rainfall
- reasonable soil for building upon

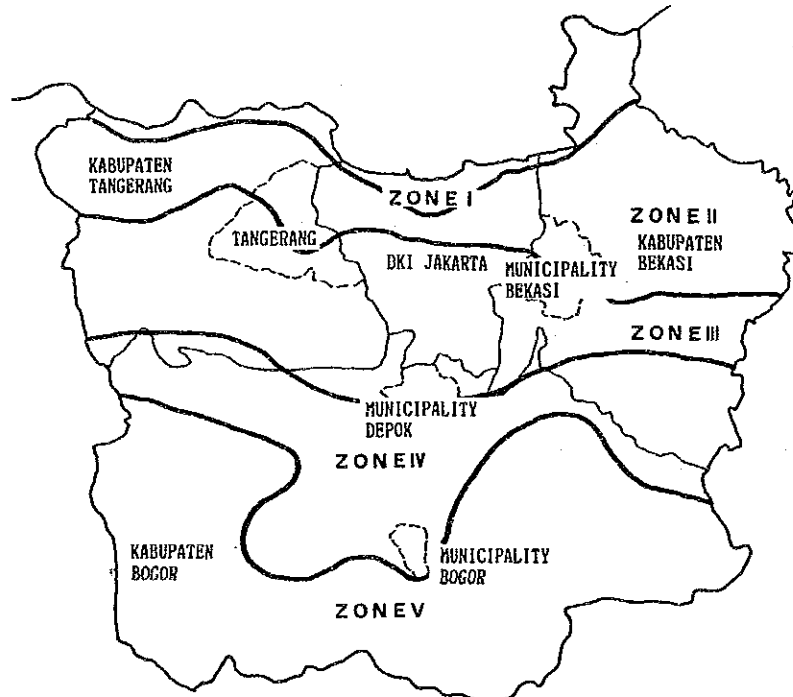
Zone V : Upland Forest Plantations, Recreation and Conservation and Avoid Agricultural Intensification

- steep mountainous zone
- rapid runoff although limited by vegetation
- natural forest areas
- agriculture limited to complicated terrace constructions
- subject to rapid erosion if forests are cleared

1965-1985, and covered the demands and guidelines for the urban development of JMDP. The major development policies in the new master plan 2005 are as follows:

- a. To implement several policies to limit the growth of the population of Jakarta so as not to exceed 12 million in the year 2005.
- b. To implement procedures of urban land development so as to meet the demand of the growth of the city which is increasing at an average of 260,000 persons per annum.
- c. To carry out distribution of inhabitants as well as related distribution of work places.
- d. To promote the opportunity for economic growth and social welfare, especially toward the social groups with low income.
- e. To minimize transportation costs and to prepare infrastructure and land for the new growth of the city, so that there is more opportunity for the groups with low income to obtain housing.
- f. To minimize the bad condition of the environment and of the densely populated areas of the city, so as to create a sound and balanced environment.
- g. To make efforts to minimize the use of groundwater in the northern part and to maintain the water source in the southern part.
- h. To limit additional growth in the north east and north west and to prevent growth southwards.

Fig. 2.11 Preferred Zone of Jabotabek Region



3.1.2 Urban Development Plan of DKI Jakarta

1) Development Policies

"DKI Jakarta Master Plan 2005", issued in 1984 by DKI Jakarta was based on the previous Master Plan,

Fig. 2.12 Zonning of Urban Development Strategies

i. To synchronize the development and management of the region with the surrounding area (Botabek).

2) Development Strategies

The basic strategy of urban development in DKI Jakarta can be broadly summarized as follows;

- a. To induce a new urbanization growth to the eastern and western parts under the "Guided Land Development (GLD)" programme.
- b. To undertake "Urban Betterment" of the existing urbanised areas especially in the central and northern parts of Jakarta.
- c. To promote urban development by "Infill" in the areas where there is still room for urbanization.
- d. To control further urban development in the environmentally sensitive areas especially in the coastal zone and the southern upland zone.
- e. Other types of urban development strategies including rehabilitation and committed projects.

Fig. 2.12 shows the zoning of the urban development strategies of DKI Jakarta.

3.1.3 Urban Betterment Measures

The Study Area lies within the "Urban Betterment Zone" mentioned above and the following are the particular urban development strategies stated in the DKI Master Plan.

1) The improvement of the area will be

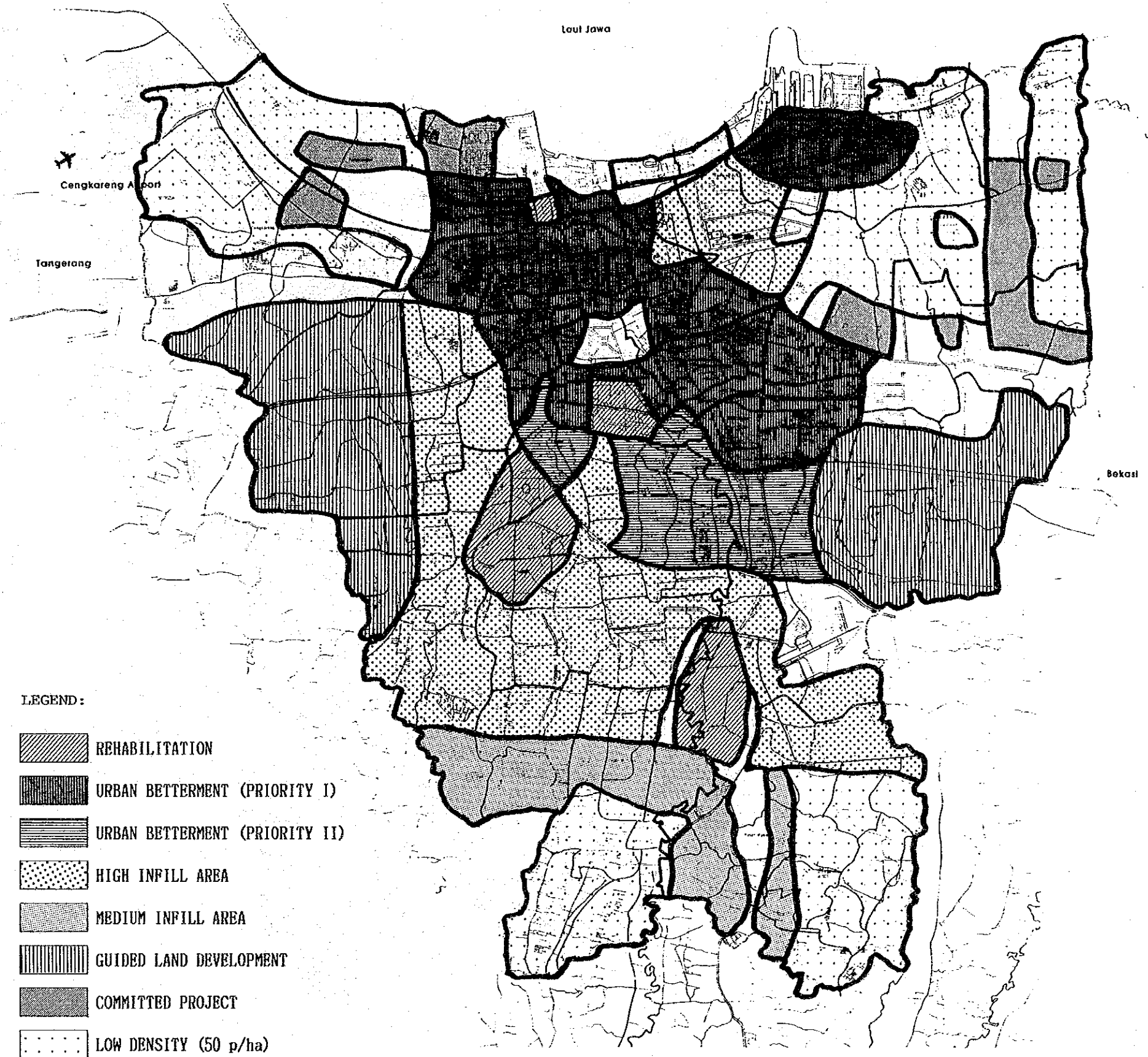
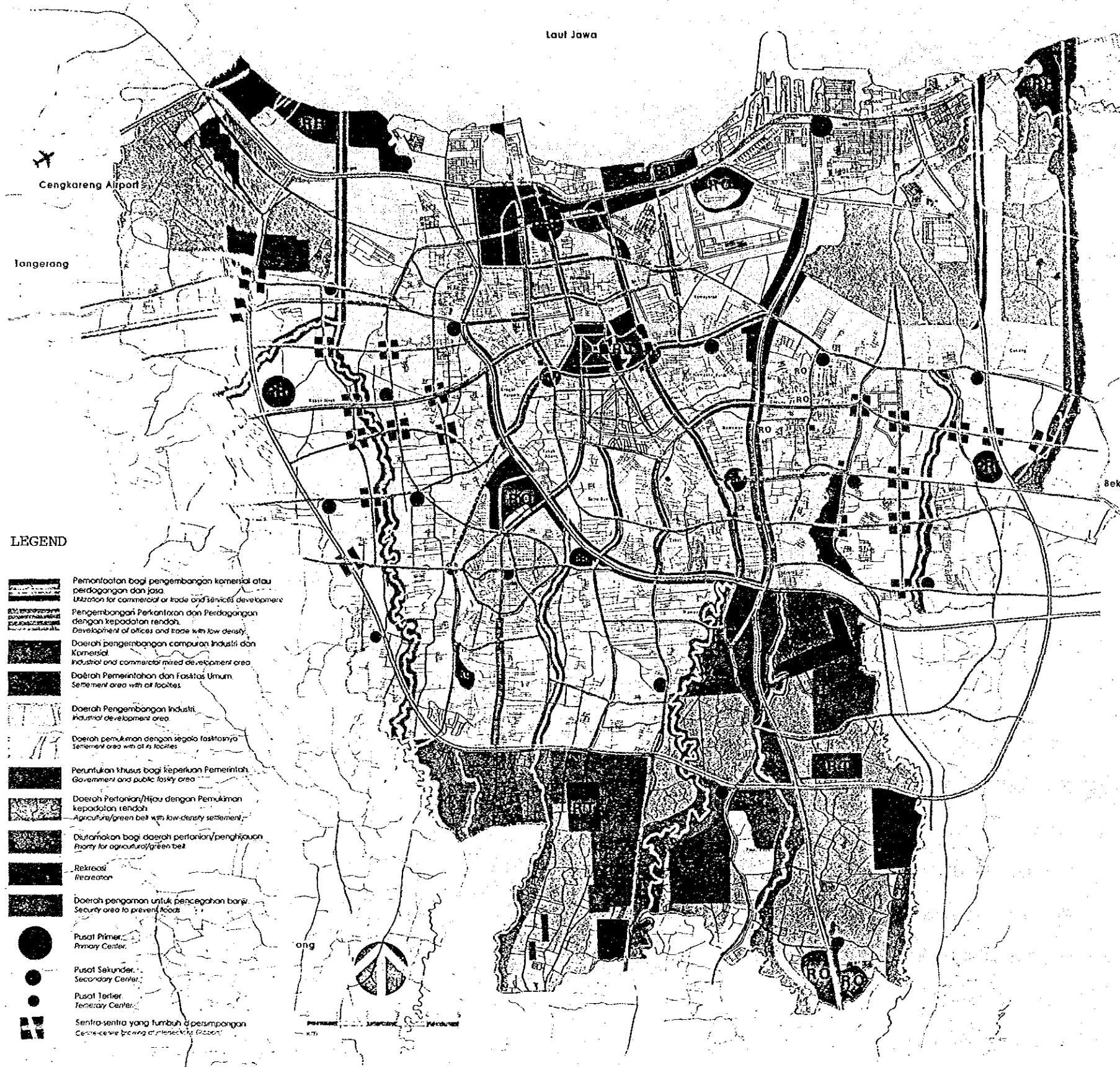


Fig. 2.13 DKI Master Plan



undertaken by providing infrastructure, upgrading socio-economic conditions of the inhabitants and carrying land rearrangement gradually in the long run.

2) Large-scale and/or intensive industrial development should be avoided and the development of commercial and business facilities should be guided to locate in the planned locations of the urban centers.

3) Development standards such as population density, housing and living environment which will be applied especially in poor areas could be minimized to conform with the serious constraints of the government budget and people's affordability.

4) Kampung Improvement Programme (KIP) will be continued to improve the very poor environment of Kampung areas with much emphasis on community involvement to the development activities.

5) Limit individual and disorderly development of housing and other buildings, and prepare the guidelines and regulations to have sound and balanced development.

6) Limit use of groundwater by individuals and provide public hydrants to increase the population served with piped water.

7) Limit private traffic and improve public transportation such as bus and railway.

3.2. NEIGHBOURHOOD FACILITIES

Existing conditions of neighbourhood facilities are analysed on the administrative community units level. The smallest administrative community unit is the RT, average size 40 households, and there are approximately 2,000 RT units in the Study Area. However, RT unit boundaries cannot be found on the available maps. Therefore, the survey has been conducted on the RW unit level (one RW unit is formed of 13.7 RT units on average) which is clearly identified on available maps.

Fig. 2.14 Conceptual Administrative Boundary
(Refer to Fig. 2.15 for the detail information.)

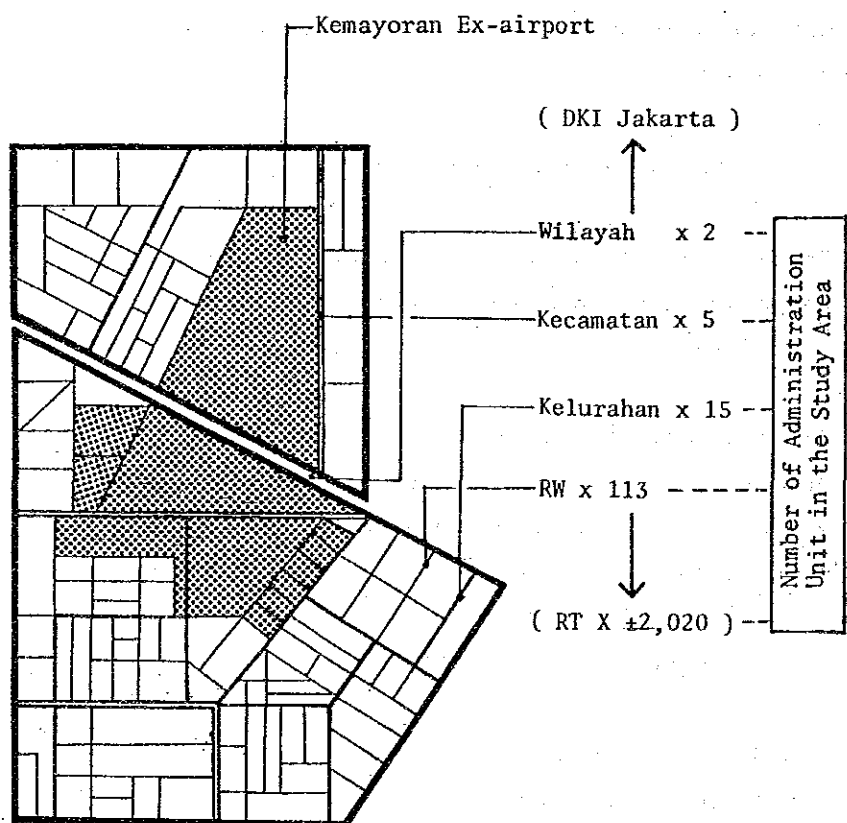
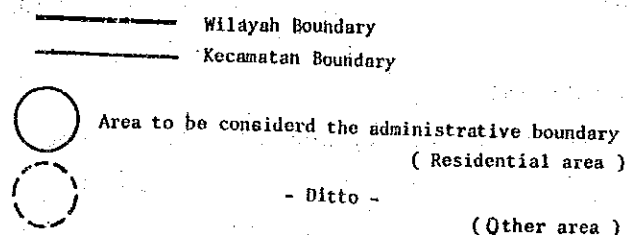


Fig. 2.15 Administrative Tree in the Study Area

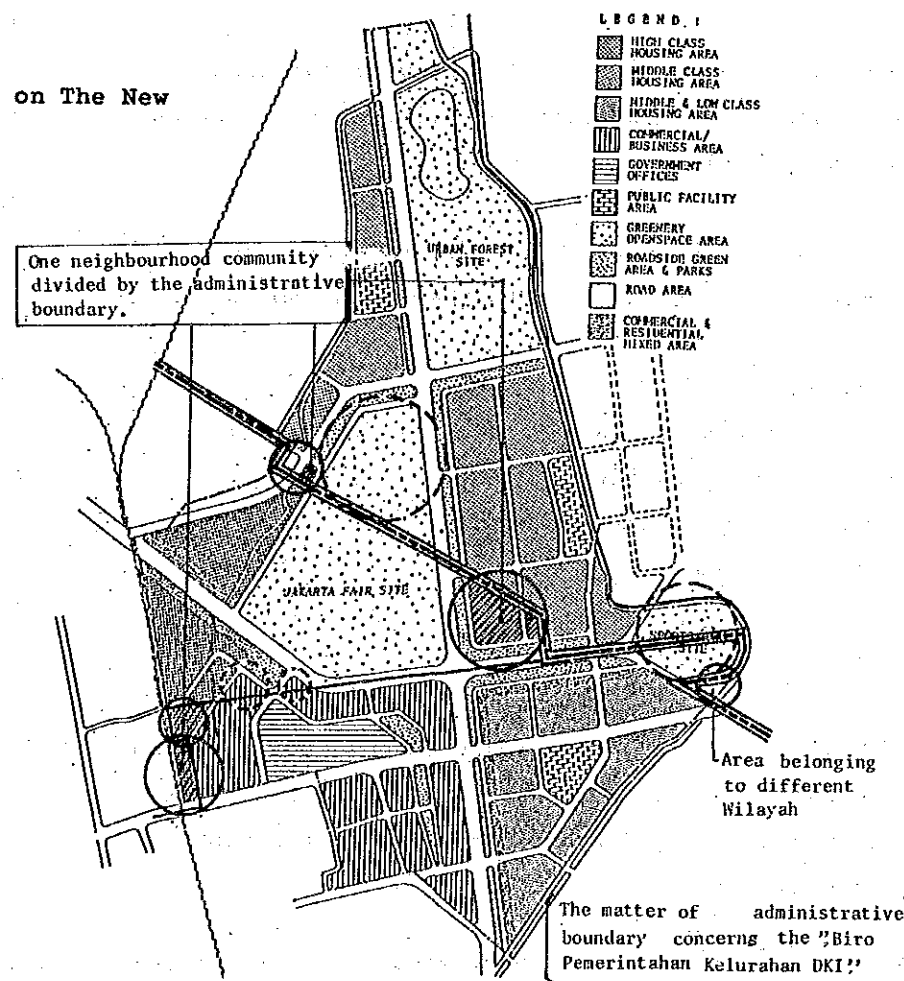
PROVINSI	WILAYAH (2)	KECAMATAN (5)	KELURAHAN (15)	RW		RT
				NO. OF RW IN THE STUDY AREA (113)	NO. OF RW IN THE WHOLE KELURAHAN (147)	NO. OF RT IN THE WHOLE (2,020)
DKI	DKI JAKARTA	JK. 1	KL. 1	4	(16)	(213)
	JK. 1	JAKARTA UTARA	SURTER AGUNG			
		TANJUNG PRIOK	KL. 2	1	(11)	(176)
			SURTER JAYA			
	JK. 2	PENJARINGAN	KL. 3 PADEMANGAN TIMUR	10		146
			KL. 4 PADEMANGAN BARAT	15		208
			(ADMINISTRATIVE CODE)			
	JK. 2	JAKARTA PUSAT	KL. 5 GUMUNG SAHARI UTARA	8		102
			SAWAH BESAR			
		JK. 3	KL. 6 BUNGUR	10		134
		SENEN	KL. 7 SENEN	2	(5)	57
		JK. 4	KL. 8 GUMUNG SAHARI SELATAN	10		127
			KL. 9 KEMAYORAN	10		124
		JK. 5	KL. 10 KEBON KOSONG	9		125
		KEMAYORAN	KL. 11 SERDANG	7		111
			KL. 12 UTAN PANJANG	10		139
			KL. 13 HARAPAN MULIA	9		122
			KL. 14 CEMPAKA BARU	7	(10)	136
			KL. 15 SUMUR BATU	1	(7)	100

Fig. 2.16 Existing Administrative Boundary on The New Land Use Plan



NOTE:

RT = Rukun Tetangga,
Neighbour's union (30-50 house holds)
RW = Rukun Warga,
Neighbour's union (15-20 RT)



The Results of the neighbourhood facilities analysis are as follows:

3.2.1 Community Unit 1 : RW

The number of RW units in the entire Study Area is 113, and there are an average of 630 households (3,060 persons) in each RW unit.

1) Religious Facilities

Mosques are found in three levels, from the smallest Musholla, the Langgar, to the Mesjid. Amongst all the neighbourhood facilities the number of mosques is the second highest reflecting the people's keen desirability for such facilities.

Mosques are used not only for praying but also for other social and community activities and serve as community halls.

If mosques have appropriate outdoor space, such community service will be further enhanced.

Mosque:

Total number of mosques	: 101 units
Number of mosques per RW	: 0.89/RW
Number of Population per mosque	: 4,078/mosque
Average catchment area	: 26.4 ha/mosque

2) Educational Facilities

Both Kindergartens and Primary Schools are operated by either the government or private sectors. Those operated by the private sector have higher quality of facilities and staff.

Madrasah is a special primary school for the moslem religion. Its economized school tuition is Rp 1,000

per month which is 30 percent of the tuition charged by public schools.

Fifteen percent of Kindergartens and 30 percent of primary schools are being operated on a double-shift basis. Mostly, pupils of both types of schools commute by becaks and cars, causing the surrounding areas of the schools to become very crowded with vehicles at the start and finish of the school hours.

Kindergarten

Total number of kindergartens	: 74 units
Number of kindergartens per RW	: 0.50/RW
Number of population per kindergarten	: 5,570/kindergarten
Average catchment area	: 32.2 ha/kindergarten
Number of children per kindergarten	: 60/kindergarten
Number of teachers per kindergarten	: 3.2/kindergarten
Number of children per teacher	: 21.7/teacher

Primary School

Total number of primary schools	: 145 schools
Number of schools per RW	: 0.99/RW
Number of population per school	: 2,840/school
Average catchment area	: 16.4 ha/school
Number of children per school	: 306/school
Number of teachers per school	: 10.3/school
Number of children per teacher	: 29.6/teacher
Number of classrooms per school	: 8.5/school

3) Sports and Cultural Facilities

Seventy-nine courts for badminton, 39 volley-ball courts, 25 tennis courts and 19 soccer fields are found in the Study Area.

There are no indoor sports facilities but some

open-air facilities have lighting equipment for night time use.

4) Other facilities

There are some postboxes, garbage boxes, street lighting, retail shops, warung, and public hydrants in the Study Area. Public hydrant is an important facility due to the lack of water supply piping in the area.

Public telephone booth	: Data not available
Security post	: Data not available
RW heads office (Ketua RW)	: using house of representative

3.2.2 Community Unit 2 : Kelurahan (Neighbourhood)

There are 15 Kelurahan units in the Study Area each with an average population of 27,460 (5,600 households).

1) Religious Facility

There is a high density of churches in this area compared with other areas of the city because of the many Chinese that have settled here.

Total number of churches	: 13 churches
Number of churchs per Kelurahan	: 0.87/Kelurahan
Number of population per church	: 31,670/church
Average catchment area	: 183 ha/church

2) Educational Facilities

Junior High School

Total number of schools	: 51 schools
Number of schools per Kelurahan	: 34/kelurahan
Number of population per school	: 8,075/school

Average catchment area : 46.7 ha/school
 Number of teachers per school : 20.9/school
 Number of children per teacher : 16.1/teacher
 Double occupancy ratio : 32%

Senior High School

Total number of schools : 36 schools
 Number of schools per Kelurahan: 2.4/kelurahan
 Number of population per school: 11,440/school
 Average catchment area : 66.2 ha/school
 Number of teachers per school : 23.2/teacher
 Number of children per teacher : 13.0/teacher
 Double occupancy ratio : 42.8%

3) Public Welfare and Health Facilities

The main function of the Public Health Centre is to provide guidance to the people in family planning thereby playing an important role in the implementation of the national policy and programmes.

Public Health Centre

Total number of centres : 9 centres
 Number of centres per Kelurahan : 0.6/kelurahan
 Number of population per centre : 45,770/centre
 Average catchment area : 264.9 ha/centre

Pharmacy

Total number of stores : 7 stores
 Number of stores per Kelurahan : 0.47/kelurahan
 Number of population per store : 58,800/store
 Average catchment area : 340.6 ha/store

4) Social, Sports and Cultural Facilities

The cinemas, although the buildings are of poor

quality, are still very popular among mostly lower income group.

Cinema

Total number of cinemas : 9 cinemas
 Number of cinemas per Kelurahan : 0.6/kelurahan
 Number of population per cinema : 45,700/cinema
 Average number of seats per cinema: 630/cinema

5) Commercial Facilities

Environmental conditions are very bad in the pasar and surrounding areas because of the raw food garbage produced from the daily food supply and scattered there. Another problem is the frequent traffic jams created by the commuting becaks/cars hired by the shoppers in the vicinity of pasar. These problems must be considered in the planning.

Total number of markets : 13 markets
 Number of markets per Kelurahan : 0.87/kelurahan
 Number of population per market : 31,680/market
 Average catchment area : 183.4 ha/market

3.2.3 Community Unit 3 : Kecamatan (Sub District)

1) Public Welfare and Health Facilities

Hospital

Total number of hospitals : 6 hospitals
 Number of hospitals per Kecamatan: 1.2/kecamatan
 Number of population per hospital: 75,000/hospital
 Average catchment area : 445.2 ha/hospital

2) Social, Sports and Cultural Facilities

Football Field

Total number of fields : 7 fields

Number of fields per Kecamatan : 1.4/kecamatan
 Number of population per field : 64,300/field
 Average catchment area : 381.6 ha/field

3) Commercial Facilities

Bank and Hotel

Available hotels cater only to domestic guests and there are no hotels for international guests.

Total number of facilities : 9 hotels
 5 banks
 No. of hotels per Kecamatan: 1.8/kecamatan
 No. of banks per Kecamatan : 1.0/kecamatan
 No. of population per hotel: 50,000/hotel
 No. of population per bank : 90,000/hotel
 Average catchment area per hotel : 300 ha/hotel
 Average catchment area per bank : 534.2 ha/bank

4) Government Offices

The number of post offices and police stations are almost the same as the number of Kecamatan administration units. This is the condition that shall be applied for new settlement in Zone 2.

Kecamatan Office, Post Office & Police Station

Total number of offices : 2 Kecamatan office
 : 5 post offices
 : 4 police stations
 No. of offices per Kecamatan: 0.4 kecamatan office/kec.
 : 1.0 post office/kec.
 : 0.8 police station/kec.

Average catchment area : 1,300 ha/kecamatan office
 : 445.2 ha/post office
 : 667.8 ha/police station

3.2.4 Community Unit 4: Wilayah (District)

Main function of cultural hall is keeping alive traditional performances, but it is not being utilized for other activities.

There is only one clinic specializing in obstetrics and gynecology, and it is therefore supposed that local people rely on other supporting sub-systems instead of the clinic.

- 1) Religious Facilities : 1 temple
- 2) Public Welfare and Health Facilities : 1 general clinic, 1 clinic for obstetrics and gynecology
- 3) Social, Sports and Cultural Facilities : 2 cultural halls, 1 youth club
- 4) Commercial Facilities : 1 department store
- 5) Government Offices : 1 fire department office
- 6) Transportation Facilities : 2 railway stations

3.2.5 Community Unit 5 : DKI Jakarta (Capital City)

There are three facilities for this category such as: 1 university, 1 school for handicapped children, and 1 religious affairs office.

Further information on the existing conditions can be found in the appendix; allocation of existing neighbourhood facilities.

3.2.6 DKI Jakarta Master Plan 2005

The Master Plan contained the following targets for the improvement of the public facilities (Table 2.7).



Primary school at Cempaka Baru

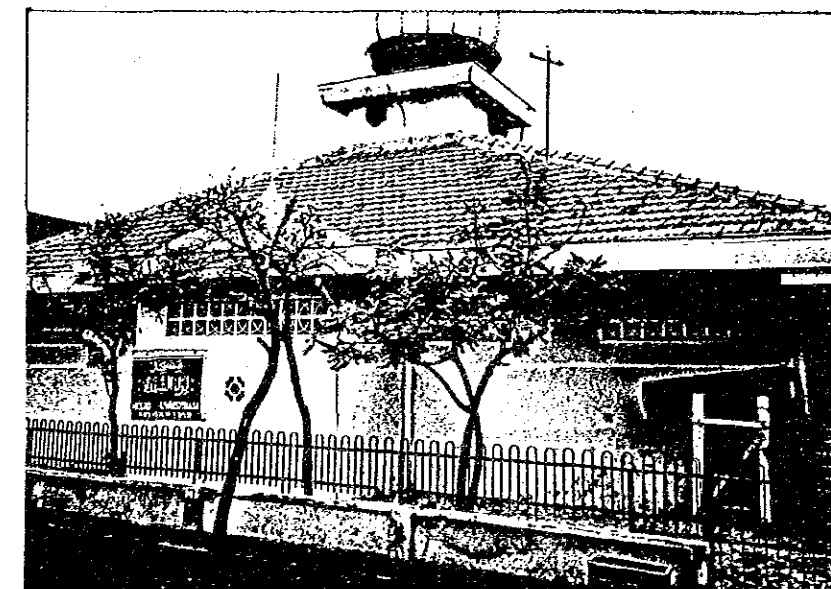
Table 2.7 Projected Number of Public Facilities, DKI Jakarta 2005

NO	Type of Facility	Total Current		Shortage	
		1980	2005	Unit	Area ha
1	Education	4,101	8,763	4,662	1,400
2	Health	1,165	1,603	438	170
3	Sports/Recreation				
	Arts and Culture	682	2,072	1,390	355
4	Social Welfare	112	664	552	20
5	Office/Government				
	Administration	188	994	806	110
6	Market	312	664	352	155
Total No. of Public Facilities		6,560	14,760	8,200	2,210

Source : Report of Team of Public Facilities Sector, DKI Master Plan 2005



Multi purpose hall at Cempaka Baru



Masjid at Pademangan Timur.

3.3. URBAN INFRASTRUCTURE DEVELOPMENT

3.3.1 Urban Road Network

Bina Marga of the Ministry of Public Works and a state-run company Jasa Marga are planning and implementing the Jakarta-West Java tollway system in order to mitigate the traffic congestion of Jakarta and support the regional development of West Java. The tollway system consists of the following major trunk highways:

- Jakarta - Tangerang Freeway
- Jagorawi Freeway
- Jakarta - Cikampek Freeway
- Jakarta Outer Ring Road
- Cengkareng Access
- Jakarta Harbour Road
- Jakarta Inter-Urban Tollway

The above major trunk highways will serve the regional traffic flow. Fig. 2.17 shows the road and transportation network of DKI Jakarta Master Plan 2005. Jakarta Harbour Road will run in the north of the Study Area. The detail design of Jakarta Harbour Road was completed in 1988 by OECF finance and the construction is scheduled to be completed in 1995. The roads in the Study Area will not directly serve the regional traffic flow.

Fig. 2.18 shows the existing roads and bus routes in and around the Study Area. Bis kota (city bus) serves on arterial roads between city bus terminals using large buses and double deckers. Pasar Senen bus terminal is located in the Study Area. Bis kota does not allow standing passengers. Bis mini serves arterial roads as well as collector roads between city bus terminals. Mikrolet (10 passenger micro

bus) is utilized by passengers with short trip distance such as trips between bus terminals.

Activity centres such as Glodok, Kota, Senen, Pasar Baru trade centres, Tanjung Priok harbour and Pulogadung industrial estate are located around the Study Area. However, at present the traffic movement in the east-west direction of this district is obstructed by the Kemayoran ex-airport. Only minor traffic is allowed to pass directly in the east-west

direction through Jl. Sunter Kemayoran as shown in Fig. 2.19.

Fig. 2.20 shows the conceptual plan of road network in an around the Study Area after the completion of Kemayoran Complex. The main frame of road network of the Study Area (Zone 1 + Zone 5) will be formed with one north-south arterial road utilizing the ex-runway and six arterial roads connecting east and west.

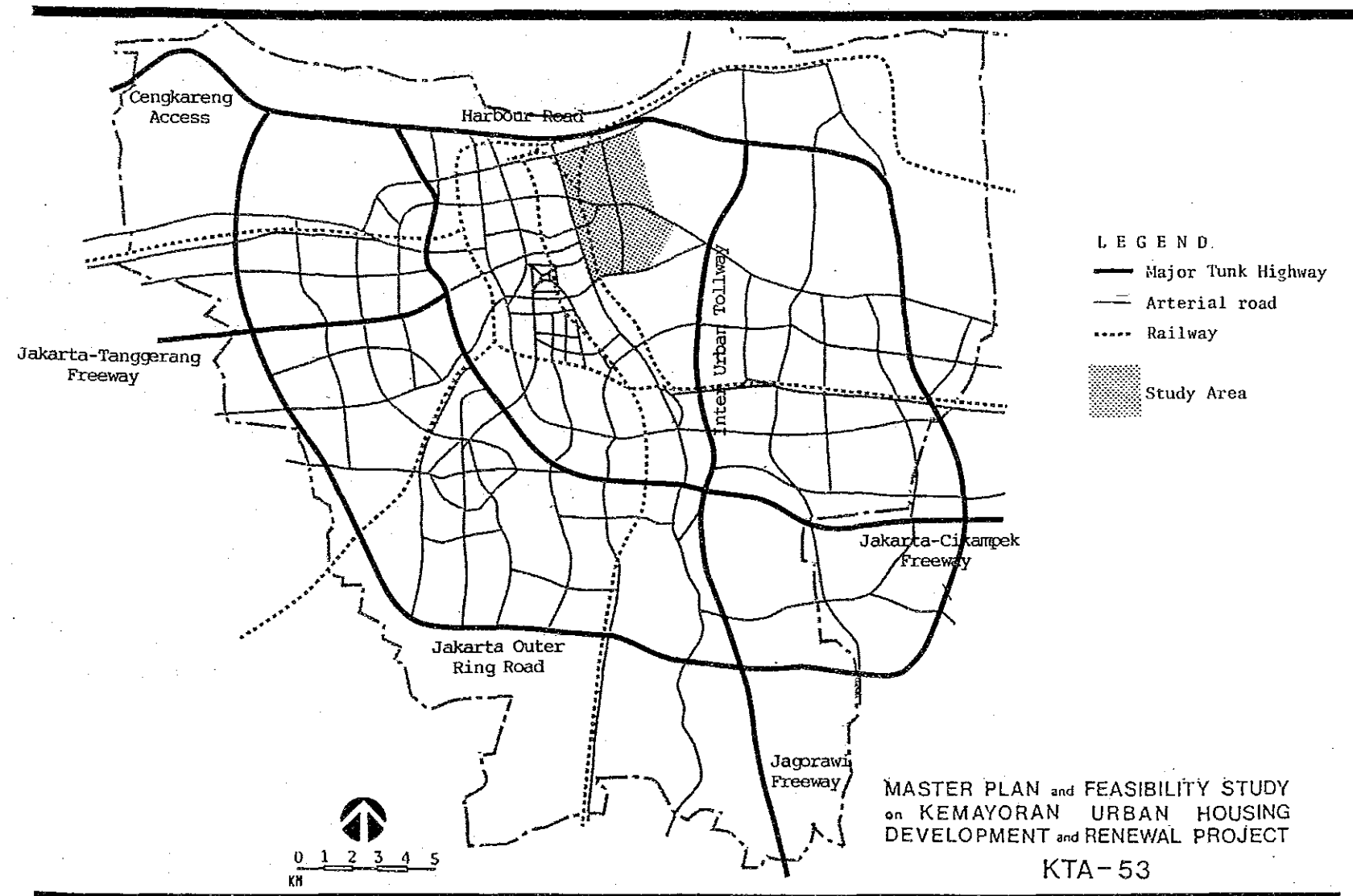


Fig. 2.17 Road and Transportation Network of DKI Jakarta Master Plan 2005

Fig. 2.21 shows the roads of Zone 5 and the area to the east of it on which extension or expansion are required for the flow of the traffic of Zone 1 to the surrounding arterial roads. Such road extensions and expansions contribute to not only vitalization of economic activities of this district but also mitigation of traffic congestion of Jakarta.

All of the roads shown in Fig. 2.21 form a part of authorized road network of DKI Jakarta in the year 2005. DKI shall implement a part of such roads expansion and extension in connection with Jakarta urban road improvement programme by using the JUDP I fund of the World Bank.

Meanwhile regarding minor streets, DKI has a street improvement plan for each Kecamatan.

Street expansion usually accompanies removal of the people, and the compensation to the people and their resettlement are the most critical problems. Therefore, the integrated urban renewal plan involving the resettlement programme of the people and the programme to improve financial feasibility of the renewal is needed in order to push forward the street expansion programmes of DKI.

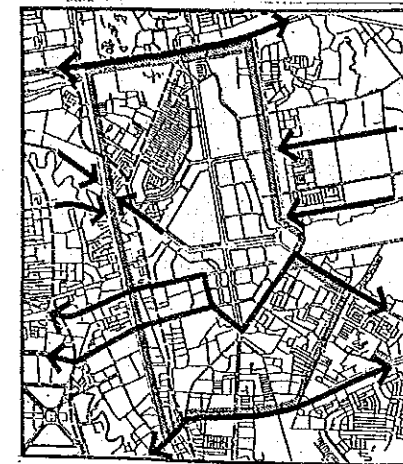


Fig. 2.19 Existing Traffic Flow

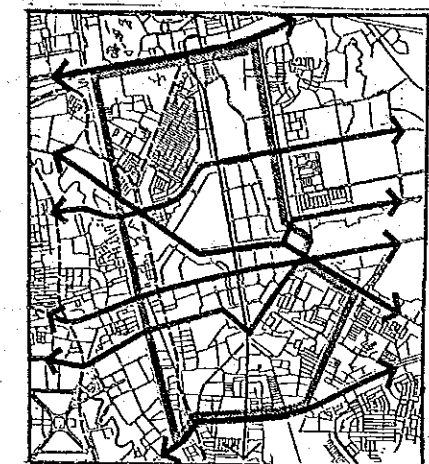


Fig. 2.20 Traffic Flow after completion of Kemayoran Complex

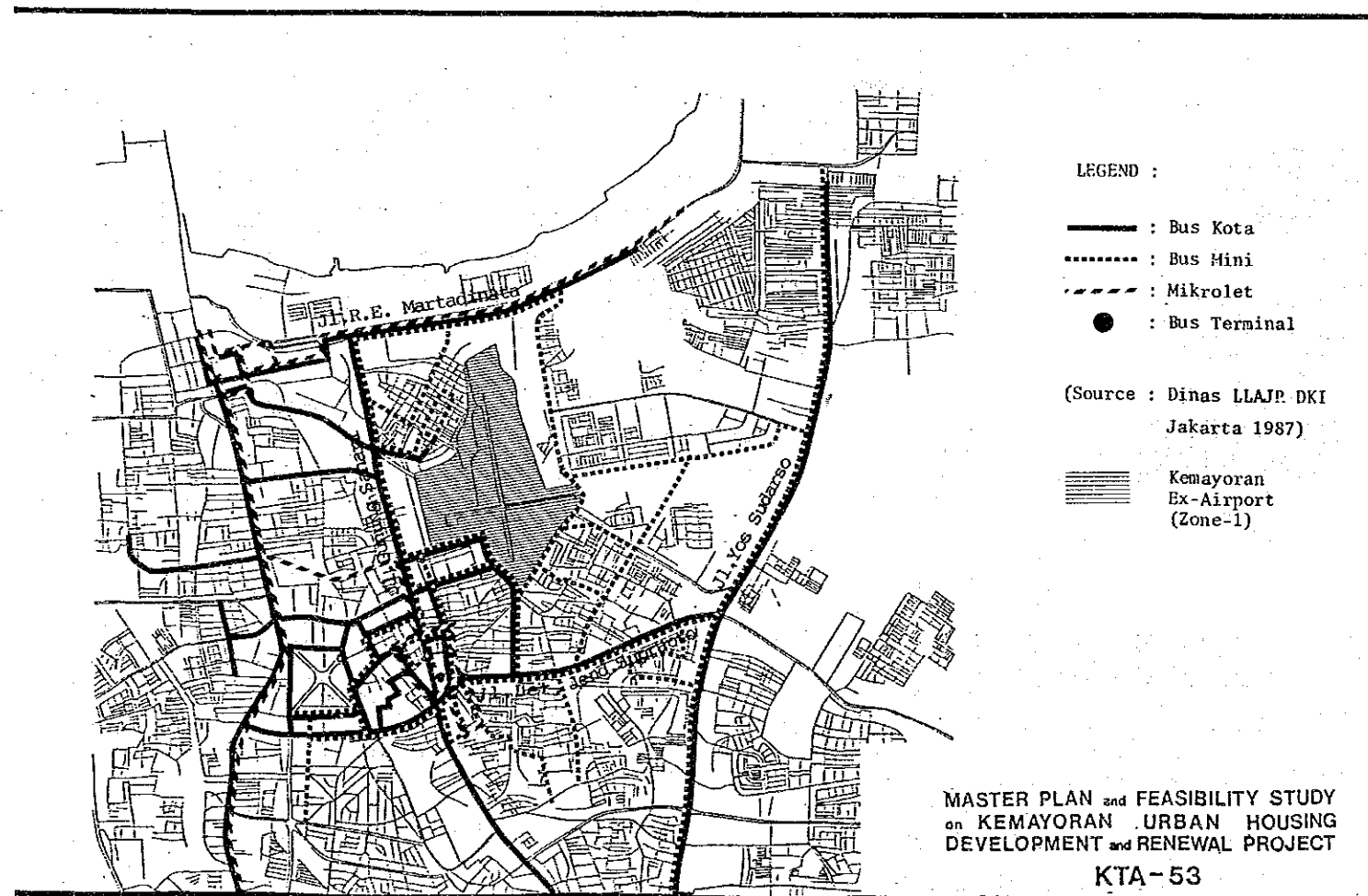


Fig. 2.18 Existing Roads and Bus Rentes in and around the Study Area

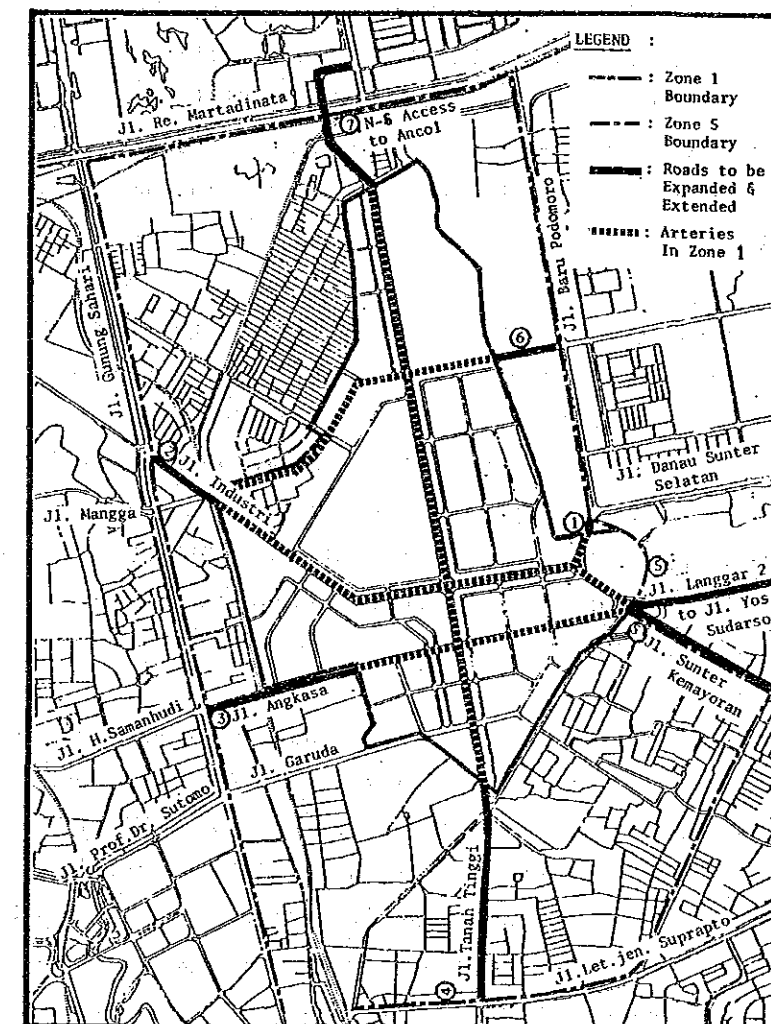


Fig. 2.21 Roads to be expanded and extended

3.3.2 Railway Transportation

Jakarta/Jabotabek Railway Project (PJKA) has formulated the Intermediate Development Plan on the basis of the report on Jakarta Metropolitan Transportation Study in 1974, thereafter the Master Plan for urban/suburban railway transportation in Jabotabek area has been made in 1981 with the technical cooperation of JICA.

In Jakarta, the railway share was only 1.2% of total person trips and therefore the railway transport had a negligible role in public transport. The Master Plan states, "The railway is the transport means best suited for mass, high-speed passenger transit and is featured, especially, by its regular time punctuality and high energy-saving efficiency. It is therefore recommended that the future urban traffic should be switched over mainly to the railway".

In accordance with the Master Plan, the development programmes are proceeding stage by stage. Fig. 2.22 shows the transition of person trips by transportation mode until 2005 estimated by PJKA. OECF is continuously assisting in the finance of such programmes since the fiscal year 1981/1982. Fig. 2.23 shows the Jabotabek railway network plan in the year 2005.

The eastern line of the railway network runs through the western side of the Study Area. Two stations, Proyek Senen and Kemayoran, are located within the Study Area at present. Rajawali and Ancol stations are planned to be established. The eastern line and western line will be connected in 1992 by improving kampung Badan station, and as a result an urban loop

railway system shall be established.

The first railway elevation works in Jakarta started in early 1988 on the route between Gambir and Gondangdia in the central line. The implementation of elevated railway on the eastern line is scheduled to start in 1992. Such elevation of railway and subsequent elimination of road and railway crossings will greatly contribute to the smooth flow of road traffic in the east-west direction through the Study Area.

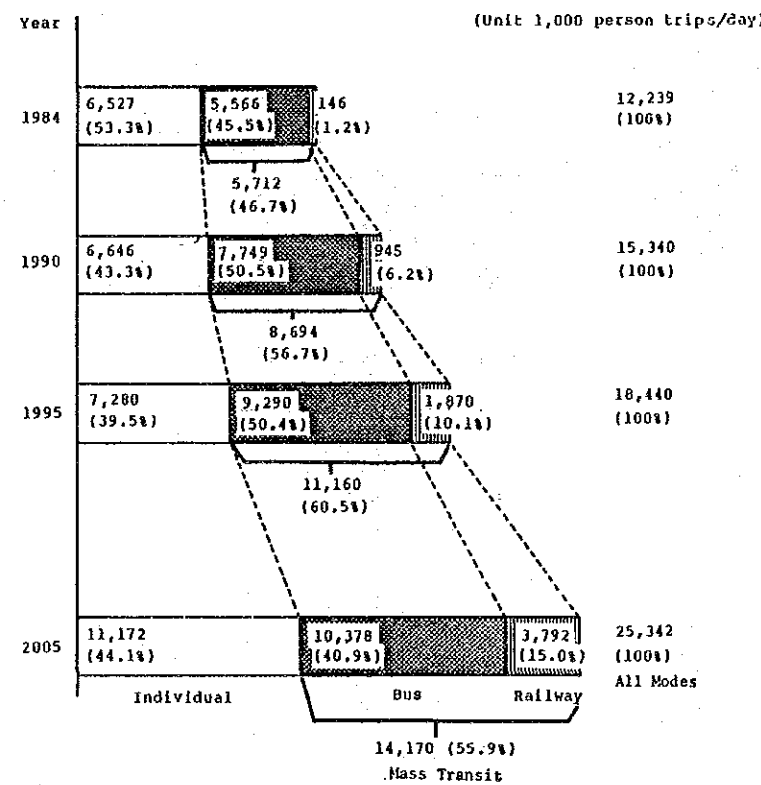


Fig. 2.22 Transition of Person Trips by Transportation Mode in 2005

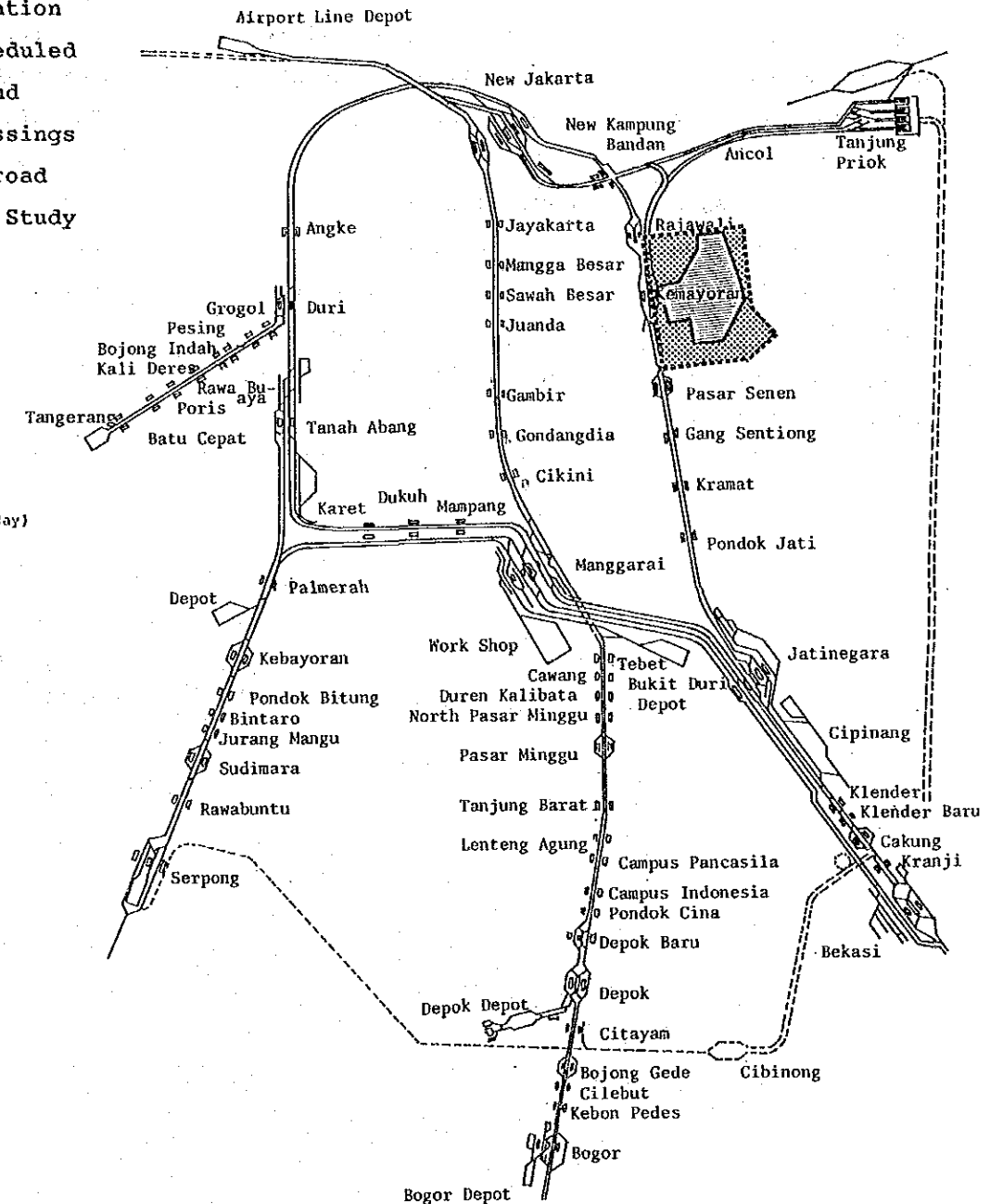


Fig. 2.23 Jakarta Railway Network Plan in 2005

3.3.3 Drainage and Flood Control

Flood occurs frequently during the rainy season in Jakarta. The major reasons for the flood are considered to be as follows:

- River slopes are too flat and the rivers meander.
- Each river is affected by tidal rise at the river mouth.
- The discharge capacity of the rivers is small compared with the size of the catchment area and the rainfall.

The Master Plan for Drainage and Flood Control of Jakarta has been made by the Ministry of Public Works and Electric Power in 1973. Thereafter, some projects have been implemented such as Pluit Polder, Sunter West Polder and Eastern Main Drain.

Fig. 2.24 shows the existing drainage flow in the Study Area. The northern part of the ex-airport is presently swamp, and Sunter canal is running along the eastern and western boundaries of the ex-airport.

The water of Sunter canal combined with rain water and sewage flows into the Ancol canal passing under the Tanjung Priok railway and Jl. R.E. Martadinata.

The elevation of the ex-runway is about 2.2-2.8 m higher than the 0.0 elevation of the Priok water mark. The highest tide is + 1.40 m at the Priok. The existing swamp and Sunter canal, whose elevation is far lower than the ex-runway, are directly affected by tidal rise.

The northern part of the Study Area suffers frequent flood damage. Particularly, some roads in the highly populated residential area of Kel. Pademangan Barat and Timur are submerged at high tide without rain. Of the infrastructure to be developed in Zone 5 in relation with Zone 1 development, the integrated flood control measures must be urgently implemented.

Kopro Banjir has carried out the detail design of Pademangan Polder for flood control in 1982. However, it was not implemented due to financial reason. Kopro Banjir is proposing the review of such design and its implementation by the JUDP II fund of the World Bank.

The low ground area between saluran air and Sunter canal is recommended to be filled before the spread of squatters in order to create good living environment for future housing development. Fig. 2.25 shows the conceptual plan of flood control and drainage system of Zone 5 in relation with Zone 1 development.



Fig. 2.24 Existing Drainage Flow

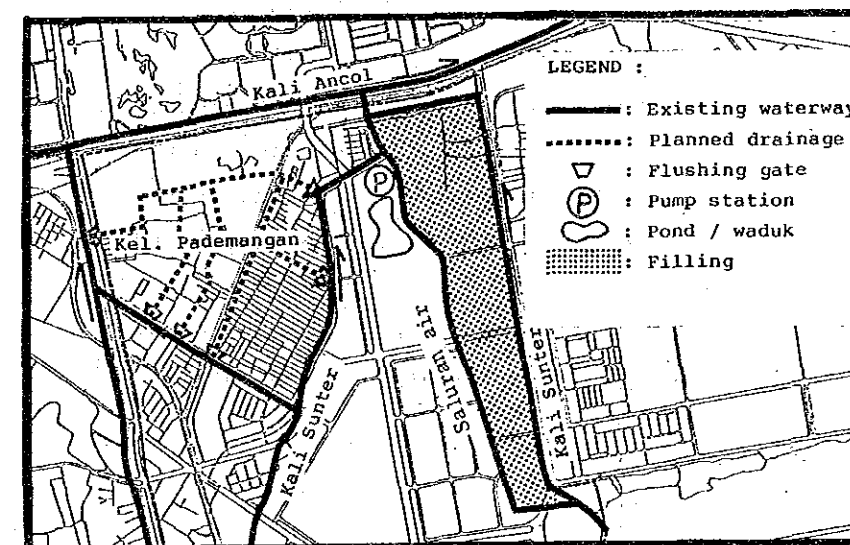


Fig. 2.25 Conceptual plan of Flood Control and Drainage System

3.3.4 Water Supply

The Master Plan for Jakarta Water Supply System has been prepared in 1985 by Cipta Karya with the technical cooperation of JICA. Thereafter, the detailed engineering and project implementation are proceeding by the financial assistance of the World Bank and OECF.

Fig. 2.26 shows the water supply trunk pipeline of existing, on-going, and planned projects in Jakarta. Table 2.8 shows the water production schedule proposed in the Master Plan.

The water to the Study Area is presently supplied from both Pulogadung and Pejompongan treatment plants. The water supply pipeline of the Study Area is administrated by PDAM Jakarta Pusat and Jakarta Utara.

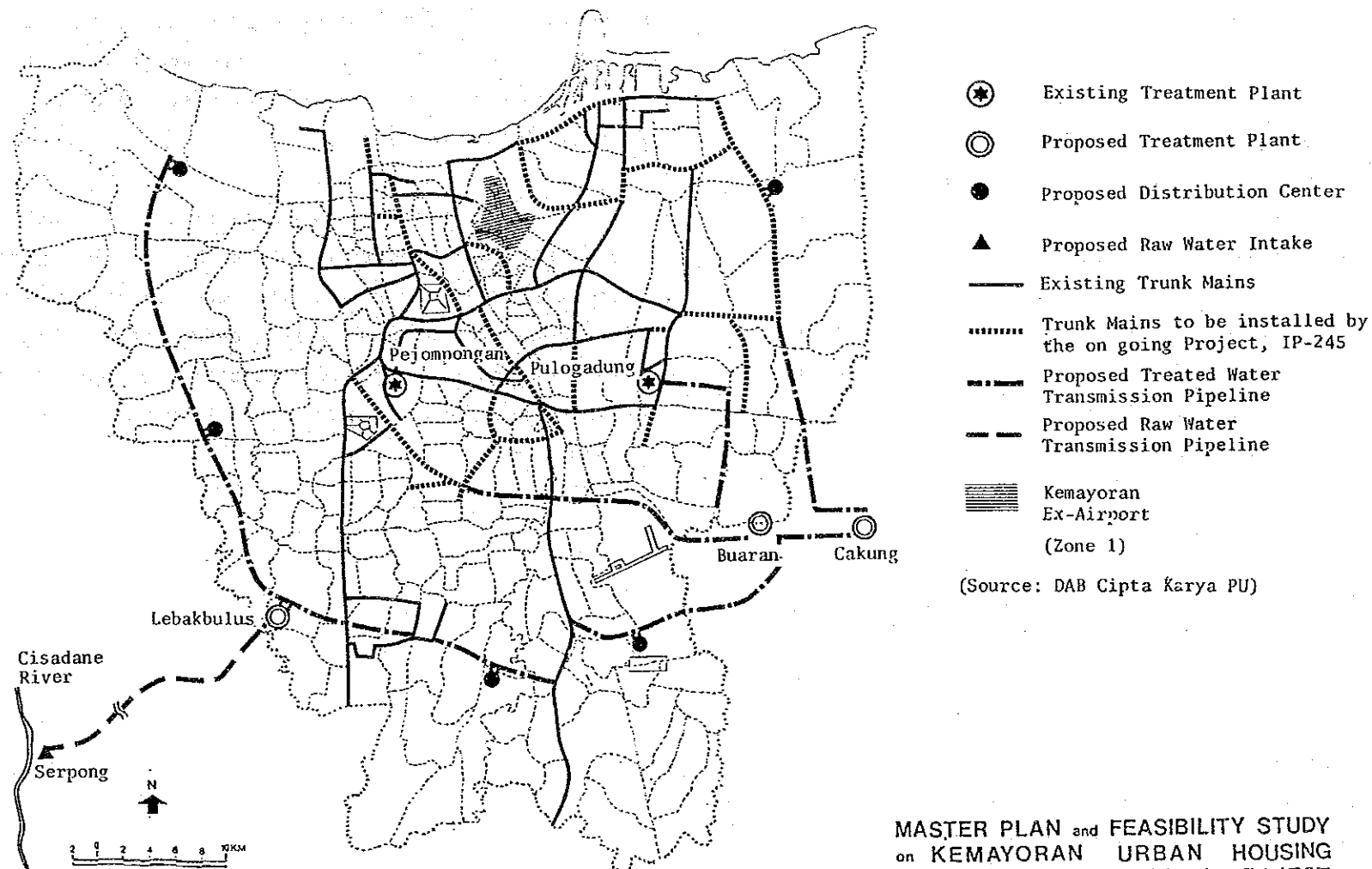
Fig. 2.27 shows the planned main grid of Pulogadung water supply system. Table 2.9 shows the planned discharge capacity and pressure of each grid from which water can be obtained to the Study Area.

The peak water demand of the Kemayoran Complex (Zone 1) was estimated to be about 500 l/sec and that of its vicinity area (Zone 5) about 990 l/sec at the time of review of the Kemayoran Complex Master Plan on March, 1989. Therefore, the above main grid will have the capacity to supply water to the Study Area if the proposed projects in the Master Plan are completed.

Table 2.8 Water Production Schedule

Year	All Jakarta production (l/sec)	Pulogadung/Pejompongan production (l/sec)	Existing mini-plant production and spring system (l/sec)	New Treatment-production	
				- Buara (l/sec)	- Lebakbulus - Cakung (l/sec)
1985	7,800	6,600	1,200	0	
1990	12,800	9,600	1,200	2,000	
1995	23,300	9,600	700	13,000	
2000	29,300	9,600	700	19,000	
2005	36,300	9,600	700	26,000	

(Source : Jakarta Water Supply Development Project, JICA, 1985)



(Source: DAB Cipta Karya PU)

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DEVELOPMENT and RENEWAL PROJECT

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Fig. 2.26 Water Supply Trunk Pipeline

However, since the development schedule by PAM is not proceeding on schedule, for short terms shortage of water may occur if the Kemayoran Complex is developed at a faster progress rate than PAM's implementation.

Observing the deteriorated quality of groundwater by sewage and intrusion of sea water, and the ground settlement due to excessive use of groundwater in the northern part of Jakarta, it is desirable that the source of the required potable water for the Kemayoran Complex shall be PAM DKI and not groundwater.

Table 2.9 Water Supply Capacity to the Study Area

Grid No.	Peak Hour Discharge (l/sec)	Pressure (m)
19	204	16.3
20	437	16.3
21	104	18.5
22	132	21.3
23	226	19.1
24	311	18.9
25	182	23.9
26	121	26.0
27	43	24.0
Total	1765 l/sec	

The coordination between PAM and KCIU started on March, 1989. Continuous coordination between PAM and KCIU is needed for securing water for Kemayoran Complex in harmony with macro-scale plan and surrounding situations..

3.3.5 Sewerage

Master Plan for Jakarta Sewerage and Sanitation Project has been made in 1977 by a Japanese consultant as a grant aid programme of UNDP, and thereafter the World Bank has been assisting in the preparation and financing of studies and their implementation for waste water collection and disposal.

Fig. 2.28 shows the plan of sanitary sewerage system of Jakarta proposed in the Master Plan. JSSP (Jakarta Sewerage and Sanitation Project financed by the World Bank) is proceeding with the implementation of sewerage system of Setia Budi district, and its main programmes are:

- a) reinforcement of Setia Budi lift station,
- b) deepening the Setia Budi pond in order to strengthen flood control function,
- c) installation of aerator in Setia Budi pond for pre-treatment of sewage, and
- d) laying trunk and collection sewer in Setia Budi district.

The Setia Budi pre-treatment system will contribute to the purification of water quality of Banjir canal which is utilized as city water source at downstream.

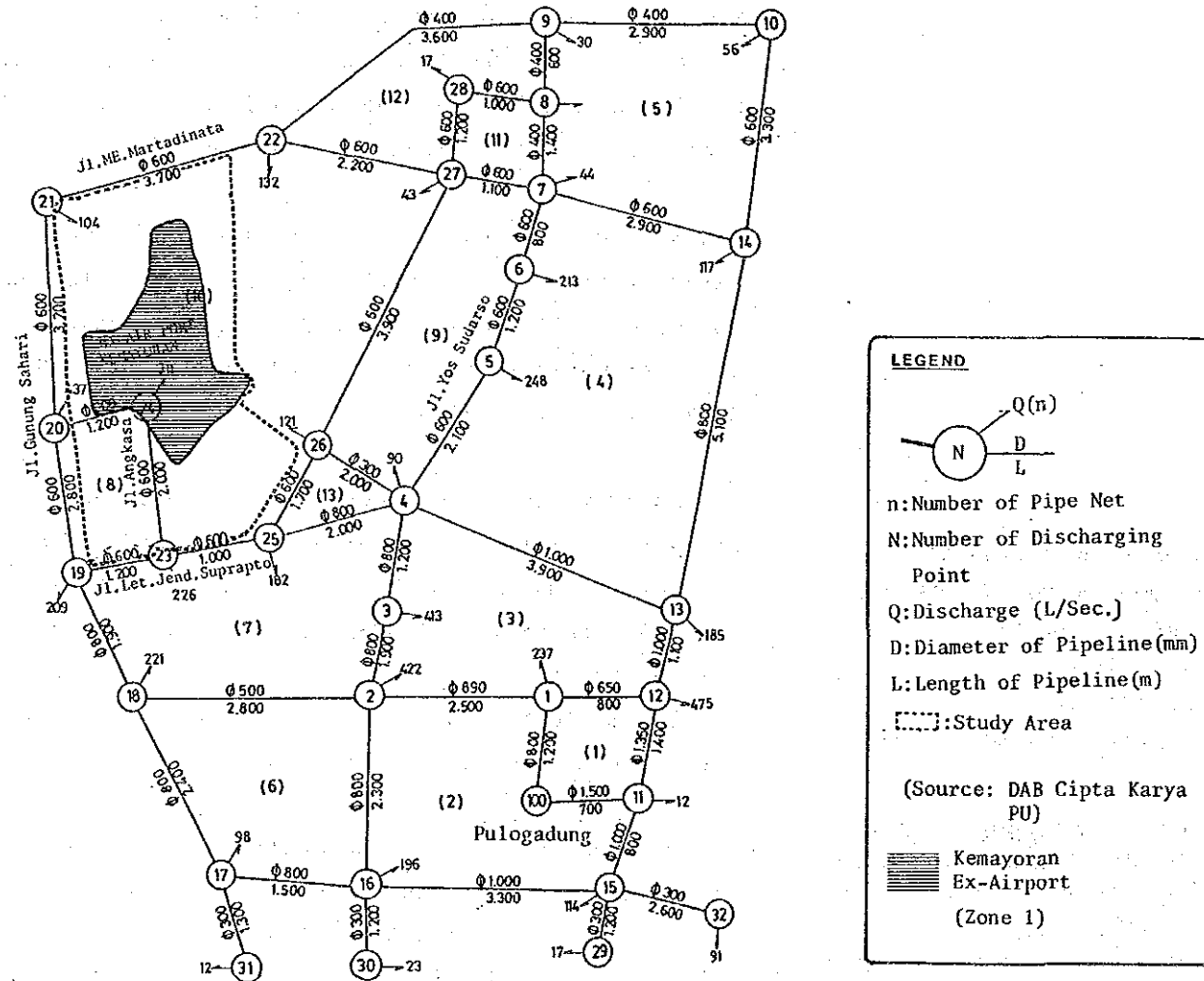


Fig. 2.27 Main Grid of Pulogadung Water Supply System

At present there is no public and sanitary sewerage system except the above Setia Budi sewerage in Jakarta. In an ordinary house, the waste water from kitchen, bathroom, etc., is discharged to the drain beside the streets and footpaths. The toilet wastes are discharged in either septic tanks or leaching pits. The overflowing water leaches into the ground where the soil is permeable. These present conditions cause serious deterioration of the city's river water and groundwater.

The time has come to introduce sewerage system with appropriate treatment into Jakarta. Cipta Karya has made "the National Strategic Plan for the Human Waste and Waste Water Disposal" with the World Bank finance in 1989. In addition, the study on urban drainage and waste water disposal of Jakarta started on September, 1989 by Cipta Karya and DKI with the technical cooperation of JICA.

For Kemayoran Complex a complete sewerage system shall be provided in order to create the well sanitized living condition and preserve the environment.

3.3.6 Solid Waste Management

The Master Plan for Jakarta Solid Waste Management has been made in 1987 with the technical cooperation of JICA. The Master Plan recommended to provide 15 transfer stations within the city and sanitary landfill sites in both Tangerang and Bekasi by the year 2005 as shown in 2.29.

Fig. 2.30 shows the coverage of solid waste collection services in 1986. Solid waste collection service by DKI of the Study Area is 50 - 75% in Kel. Pademangan and 75 - 100% in remaining area.

Table 2.10 shows the existing collection system based on the areal characteristics. The solid waste volume of 1984 was 4.930 ton/day, and the Master Plan estimated it to reach 7.360 ton/day in 1995 and 10.220 ton/day in 2005.

The solid waste to be produced in the developed Kemayoran Complex estimated at the time of review of Kemayoran Complex Master Plan on March, 1989 will be about 90 ton/day. Solid Waste of the Study Area will be transferred to the large-scale transfer station of Sunter which will be provided in the near future in accordance with the above Master Plan.

Door to door system will be applied in high/middle income individual houses, and communal container will be used for collection of solid waste from flats housing and building complex in the Kemayoran Complex.

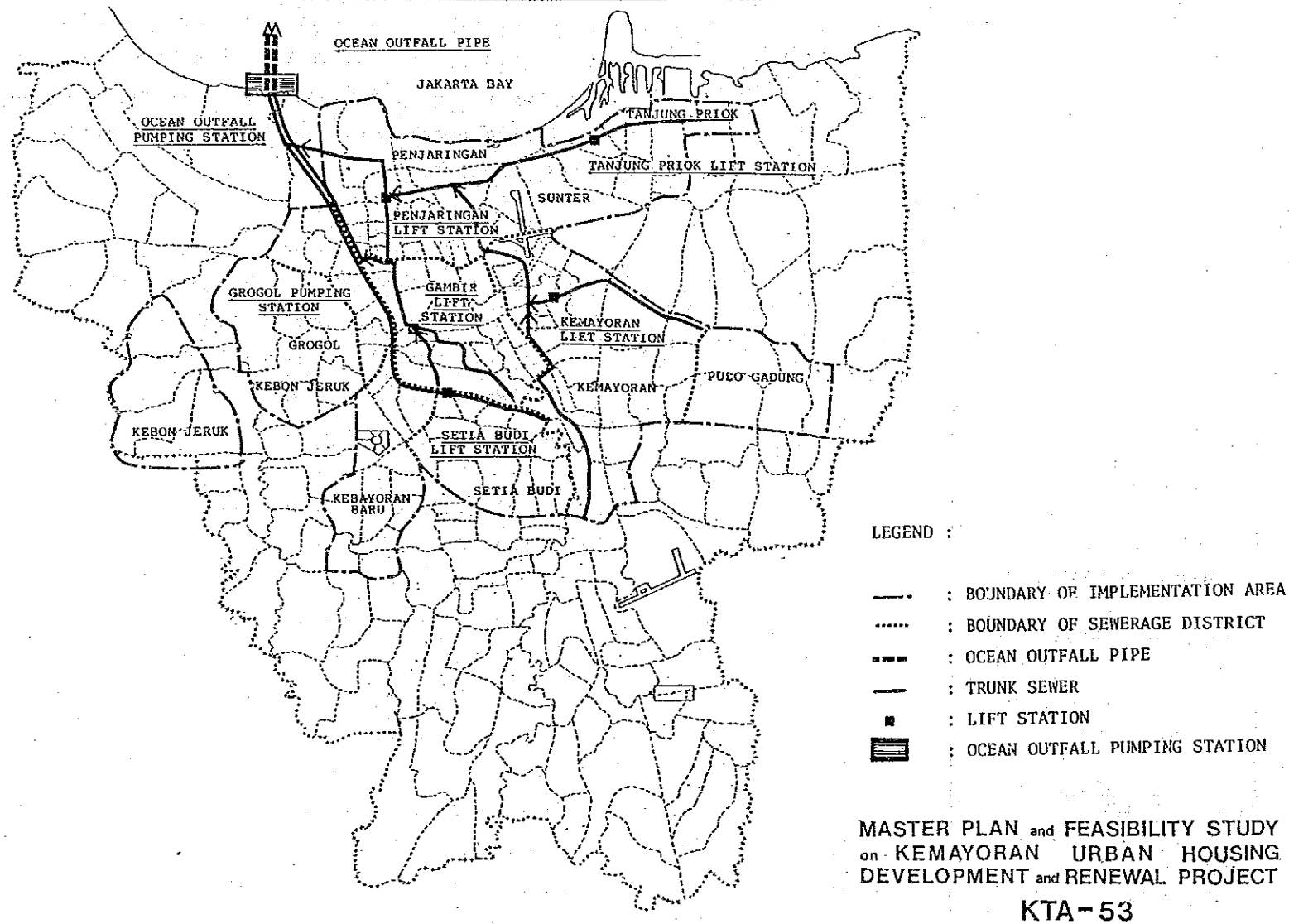


Fig. 2.28 Master Plan for Jakarta Sewerage and Sanitation Project in 1979

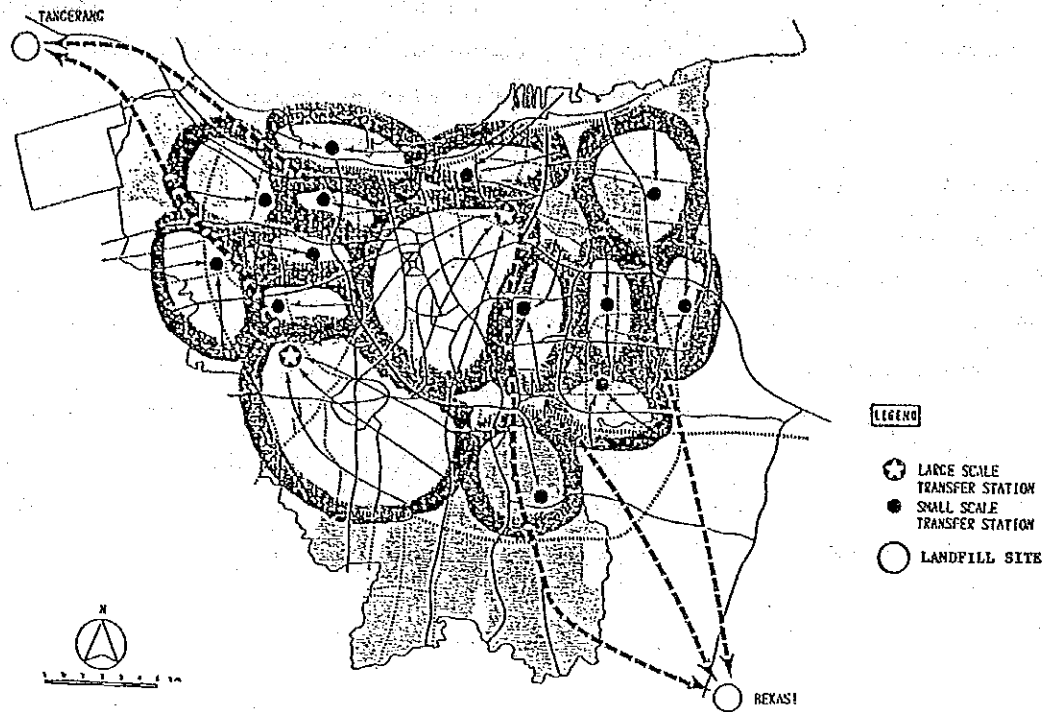


Fig. 2.29 Location of Transfer Stations

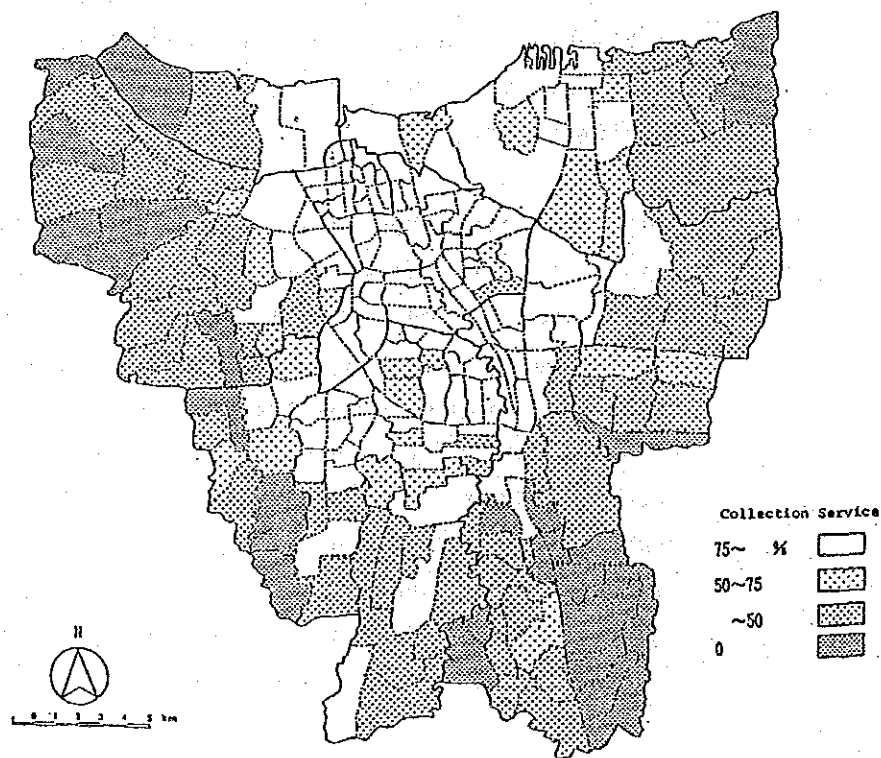


Fig. 2.30 Coverage of Collection Service

Table 2.10 Characteristics of Collection System

Collection system	Area Characteristics		
	Areal Conditions	Income Level	Remarks
Door to door	<ul style="list-style-type: none"> - High level residential with detached housing and garden, accessible to each house by vehicle - Road-side commercial zone along main street 	High	Activity of RT/RW is not always strong
Jali-jali	<ul style="list-style-type: none"> - Low grade densely populated area, so-called "Kampung", with only narrow roads 	Low	RT/RW can not afford to employ and maintain handcart collectors
Handcart pool	<ul style="list-style-type: none"> - Kampung area - Only surrounding roads are wide enough for the vehicle 	Middle	No specified place for waste is secured
Communal Concrete bin	<ul style="list-style-type: none"> - Kampung area - Communal concrete bin where wastes are collected has been secured 	Low to middle	Previously open space
Open Space	<ul style="list-style-type: none"> - Kampung area - Open spaces for waste have been secured 	Low to middle	-
Large Communal Container	<ul style="list-style-type: none"> - The street is wide enough to place the container on road side 	-	-
Depot	<ul style="list-style-type: none"> - Where the depot side is secured - Mainly residential area 	Low to middle	-
Placed Handcart	Commercial zone along main streets	-	-
Placed Small Communal Container	Commercial zone along main streets	-	-

3.3.7 Electricity

At present Jakarta depends for its electricity power on such 3 system as diesel power plant, gas power plant and water power. The electricity power consumption of Jakarta recorded in 1987 was 5,098 mega watts.

There are 4 main transformer houses which are around the Study Area as shown in Fig. 2.31, namely

- Ancol Main Transformer House

- Gambir Lama Main Transformer House
- Gambir Baru Main Transformer House
- Plumpang Main Transformer House.

Observing the electric network system existing in Jakarta, in particular around the Study Area, it is estimated that the needed electricity for the Study Area can be supplied by the PLN electric network, while the generators are used as reserve/emergency electric resources.

The electricity power demand of the Kemayoran Complex estimated at the time of review of Kemayoran Complex Master Plan on March, 1989 will be about 72 mega watts after completion of whole development in 1998.

PLN will construct substation for Kemayoran Complex in the southern part of Kemayoran Complex at its own cost, and the land for the substation about 5,000 m² will be prepared by KCIU for PLN free of charge. The investment of PLN will be covered by installation fee and consumption charge which shall be paid by individual users.

3.3.8 Telephone

The recorded number of telephone lines in Jakarta in 1986 was 254,000 for residences, offices and industries, and the public lines numbered 2,400 in 1988. In the year 2005, lines for exclusive use are estimated to increase to 1,627,000. It is further estimated that 16,000 public telephone lines shall be installed.

Fig. 2.31 shows the location of telephone exchange around the Study Area. At present, the need for telecommunication services in the Study Area is served by the Cempaka Putih Automatic Telephone Exchange. From this the installed capacity of 4,000 lines are already in use, while the remainder of 8,000 lines will be used by the subscribers who have been put on a "waiting list". The Study Area is served also by Ancol Telephone Exchange which has a capacity of 4,000 lines of the analogue system. The installed capacity is already entirely used.

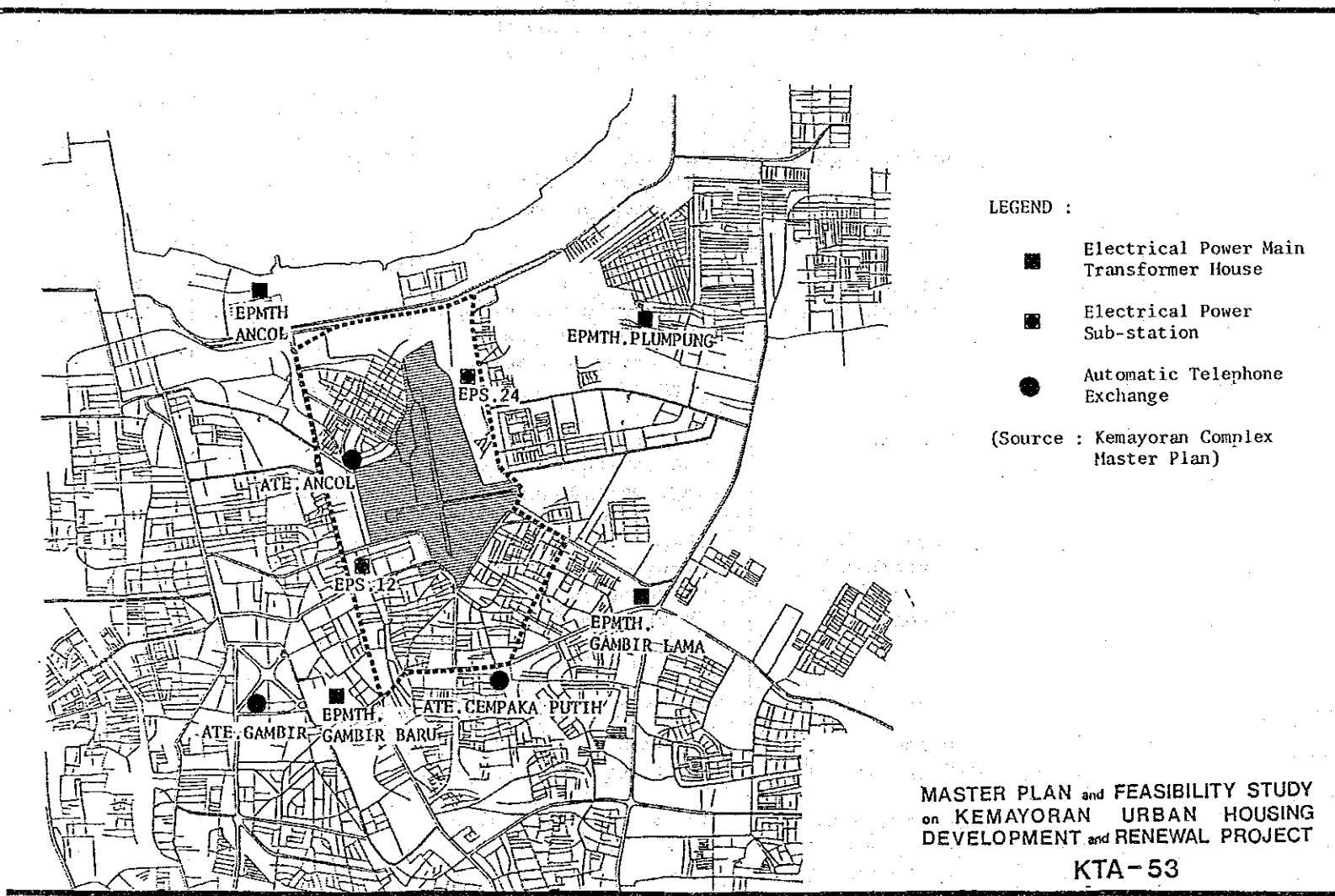


Fig. 2.31 Location of Existing Power Transformer Houses and Telephone Exchanges

The demand for telephone lines in the developed Kemayoran Complex estimated at the time of review of Kemayoran Complex Master Plan on March, 1989 will be 14,900 lines. PERUMTEL will provide a telephone exchange within Kemayoran Complex at its cost, and the land for it will be provided by KCIU free of charge. Individual telephone lines will be supplied against an installation fee of 500,000 Rp/line and public ones will be provided by PERUMTEL free of charge where security is secured.

3.3.9 Organization for Infrastructure Development

Infrastructure such as road network, drainage system and urban utilities of Jakarta are managed by the authorized agencies. Such agencies have their own development plans covering the whole city area, in which those of the Study Area are involved.

KCIU is responsible for providing the main infrastructure of Zone 1. The main infrastructure will be developed before selling land, and after that those will be handed over to the concerned agencies for operation and maintenance.

The secondary/tertiary infrastructure within a block will be developed by the individual developers who purchased land from KCIU, and those will be maintained by local community (RW) organized by inhabitants like yayasan.

Table 2.11 shows the expected bodies responsible for construction, share of the construction cost and operation & maintenance of infrastructure of Zone 1. The infrastructure of Zone 5 will be developed by the authorized agencies in accordance with the agencies' development plan and in coordination with the development schedule of Zone 1.

Table 2.11 Bodies for Construction, Share of the Cost and Operation & Maintenance of Infrastructure

	Construction	Body to share the cost	Operation & Maintenance	Remark	
Traffic	Street	K C I U	K C I U	D K I	Cost will be covered by passenger charge.
	Bus Terminal	DLLAJR DKI	DLLAJR DKI	DLLAJR DKI	
Drainage	Pademangan Polder	K C I U Kopro Banjir D K I	K C I U Kopro Banjir D K I	D K I	
	Micro Drainage	K C I U	K C I U	D K I	
	Tertiary drainage	Developer	Developer	R W	
Water Supply	Primary	K C I U PAM DKI	K C I U PAM DKI	PDAM Jakarta Pusat & Utara	Water charge will be collected by PDAM Jakarta Pusat & Utara.
	Secondary	Developer PAM DKI	Developer	PDAM Jakarta Pusat & Utara	
	Tertiary	Developer	Developer	R W	
Sanitation	Sewage treatment system	Developer	K C I U Developer	R W	Sludge will be corrected and discharged by DKI subject to 500 Rp/m3.
	Recycle of water	Developer	K C I U Developer	R W	
	Solid waste	Developer	Developer	D K I R W	
Electricity	Electricity supply	P L N	P L N	P L N	Cost will be covered by the installation fee and electricity charge paid by the user.
	Street lighting	K C I U	K C I U	D K I	
	Outdoor lighting for security	Developer	Developer	R W	
Telephone	Exclusive use	PERUMTEL	PERUMTEL	PERUMTEL	Cost will be covered by the installation fee of 500,000 Rp/line and telephone charge paid by the user.
	Public Telephone	PERUMTEL	PERUMTEL	PERUMTEL	

NOTE : RW in the table means the local community which will be organized by inhabitants for mutual aid and security.

4. HOUSING DEVELOPMENT

4.1 GENERAL

Around 50% of housing in Jakarta is in a poor environment with inferior buildings, located at those parts of the city where high investments for infrastructure and other facilities are needed. (e.g. flood areas, bad ground conditions, groundwater pollution, traffic congestion, etc.). It is assumed that around 40% are houses of medium condition and that the remainder are in good condition

Only 25% of the housing demand is served by the formal sectors, including both public and private such as Real Estate, Perumnas, BTN, Government Agencies and Army Forces, with the remaining (75%) being wholly based upon the individual ability, which mostly consists of groups with low socio-economic levels.

Meanwhile the KIP programme has been planning a major role in environmental improvement of poor housing areas but, until now better housing conditions are not being stimulated, not to mention the absence of overall upgrading of the living environmental condition.

The formal criteria, technical and administrative guiding principles for housing construction (building regulation, license procedures, etc.) are generally beyond the ability of the low socio-economic level groups and as a result housing environment, not properly managed and controlled, are on the increase.

Most housing and environmental conditions in the Study Area mirror the situation which is prevalent in most of Jakarta city, i.e. that of "Poor housing in poor environment". Therefore, it can be said that the condition of the Study Area is by no means the worst or the poorest area, rather the average level. As compared with other areas in Jakarta, the distinctive features of the area, however, can be described as follows:

- a. highly dense population and building
- b. high rate of urbanization (more than 90% is built-up area)
- c. high rate of temporary houses (more than 30%)
- d. many commercial facilities (service, business and small scale industry) are mixed within the residential area
- e. old buildings, narrow streets and heavy traffic
- f. population is decreasing (-1.27% annual '81-'86 in Kel. Kemayoran)

Since the conditions do not differ from those of other areas, the issue of housing and its environment in the Study Area should not be considered as a special issue but a general one pertaining to the built-up area of the city. However, the government does not consider it as a priority issue to be solved. Therefore, in the present condition, the government does not have any effective measures which promote the improvement in housing and its environment except KIP mentioned above.

Cipta Karya, Directorate of Housing, in response to the present condition, is resorting to a solution which is carried out mainly by private sector and the self-effort of residents on a long-term basis in

order to solve the housing issues in the already built-up areas of the city.

4.2 HOUSING DEVELOPMENT POLICY AND GUIDELINES

This is the interpretation of the National Development Policy of Housing and Settlement Sector in Repelita V.

Housing development particularly in "Urban Betterment Zone", or in other words built-up area, will be carried out by the following development programmes.

4.2.1 Building of Housing for the People

Attention should be mainly focused on the low income group within the community, and providing them with affordable housing as much as possible but with constant attention to satisfying minimal requirements for reasonable urban-type, healthy, safe and suitable housing.

- 1) The standard floor space of individual house should be between 12 m² and 70 m².
- 2) The flat house with a unit floor space of 18 m² to 54 m² will be promoted especially in renewal projects executed by Perumnas, Sarana Jaya of DKI and private developers. This will be transferred to the low income community through KPR-BTN mechanism with more variation in rate levels.
- 3) "Site and Services (KSB, RSB)" and "Rent House" initiated by the government will be more encouraged for lower income group.

- 4) To enable the increase of financial resources, effort should be made on mobilization of "Community Funds" involving State Saving Bank, BTN and other related government agencies, private companies or particular institutions, and individuals. This would encourage the community to invest its funds for the provision and maintenance of good housing buildings.

4.2.2 Environment Improvement

1) Kampung Improvement Programme (KIP)

The KIP will be continued with more attention toward community participation to improve the living quality mainly for the low income group through environmental improvement and provision of basic infrastructure, as follows:

- a. providing drinking water
- b. improvement of household sewage
- c. utility building of MCK
- d. garbage depot
- e. improvement of residential road
- f. placing road lighting
- g. house improvement and home latrines

The KIP shall also be involved in "Market Environment Improvement" in order to develop not only the residential area, but also improve the dirty and unsafe market areas.

2) Density Guidelines

Another means for environmental improvement of built-up area is the enforcement of density guidelines to induce and control population density in the residential area and guidelines for building heights and BCR.

Those guidelines are issued and managed by the local government. The details are as follows:

- a. Environmental improvement by low infill (Perbaikan lingkungan dengan pengisian rendah)
 - increase number of population up to 150% (for example: 100 people/ha ---- 150 people/ha)
 - number of houses will be maintained ---- change from 1 storey to 2 stories
 - inhabitants can make the housing improvements by themselves.
 - b. Environmental improvement by high infill (Perbaikan lingkungan dengan pengisian tinggi)
 - increase number of population up to more than 500% (for example: 100 people/ha ---- 500 people/ha)
 - build flat type house:
 - * in empty lot
 - * renewal
 - c. Environmental improvement by high density (Perbaikan lingkungan dengan pemadatan)
 - increase number of population from 100 up to 500 persons/ha
 - change the building with government permission
 - inhabitants may build their houses up to 4 stories
- 3) Building Heights and BCR (Building Coverage Ratio)
- a. 2 stories with possibility upto 4 stories, condition/requirement:
 - minimum area 2,000 m²
 - BCR on high density area: 50%

- BCR on medium density area: 40%
- BCR on low density area : 20%

- b. 4 stories with possibility upto 8 stories, requirement
 - minimum area 1 ha
 - only in low density area, BCR maximum 20%
 - c. Possibility upto 12 stories requirement
 - minimum area 2 ha
 - only in low density area, BCR maximum 20%
- 4) FAR (Floor Area Ratio) and building set-back regulations are also designated according to the building heights.

4.2.3 Renewal

1) Definition

This is a new type of urban development which shall be applied in built-up areas where conditions are serious and the more conventional improvement methods such as KIP are insufficient. The development potential and its positive effect on the surroundings of the area subject for renewal must also be confirmed.

Renewal is carried out by partly or totally demolishing existing structures in order to make way for planned infrastructure and new buildings. Priority should be given to inhabitants of such areas to resettle there after renewal is completed.

2) Land Consolidation

The effort of urban renewal is usually also connected with efforts of rearranging the urban

land, including land consolidation. The said land consolidation aims to improve the utilization efficiency of community owned land in certain areas which from the beginning were not well regulated by involving active participation of the local community, both inhabitants and land owners.

3) Benefit of Renewal Activity

- a. To improve old buildings
- b. To encourage the use of land more efficiently
- c. To ease the provision of the needed infrastructure and means
- d. To avoid asymmetry among regions built formally and informally

4) Financial Consideration

The urban renewal, as much as possible shall be performed and financed by private sector in cooperation with the local community. The government will only provide guidance and direction, and ensure no harm befalls the local inhabitants and that the work is proceeding in accordance with the urban development programme which has been set. However, in the renewal of slum areas it is often necessary to build flat housing which requires high finance beyond the the financial capability of the local community. In such a situation and within certain limits, the grant aid of the government is desirable.

5) Realization of City Planning

Furthermore, for urban renewal, a master plan shall be prepared giving attention to existing conditions and population distribution pattern, space ordering pattern and land use order, as well as living environment aspects. It is expected that the private sector actively participates in the realization of the city plan.

4.3 HOUSING DEVELOPERS

4.3.1 General

Housing development aims mainly to meet the need for decent housing, especially focusing on the low income class. Therefore, for the housing development concerned there are some development programs (measures) depending upon the income group as follows; (Table 2.12)

Table 2.13 shows the housing development programme for each development zone in DKI Jakarta until the year 2005. The major housing developers, excluding individual development activities are described hereafter:

Table 2.13 Housing Development Programme up to 2005 in DKI Jakarta

Wilayah Pengembangan (WP) Development Zone	Jenis Sentra Type of Center												Jumlah Total	
	Sentra Primer Primary Center				Sentra Sekunder Secondary Center		Sentra Tersier Tertiary Center		Sentra Lokal Local Center		Ribbon Ribbon		Tempat Kerja Working Places	Tanah yang Dibutuhkan Land Required
	Lama Old		Baru New		Jiwa Person	Ha	Jiwa Person	Ha	Jiwa Person	Ha	Jiwa Person	Ha		
Barat Laut North West	-	-	-	-	22.339	24	20.531	15	29.212	21	87.636	89	159.718	149
Utara North	36.276	32	-	-	223.386	245	104.367	75	121.717	89	292.118	295	777.864	736
Timur Laut/ Tanjung Priok North East/ Tanjung Priok	36.276	32	-	-	89.354	98	34.218	25	63.293	46	102.242	103	325.383	304
Barat West	-	-	54.415	49	44.677	49	35.929	26	87.636	64	146.060	148	368.717	336
Pusat Central	108.828	98	-	-	134.031	147	90.678	65	107.110	78	584.239	590	1.024.886	978
Timur East	36.276	32	54.415	49	89.354	98	53.038	38	107.110	78	146.060	148	486.253	443
Selatan South	-	-	-	-	67.016	73	56.460	40	68.161	49	102.242	103	293.876	265
Total Total	217.656	194	108.830	98	670.157	734	395.221	284	584.239	425	1.460.597	1.476	3.436.700	3.211

Sumber: Laporan Tim Sektor Perdagangan - Rencana Induk DKI Tahun 2005
Source: Report of Team of Trade Sector - Master Plan DKI 2005

Table 2.12 Housing Development and Income Group

Income Group	Developers/Measures
High	Self-reliance
Higher Middle	Real estate by the private sector with the aid of P.T. Papan Sejahtera
Middle	Perumnas low cost housing with BTN aid
Lower Middle	Perumnas housing with cross subsidy and BTN aid
Low	Kampung Improvement Programme for the infrastructure

- 1) Perumnas (National Urban and Housing Development Cooperation) supports low cost housing supply for low and middle income groups.
- 2) Sarana Jaya (DKI Jakarta Urban and Housing Development Cooperation) supports mainly low cost housing for low income group and commercial building supply.
- 3) Private Housing Developers
Real estate by the private sector supplies housing for middle and high income groups.
- 4) KIP (Kampung Improvement Programme) project has performed an important role in the improvement of living environment for low income group.
- 5) Other projects related to urban and housing development.

4.3.2 Housing Development by Public Sector

According to a recent housing development programme, Perumnas plans to construct 7,846 houses in DKI Jakarta and 24,233 houses in Botabek, during the Repelita IV period, as shown in Table 2.14.

As can be seen from the table, public housing development projects by Perumnas in Repelita IV are mainly located in the Botabek area, especially in Tangerang and Bekasi which account for over 60% of the whole units to be supplied to the Jabotabek region.

Moreover Sarana Jaya as a local government organization, aims at mainly supply of low cost housing for selling and renting in DKI Jakarta and plans to develop 7,218 units in the Repelita IV period.

The critical issues facing recent housing development executed by the public sector are as follows:

- a. Land acquisition is becoming more difficult because of a rise in the price of land due to rapid urbanization and complicated land ownership.
- b. Due to the fact that most of the public housing supplied by Perumnas is located outside DKI Jakarta, especially in Tangerang and Bekasi, those residents are commuters to Jakarta and have to pay high transportation costs.

Table 2.14 Execution Programme of Perumnas in Repelita IV

		Unit House					
		1984/85	1985/86	1986/87	1987/88	1988/89	Total
Jakarta	Klender I			70			70
	Klender II	1,280					1,280
	Klender III			359			359
	Pulogebang Cakung			4,279			4,279
	Kebon Kacang II					1,358	1,358
Sub Total (Jakarta)	1,280		4,708		1,858	7,846	
Bogor	Bantarjati		220				220
	Parung			200	1,020	1,118	2,338
	Cibinong					1,500	1,500
	Depok II		331				331
Tangerang	Karawaci I		307				307
	Karawaci II			5,000	3,825		8,825
	Serpong				1,200		1,200
Bekasi	Rawa Tembaga II		300	870			1,170
	Setiamaker		4,600	742			5,342
	R. Lumbu			3,000			3,000
Sub Total (Botabek)		5,758	9,812	6,045	2,618	24,233	
Jabotabek Total	1,280	5,758	14,520	6,045	4,476	32,079	

c. Higher density mass housing, that is multi storied flat type, was attempted in Kebon Kacang and Tanah Abang for application of effective land utilization. However construction of mass housing is costly.

1) Perumnas

Perumnas has been established in 1975 to undertake the construction of low cost housing for low income group.

The Minister of Housing Affairs plans to build 450,000 units of low-cost housing in the Repelita V (The fifth 5-year development plan 1989-1993), consisting of 350,000 units for small houses (36 m²) and the remainder larger ones.

According to data of the Minister of Housing Affairs, 549,781 units of houses were built during Repelita II (1974-1978) and Repelita IV up to July, 1988, composing 164,111 units built by Perumnas and 385,670 units built by non-Perumnas housing companies.

The construction of houses in Repelita IV (until July, 1988) reached 354,053 units, comprising 75,688 units by Perumnas and 278,365 by non-Perumnas housing companies. This number exceeded the target of 300,000 units in Repelita IV. The goal and the realized result of Repelita are shown in Tables 2.15 and 2.16.

2) Sarana Jaya

The Government of DKI Jakarta has been undertaking land management through PTB-DKI (Peraturan Tanah dan Bangunan of DKI) since 1969.

Table 2.15 Perumnas Realization Programme in Repelita II until Repelita IV Age 3 (1974/75 - 1986/87)

Description	Repelita	Repelita	Repelita - IV			Total
	I	II	1984/85	1985	1986/87	
Land Acquisition	1,810.6	3,231.8	84.5	199.5	469.28 ha	5,796.08
Housing construction	50,670	81,323	10,516	15.07	12,886 unit	166,743
Allocation	38,380	92,366	8,985	11.55	8,976	147,845
Marketing	350	9,410	9,410	40.71	8,976	147,845
Instruction cost	84,101	59,448	59,448	92.26		
Profit/loss				22.5	1,288	23,833
Tax				7.18	444	7,628

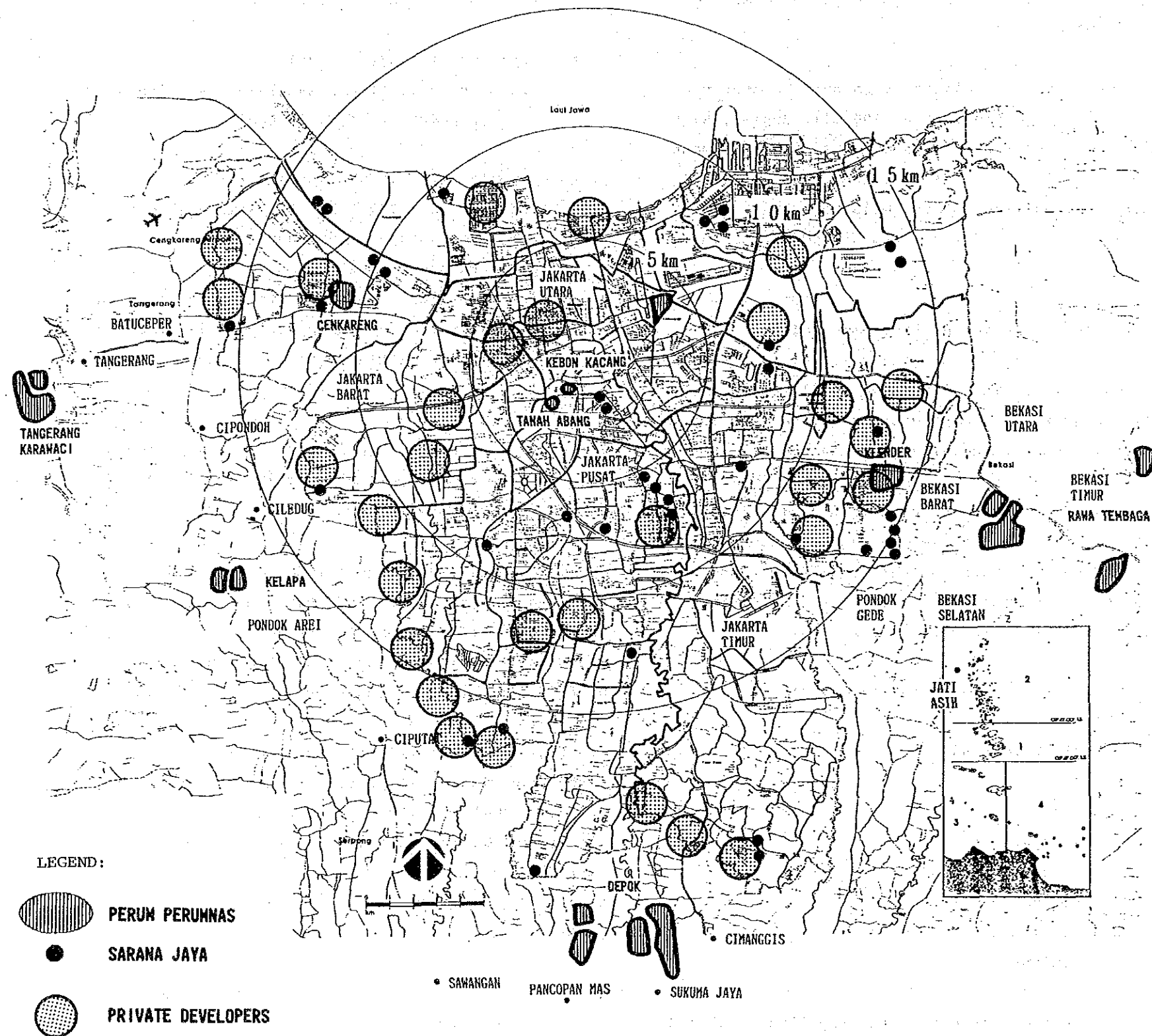
In million rupiahs

Table 2.16 Pengadaan Perumahan Rakyat Oleh Perumnas

No Daerah Tingkat I	1982/83			1983/84			1984/85			1985/86			1986/87			1987/88*)		
	Rumah Seder-hana	Rumah Inti	Rumah Susun	Rumah Seder-hana	Rumah Inti	Rumah Susun	Rumah Seder-hana	Rumah Inti	Rumah Susun	Rumah Seder-hana	Rumah Inti	Rumah Susun	Rumah Seder-hana	Rumah Inti	Rumah Susun	Rumah Seder-hana	Rumah Inti	Rumah Susun
1 Daerah Istimewa Aceh	92	284	0	0	0	0	0	0	0	0	0	236	0	0	142	0	0	
2 Sumatera Utara	224	1,086	0	0	686	0	0	0	0	0	0	632	2,978	416	232	0	0	
3 Sumatera Barat	0	0	0	0	0	0	74	168	0	130	1,238	0	28	78	84	0	0	
4 Riau	0	0	0	0	0	0	0	0	0	0	0	172	128	0	120	0	0	
5 Jambi	210	392	0	178	638	0	82	436	0	0	0	0	0	0	52	0	0	
6 Sumatera Selatan	554	1,036	0	0	0	0	142	72	0	310	132	2,984	64	181	0	384	0	
7 Bengkulu	484	256	0	0	0	0	0	0	0	120	78	0	136	0	131	0	0	
8 Lampung	58	774	0	0	0	0	0	0	0	0	0	0	5	2	253	0	0	
9 DKI Jakarta	0	0	0	335	0	600	0	0	1,280	0	0	0	0	0	103	0	0	
10 Jawa Barat	352	902	0	1,460	706	180	584	1,084	0	1,910	4,844	0	1,192	1,488	0	6,005	0	
11 Jawa Tengah	130	1,061	0	333	727	0	200	2,310	0	386	944	0	78	104	0	1,181	0	
12 D I Yogyakarta	0	0	0	200	1,518	0	0	0	0	0	0	0	120	0	0	0	0	
13 Jawa Timur	0	0	0	478	2,988	0	738	950	656	0	1,372	0	771	1,074	0	1,118	0	
14 Bali	240	1,774	0	10	148	0	0	0	0	98	72	0	0	0	427	0	0	
15 Nusa Tenggara Barat	0	0	0	0	0	0	0	0	0	0	0	0	130	0	0	0	0	
16 Nusa Tenggara Timur	67	497	0	0	0	0	49	131	0	0	0	0	64	56	0	20	0	
17 Timor Timur	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18 Kalimantan Barat	270	1,652	0	0	0	0	0	0	0	454	0	0	0	0	0	0	0	
19 Kalimantan Tengah	0	0	0	0	0	0	0	0	0	0	0	0	86	28	0	0	0	
20 Kalimantan Selatan	0	0	0	502	304	0	0	0	0	0	0	0	190	0	0	85	0	
21 Kalimantan Timur	258	630	0	0	432	0	0	0	0	0	0	0	25	0	0	25	0	
22 Sulawesi Utara	63	486	0	43	230	0	322	154	0	0	0	0	0	0	0	0	0	
23 Sulawesi Tengah	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	0	
24 Sulawesi Selatan	1,192	1,028	600	171	218	600	0	400	600	0	0	0	943	1,323	0	396	0	
25 Sulawesi Tenggara	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26 Maluku	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	
27 Irian Jaya	0	0	0	0	0	0	148	536	0	0	0	0	74	36	0	125	0	
Sub Jumlah	4,194	11,778	600	3,680	8,523	760	2,339	6,241	1,936	3,408	8,688	2,984	4,996	7,474	416	10,984	15,989	
Jumlah	16,572			12,963			10,516			15,872			12,886			26,937		

) Angka sementara (sampai dengan Desember 1987)

Fig. 2.32 Location of Major Housing Development Sites in DKI Jakarta and Botabek Area



Sarana Jaya supplies two types of buildings, i.e. commercial and non-commercial. Commercial buildings are provided to produce profits, while non-commercial buildings are non-profit making.

Sarana Jaya invests the profit from sale and rental of commercial buildings into development funds for non-commercial buildings. Table 2.17 shows the number of buildings developed by Sarana Jaya. The locations of the major housing development sites made by Perumnas and Sarana Jaya in DKI Jakarta are shown in Fig. 2.32.

Table 2.17 Housing of Sarana Jaya

	Repelita I	Repelita II	Repelita III	Total
Non-Commercial Type				
Land Plot	8,395	5,883	-	14,278
Building	1,740	1,050	608	3,398
Sub Total	10,135	6,933	608	17,676
Commercial Type				
Land Plot	394	276	-	670
Building	385	1,740	148	2,273
Sub Total	779	2,016	148	2,943
T o t a l	10,914	8,949	756	20,619

Source : PERUSAHAAN DAERAH PEMBANGUNAN SARANA JAYA DKI JAKARTA.

4.3.3 Housing Development by Private Sector

Private housing developers, so called Real Estate Enterprises, have contributed to the supply of housing in Jabotabek, but mainly for the high income group.

The sites developed by the private housing developers are located in the fringes of DKI Jakarta concentrated in several areas depending upon marketability. Table 2.18, prepared from REI (Real Estate Indonesia) data, shows the areas in recent years that have been developed by many private housing developers.

Table 2.18 Housing Development Sites in DKI Jakarta

Location	Main Development Site	Target class
Eastern Area	Kramat, Jatibening	Middle class
	Klender, Halim, Cakung	
Northern Area	Kebon Jeruk, Kembangan	Middle & High class
	Kalideres, Joglo	
Southern Area	Tebet Barat, Cinere	Low, Middle & High class
	Cipete Utara, Permai	
Western Area	Sunter, Kebon Jeruk	Middle & High class
	Kalideres, Joglo	

In addition middle class housing development projects have spread around DKI Jakarta in Botabek, such as Tangerang, Bekasi, creating long commuting times of about 1 hour.

Most private housing developers favour the supply of high class housing higher than 100 mil. Rupiah. High profits can be attained and such housing development is more lucrative to developers than low income housing. The locations of the major housing development sites in DKI Jakarta are shown in Fig. 2.32.

4.3.4 Kampung Improvement Programme (KIP)

The Kampung Improvement Programme (KIP), called M.H. Thamrin Programme is being executed since 1969 in Jakarta with the financial assistance of world bank.

The principle of KIP is to establish basic living infrastructure in the dense, unplanned, and unserviced Kampung where access is difficult and environmental conditions are bad, with the minimum disturbance or removal of the residents.

The KIP involves the following development components;

- distribution road
- footpath
- drainage
- water supply
- human waste disposal
- primary school
- health clinics
- recreation area

The achievement of KIP during the Repelita I, II and III periods are as follows:

- a. Repelita I (1969 - 1974)
Executed in 2,400 ha, 89 kampungs, with a total population of 1,200,000
- b. Repelita II (1974 - 1979)
Executed in 5,806 ha, 248 kampungs, with a total population of 1,918,000
- c. Repelita III (1979 - 1984)
Executed in 2,747.5 ha, 206 Kampungs, with a total population of 691,000. Where the KIP projects had been executed during Repelita I and II periods, improvements, called Kampung Rehabilitation, were carried out in 2,237 ha, 82 Kampungs with a total population of 1,082,000.

From the urban planning point of view KIP projects have performed an important role in improvement of the residential environment in DKI Jakarta.

Up to the end of Repelita III period, KIP was executed in a total area of 10,954 ha., which is 16.9% of all of Jakarta. The projects covered 3,809 thousand residents, which is 58.6% of the population of 6,503 thousand persons (census 1980) in Jakarta.

Considering the distribution of KIP projects, it is noted that most of the areas are comparatively old and dense Kampungs with location in areas such as Kecamatan Kemayoran, Cempaka Putih, Tambora, Tebet and Matraman. The location of the KIP areas during Replita I to Replita IV and planned KIP areas are shown in Fig. 2.38.

4.3.5 Other Projects Related to Urban and Housing Development

- a. Guided Land Development Programme (GLD)
A Guided Land Development Programme (GLD) is proposed in the Jabotabek Metropolitan Development Planning (JMDF).

The purpose of the GLD is to provide a sufficient supply of planned, urbanized land so as to control the land price and order growth and to assist in the establishment of low-income residential settlements.

At present two areas in the DKI Jakarta, Kebon Jeruk in West Jakarta and Pulo Gadung in East Jakarta, are under a pilot study by Bappeda. While in the Botabek area, Tangerang and Bekasi are under study by Cipta Karya.

- b. PUSPITEK (Scientific Education and Research Center)
The Government started construction of a Scientific Education and Research Center at Serpong in 1972. At present various research facilities have been established with the objective of developing technological expertise and research.

- c. New Campus of University Indonesia
Relocation of University Indonesia to Depok has started and several departments have settled already in the new site with a total area of 350 ha. Housing facilities for employees and students are being considered for development by the Government in the Depok area.

- d. East and West Primary Centers
The Government of DKI Jakarta has decided that two new primary centers will be developed in East and West Jakarta. It is expected that some of the existing administrative facilities in East and West Jakarta will move to the new sites of the primary centers. The areas will consist of commercial and trading business, administrative facilities and a bus terminal. These centers will provide an opportunity for employment and induce urban development in the east and west directions in Jakarta.

- e. Integrated Urbanization Pole at Bekasi
The Ministry of Public Works has a plan to develop an Integrated Urbanization Pole (POLA PENGEMBANGAN KOTA TERPADU, called PPKT) at Bekasi. A pilot study for this project has been made and recommends that this PPKT is planned for about 35,000 units of new housing development for high, middle and low income groups with a total area of 1,500 ha. It also recommends that the PPKT will be developed as a new satellite city apart from the existing city of Bekasi.

- f. The expansion of Pulo Gadung Industrial Estate
About 100 ha. expansion is planned to the north of the present Pulo Gadung Industrial Estate and an export processing zone is planned for development to the south.

- g. Marunda Timber Processing Estate
A new domestic port development project is planned at Marunda which is located at the east of Tanjung Priok Port.

The Marunda Timber Processing Estate is aimed at leading industry to the hinterland of Marunda Port. Land acquisition of 450 ha. has now been completed.

- h. Industrial Estate in West Jakarta
In order to attract large and medium industries to West Jakarta as well as to Pulo Gadung Industrial Estate in East Jakarta, an industrial estate development plan of about 1,000 ha is under study.

- i. Industrial Estate for Small Industries:
At Penggilingan east of Pulo Gadung, an estate with 2,000 units of capacity for traditional small industries is under construction and already partially operating.

In West Jakarta, an industrial estate development plan for modern small industries, which will be implemented by the private sector, is under study by the Government.

4.4 Affordability

4.4.1 Income Group

According to the Jakarta Master Plan 2005, income group of less than Rp. 200,000/month is forecast to decrease as follows: 94% (1980), 83% (1995) and 72.5% (2005).

Table 2.19 Total Household by income

Income Group (Rp/month)	1980	1995	2005
I 0 - 30,000	17.5	11.5	6.0
II 30 - 55,000	33.5	21.0	18.5
III 55 - 120,000	33.0	34.0	29.0
IV 120 - 200,000	10.0	16.5	19.0
V 200,000 -	6.0	17.0	27.5
Total Household	6.50	9.95	12.00 (million)

Source: Jakarta Master Plan 2005, 1984

Other forecasts by the Jabotabek Metropolitan Development Plan were as follows:

Table 2.20 Household Income in DKI Jakarta

Income Group (Rp/month)	Household		
	1978-83	1978-88	1978-93
Group I 0-30,000	283,240	266,810	200,900
Group II 30-55,000	391,250	382,150	284,680
Group III 55-120,000	341,730	380,560	363,000
Group IV 120-200,000	140,700	172,110	194,510
Group V over 200,000	33,290	72,950	118,760
Total Household	1,190,210	1,274,580	1,161,850

Source: Jabotabek Metropolitan Development Plan

The Socio-Economic Survey on Zone 4 and Zone 5 in December 1988 shows the income distribution as follows (Table 2.21).

Table 2.21 Income distribution in Zones 4 & 5

Income/month (Rp.)	Proportion (%)
1. Rp. 0 - 100,000	60.6
2. Rp.100,000 - 200,000	25.7
3. Rp.200,000 - 300,000	6.9
4. Rp.300,000 - 500,000	5.3
5. Rp.500,000 -	1.4

Source: Socio-Economic Survey of Zone 4 and Zone 5, December, 1988.

4.4.2 Present Housing Situation

1) National level

Housing supply by the central government has generally been undertaken by Perun Perumnas or Permahan DPU. They mainly sell houses which are financed by BTN-KPR. Selling price of Perun Perumnas is set under BTN-regulation. Up to April 1989, the maximum income per month by such regulation was Rp. 300,000, that was the boundary to Papan Sejahtera. The maximum monthly income was changed by the new BTN regulation of 20 April, 1989. The max. income per month is set by type of house as follows:

Table 2.22 Max. Income by Type of House

Type of house	max. Income per month (Rp.)
T12 - T18	Rp. 250,000
T21	Rp. 300,000
T27 - T36	Rp. 450,000
T45 - T54	Rp. 750,000
T70	Rp. 900,000
Flat 21	Rp. 400,000
Flat 36	Rp. 600,000
Flat 36	Rp. 800,000

Note: T means a detached house with land.

A person whose income per month exceeds the max. amount set by BTN regulation by type of house should use Papan Sejahtera for financial source. These important BTN and Papan Sejahtera financial support schemes are described in detail in the next section 4.4.3.

2) Local Government level

DKI Jakarta has an executing body for housing development such as Sarana Jaya. Some other local governments also have establishments similar to Sarana Jaya. Concerning residential housing, Sarana Jaya mainly supplies rental houses especially for the low income group. The classification of income group for Sarana Jaya applicants and the monthly income are as follows:

Table 2.23 Classification of Income Group by Sarana Jaya

Income Group	max rent	monthly Income
Very low	less than Rp. 1000/day	Rp.100,000
Low	less than Rp. 2000/day	Rp.100-200,000
Middle	less than Rp.15000/day	Rp.200-500,000
High	more than Rp.15000/day	Rp.500,000

Actual rental fee for 2 story flats in 1988 was Rp. 900/day/14m² such as Ceng Kareng, Pondok Kelapa, Pondok Bambu and Cipinang. In the case of 4 stories flat in 1988, Tambora F18 was Rp. 1150/day and Penjaringan was as follows:

Table 2.24 Average Rental Fee in Penjaringan

Type	People suffered by fire	General
F18	Rp.1,500/day (Rp.150,000/month)	Rp.2,250/day (Rp.225,000/month)
F36	Rp.2,500/day (Rp.250,000/month)	Rp.4,600/day (Rp.460,000/month)
F54	Rp.4,600/day (Rp.460,000/month)	Rp.7,000/day (Rp.700,000/month)

note: Affordable income is shown in ().

3) Private Sector

Recent tendency of housing for sale by private sector is shown in Fig. 2.33 according to the data of REI (Real Estate Indonesia). The tendency is as follows:

- The price class of less than Rp. 10 mil. is decreasing.
- The price class of Rp. 10 - 20 mil. is increasing.
- The price class of Rp. 20 - 50 mil. is decreasing.
- The price class of more than Rp. 50 mil. is increasing.

This means the housing levels for the income group of less than about Rp. 300,000/month and also about Rp. 500,000 - 800,000/month are decreasing. On the contrary, the housing levels for the class of about Rp. 400,000 - 500,000 and that of more than Rp. 1,500,000/month are evidently increasing.

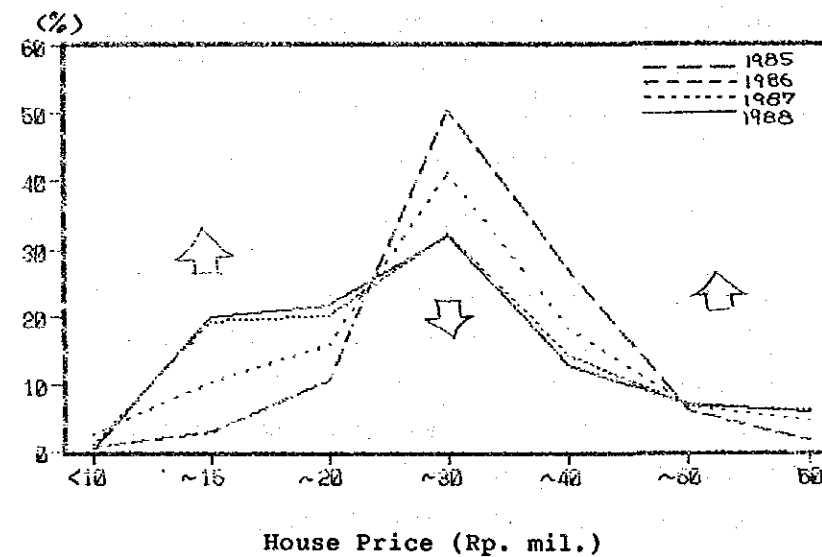


Fig. 2.33 Tendency of housing sales

When the private developers sell houses, they can also use BTN or Papan Sejahtera. But although BTN and Papan Sejahtera can be applied to construct houses for sale, they cannot be applied to construct rental houses and commercial buildings.

Rehabilitation and reconstruction of houses by individuals for their own use also do not qualify for BTN loan. In the case where cooperatives are organized by a group of individuals to construct houses, BTN-KPR loan may be possible depending upon

the scale of construction. However There are no fixed regulations covering this case yet, and approval is subject to various conditions and detailed negotiations.

These matters should be taken into consideration for urban renewal in Zone 4 and Zone 5. BTN said that they were under examination or would be examined in the near future to formulate concrete regulations concerning the financing for commercial floors, rental houses and the cooperative executing bodies.

In other cases, private developers have their own financing system jointly with private banks to meet the demand of individuals to buy houses. One example is as follows:

- Type of house : 50 m²/house and 108 m²/land
- Location : DANAU SELATAN - BONALI
- Total Price : Rp. 25,000,000.-
- PPN : Rp. 2,327,000.-
- Total : Rp. 27,327,000.-
- Down payment : 1. Rp. 4,099,000.-
2. Rp. 4,099,000.-
3. Rp. 4,099,000.-
- Total installment: Rp. 15,030,200.-
- Interest of loan : 11% / year
- Period of loan : max. 2 years
- Installment : 12 months - Rp. 1,390,000/month
Per month : 15 months - Rp. 1,140,000/month
: 18 months - Rp. 973,000/month
: 21 months - Rp. 854,000/month
: 24 months - Rp. 764,000/month

4.4.3 Housing Development Cost

In general, construction cost is increasing year by year especially due to increasing material cost, and accordingly affordability of purchasing house is gradually becoming lower.

The housing development cost generally includes the following items:

- Land acquisition cost
- Land development cost comprising;
 - . Demolition
 - . Grading and stormwater drainage
 - . Utility service network provision
 - . Road and path
 - . Landscape/gardening
- Building construction cost
- Cost and fee for planning and design
- Contingencies
- Project administration cost including application cost for HPL, HGB, etc.

1) Land Acquisition Cost

Land acquisition cost differs by location. Recent housing development projects are mostly located in the suburbs of Jakarta due to cheaper land prices than the city center.

2) Land Development Cost

Since unit cost for land development per land area differs by items included in it, the following three development types by size are set for rough cost estimation:

a. Large Scale Development

This development type covers all items shown above and the land development cost is similar to the Zone 1 development especially including main artery roads and main lines of utility services.

In this case the unit cost is roughly Rp. 23,000/m².

b. Middle Scale Development

This development type is for a middle scale development site of around 3 to 10 ha. including collector road level and secondary lines of utility services.

The unit cost in this case is roughly Rp. 10,000/m².

c. Small Scale Development

This development covers just one or two house buildings including only access road(s) and connection line of utility services. In other words, development is only for external works in building development site or gardening level.

The unit cost in this case is roughly Rp. 8,000/m².

3) Building Construction Cost

Table 2.25 shows the unit cost for building construction in Jakarta in general.

The costs shown in Table 2.25 are discussed below:

a. Unit costs of the individual houses of one or two stories are shown only for low or middle class houses but there are many high class housing development with much higher costs.

b. For Costs of Apartment House,

- Perumnas Standard is estimated by the Study Team.
- Sarana Jay Standard is assumed according to the Study Team for buildings in Cipinang project.
- BTN Standard is by hearing from BTN.

c. Cost of office building is shown for reference purpose. It is generally said that unit cost of high rise buildings being constructed along Jl. Sudirman is mostly Rp. 1,000,000/m².

4) Other Costs

If other costs relating to the development, such as planning and design fee, administration fee etc., are included, the total housing development cost will be 110 to 120% of the total costs of land development and building construction in case compensation costs are not needed.

Table 2.25 Building Construction Cost

Item		Unit Construction Cost (Rp x 10 ³ /m ²)	Remarks	
Apartment House	Perumnas Std.	125- 150	T21/T27/T36/T45/T54	
	BTN Std.	150- 200	T45/T54/T70	
	Papan Sejahtera Std.	200- 400	T45/T54/T70	
Individual House with Land of 1-2 stories	Perumnas Std.	240	4 stories	F36
		375	8 stories	
	Sarana Jaya Std.	100- 150	F15/F18 2 stories type	
	BTN Std.	385	F21	4 stories
400		F36		
Office building		700-1,200		

4.4.4 Condition of Housing Loan

1) Financial Body

Concerning the housing financial support, the following three categories should be mainly discussed:

- (1) BTN (Bank Tabungan Negara)
- (2) PT. Papan Sejahtera
- (3) Other bank loan

These financial supporting systems are the most essential matters for the housing demand/supply.

2) BTN (Bank Tabungan Negara)

BTN was established in 1968 by the Government of Indonesia. In order to provide housing supply especially to the low income group, the Government established Perumnas as the main public housing supplier for low income group and, at the same time, designated BTN as the financing bank for housing acquisition in 1974.

KPR (Kredit Pemilikan Rumah), which is a loan to individuals to acquire housing has officially applied from 1979 to Perumnas.

BTN cooperates with the post office for TABANAS (Tabungan Bank National), which is a programme to facilitate saving by people through the post offices in rural areas.

The conditions for BTN Housing Loan, from April 1989, are as follows.

- a. Indonesian nationality
- b. Do not own house
- c. Age between 21 and 65 years
- d. Monthly income for KPR : up to Rp. 900,000
for KPFSB: up to Rp. 150,000
- e. Government officer who has a registrate number (NIP/NPR), soldier or worker of a private enterprise who has been working for more than 5 years.
- f. Applicants must make a downpayment which is the difference between the price of house type and KPR-BTN loan amount.
- g. Area of house is min. 12 m² and max. 70 m².
- h. House durability should exceed 20 years.
- i. Land area of detached house is min. 60 m² and max. 200 m². Land area of maisonette type is min. 45 m².
- j. Conditions of loan are shown in Section 3.3 in CHAPTER III.

3) P.T. Papan Sejahtera

P.T. Papan Sejahtera was established in 1980 to provide financing for acquiring housing for the people whose income is more higher than BTN applicants. P.T. Papan Sejahtera is a joint concern, which is organized by Bank of Indonesia, P.T. PDFCI (private financing company), P.T. REI Sewindu, some insurance companies and some overseas organizations.

The Papan Sejahtera loan regulations are as follows:

- a. Regular monthly income is minimum Rp. 300,000 and maximum Rp. 2,000,000.
- b. Max. house price
- Jakarta : up to Rp. 90,000,000
 - Other area : up to Rp. 75,000,000
- c. Condition
- to finance in order to construct housing on own land
 - to improve the house, in which case maximum loan amount is 60% of house price (value)
 - to buy a house, in which case maximum loan amount is
 - * fixed income group : 90% of house price
 - * non-fixed income : 80% of house price group
 - Downpayment ; fixed income : 10%
non-fixed income : 20%
 - Max. monthly installment is maximum 40% of monthly income.
 - Interest: fixed income : 20%
(5-20 years)
non-fixed income : 20%
(5-15 years)
 - Age is less than 65 years.
 - Usually the major loan period is 15 years.

4) Other Financial Sources

An applicant who cannot qualify for either BTN or P.T. Papan Sejahtera, for example whose income is larger than the income ceiling stipulated in P.T. Papan Sejahtera conditions, can be financed by Private commercial bank or some government bank. This kind of loan is called "Common Credit". The interest is usually 24 - 30%.

4.4.5 Selling Price

Selling Price of house mainly depends upon the location and its land price, construction cost and its finishing. Therefore, it cannot be compared in general. In this section, some examples picked up for reference/information are as follows:

- Kebon Kacang by Perumnas (1986)

TYPE	General Price
F21	Rp. 7,975,000
F42	Rp. 13,750,000
F51	Rp. 16,500,000

- Klender III by Perumnas (1984)

TYPE	Selling Price
F36	Rp. 5,247,000
F48	Rp. 7,123,000
F54	Rp. 7,928,000

- Pondok Indah by Private Developer (1988)

TYPE	Selling Price
T111/136	Rp. 57,976,000
T110/153	Rp. 61,318,000
T127/170	Rp. 70,380,000

Note: Land price is Rp. 200,000 - 280,000/m²
(not including PPN 8%)

- Pumi Indah by Private Developer (1988)

TYPE	Selling Price
T 90/140	Rp. 38,803,000
T100/152	Rp. 42,182,000

Note: Land price is Rp. 127,500/m²
(not including PPN 8%)

- Bukit Cinere Indah by Private Developer (1988)

TYPE	Selling Price
T105/300	Rp. 50,050,000
T143/301	Rp. 55,849,000

Note: Land price is Rp. 86,900/m²
(not including PPN 8%)

- Bumi Bintaro Permai (1988)

TYPE	Selling Price
T109/120	Rp. 53,992,000
T 89/140	Rp. 53,945,000
T132/160	Rp. 69,853,153
T200/173	Rp. 88,705,000

- Taman Impian in Ancol by private developer (1988)

TYPE	Selling Price
T145/250	Rp. 105,000,000
T130/180	Rp. 85,000,000

The last five cases are financed by PD. Papan Sejahtera (downpayment min. 20% and max. 15 years). And also, some of these are financed by BUN City BANK, where downpayment is Min. 30% and 2-10 years. In the case of lease for customers, downpayment is min. 50% and max. 2 years.

In the case of rental for commercial purpose, Project Senen is as follows:

- Project Senen consists of 4 blocks.

Block I & II: 4 stories

1st story Textile, electronics, clothes, hardware

2nd story Textile, clothes, shoes
 3rd story Book shop & Stationary
 4th story Department store
 Block III : Market
 Block IV : Shops & Car Services/spare parts

- Rental Payment is for a 10 year period contract.

- There are 3 ways of payment: (Unit Rp./m²)

Type of Payment	Lt. 1st	Lt. 2nd	Lt. 3rd	Lt 4th
1. Payment in advance for 10 years	Rp.103,000	Rp. 95,000	Rp.25,000	Rp.12,500
2. 5 year payment (each year for 2 years rental fee)	Rp.129,000	Rp.113,000	Rp.31,000	Rp.15,000
3. Per year	Rp.165,000	Rp.144,000	Rp.37,000	Rp.18,000

- Minimum space : 1.5m x 1.5m (2.25m²)

- Parking area : 500 cars

- Maintenance Cost: Rp. 75,000,000/month

4.4.6 Classification of Income Group

According to the already mentioned income distribution, income classification for housing development and conditions of financing, it is not clear to identify income group boundaries such as the definition for low income group etc.

The low income group can be vaguely classified by housing affordability, Table 2.26, as following. The low income group is less than about Rp. 300,000/month and high income group is more than about Rp. 1,000,000/month. Therefore, middle income group is Rp. 300,000 - Rp. 1,000,000/month.

Table 2.26 Income and House Type

Flat Type	BTN	P.Sejahtera Penjeringan		BTN	House Type
F16		100,000			
F18		250,000	225,000		
F21	400,000			300,000	T21
F27-36	600,000	500,000	460,000	450,000	T27-36
F45-54				750,000	T45-54
F70	800,000		700,000	900,000	T70