

## 2.3 SUMMARY OF EXISTING DEVELOPMENT PLANS

### 2.3.1 SUMMARY OF NATIONAL DEVELOPMENT PLAN

The national development context described by the Fourth Five-Year National Development Plan (Repelita IV) is summarized as follows:

The aim of Repelita IV (Fourth Five-Year National Development Plan) is:

- To improve the living standard, intelligence and welfare of the entire population in a more equitable and just manner
- To lay a solid foundation for further development

The target of Repelita IV in line with the general pattern of long-term development is:

- To promote economic development with emphasis on agriculture to continue efforts towards food self-sufficiency and to emphasize fostering industry that will produce manufacturing machines which will be further expanded in the next Repelita

The development trilogy for the purpose of continuing and refining development policies is:

- The equitable distribution of development and its results on the route to social justice for the entire population
- High economic growth
- Sound and dynamic national stability

The aim of the regional development of DKI Jakarta with respect to the National Development Framework is:

- As the metropolitan city of Indonesia, its development should be combined with that of its surrounding area (Botabek region)

Policies on regional development of DKI Jakarta are:

- To develop the ability of the government administration in order to prepare overall urban facilities
- To formulate a legislative system for Jabotabek development in order to eliminate administrative obstacles in planning and plan execution
- To strengthen transportation capacity of the railway in order to relieve heavy traffic from arterial roads
- To start tackling the major problems such as flood prevention, drainage system, and urban sanitation

### 2.3.2 SUMMARY OF JABOTABEK DEVELOPMENT PLAN 2005

The existing Jabotabek Development Plan 2005, which is expected to be authorized by the President, was established through the revision of the Jabotabek Metropolitan Development Plan (JMDP) proposed by a British Consultant in 1980.

The JMDP was undertaken in accordance with Presidential Instruction No. 13 of 1976, which calls for the Ministries of EKUIN (Economy, Finance and Industry), Home Affairs and Public Works, in conjunction with the Governments of DKI Jakarta and West Java, to adjust the development planning of the Jabotabek area.

The purpose of the JMDP was to continue the planning process begun in 1973, taking into account the development policy and principles in the Presidential Decree and to identify the critical tools for the implementation of the chosen expansion strategy and to prepare a preliminary investment program and sectional policies for review by the Government.

#### POPULATION POLICY AND URBAN STRUCTURE

Dispersion of the population from DKI Jakarta is an important issue. The plan shows that the forecasted future population is 23.5 million in the whole Jabotabek Region, of which 12.0 million is estimated in DKI Jakarta and 11.5 million in Botabek in 2005. This population for DKI Jakarta is regarded as the maximum capacity considering ecological and physical conditions.

In the context of population dispersion, the encouragement of potential sub-centers as self-sustainable towns in Botabek is stressed. In the eastern area, these are Bekasi, Cibitung and Cikarang, and in the western area, Tangerang, Serpong, Cikupa and Balaraja.

Depok, which is a potential town in the southern area, is planned as a sub-center related to Jakarta urbanization and is not necessarily aimed to be a self-sustainable town.

In order to satisfactorily link these sub-centers, emphasis is placed on development of the outer ring road.

#### POLICIES FOR INDUSTRIAL DEVELOPMENT

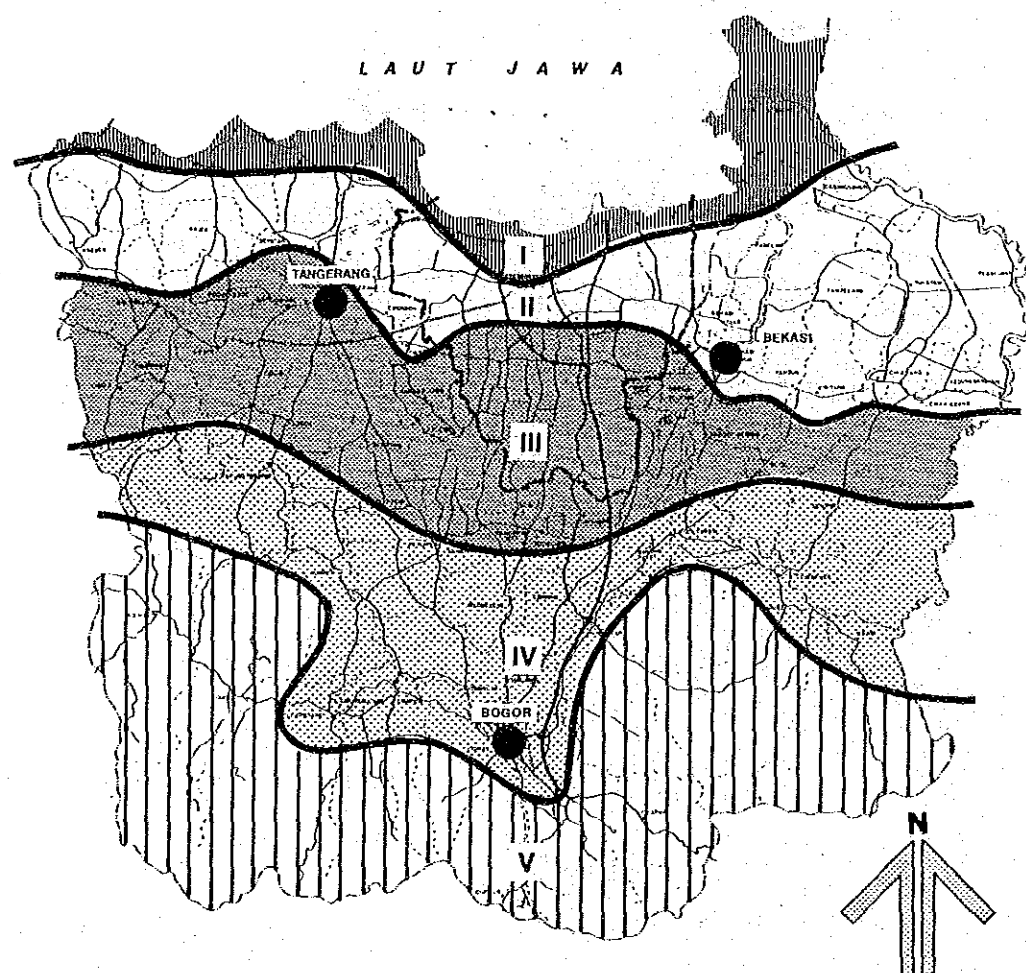
To encourage strategic industrial developments at the intersections between principal roads, the regional freeways in particular are expected to be developed along with the development of sub-centers.

With regard to the regional structure development, a new railway line is proposed to transport coal from Merak and cement from Cibinong to industrial areas and to the Tanjung Priok Port.

## DEVELOPMENT STRATEGIES

The Jabotabek area is divided into five strategic development zones as shown in Fig. 2.3.1. Each zone has a general direction for future development.

In this zoning system, agricultural production is still stressed, especially in the potential areas of zone II, in order to produce food to supply the metropolitan area.



### POLICY IMPLICATION

- Zone I : Tourism and Seaboard Activities, Avoidance of Urban Development
- Zone II : Agricultural Intensification (Irrigation), Limited Urban Development
- Zone III : Major Urban Development, Agricultural Intensification
- Zone IV : Limited Urban Development, Agricultural Intensification
- Zone V : Upland Forest Plantations, Recreation and Conservation, Avoidance of Agricultural Intensification

Fig. 2.3.1 ZONING SYSTEM PROPOSED BY JABOTABEK DEVELOPMENT PLAN

## OTHER MAJOR ISSUES

The following are notable issues discussed in the development plan:

- Decentralization of accumulated economic activities in Jakarta should be realized with encouragement of potential cities located within the Botabek area
- New allocations for the University of Indonesia and other higher educational facilities are placed in the Depok area
- Studies of river utilization and environmental aspects are awaited, especially for the surrounding areas of Cibinong
- Truck terminal developments are expected which will be more comprehensive than truck parking terminals

Table 2.3.1 POPULATION FRAMEWORKS IN JABOTABEK

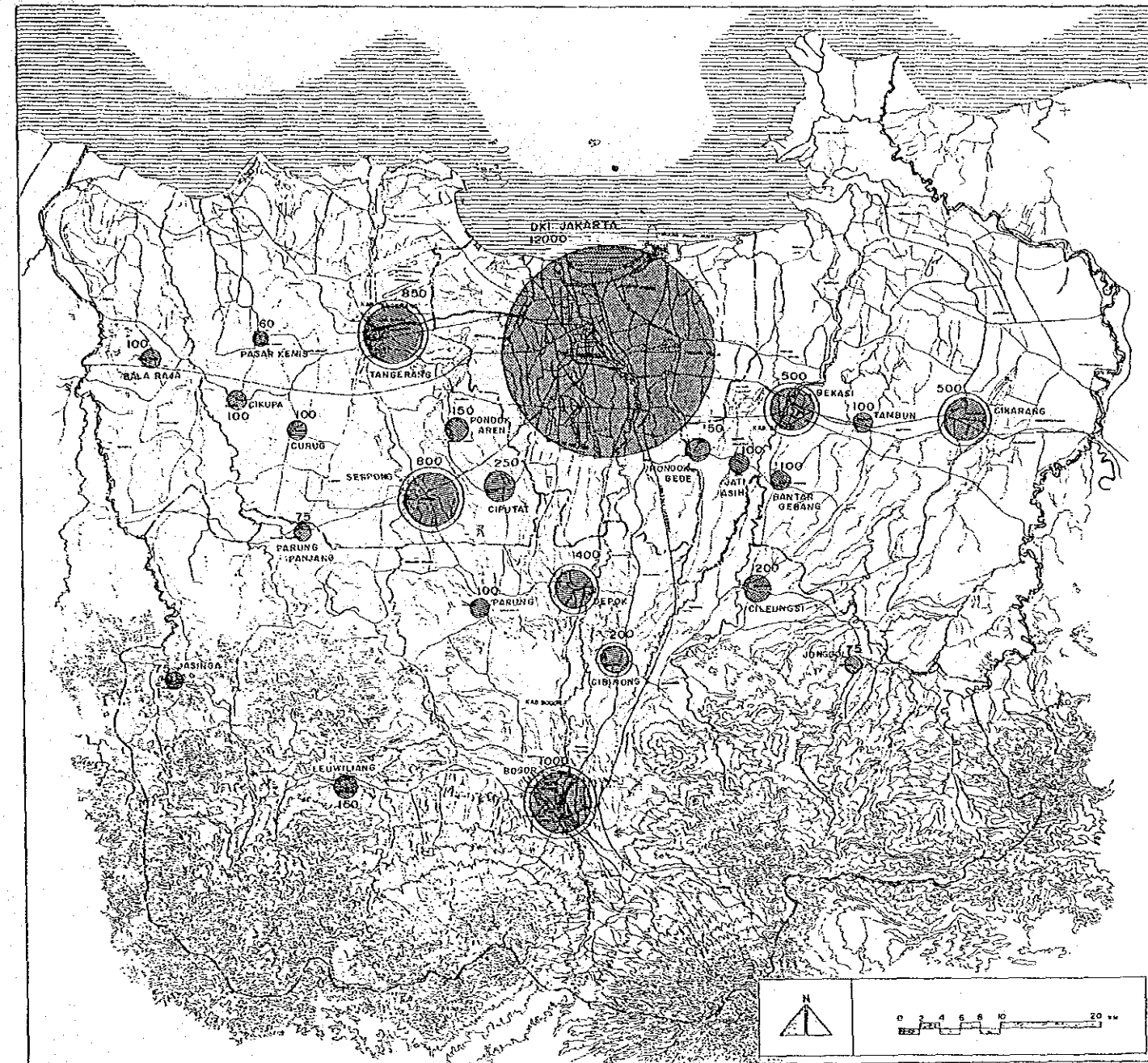
Unit: 1,000 Persons

	Census Population 1980	Projected Population by Jabotabek Development Plan 2005	Annual Growth Rate (%)
JABOTABEK	11,916 (100.0%)	23,500 (100.0%)	2.8% p.a.
DKI JAKARTA	6,503 (54.6%)	12,000 (51.1%)	2.5% p.a.
BOTABEK	5,413 (45.4%)	11,500 (48.9%)	3.1% p.a.
- BOGOR (Kab. + Kdy.)	2,741 (23.0%)	4,870 (20.7%)	2.3% p.a.
- TANGERANG (Kab.)	1,529 (12.8%)	3,730 (15.9%)	3.6% p.a.
- BEKASI (Kab.)	1,143 (9.6%)	2,900 (12.3%)	3.8% p.a.

Table 2.3.2 DISTRIBUTION OF FUTURE POPULATION IN BOTABEK

Unit: 1,000 Persons

BOTABEK AREA		POPULATION 2005
<b>KOTAMADYA AND KABUPATEN BOGOR:</b>		
Kotamadya Bogor	1,000	( 20.6%)
Depok	400	( 8.2%)
Gibinong	200	( 4.1%)
Leuwiliang	150	( 3.1%)
Parung	100	( 2.1%)
Cimanggis	-	-
Citeureup	-	-
Cileungsi	200	( 4.1%)
Jasinga	75	( 1.5%)
Cibungbulan	-	-
Parung Panjang	75	( 1.5%)
Jonggol	75	( 1.5%)
Subtotal of Urban Population	2,275	( 46.7%)
Other Rural Center Population	630	( 12.9%)
Village Population	1,965	( 40.4%)
<b>Total of Kotamadya and Kabupaten Bogor</b>	<b>4,870</b>	<b>(100.0%)</b>
<b>KABUPATEN TANGERANG:</b>		
Tangerang	850	( 22.8%)
Serpong	800	( 21.4%)
Balaraja	100	( 2.7%)
Cikupa	100	( 2.7%)
Pasar Kemis	60	( 1.6%)
Ciputat	250	( 6.7%)
Pondok Aren	150	( 4.0%)
Curug	100	( 2.7%)
Ciledug	-	-
Tigaraksa	-	-
Subtotal of Urban Population	2,410	( 64.6%)
Other Rural Center Population	360	( 9.7%)
Village Population	960	( 25.7%)
<b>Total of Kabupaten Tangerang</b>	<b>3,730</b>	<b>(100.0%)</b>
<b>KABUPATEN BEKASI:</b>		
Bekasi	500	( 17.3%)
Cikarang	500	( 17.3%)
Pondok Gede	150	( 5.2%)
Jatiasih	100	( 3.4%)
Bantar Gedang	100	( 3.4%)
Tambun	100	( 3.4%)
Lemah Abang	-	-
Subtotal of Urban Population	1,450	( 50.0%)
Other Rural Center	340	( 11.7%)
Village Population	1,110	( 38.3%)
<b>Total of Kabupaten Bekasi</b>	<b>2,900</b>	<b>(100.0%)</b>



**LEGEND**

● PRIMARY CENTER

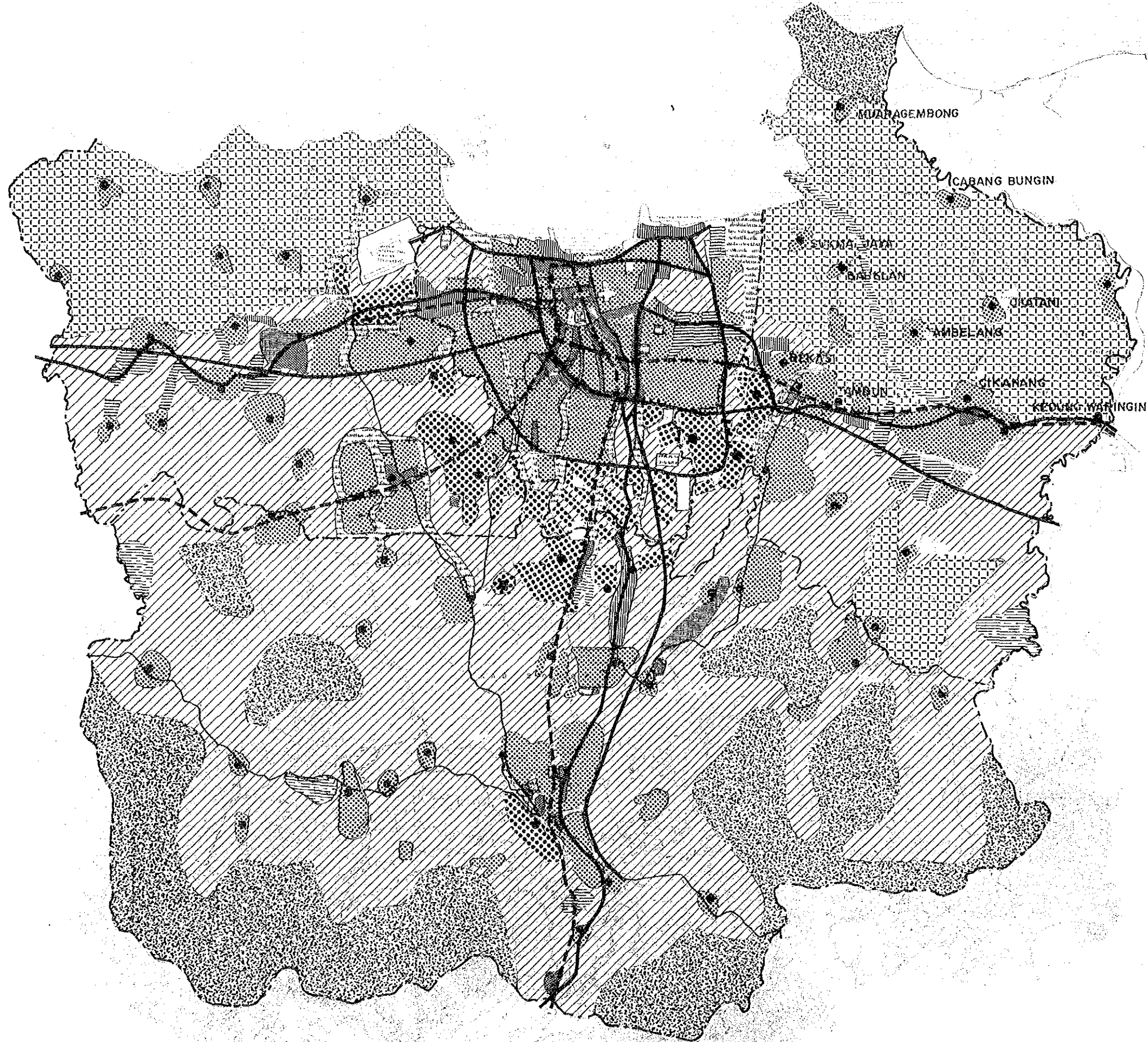
● SECONDARY CENTER

UNIT : 1,000 PERSONS

Source : JABOTABEK DEVELOPMENT PLAN 2005, BKSP JABOTABEK

Fig. 2.3.2 POPULATION DISTRIBUTION IN JABOTABEK, 2005

Fig. 2.3.3  
 JABOTABEK DEVELOPMENT PLAN



**LEGEND**

- +---+ DKI JAKARTA BOUNDARY
- KABUPATEN BOUNDARY
- PRIMARY ARTERIAL ROAD
- PRIMARY COLLECTOR ROAD
- - - RAILWAY
- KECAMATAN CENTER
- [Cross-hatch pattern] SETTLEMENT
- [Dotted pattern] SETTLEMENT WITH CONTROL
- [Diagonal lines /] COMMERCIAL AND BUSINESS
- [Horizontal lines] INDUSTRIAL DEVELOPMENT AREA
- [Vertical lines] LIMITED INDUSTRIAL AREA
- [Diagonal lines \] INDUSTRIAL AREA WITHOUT WATER POLLUTION
- [Stippled pattern] GREEN BELT AND RECREATION PARK
- [Dotted pattern] CONSERVATION FOREST
- [Checkered pattern] IRRIGATED FARM
- [Empty box] SPECIAL USE BY GOVERNMENT
- [Horizontal lines] LAKE
- [Diagonal lines /] GARDEN AND DRY-FIELD



**ARTERIAL ROAD SYSTEM  
 DEVELOPMENT STUDY  
 IN JAKARTA METROPOLITAN AREA**

2.3.3 SUMMARY OF DKI JAKARTA STRUCTURE PLAN 2005

PREMISE

The DKI Jakarta Structure Plan 2005 proposes the future urbanization of Jakarta for the next 20 years in order to keep the continuity of the Jakarta Master Plan 1965-1985 which was established 20 years ago.

The overall plans concerning this are as follows:

- "Guidance for arrangement of planning and management of development" on the basis of an ordinance under the Ministry of Interior called, "Regional Development Planning System"
- Jabotabek Master Plan

DKI Jakarta is regarded as being the city for which it is necessary to develop the urban functions as a capital city and/or as a central city in the large region of Central and West Java and South Sumatra. The previous Jakarta Master Plan 1965-1985 was landuse oriented, but the Master Plan DKI 2005 changes to the "action oriented type".

MAIN POLICIES FOR DEVELOPMENT

The main policies determined to achieve the development goals are as follows:

- Population  
Not over 12,000,000 persons in 2005
- Land development  
Sufficient land development for an increase of 260,000 persons per year
- Population dispersion  
Especially in relation to the distribution of work places
- Social group with low income  
To promote social service for the low income group  
To minimize traffic cost so that there are more opportunities for low income groups to obtain housing in new development areas  
To reduce to 24.5% the group with an income less than Rp.55,000 in 2005 (Refer to Fig. 2.3.4)

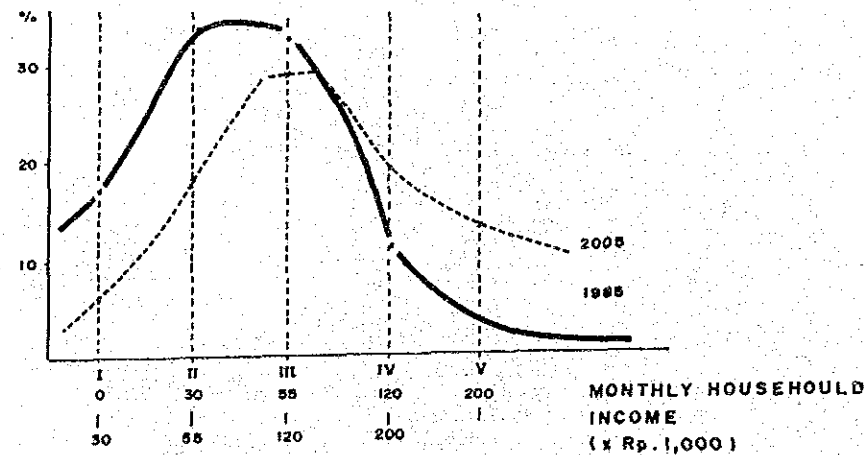
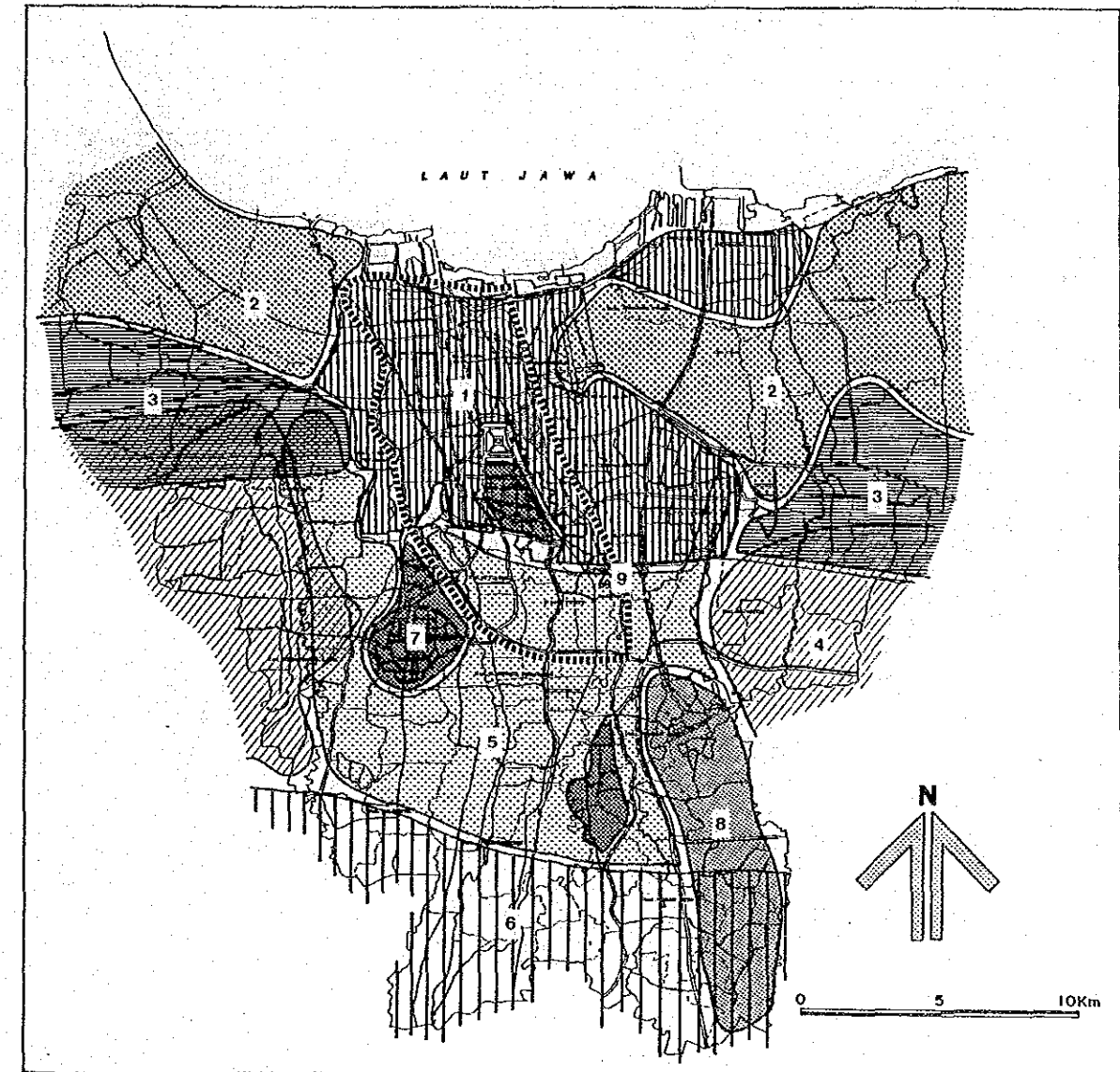


Fig. 2.3.4 ESTIMATED INCOME DISTRIBUTION PATTERN



LEGEND :

- 1 Limitation of growth in the short term
- 2 Postponement of development until completion of the infrastructure
- 3 Proposed industrial development area
- 4 Priority for new settlement development
- 5 Main infill area until the density is 300/400 persons/ha
- 6 Strictly controlled area for development with low density
- 7 Limited new development
- 8 Special zone for the Government
- 9 Limited traffic zone

Fig. 2.3.5 BASIC DIRECTION FOR DEVELOPMENT

- Environment  
To control environment aggravation to the minimum  
To minimize the use of underground water in the north and to maintain the water source in the south
- Development  
To promote urban development in the east and west direction and to limit urban growth in the south
- Botabek  
To integrate with the development policies of the Botabek region
- Basic direction for development (Refer to Fig. 2.3.5)

#### STRUCTURE PLAN

Based upon the main policies explained above, the DKI Jakarta Structure Plan provides the planning frames for the specific development zones and activity centers. The activity centers in Jakarta, in general, are classified into the following forms:

Primary center	(SP)
Secondary center	(SS)
Tertiary center	(ST)
Local center	(SL)

#### PRIMARY CENTER (SP)

In parallel with the east-west direction development policy, new primary activity centers are expected to the east and west of Jakarta. Therefore, there would be six old primary centers and two new primary centers:

1. Glodok Primary Center
2. Tanjung Priok Primary Center
3. Senen Primary Center
4. Tanah Abang Primary Center
5. Jatinegara Primary Center
6. Manggarai Primary Center
7. West Primary Center
8. East Primary Center

#### SECONDARY CENTER (SS)

The secondary centers cover local services with approximately the scope of a kecamatan. At the secondary centers, the following activities will be induced:

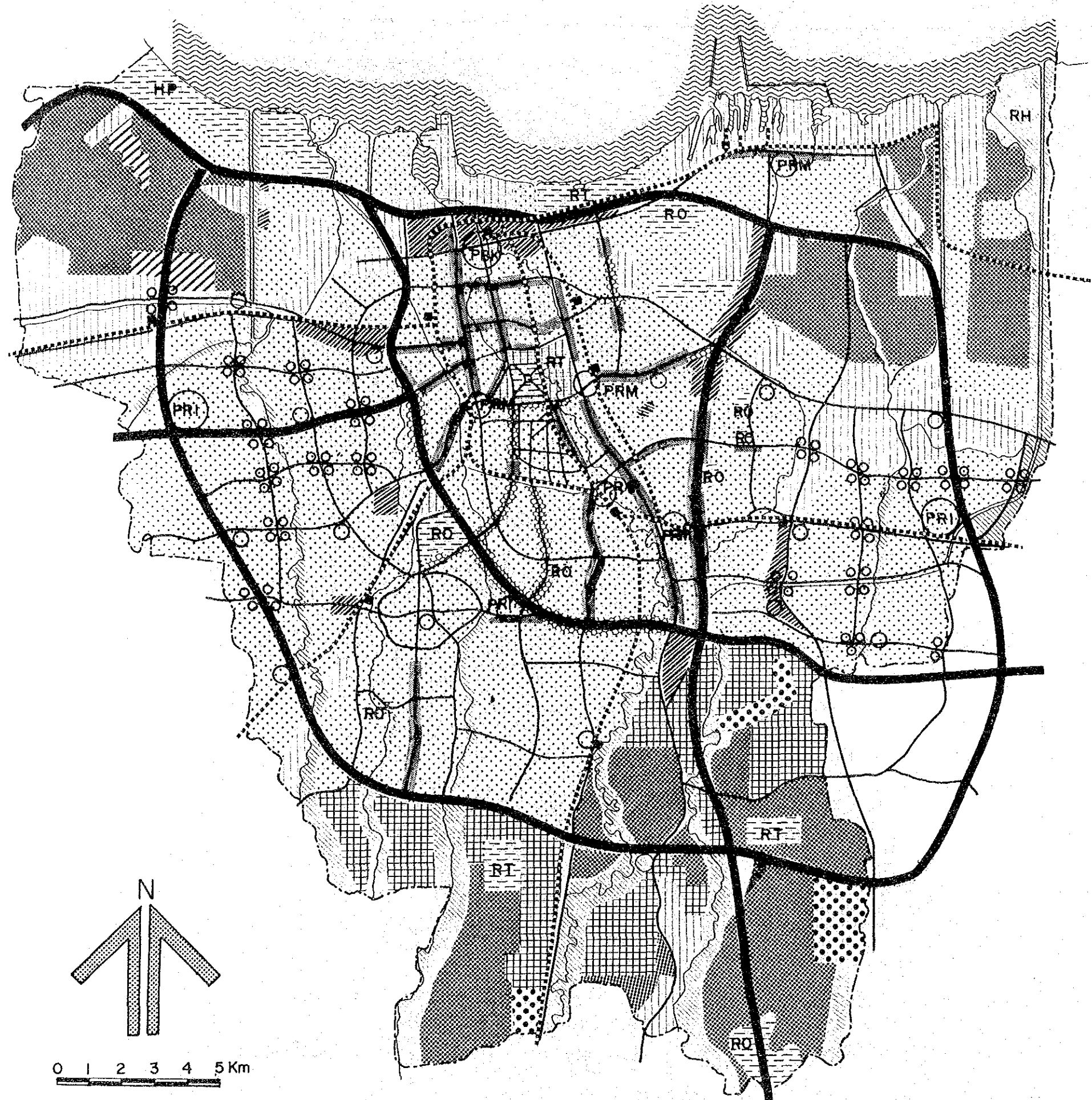
- . The formal and informal sector will be arranged in balance
- . The formal sectors are expected to play a sufficient role in these centers
- . Even the small formal sectors should also be able to play a rather sufficient role

#### TERTIARY CENTER (ST) AND LOCAL CENTER (SL)




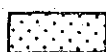
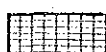
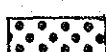



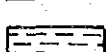

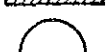



The service coverage of both of these centers is more of a special local service; the tertiary centers cover the inhabitants of the village (kelurahan), while the local centers are the centers of the neighborhood.

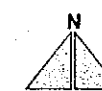
Based upon the development policies mentioned above and the urbanization pattern for DKI Jakarta, the DKI Jakarta Structure Plan 2005 was established as shown in Fig. 2.3.6.

Fig. 2.3.6  
DKI JAKARTA  
STRUCTURE PLAN 2005



LEGEND

-  Commercial and Business Area
-  Commercial and Business Area with Low Density
-  Industrial and Commercial Mixed Area
-  Residential Area
-  Public Facility Area
-  Special Government Area
-  Industrial Area
-  Agriculture Area with Low Density Housing
-  Agriculture Area
-  Recreation Area
-  Reserved Area for Flood Prevention
-  Eastern and Western Region Commercial Center
-  District Commercial Center
-  Neighbourhood Commercial Center
- PRI Priority for Expansion
- PBK Limited Expansion with Improvement
- PRM Limited Expansion with Renewal
- RT Recreation/Garden
- RO Recreation/Sport
- RH Recreation Reserved Forest
-  Developing Center in the Crossed Area



**ARTERIAL ROAD SYSTEM  
DEVELOPMENT STUDY  
IN JAKARTA METROPOLITAN AREA**

## 2.4 DEVELOPMENT OBJECTIVES AND STRATEGIES

### 2.4.1 SUMMARY OF DEVELOPMENT OBJECTIVES

The ARSDS receives the development goals and objectives of the Jabotabek Development Plan 2005, the DKI Jakarta Structure Plan 2005 and their guidelines for preparation of action plans. These are referred to as the basic guidelines in order to review regional and urban development strategies and transportation development policy in the ARSDS. Table 2.4.1 shows the summary of the development goals and objectives.

Table 2.4.1 DEVELOPMENT GOALS AND OBJECTIVES

Regional Objectives	Jakarta Metropolitan Objectives	DKI Jakarta Objectives
1) Accelerate the level of economic growth in the Botabek kabupatens relative to that of DKI Jakarta, and as a consequence activate a greater degree of intra-regional equity	The key objectives for development within the Jakarta Metropolitan Area in addition to those identified at a regional scale are as follows:	Additional objectives for DKI Jakarta are as follows:
2) Accelerate the level of economic growth in other regions of the nation, and as a consequence reduce the growth in Jabotabek and particularly DKI Jakarta, to achieve a greater degree of inter-regional equity	1) Improve regional distribution services and induce their development to ensure the functioning of the regional development mechanisms of the Jakarta Metropolitan Area	1) To implement several policies to limit the growth of the population of Jakarta so as not to exceed 12 million in the year 2005
3) Promote the economic and social betterment of the urban and rural poor of the region	2) Further relieve the population increase in DKI Jakarta by inducing higher than normal rates of population growth and employment creation in the main sub centers of the Jakarta Metropolitan Area	2) The implement procedures of municipal land development so as to meet the city's growth demand which is increasing at an average of 260,000 persons per annum
4) Ensure the protection and development of key environmental resources, particularly the water cycle, and ensure equity of use for agricultural and urban purposes, and increase the availability to the urban poor	3) Guide and induce development into preferred geographical zones away from environmentally sensitive zones, and make these development mechanism complementary where possible	3) To promote distribution of inhabitants and related work places
5) Ensure equitable access to improved transportation within the region such that farmers and industrialists alike can benefit from a widened market opportunity	4) Relieve pressure on the environmental conditions, particularly those for low income urban households, so as to undertake the needed short term improvements, and ensure long term environmental protection of key resources (in particular the water cycle)	4) To promote economic growth and social welfare opportunities, especially among the low income social groups
6) Accelerate the creation of non-farm employment opportunities in rural areas to augment farm incomes	5) Generate the creation of sub-regional service centers away from DKI Jakarta (in particularly for Kabupatens Tangerang and Bekasi) so as to provide more comprehensive services to the local Kabupaten population	5) To expand housing opportunities for low income groups by minimizing transportation costs and by preparing land and an infrastructure for new city growth
7) Accelerate the improvement of health and education services in Botabek and rural service centers so as to improve social conditions	6) Accomplish the above at the least possible public cost, with maximum utilization of private development capital and minimum practical levels of short-term commuting into DKI Jakarta	6) To create a sound and balanced environment by minimizing the poor conditions of densely populated areas and by preventing further environmental damage
8) Increase efforts to achieve self-sufficiency in agricultural produce for the urban and rural population growth of the region		7) To minimize the use of ground water in the northern region and to maintain the water source in the southern region
9) Improve the financial and administrative capabilities of the kabupatens of Botabek in order to undertake and manage development growth		8) To limit additional growth in the northeast and north and to prevent growth southwards
10) Increase the recovery of development costs from the household and the firm while keeping public investment in such development expenditures to a minimum practical level		9) To synchronize the development and management of the region with the surrounding area (Botabek)



## 2.4.2 REVIEW OF DEVELOPMENT STRATEGIES

The regional and urban development strategies to achieve the development goals and objectives were received through the analysis of the existing urban problems and the future prospect of the region. The review identified weak points of the existing development strategies proposed in the Jabotabek Development Plan 2005 and the DKI Jakarta Structure Plan 2005. The major weak points are as follows:

- The sub centers in the suburban areas of DKI Jakarta and in Botabek are considered to develop independently, making little use of the existing growth potential of the Central Area of DKI Jakarta. This is not only unlikely, but, if possible, a huge investment would be required to encourage such development.
- No strong incentives are given to decentralize the existing urban functions and activities from the Central Area of DKI Jakarta.
- An insufficient provision of urban infrastructure is considered to be able to supply enough land to accommodate the increased population in the east and west areas.

Based on the analysis of the weak points above, some additional strategies were proposed by the Study Team. The detailed reasoning for these additions are examined in Chapter 3. In this section the additional strategies are summarized in Tables 2.4.2 and 2.4.3 together with the development strategies proposed by the DKI Jakarta Structure Plan 2005 and the Jabotabek Metropolitan Area Development Plan (JMDP).

Table 2.4.2 ADDITIONAL DEVELOPMENT STRATEGIES FOR DKI JAKARTA

DKI JAKARTA DEVELOPMENT OBJECTIVES	DEVELOPMENT STRATEGIES OF DKI JAKARTA	KEY PROPOSALS IN JMDP STUDY	ADDITIONAL STRATEGIES PROPOSED BY THE STUDY TEAM
1) To implement several policies to limit the growth of the population of Jakarta so as not to exceed 12 million in the year 2005	To limit, to a realistic minimum, the growth of large and medium scale industries within the city		To allocate industrial areas in the east-west regional corridor  To establish the Jakarta Metropolitan Area as a commutable area with high mobility in the east-west direction
2) To implement procedures of municipal land development so as to meet the city's growth demand which is increasing at an average of 26,000 persons per annum	To support the participation of low income families, and implement "guided land development" in east and west Jakarta with procedures for construction permits, planning regulations and fully adopting land ownership		
3) To promote distribution of inhabitants and related work places	To encourage development of eight primary centers including new east and west centers		To develop more activity centers to cope with increment population in addition to the centers planned in the existing plan
4) To promote economic growth and social welfare opportunities, especially among the low income social groups			To induce activity center development in a multi nucleus pattern and promote it globally in relation with proposed arterial street network
5) To expand housing opportunities for low income groups by minimizing transportation costs and by preparing land and an infrastructure for new city growth			To provide standardized accessibility to the proposed arterial street network system for the people in the urban area (by forming the "urban unit")

Table 2.4.2 ADDITIONAL DEVELOPMENT STRATEGIES FOR DKI JAKARTA (CONTINUED)

DKI JAKARTA DEVELOPMENT OBJECTIVES	DEVELOPMENT STRATEGIES OF DKI JAKARTA	KEY PROPOSALS IN JMDP STUDY	ADDITIONAL STRATEGIES PROPOSED BY THE STUDY TEAM
6) To create a sound and balanced environment by minimizing the poor conditions of densely populated areas and by preventing further environmental damage	<p>To determine a policy to limit private traffic, especially in the central area of the city, accompanied by an effort to increase public transportation services</p> <p>To promote the clearing of canals and syphons to achieve smooth water flow</p> <p>To limit the increase of jobs in the northern region as much as possible, especially activities in the formal sector, through limitation of licences</p> <p>To promote environmental improvement and upgrading in the north, especially in the frame of village betterment /intervillage betterment, including upgrading of the infrastructure and land adjustment</p>	To discourage, as far as possible, further concentration of functions located in the Central Area of DKI Jakarta so that these functions can be relocated in the Botabek area	To promote redevelopment for commerce and business around railway stations when the railway becomes a principal urban transportation mode
7) To minimize the use of ground water in the northern region and to prevent growth southwards	<p>To limit the number of individual piped water connections and to increase the number of hydrants, especially in the northern region</p> <p>To promote the development of the water resources to meet the present and future demand</p>		To induce development of the east-west development axis, and to give priority to piped water development
8) To limit additional growth in the northeast and north and to prevent growth southwards	To limit the construction of new roads in the northeast, northwest and south and to determine development criteria in order to minimize the rapid urbanization of these areas		To guide and control development, especially in limited development zones, and not to form conurbation but to shape compact towns with surrounding open Space
9) To synchronize the development and management of the region with the surrounding area (Botabek)		To proceed with railway service improvement of the existing routes from Jakarta to Tangerang, Serpong, Depok, Bogor and Bekasi	<p>To form the east-west development axis (circuit) so as to integrate the east-west development</p> <p>To develop Serpong in coordination with the modernization program of the Merak Railway Line</p>

Table 2.4.3 ADDITIONAL DEVELOPMENT STRATEGIES FOR JAKARTA METROPOLITAN AREA

JAKARTA METROPOLITAN DEVELOPMENT OBJECTIVES	DEVELOPMENT STRATEGIES OF DKI JAKARTA	KEY PROPOSALS IN JMDP STUDY	ADDITIONAL STRATEGIES PROPOSED BY THE STUDY TEAM
1) To improve regional distribution and induce regional development		To improve the basic network of regional and Kabupaten Roads connecting market towns with national and provincial road networks	
2) To relieve population increases in Jakarta by promoting population growth and employment creation in the main sub-centers of the Metropolitan Area	To promote large and medium scale industries in the industrial areas of Bekasi/Tambun and Tangerang/Batu Ceper	Same as development strategies of DKI Jakarta  To expand and improve the level of services and infrastructure required for industry, including upgrading the availability of utilities in the Botabek area	To develop industrial areas along the east-west regional corridors  to induce urbanization making the best use of existing cores in Tangerang and Bekasi  To foster the centers of Tangerang and Bekasi  To form the street network centering the above centers in order to promote the development
3) To guide and induce development into preferred geographical zones outside environmentally sensitive zones			Inducement of the east-west axis development is to be set as the key element of the long term program
4) To relieve the pressure of deteriorating environmental conditions, particularly residential environments of low income urban households			To limit the development in the north-east, northwest and southern areas of DKI Jakarta as much as possible in the long term
5) To create sub-regional service centers outside DKI Jakarta			Center development in Serpong and Depok to be developed in the limited development zone under the control of such guidelines as mentioned above
6) To accomplish the above at least public cost, with maximum utilization of private development capital			
7) To accomplish the above with a minimum practical level of short-term commuting into DKI Jakarta			Commuters from the metropolitan area will be allowed to enter when they switch to the medium/mass transportation system

2.5.1 TRANSPORTATION DEVELOPMENT GOALS

The following transportation development goals are identified in the Jabotabek Development Plan 2005 and the DKI Jakarta Structure Plan 2005 and these are referred to as the transportation development goals for the ARSDS:

- a) To recognize and improve the Jakarta Metropolitan Area as the significant center of transportation and communication
- b) Continuous improvement of transportation and communication facilities in the Jakarta Metropolitan Area is necessary to sustain its growth and to compete with foreign capital cities
- c) It is essential to provide residents in the Jakarta Metropolitan Area with rapid, comfortable, safe and economical transportation from their homes to work, schools, shopping areas and recreational and cultural facilities
- d) Goods transportation within the metropolitan area and between regions must be efficiently carried out without disturbing the residents' normal way of life

2.5.2 REVIEW OF TRANSPORTATION DEVELOPMENT POLICY

GENERAL TRANSPORTATION DEVELOPMENT POLICY

In the Jabotabek Development Plan 2005 and the DKI Jakarta Structure Plan, the following three directions of transportation improvement are described:

- 1) The predominant role of mass transportation should be established to attract the higher income population, considering there will be an increase in the high and middle income population resulting from future growths in incomes
- 2) More rational use must be made of the existing and future transportation. Rational use must be made of the streets to increase the person carrying capacity of streets by restraining private automobile use and by giving priority to bus services
- 3) Transportation investment should be more efficient in a long perspective. This implies that the preferred development for dealing with traffic should be induced in a long perspective

NEEDS TO REVIEW TRANSPORTATION DEVELOPMENT POLICY AND PLAN

The ARSDS agrees with the general transportation development policy described above. However, the transportation networks proposed in the Jabotabek Development Plan 2005 and in the DKI Jakarta Structure Plan 2005 will not achieve the development objectives, especially for the decentralization of job opportunities away from the Central Area of DKI Jakarta and for the inducement of housing development in the preferred zone. The reasons for this are as follows:

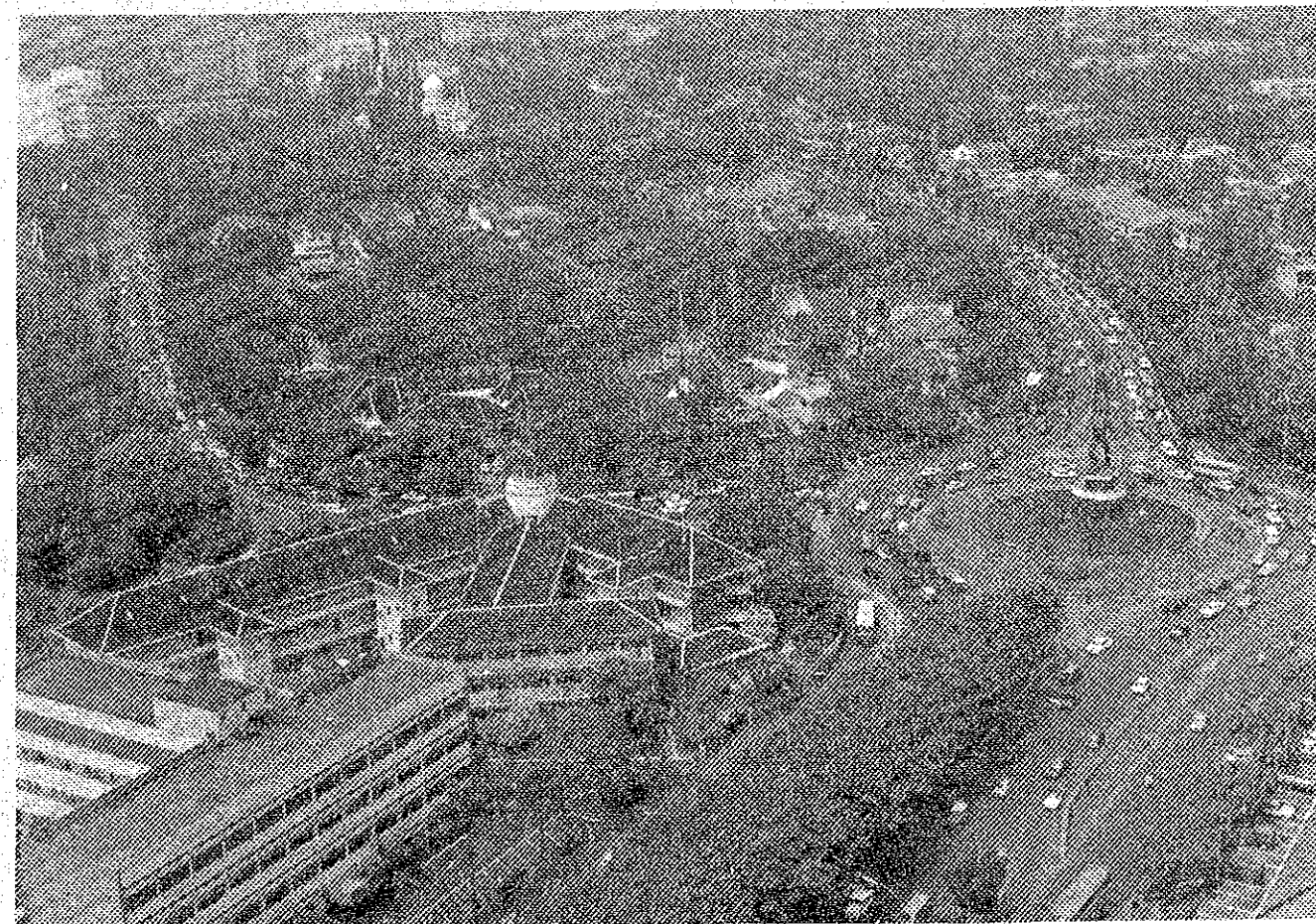
- No medium/mass transportation with high speed services is planned except for the modernized existing railway system, which will not have enough coverage over all the major development areas within the metropolitan area
- The street network planned is insufficient from the viewpoint of inducing development of activity centers and housing in the suburban areas, and also in terms that most of the public transportation users will still have to rely on conventional bus services operated on arterial streets

The transportation development policy has to be reviewed, but it cannot be considered separately from the discussion of urban development. Therefore, transportation development will be discussed together with considerations on urban development in Chapter 3, and the recommended transportation development policy and transportation system for the Jakarta Metropolitan Area are summarized through the overview of the current situation and future prospects of urban transportation in Chapter 4.

CHAPTER

3

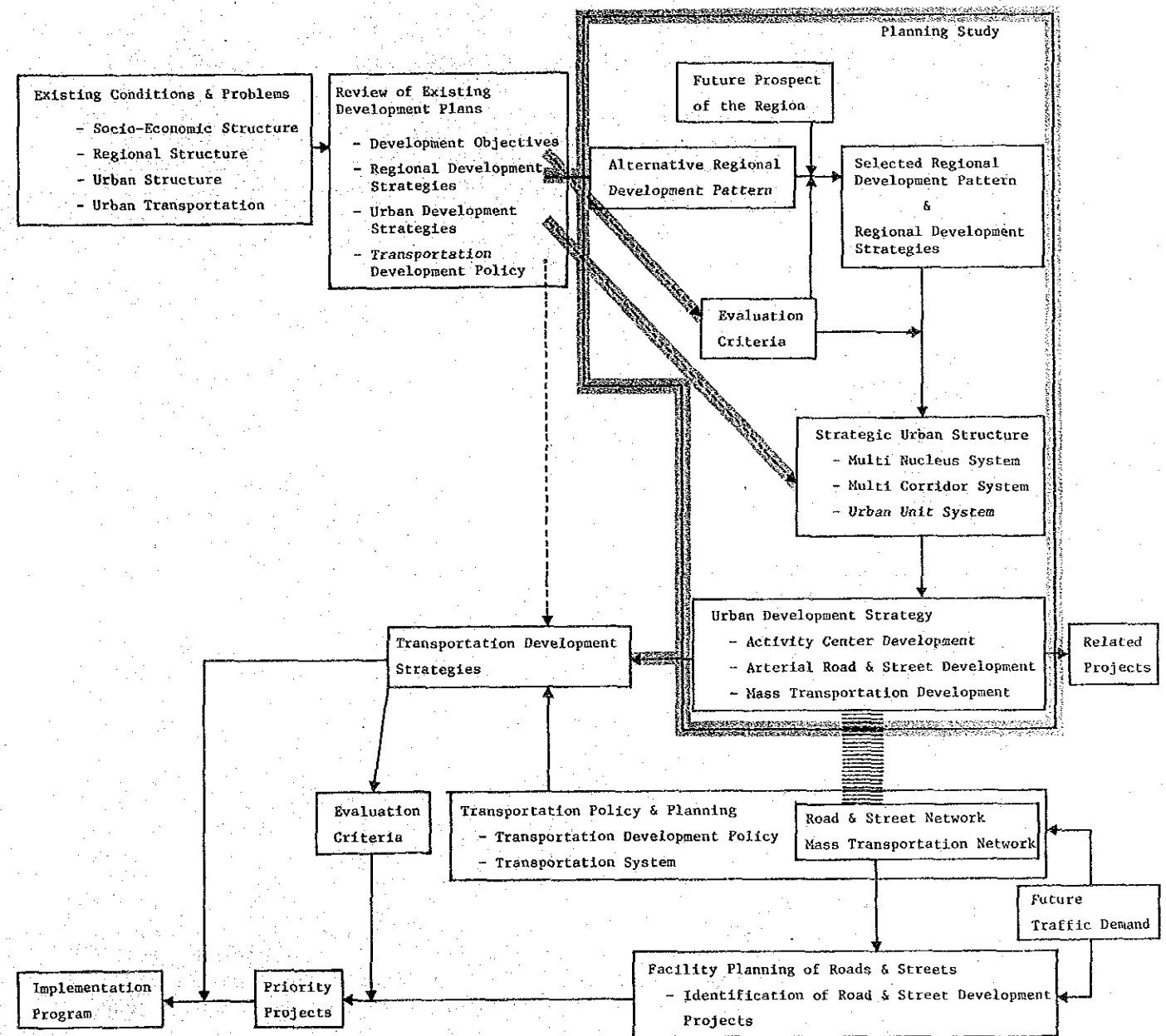
**PLANNING STUDY  
FOR ESTABLISHING  
ROAD AND STREET NETWORK**



This chapter is the main part of the ARSDS. This chapter deals with the planning study for establishing the arterial road and street network in the Jakarta Metropolitan Area. However this study will cover discussions on regional development pattern/strategy, urban development strategies, urban structure, medium/mass transportation and the road/street network. This is because transportation development cannot be considered separately from urban development and because weak points to be strengthened were found in the existing development plans through the review in Chapter 2.

In the Jakarta Metropolitan Area, an urban structural change is required to solve the future crucial urban problems. Transportation itself is one of the major elements which has a strong influence on urban development. In this context, the formation of the East-West development axis, by providing the Medium/Mass Transportation Corridor and major arterial streets in the Multi Corridor System, is recommended as the most important urban development strategy.

Based on the road and street network, facility planning of roads and streets will be discussed in Chapter 6. The discussion on transportation development policy and strategy, together with the transportation system in this chapter, will be summarized from the viewpoint of transportation planning.



## 3.2 REGIONAL DEVELOPMENT SCENARIO AND FRAMEWORK

### 3.2.1 REGIONAL DEVELOPMENT OBJECTIVES AND PRIME POLICY

The development objectives defined in the existing Jabotabek Development Plan (Structure Plan) were reviewed in the previous chapter and are accepted by the Study Team as follows:

- i) Economic growth and the improvement of the standards of living
- ii) Creation of sufficient employment opportunities
- iii) Equitable distribution of income among the people and throughout the region

To achieve these objectives, the decentralization of urban settlements, economic activities and other urban functions from DKI Jakarta is considered as a most vital planning issue. The decentralization policy was also accepted in this study as the prime policy for regional and urban development.

Discussions on future prospects, potential and constraints of regional development will be made in the following sections to delineate a direction of urban development in the region. Subsequently, based on the prime policy mentioned above, alternative regional development patterns will be compared and strategies to realize the selected development pattern will be recommended.

### 3.2.2 FUTURE PROSPECTS

#### POPULATION

Assuming the population will grow at the past trend of 4.0% p.a., it will reach 17 million in 2005 with a population density of 260 persons/ha. It is not likely that DKI Jakarta can afford to prepare infrastructure and other urban facilities required for a population of 17 million.

The population of DKI Jakarta is rapidly increasing because of the attractiveness of its business, employment and education opportunities. The present rapid urbanization in the outskirts of DKI Jakarta is considered as the spill over of the population that is attracted by DKI Jakarta.

The population framework of 12 million in the DKI Jakarta Structure Plan 2005, implies that DKI Jakarta cannot afford to prepare urban infrastructure and services required for a population of more than 12 million and that the population spilt from DKI Jakarta should be settled outside of DKI Jakarta.

Therefore, the urban structure planning should not be confined within the DKI Jakarta boundary, but should be extended with the most suitable development measures to the preferable urban development area beyond the boundary.

#### ECONOMIC ACTIVITIES

The economic potentials of DKI Jakarta can not be compared with other regions. There exist many advantages in business and job opportunities, easier access to supporting industries, services, information, communication and so on. Because of these advantages, people and industries will continue to concentrate to DKI Jakarta. However, such a continuous trend of concentration will surely corrupt social stability, economic efficiency and urban environments.

The past development of industries along the regional corridors were due to the good accessibility to Jakarta, which was provided by the regional roads and tollways. The Botabek region does not have its own independent advantages in this respect, outside of being adjacent to Jakarta.

The existing accumulations of urban facilities and economic activities in the Botabek region are too poor to induce the economic development needed to achieve the decentralization of job opportunities from DKI Jakarta. Therefore a strategic plan utilizing the economic potentials of DKI Jakarta will be an important matter for promoting economic activities in the Botabek region.

It is essential for such a megalopolis as Jakarta to have the basic industries required to create a sufficient number of formal jobs to accommodate the increasing population. Although the jobs in the manufacturing sector increased notably in the 1970's, Jakarta has predominantly relied on the trade/service and government sectors for employment creation. Since the formal job supply by the trade/service and government sectors is considered to be insufficient in future, the development of the manufacturing industry is a key to solve this problem.

### 3.2.3 DEVELOPMENT POTENTIALS AND CONSTRAINTS IN JABOTABEK

Analyses of physical constraints and potentials for Jabotabek development, such as water resources, water usage, ground water conditions, agricultural soil suitability and building suitability, were made in the course of the JMDP (Jabotabek Metropolitan Development Planning) study.

In this section, based on the analysis of the future prospect described in the previous section, the development potentials and constraints in the Jabotabek Region will be reviewed.

#### POTENTIALS

One of the most useful potentials which is available for the Jabotabek Region is the growth potentials of DKI Jakarta which are supported by the existing accumulated facilities and functions in DKI Jakarta. The decentralization of urban settlements, economic activities and urban functions will not be realized if this potential is not effectively utilized.

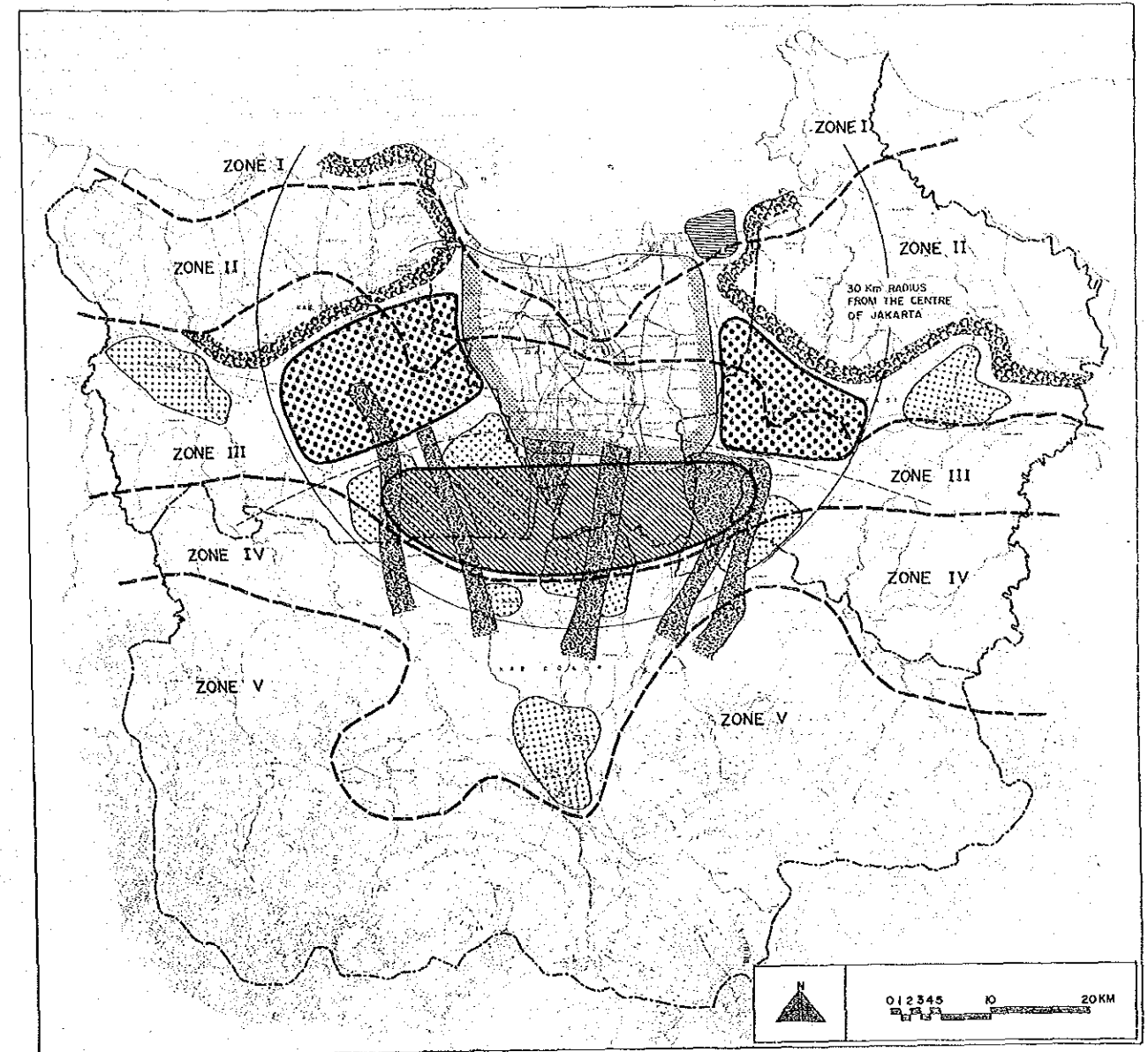
In consideration of the climate of this region and the future transportation technology, the areas which can be reached from the Central Area of Jakarta within one hour have high development potentials. This is justified by the fact that recent developments of industry and housing have occurred within a 30 km radius from the center of Jakarta.

#### CONSTRAINTS

The following development constraints in the region are identified by the JMDP Study:

- i) To minimize the use of ground water in the north of the city, and safeguard ground and surface water sources in the south
- ii) To minimize the rate of urban growth in the northeast and northwest of the city and in the environmentally sensitive area (aquifer recharge zone) in the south of the city

These constraints are considered not to be solved by any measures within the prospected regional development framework. On the other hand, there exist an important development constraint to be solved in order to implement the decentralization policy. This constraint is the accessibility to the land which is preferable to be developed. Especially, high mobility within a 30 km radius from the center of Jakarta should be secured to utilize the development potentials described above.



#### LEGEND

- AGRICULTURAL CONSERVATION ZONE
- LIMITED URBAN GROWTH AND AGRICULTURAL ENCOURAGEMENT TO THE SOUTH
- AQUIFER RECHARGE ZONE
- POLLUTION PROTECTION ZONE
- JAKARTA URBAN DEVELOPMENT ZONE
- EAST AND WEST URBAN DEVELOPMENT ZONE
- URBAN DEVELOPMENT IN FURTHER STAGE
- PORT AND INDUSTRIAL DEVELOPMENT ZONE

- ZONE I : AVOIDANCE OF URBAN DEVELOPMENT
- ZONE II : AGRICULTURAL INTENSIFICATION AND LIMITED URBAN DEVELOPMENT
- ZONE III : MAJOR URBAN DEVELOPMENT AND AGRICULTURAL INTENSIFICATION
- ZONE IV : LIMITED URBAN DEVELOPMENT AND AGRICULTURAL INTENSIFICATION
- ZONE V : UPLAND FOREST, PLANTATION, RECREATION AND CONSERVATION

Fig. 3.2.1 DEVELOPMENT POTENTIALS AND CONSTRAINTS IN JABOTABEK

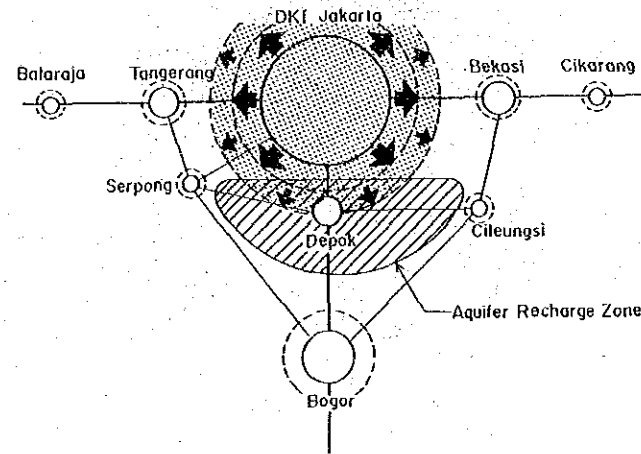


### 3.2.4 ALTERNATIVE REGIONAL DEVELOPMENT PATTERNS

Based on the prime policy of decentralization of urban settlements and economic activities from DKI Jakarta, alternative regional development patterns are compared as follows:

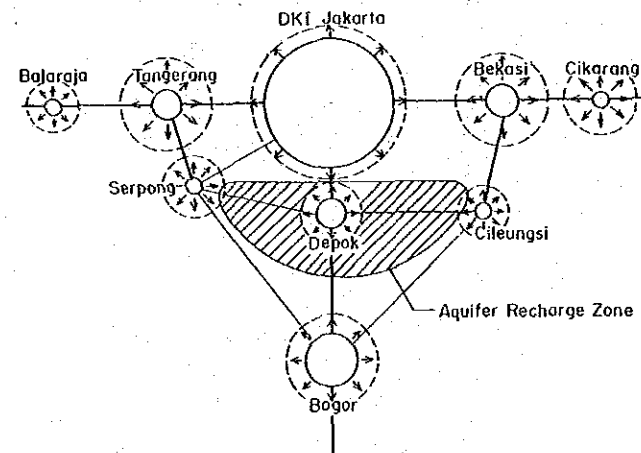
#### 1) Concentrated Growth with Urban Expansion

This alternative expands the urban area outside of Jakarta, but the major economic activities would still be located in the centers of DKI Jakarta.



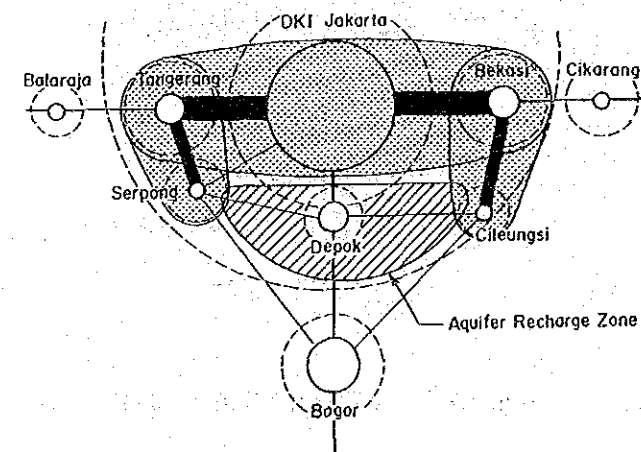
#### 2) Formulation of Self-Sustainable Cities Outside Jakarta

This alternative aims at formulating self-sustainable cities with relatively higher levels of independence from other cities.



#### 3) Formation of Jakarta Metropolitan Area

This alternative aims at formulating the Jakarta Metropolitan Area within a 30 km radius. The metropolitan area has one metropolitan center and several sub centers.



1) The First Alternative depends much on Jakarta's development potentials and takes advantage of the integration of urban facilities and functions. This pattern is a trend type model and it is likely to promote a highly dense population in the existing urban area and an urban sprawl with insufficient infrastructures. Therefore an exceeding amount of burden is put on the existing facilities and consequently the urban and natural environments deteriorate.

2) The Second Alternative aims at decentralizing Jakarta's increasing population to sub-regional centers around DKI Jakarta. These core cities are planned to be self-sustainable providing both settlement and economic activities within the city areas. Consequently, it is not a requirement to secure high mobility between Jakarta and these self-sustainable cities to form this development pattern. This alternative does not aim at utilizing the existing growth potentials of DKI Jakarta.

3) The Third Alternative aims at formulating a metropolitan area within a 30 km radius (one hour travel time), where high mobility is secured between outlying activity centers and the Central Area of Jakarta. This alternative intends to make the best use of the existing urban accumulations and potentials of Jakarta in order to decentralize urban settlements, economic activities and urban functions from Jakarta. The development of self-sustainable cities with a higher level of independence from Jakarta are encouraged outside of the metropolitan area.

#### SELECTED REGIONAL DEVELOPMENT PATTERN

The Third Alternative, Formation of Jakarta Metropolitan Area, was selected based on the basic criteria of "Efficiency", "Equity" and "Environment". The most important point in the selection is the possibility of decentralizing urban settlements, economic activities and urban functions from Jakarta. If this prime policy of decentralization is not achieved, almost all of the development objectives cannot be achieved.

The first alternative is the existing trend, which cannot solve the existing various urban problems, much less the future problems. The second alternative is too idealistic and optimistic in the formulation of self-sustainable cities, which in general require huge public investments in advance for urban infrastructure and services, since self-sustainable cities first need both employment and residences within the cities. The government cannot create enough jobs by itself and attract private companies without good incentives. Moreover this formulation of self-sustainable cities is too difficult under the direct area of influence of DKI Jakarta within a 30 km radius of Jakarta.

What are the good incentives for decentralization for economic activities and residents? The Third Alternative answers this question.

### 3.2.5 REGIONAL DEVELOPMENT STRATEGIES

The formation of the Jakarta Metropolitan Area within a 30 km radius (one hour travel time) and higher self-sustainable cities outside of the metropolitan area were recommended in the regional development pattern to allow the functional continuity from the Central Area of Jakarta to a radius of 30 km. Outside of the metropolitan area, sub-regional centers such as Bogor, Cibinong, Balaraja and Cikarang will be developed with relatively higher levels of independence from Jakarta City.

Based on the considered results obtained in the previous sections, development strategies suitable for constructing the Metropolitan System were selected as follows:

#### 1) Development of Basic Industries

The development of basic industries which produce fundamental products/services for other regions and for other sectors is required to maintain an economic growth rate higher than that of the urban population in order to supply enough employment opportunities and to encourage middle income group formation. Therefore the following basic industries of this region should be further developed:

- Regional Commercial and Service Industry
- Manufacturing Industry
- Central Government Administration

In consideration of the ability to supply formal jobs, the manufacturing industry should be emphasized.

#### 2) Decentralization of Manufacturing Industry

The manufacturing industry and central government administration sectors are among the basic industries which can be dispersed or moved out of Jakarta. The dispersion of the manufacturing industry is not only a key to achieve the decentralization of Jakarta's urban functions, but it is also a key to encourage higher development of the core cities outside of DKI Jakarta. From the viewpoint of efficient provision of supporting infrastructures, such as roads and water supply, the manufacturing industry should be located in the regional corridors.

#### 3) Development of Activity Centers

The location of the formal commercial and service sectors is one of the major factors of the establishment of the urban structure. In order to decentralize activities of these sectors from the Central Area, conventional ribbon type development should be discouraged and activity center development should be encouraged while securing connections from activity centers in the suburban areas to the Central Area.

#### 4) Development of Informal Sector

Even if a high economic growth is achieved, a sufficient number of formal jobs will not be able to be supplied for the rapidly increasing population. The dual structure of industries, formal and informal, will continue to exist. Therefore, informal sector development should also be emphasized in the following ways so as to absorb the increased labor forces:

- Preparation of incentives for locations near activity centers in the suburban areas
- Provision of economic incentives, such as tax reduction and technical assistance, for investment in small scale industry

#### 5) Formation of East-West Development Axis

Since the southern aquifer recharge areas have development constraints, the major development zone in the Jakarta Metropolitan Area is of a wide belt form in the east-west direction. In order to utilize the growth potentials of the Central Area of Jakarta, high mobility should be secured between the activity centers in the suburban areas and the Central Area by providing multi transportation corridors.

In a megalopolis, medium/mass transportation on a separated right-of-way should play the major role in providing adequate levels of transportation services. Therefore the east and west development requires medium/mass transportation on a separated right-of-way, which should be in a corridor/axis form.

In this sense, the east and west development in the development objectives should be done in the context of forming the east-west development axis by providing the Medium/Mass Transportation Corridor.

#### 6) Compact Development to the South

In order to prevent the deterioration of river and ground water, which are used as sources of drinking water for Jakarta residents, the development of core cities in the southern part of the Jakarta Metropolitan Area should follow a compact pattern around activity centers.

#### 7) Self-sustainable City Development

The core cities to be developed outside of DKI Jakarta should be as self-sustainable as possible, so as not to impose an excessive load on Jakarta, and also not to promote physically continuous development, particularly to the south of Jakarta for environmental reasons.

### 3.2.6 REGIONAL DEVELOPMENT SCENARIO

In a perspective more than 40 years, the regional development scenario can be categorized into the two following ways:

- 1) Formation of the Jakarta Metropolitan Area within a 30 km radius by developing the East-West Axis to induce development of activity centers and housing. In this context, the Tangerang, Bekasi, East and West centers are placed as the growth centers
- 2) Reformation of the Jabotabek Regional Structure within a 50 km radius by promoting the development of high level self-sustainable core cities outside of the 30 km radius

The first one should be tackled from now on and the second one should follow the first one in the future, as shown in Fig. 3.2.2.

In the distant future, the Jabotabek Region will face the selection of the regional development policy in the context of national development.

At present Indonesia adopts the decentralization policy for not only Jakarta but also for large cities throughout the country because the country is composed of many islands and a diverse population. However if Indonesia emphasizes urban development throughout the country, the potential of the belt area in the regional corridors can be utilized by promoting the Ladder Pattern Development as schematically shown in Fig. 3.2.3. The detailed plan of the Ladder Pattern is presented in the Appendix 1 of this report.

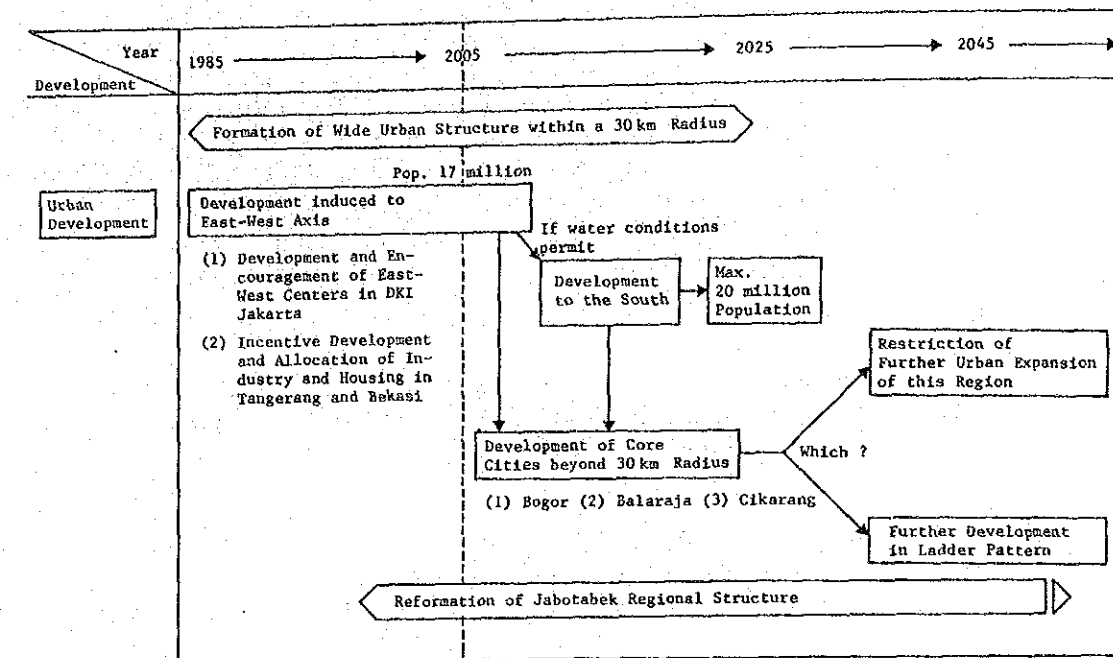


Fig. 3.2.2 REGIONAL DEVELOPMENT SCENARIO

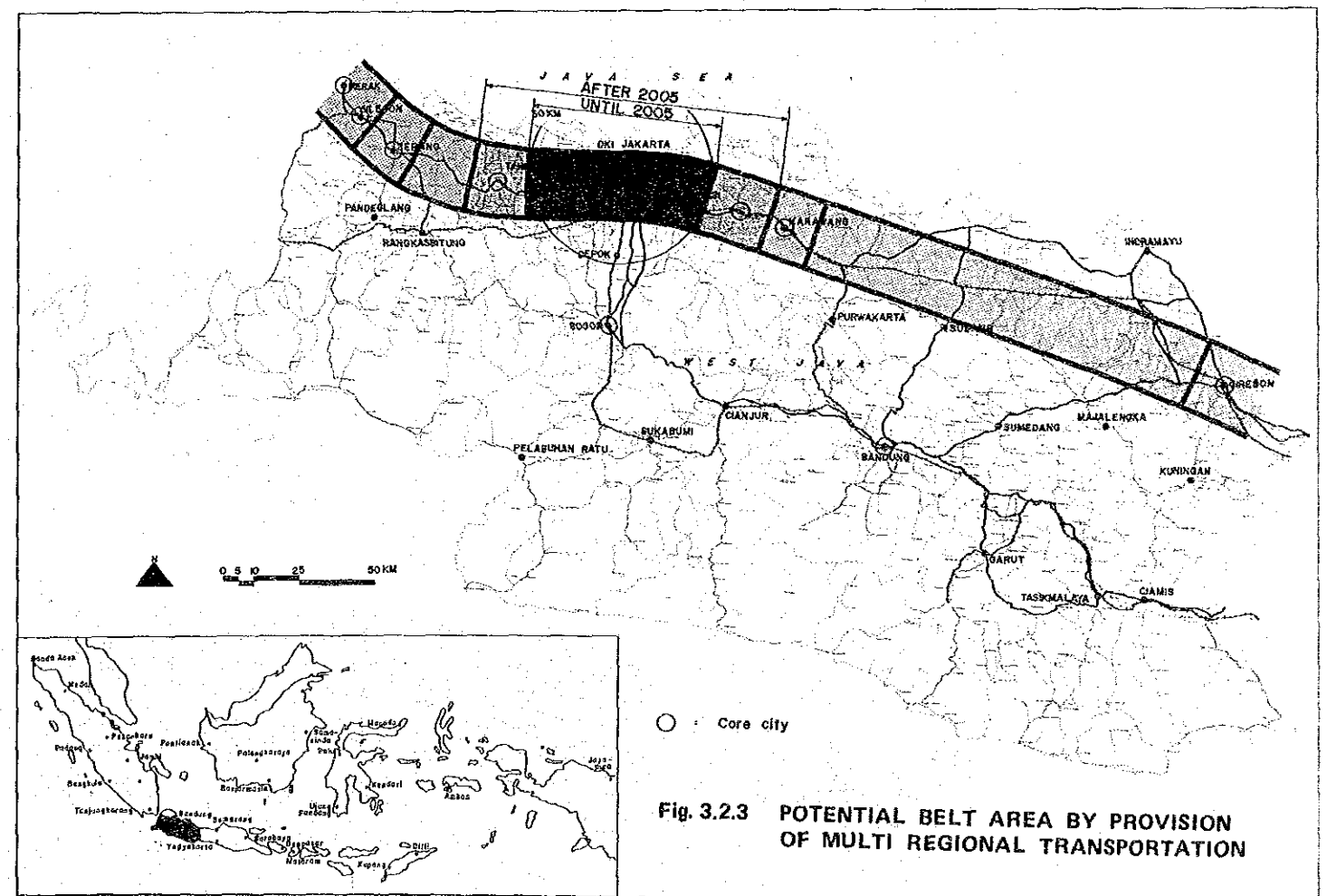


Fig. 3.2.3 POTENTIAL BELT AREA BY PROVISION OF MULTI REGIONAL TRANSPORTATION

### 3.2.7 FUTURE SOCIO-ECONOMIC FRAMEWORK

#### POPULATION FRAMEWORK IN JABOTABEK

The population in Jabotabek is projected to increase from 14.3 million in 1985 to 19.0 million in 1995 and to 23.5 million in 2005. These future populations expected in the DKI Jakarta Structure Plan 2005 and in the Jabotabek Development Plan 2005 define the future development framework.

The population for each component of Jabotabek are also projected in the above plans and are applied to the ARSDS as presented in Table 3.2.1.

The Jabotabek Development Plan intends to control the urban population growth in Botabek, by lowering its average annual rate from 18.0% p.a. during 1971/1980, 14.0% p.a. during 1980/1985 to 5.6% p.a. during 1985/2005, which is nearly the same rate as Indonesia's total during 1971/1980.

The urban population in Jabotabek is expected to increase from 10.3 million in 1985 to 19.5 million in 2005 at an average annual growth rate of 3.2% p.a.. The projected urban and rural population in 2005 are presented in Table 3.2.1.

Table 3.2.1 PROJECTION OF URBAN AND RURAL POPULATION IN JABOTABEK, 2005

Unit: 1,000 persons

Region	Year 1985			Year 2005		
	Urban	Rural	Total	Urban*	Rural	Total
DKI Jakarta	7,830	-	7,830	12,000	-	12,000
Bogor	1,609	1,601	3,210	2,905	1,965	4,870
Tangerang	490	1,340	1,830	2,770	960	3,730
Bekasi	390	1,000	1,390	1,790	1,110	2,900
Botabek	2,489	3,941	6,430	7,465	4,035	11,500
Jabotabek	10,319	3,941	14,260	19,465	4,035	23,500

Note: \* Including rural center populations of 630,000, 360,000 and 340,000 for Bogor, Tangerang and Bekasi, respectively

#### EMPLOYMENT AND ECONOMIC GROWTH

Providing enough employment opportunities for the labor force is one of the development objectives of the Jabotabek regional plan. Employment opportunities are interrelated with GRDP growth and productivity. These three factors have to be adjusted in line with past economic trends, the national development plan and regional development perspectives and strategies.

Evaluation criteria applied to employment and economic growth are as follows:

- Creation of as much employment opportunities as possible for the labor force supply
- Growth of economy and income level
- Reduction of the income gap among people and regions
- Development of the formal sector and manufacturing industry
- Decentralization of economic development

Consequently, the future GRDP in Jabotabek is expected to grow at a rate of 8.5% p.a., during 1985 and 2005. The employment by industrial sector in 2005 is estimated for DKI Jakarta and Botabek as shown in Table 3.2.2.

Table 3.2.2 ESTIMATED EMPLOYMENT BY INDUSTRIAL SECTOR IN JABOTABEK, 2005

Unit: 1,000 jobs

Industrial Sector	Year 1985			Year 2005		
	Jakarta	Botabek	Jabotabek	Jakarta	Botabek	Jabotabek
Agriculture	38	455	493	32	738	770
Large and Medium Industry	208	68	276	364	262	626
Small & Cottage Industry	142	186	328	317	558	875
Government Services	377	88	465	605	157	762
Trade & Services, Others	1,704	878	2,582	3,882	2,713	6,595
Total Jobs	2,469	1,675	4,144	5,200	4,428	9,628

#### INCOME DISTRIBUTION

In order to estimate the future distribution of income groups, the following assumptions were made:

- The total GRDP growth rate during 1985-2005 is 8.5% p.a.
- The future per capita income was estimated to grow at 3.7% p.a. based on the projected population and GRDP growth rates in the same period

Accordingly, the 2005 average expenditure levels by decile population group were estimated to obtain the 2005 income group distribution as shown in Table 3.2.3.

Table 3.2.3 ESTIMATED INCOME GROUP DISTRIBUTION AND EXPENDITURE LEVEL IN DKI JAKARTA 2005

Income Group	Monthly Expenditure Level* (Rp/month)	% Distribution	
		1985	2005
Low	- 18,250	47.5 ( 47.5)	6.3 ( 6.3)
Lower Middle	18,250 - 42,000	36.4 ( 83.9)	51.2 ( 57.5)
Upper Middle	42,000 - 140,000	12.2 ( 96.1)	34.6 ( 92.1)
High	140,000 -	3.0 (100.0)	7.9 (100.0)

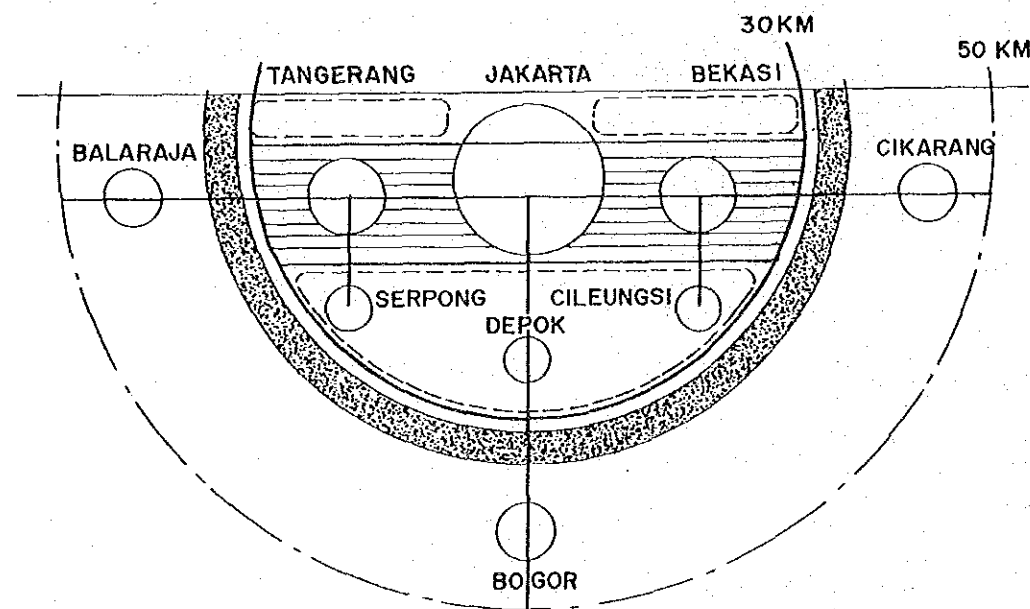
Note: \* At 1980 constant prices  
Figures in ( ) show accumulated percentage

3.3.1 URBAN DEVELOPMENT IN JABOTABEK

Previously in Section 3.2, the regional development of the Jabotabek Region was examined from the socio-economic viewpoint. In this section, this regional development will be described from the physical urban development viewpoint.

The recommended regional development implies two different types of urban development. One is a physically continuous urban pattern and the other is a physically compact urban pattern. The physically continuous urban pattern is applied to within the metropolitan area, except for the southern limited development zone. The physically compact urban pattern will be promoted in the southern limited development zone by not providing multi access to Jakarta. In order to attain high independence from Jakarta, the core city areas outside of a 30 km radius should also be of the physically compact urban pattern separated from the Jakarta Metropolitan Area.

In order to avoid the continuous urban sprawl of spontaneous form reaching the cities such as Balaraja and Cikampek after the year 2005, following the existing urbanization trend, the ARSDS proposes the provision of a Green Belt outside the 30 km radius as preparation for the next stage before it becomes too late.



LEGEND

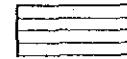
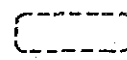

-  Major Urban Development Zone (Formation of Open City)
-  Restricted Urban Development Zone (Formation of Closed City)
-  Green Belt

Fig. 3.3.1 URBAN DEVELOPMENT SCHEME IN JABOTABEK

3.3.2 BASIC CRITERIA AND DEVELOPMENT DIRECTIONS

Previously in Section 3.2 the regional development scenario in Jabotabek was examined from the socio-economic viewpoint with the understanding that the development of the Jakarta Metropolitan Area with a radius of 30 km is an important theme toward the year 2005.

This section will examine the formation of the Jakarta Metropolitan System from the physical urban development viewpoint and thereby investigate the incentive elements and strategies to materialize the development inducement.

First, the ARSDS team refers back to the following three basic development criteria:

- Equitable Development
- Efficient Development
- Environment Conscious Development

The major development guidelines according to these three basic criteria can be described as follows:

EQUITABLE DEVELOPMENT

- Development to decentralize job opportunities and urban services, and transportation development to secure equitable access to job opportunities and urban services
- Development of collector and local streets, as well as arterial streets, so that every person can enjoy equitable transportation mobility and service
- Promotion of medium/mass transportation development so that every social class and person in every area can benefit from equitable transportation mobility

EFFICIENT DEVELOPMENT

- Avoidance of concentrations toward Jakarta which exceeds the capacity of infrastructure development
- Control of inefficient, loose spreading sprawl from the standpoint of investment and efficient utilization of infrastructure
- Efficient utilization of the effect of economic accumulation by activity center, instead of loose ribbon development
- Utilization of the existing accumulations in Tangerang, Bekasi and the present primary centers in Jakarta for the sake of investment efficiency

### 3.3.3 RECOMMENDED STRATEGIC URBAN SYSTEMS

- Promotion of the efficient use of land by introducing middle rise schemes and block developments in commerce and business areas such as in activity centers
- Development of an efficient medium/mass transportation system, instead of continued dependence upon individual private vehicles, and promotion of an urban formation suitable for its development

#### ENVIRONMENT CONSCIOUS DEVELOPMENT

- Control of the urban sprawl towards the south which threatens the maintenance of water resources, induces deforestation and excavation, and results in flooding and other natural disasters
- Provision of sufficient green open spaces from neighborhood and district parks to town fields and town parks with recreational purposes in line with local planning of RBWK (Rencana Bagian Wilayah Kota 2005)
- Provision of green preservation zones along rivers to prevent pollution of the water
- Provision of green open spaces as buffer zones around industrial areas, airports, highways, etc.
- Provision of sufficient space on streets for sidewalks and streetside trees to separate the pedestrians from the carriageway, to protect the pedestrians from strong sunlight and to provide amenity
- Promotion of the development of the well planned settlements such as Perumnas, Guided Land Development, and new towns in the suburban areas
- Development of the medium/mass transportation system instead of continued dependence upon private vehicles which cause air pollution, noise and traffic accidents

Considering how to concretize the Jakarta Metropolitan System development following the development objectives and basic criteria described in Chapter 2 and in the previous Section of 3.3.2, the ARSDS Team proposes the strategic urban structure equipped with the following three systems:

- Multi Nucleus System
- Multi Corridor System
- Urban Unit System

#### MULTI NUCLEUS SYSTEM

As described in Section 3.2, the decentralization of urban settlements, economic activities and urban functions is understood as the prime policy for the Jakarta Metropolitan System. In the recommended regional development strategies, the commercial and business sector is considered to play the major role in establishing the Jakarta Metropolitan Area by decentralization of their activities.

In the present situation, however, the mono-centric concentration is still dominant, and the ribbon development of commerce, business, service and administrative functions along large streets in the highly urbanized area is increasing this concentration, which causes the traffic congestion not only in the Central Area, but also on the radial streets in the suburban areas.

The decentralized economic activities and urban functions from the Central Area are recommended to be accommodated and concentrated in some of the activity centers in the suburban areas to achieve the following:

- To reduce the mono-centric concentration of economic activities in the Central Area
- To relieve the traffic problems, such as congestion concerning the functional concentration in the Central Area
- To efficiently provide infrastructure to support the activities of centers
- To accommodate the social and public service facilities for the increased population in the hinterland of each activity center

In this sense, the urban structure consisting of the metropolitan center in the Central Area and several activity centers in the suburban areas, the so-called Multi Nucleus System, should be formed to promote the prime policy of decentralization. In order to establish the Multi Nucleus System, activity center development should be emphasized. On the other hand, the conventional ribbon development is considered as supplementary.

### MULTI CORRIDOR SYSTEM

The basic problem with the existing road and street network in developing the Multi Nucleus System in the Jakarta Metropolitan Area is the lack of arterial streets and their Cell System network as mentioned in Section 1.4.5.

Because this Cell System is still the basic street network in the Jakarta Metropolitan Area, there are many different traffic congestions and jams, especially around activity centers. This forms obstacles for the growth of activity centers.

In order to efficiently induce the Multi Nucleus System, the Multi Corridor System, consisting of multiple transportation corridors such as major arterial streets, minor arterial streets, regional roads, medium/mass transportation, etc., is required with the following functions:

- The system gives the outlying activity centers direct accessibilities to the Central Area
- In order to promote activity centers, the system gives accessibilities between activity centers and their hinterlands
- The system enables installation of mass transportation on the separated right-of-way
- The system achieves differentiation of street functions, such as goods and person movement, individual and mass transportation, local and through traffic, etc.

The ARSDS Team proposes the Multi Corridor System as a strategic system which would reinforce and overcome the existing Cell System network, induce dynamism to form the Multi Nucleus System, and provide the open flexibility necessary for population growth and urban expansion toward the year 2005 and thereafter.

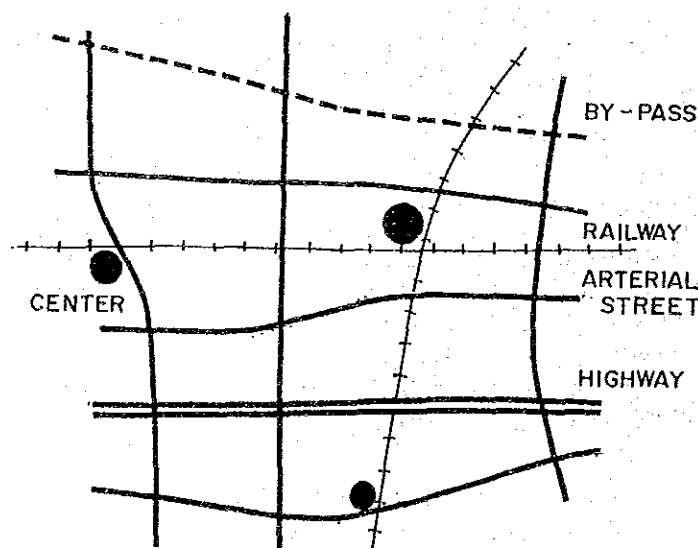


Fig. 3.3.2 MULTI CORRIDOR SYSTEM

### URBAN UNIT SYSTEM

At present, with some exceptions such as in Menteng, Kebayoran Baru, Banteng, etc., the urban areas are not composed of urban units enclosed by arterial streets. The residential areas in the Central Area are occupied by urban kampungs that are not provided with adequate collector streets. In the suburban areas, housing complexes are developed relying on existing rural roads. These trends are the result of, and help perpetuate, the lack of planned urban infrastructures, such as collector streets, open space, public facilities, etc. Moreover, the loose development spreads in the suburban areas, and consequently efficient land utilization cannot be achieved. Commercial and business areas in the Central Area take the form of ribbon along large streets, but do not take the block form because the pitch of arterial streets is too long to form a block for commercial and business activities.

The adoption of the urban unit system, by providing enough arterial streets to shorten the pitch, is required to achieve the following:

- To give a development framework to improve the environment by the urban unit
- To give a guideline for housing development by the urban unit, in order to achieve a high utilization of land
- To enable the systematic approach to the provision of collector and local streets by the urban unit
- To eliminate through traffic from the urban unit
- To facilitate a block-wise development in activity center areas

An urban unit is composed of following two different systems:

- External System: Arterial streets surrounding the urban unit
- Internal System: Collector and local streets being surrounded by arterial streets

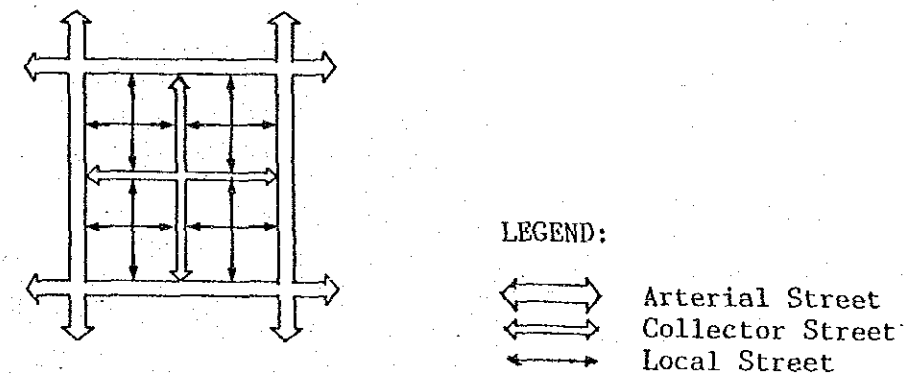


Fig. 3.3.3 URBAN UNIT SYSTEM

### 3.3.4 RECOMMENDED URBAN DEVELOPMENT STRATEGY

#### RECOMMENDED URBAN DEVELOPMENT STRATEGY

The following urban development strategy for the Jakarta Metropolitan Area is recommended:

- Formation of the east-west development axis, consisting of the mass transportation and major arterial streets connecting activity centers, in order to induce activity center development and housing developments in the axis
- Establishment of east-west transportation in the Central Area, which allows the decentralization of economic activities and urban functions, and which enables up-grading of urban functions in the Central Area in the long run
- Encouragement of compact development around activity centers in the southern limited development zone by keeping the transportation network to the zone as the Cell System

By reviewing the strategic urban systems described in the previous section more concretely and physically in the Jakarta Metropolitan Area, the ARSDS Team came to following three physical key development issues which are effective incentives for urban development:

- Activity Center Development
- Arterial Street Development
- Medium/Mass Transportation Development

These three developments are required to be carried out in close inter-relation in order to form the strategic urban structure combined with the Multi Nucleus System, Multi Corridor System and Urban Unit System. These interrelated developments compose the urban development strategy to establish the Jakarta Metropolitan Area.

#### ACTIVITY CENTER DEVELOPMENT

For activity center development, close attention should be paid in the following ways to both the activity center itself and the urban infrastructure supporting it:

- Adequate allocation of activity centers in the multi nucleus form in consideration of their areas of influence
- Supply of sufficient land to accommodate work places, urban functions and urban infrastructure in activity centers
- Encouragement of the allocation in activity centers of urban functions such as government offices, high education facilities, large hospitals, recreation facilities, etc.
- Allocation of work places and urban functions within walking distance to promote the usage of medium/mass transportation in consideration of pedestrians in activity centers

- Encouragement of block development to achieve high land utilization
- Provision of direct accessibilities from the activity centers to the Central Area through medium/mass transportation and major arterial streets in order to encourage activity center development
- Provision of arterial streets around activity centers to form urban units for the center area and to serve the residential areas surrounding activity centers

#### ARTERIAL STREET DEVELOPMENT

The development of arterial street has to be coordinated with the following guidelines and related developments:

- Provision of major arterial streets with direct accessibilities to the Central Area from Activity centers in the suburban areas in order to encourage activity center development
- Provision of major and minor arterial streets connecting activity centers with their hinterlands in order to promote housing development in the suburban areas
- Provision of arterial streets accessing to the medium/mass transportation to promote its usage
- Increase the density of arterial streets to form urban units which facilitate systematic preparation of collector street

#### MEDIUM/MASS TRANSPORTATION DEVELOPMENT

The medium/mass transportation should have the separated right-of-way in order to play the major role in providing adequate transportation services in a megalopolis such the Jakarta Metropolitan Area. The medium/mass transportation on the separated right-of-way takes the form of a corridor. In this sense, the axis development in the Multi Corridor System is suitable to induce the activity centers in the Multi Nucleus System. The Medium/Mass Transportation Corridor should be provided in coordination with the following related developments:

- To connect several activity centers on the Medium/Mass Transportation Corridor to the Central Area in order to induce activity center development
- To have a joint right-of-way of medium/mass transportation and arterial streets in order to strengthen the ability of inducing urban development along the corridor
- To provide adequate transfer facilities such as station plazas
- To provide arterial streets accessing to the medium/mass transportation corridors in order to form urban units and to induce housing developments relying on the medium/mass transportation



3.4.1 ZONING FOR URBAN DEVELOPMENT

By examination of the regional development scenario in Section 3.2 and the Jakarta Metropolitan Development Strategies in Section 3.3, the ARSDS team proposes the following setting of zoning for urban development of the Jakarta Metropolitan Area.

As described in Section 3.3.1, the ARSDS team first differentiated the urban development zone into the following two categories:

- Major urban development zone  
This is the zone where vigorous urban development should occur toward the year 2005
- Minor urban development zone  
This is the zone of restrained urban development where only compact or low density development should occur toward the year 2005

The limitations of the major urban development zone are considered as follows:

LIMITATION IN THE NORTH

- In Tangerang, the northern limitation is set along Jl. Daan Mogot where many industrial facilities are already located
- In Bekasi, the northern limitation is set at about 6 km north of the Jakarta - Cikampek Freeway along the extension of Jl. Raya Kali Abang where some industrial facilities are already located

LIMITATION IN THE SOUTH

- In Jakarta, the southern limitation is set at the Outer Ring Road to avoid active development in the aquifer recharge zone
- In Tangerang, the southern limitation is set about 7 km south of the Jakarta - Merak Freeway to avoid active development in the aquifer recharge zone
- In Bekasi, the southern limitation is set about 7 km south of the Jakarta - Cikampek Freeway to avoid active development in the aquifer recharge zone

LIMITATION IN THE EAST

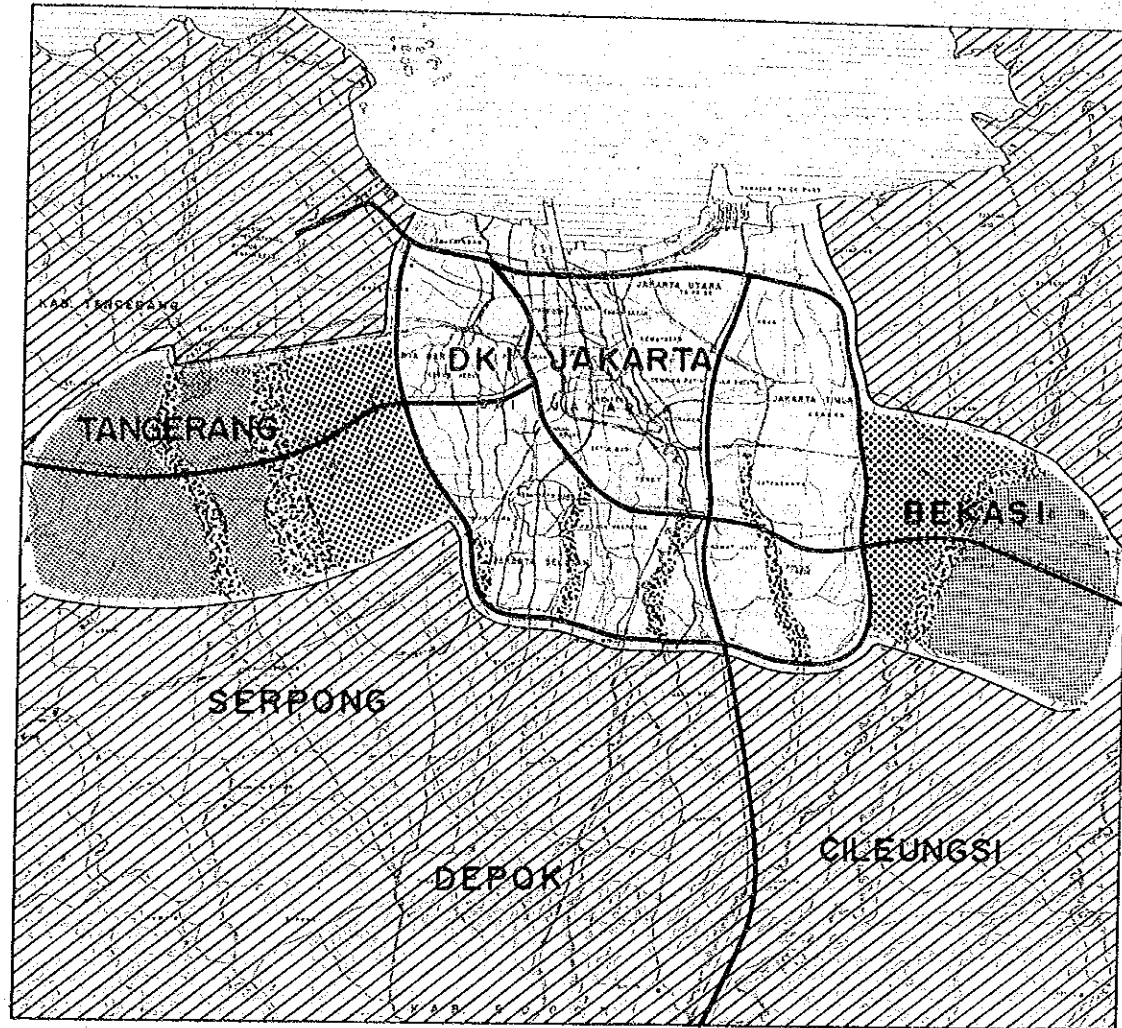
- In Bekasi, the eastern limitation is set at the border of the 30 km radius from the center of Jakarta
- Considering the Bekasi river as a green preservation zone, the area between the river and the Outer Ring Road is developed as the conurbation zone
- The area east of the river until the 30 km radius boundary is developed as an identical urban development zone of Bekasi

LIMITATION IN THE WEST

- In Tangerang, the western limitation is set at the border of the 30 km radius from the center of Jakarta
- The ARSDS team proposes to provide a green preservation zone between Tangerang and Jakarta to promote an identical urban development of Tangerang city. This area should function as a town field with recreational purposes. More detailed description about this town field is found in Section 6.4.4
- The area between the town field mentioned above and the Outer Ring Road is developed as the conurbation zone
- The area west of the town field until the 30 km radius boundary is developed as an identical urban development zone of Tangerang

Based on the above urban development zoning, the ARSDS team analyzed the existing Jakarta Metropolitan Area into five zones as follows:

- a) First Zone (North of Harbour Road and Jl. Tol. Prof. Dr. Sedyatmo)  
A harbour area. It has industrial and housing areas. Care should be paid to preserve the green space along the coast.
- b) Second Zone (North of the East-West regional corridor)  
For development there is a problem of water treatment due to the many swamps in this belt. Development, except in special cases, should not be allowed.
- c) Third Zone (Regional corridor of primary arterial road)  
Corridors connecting the harbour area and other regions in east and west. Suitable to allocate facilities for goods transportation; this zone is in relation with industry.
- d) Fourth Zone (South of regional corridor, north of freeways)  
East and West new centers are planned. The sub-regional centers of Tangerang and Bekasi are inside a 20 km radius distance. A housing development related to the industrial area in the north is expected.
- e) Fifth Zone (South of freeways, north of control zone boundary)  
Intensive road development has not occurred in this zone, and a huge amount of land suitable for housing development exists. If a reasonable road network and land supply system is applied, this could create a good environment for housing development.



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



-  LIMITED URBAN DEVELOPMENT ZONE
-  MAJOR URBAN DEVELOPMENT ZONE AS CONURBATION
-  MAJOR URBAN DEVELOPMENT WITH CORE CITY
-  GREEN PRESERVATION / RECREATION ZONE

Fig. 3.4.1 ZONING FOR URBAN DEVELOPMENT IN JAKARTA METROPOLITAN AREA

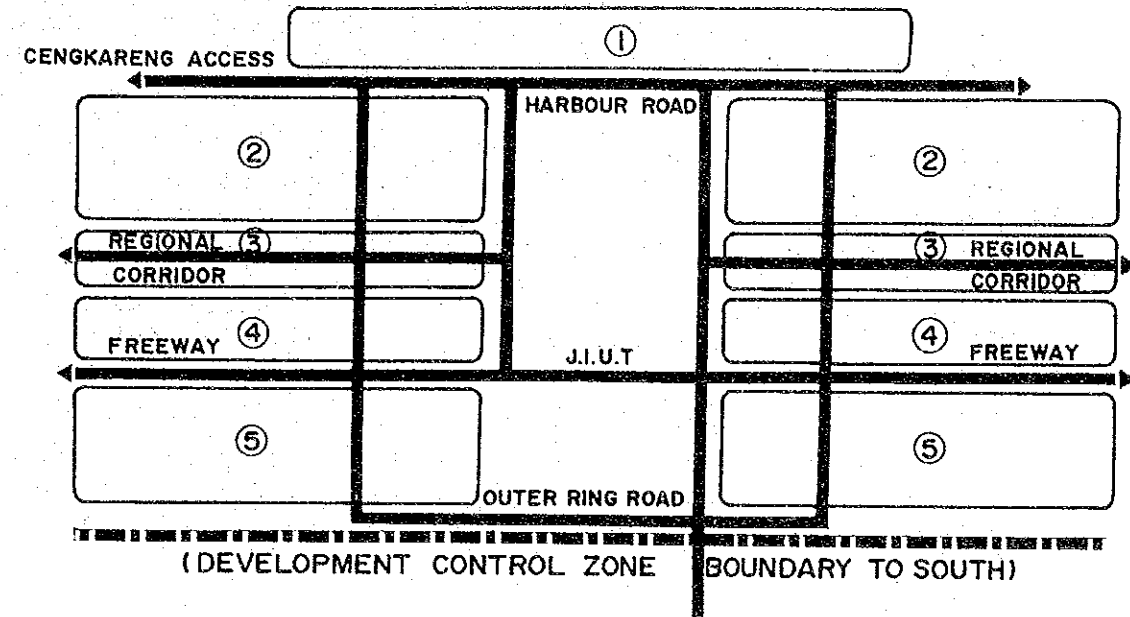


Fig. 3.4.2 FIVE ZONES IN EAST - WEST DIRECTION

### 3.4.2 TRAFFIC SECTORIAL ZONES AND THEIR CHARACTERISTICS

In order to examine the urban development of the Jakarta Metropolitan System more concretely by referring to the physical conditions of the area, the ARSDS team paid close attention to the Traffic Sectorial Zones (T.S.Z.).

Traffic Sectorial Zones are the areas surrounded by big physical barriers, such as big rivers, tollways, highways, railways, etc., which limit transportation unless facilities such as bridges are constructed to overcome these barriers.

In consideration of the allocation of activity centers following the Multi Nucleus System, the ARSDS team has the understanding that the service spheres of the activity centers and people's movement are influenced by the physical constraints of the T.S.Z.

To provide equitable access to employment and services and to practice more efficient transportation operation and management by avoiding extreme concentration toward the Central Area of Jakarta and certain limited centers, the ARSDS team felt it necessary to allocate at least one activity center in each T.S.Z.

Fig. 3.4.3 shows the Traffic Sectorial Zones in the Jakarta Metropolitan Area which are divided by physical traffic barriers.

#### CHARACTERISTICS OF TRAFFIC SECTORIAL ZONES

UC, UE, US-1 US-2, UW	All T.S.Z. surrounded by the Intra Urban Tollway are almost fully developed urban areas.
NC, NE	These zones to the north of the Harbor Road have been developed centering around Sunda Kelapa Port and Tanjung Priok Port. Manufacturing industries, warehouses, amusement facilities and densely populated housing are located.
SE-1, SE-2, SE-3 SS-1, SS-2, SS-3 SW-1, SW-2	A rapid urbanization in the suburban area surrounded by the Outer Ring Road and the Intra Urban Tollway is in progress. It is, however, not yet fully urbanized. SS-1, SS-2, SS-3 are provided with direct access to the central area. T.S.Z. in east and west hardly have direct access to the central area, except for SE-1 and SW-1 which have regional corridors. Among T.S.Z. in the east, SE-2 and SE-3 have disadvantageous access conditions to the Central Area which can only be given by joining the direct access of other T.S.Z. Therefore the adjustment of this access route to the central area is more necessary than for other T.S.Z.

CE-1, CE-2, CE-3

These T.S.Z. are still less developed than those described above. Their access conditions to the central area have similiar characteristics to their adjacent T.S.Z. in the the suburban area (SE) on the side of the Central Area.

CW-1, CW-2

These T.S.Z. are also still less developed than those described above. Their access conditions to the central area have similiar characteristics to their adjacent T.S.Z. in the suburban area (SW) on the side of the central area.

B-1, B-2, B-3

Separated from Jakarta physically by the Bekasi river. B-1, B-2 and B-3 are the T.S.Z. which should form an identical development with Bekasi.

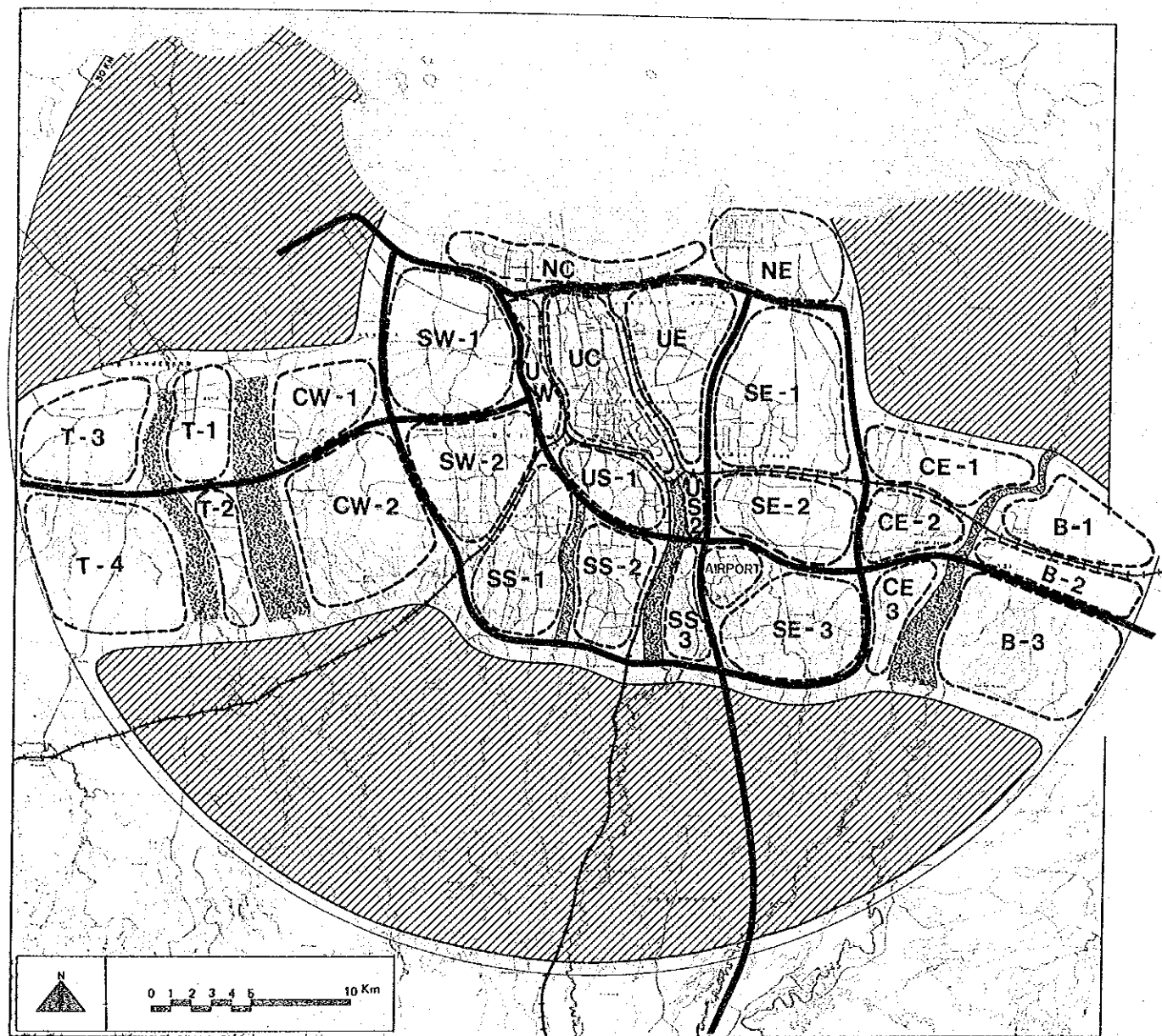
B-1 does not have good access to either Bekasi or Jakarta.

Including the city of Bekasi, B-2 has a potential for vigorous urbanization. B-3 is the least developed zone among the three.

T-1, T-2  
T-3, T-4

Separated from Jakarta physically by the town field, T-1, T-2, T-3, and T-4 are the T.S.Z. which should form an identical development with Tangerang.

Including the city of Tangerang, T-1 has a potential for vigorous urbanization. T-2 is hardly urbanized, except for some real-estate development.



LEGEND






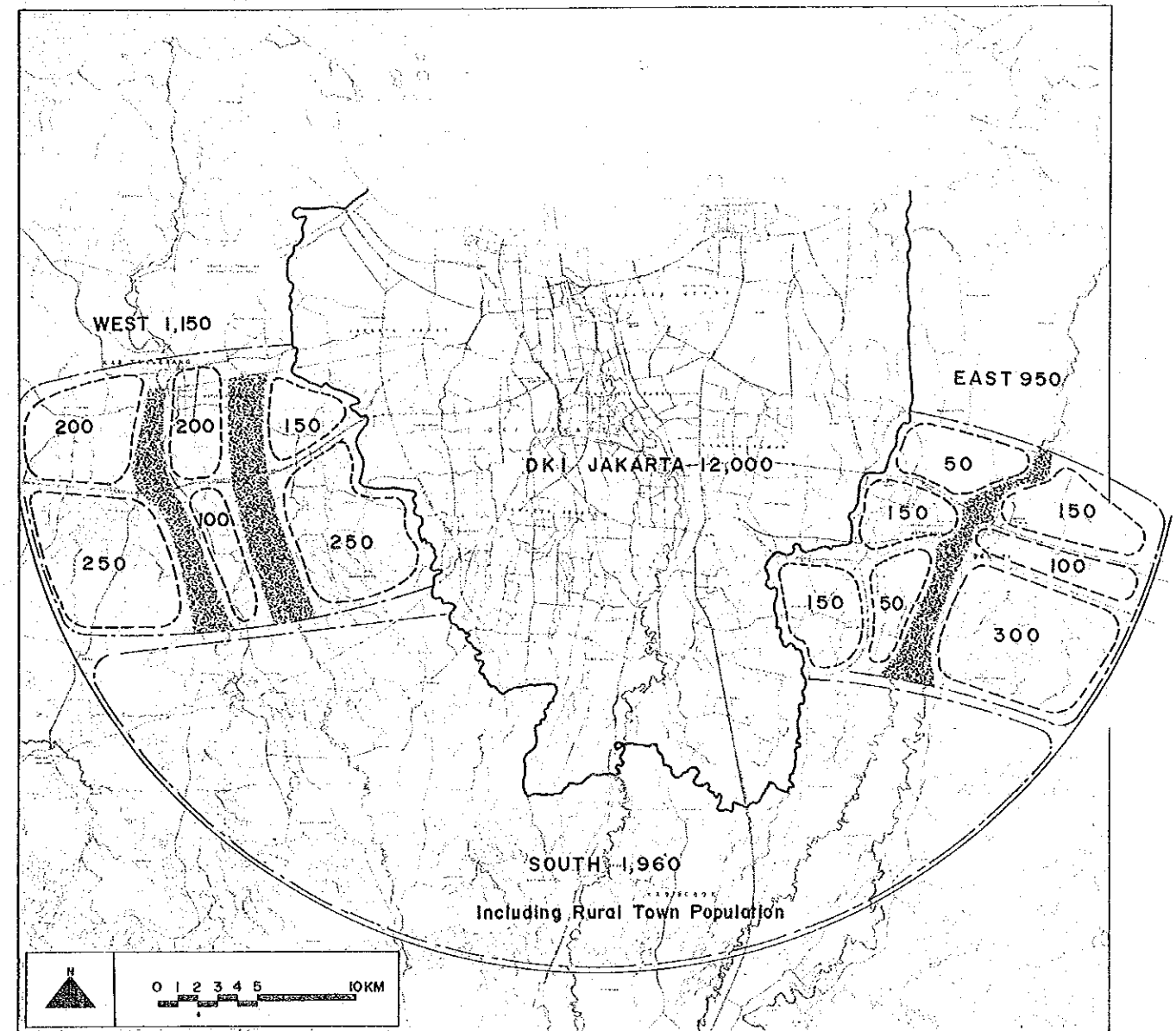
-  GREEN PRESERVATION/ RECREATION ZONE
-  TRAFFIC SECTORAL ZONE
-  LIMITED DEVELOPMENT ZONE
-  FREEWAY
-  RAILWAY



Fig. 3.4.3 FORMATION OF TRAFFIC SECTORAL ZONES (T.S.Z.)

3.4.3 ALLOCATION OF POPULATION

By following the ideas of the Jakarta Metropolitan System described above and by referring to the population frames given in the DKI Jakarta Structure Plan 2005 and Jabotabek Development Plan 2005, the ARSDS team considers the settlement hierarchy and the population allocation as follows:



LEGEND

-  GREEN PRESERVATION/ RECREATION ZONE
-  TRAFFIC SECTORAL ZONE

UNIT : 1,000 PERSONS

Fig. 3.4.4 ALLOCATION OF URBAN POPULATION IN JAKARTA METROPOLITAN AREA

#### 3.4.4 HIERARCHY AND ALLOCATION OF ACTIVITY CENTERS

As described previously in Section 3.3, the allocation of activity centers in the Jakarta Metropolitan Area plays an important role for inducing urban development by providing working places and various social and urban services. By collecting goods and persons, they have a big impact upon the whole traffic movement.

To provide equitable access to employment and services and to practice more efficient transportation operation and management by avoiding extreme concentration toward the Central Area of Jakarta and certain limited centers, the ARSDS team felt it necessary to allocate possibly at least one activity center in each T.S.Z., with each having a service population around one half to one million, thereby corresponding to the forecast population of each T.S.Z. in 2005.

This is the reason why some new activity centers are proposed by the ARSDS team.

The activity center hierarchy developed by the ARSDS team is as follows:

First, the ARSDS team differentiates the functions of the activity centers into the following two categories:

- Public Administration
- Commerce, Business and Service

Based on the differentiated functions above, the ARSDS team proposes the following three categories of activity centers in the Jakarta Metropolitan Area:

- Metropolitan Centers
- Sub Centers
- Secondary Centers

##### METROPOLITAN CENTERS

The Metropolitan Centers are the activity centers whose accumulations of administration, commerce and business have wider influences beyond the mere local service to the whole Jakarta Metropolitan Area and Indonesia. Two centers which are in this category are:

- Kota (mainly commerce and business functions)
- Monas (mainly public administration functions)

Kota has played the central role in the historical development of Jakarta. The commercial and business functions are still concentrated mostly in Kota and its influence is still expanding. Today the accumulation does not stay around Glodok alone, but expands along Jl. Cajah Mada/Hayam Wuruk and Jl. Mangga Besar. The former Lokasari is planned to be re-developed as a new commerce and business area in future.

The area around Monas has the function of nation wide administration with concentrated governmental facilities. Mixed in with them are also quite a few private business facilities. To the east of Monas, in Banteng, many new buildings are being built at the moment.

The station of Gambir is also going to be modernized according to the Central Line elevation. To the north of Banteng, Pasar Baru is showing vigorous growth as a commercial and business area.

It is also expected that these two poles will be further activated by the redevelopment project of the Kemayoran ex-airport.

##### SUB CENTERS

The ARSDS team proposes the following eight Sub Centers according to their administrative functions, such as Walikota and Kabupaten Offices, the city hierarchy in the Jabotabek Development Plan 2005 and the existing and future commercial and business accumulations.

- New East Center (Jakarta - Timur)
- New West Center (Jakarta - Barat)
- Blok M (Jakarta - Selatan)
- Tanjung Priok (Jakarta - Utara)
- Tangerang
- Bekasi
- Serpong
- Depok

In order to support the decentralization policy of the working places, it is important to enrich the administrative, commercial and business facilities. By developing the public facilities with cultural, educational, social, medical and recreational functions, sufficient local service for the demand of the residents should also be achieved in the suburban area and the Botabek Region. Sufficient land space for their long term prospect should be provided from the beginning. By developing multi-use activity centers which can fulfill various demands of the residents, trip concentration to Jakarta, other than commuting trips, can be reduced.

##### SECONDARY CENTERS

The ARSDS team proposes the following eighteen Secondary Centers which should reinforce the Metropolitan Centers in the Central Area and the Sub Centers in the suburban area and Botabek Region by primarily providing commercial and business services.

- |                |                 |                 |
|----------------|-----------------|-----------------|
| - Senen        | - Pondok Gede   | - Cileungsi     |
| - Tanah Abang  | - South Bekasi  | - Tambun        |
| - Manggarai    | - Kebon Jeruk   | - Ciputat       |
| - Jatinegara   | - Jati Uwung    | - Bantar Gebang |
| - Pondok Bambu | - North Legok   |                 |
| - Pasar Minggu | - North Serpong |                 |
| - Pulogadung   | - Cileduk       |                 |

The Secondary Centers above are based on the criteria of equity, in that the residents living in every T.S.Z. should be given sufficient local services. According to the T.S.Z. and the population forecast for 2005, the Secondary Centers are designed to serve around half a million to one million people. Furthermore, the design of the Sub and Secondary Centers are based on the idea that the maximum distance between the centers should not exceed 5 km.

As with the Sub Centers, it is important to enrich the commercial and business facilities of the Secondary Centers to support the decentralization policy of the working places.

By developing the public facilities with cultural, educational, social, medical and recreational functions, sufficient local service for the demands of the residents should also be achieved.

Similarly, sufficient land space for the long term prospect should be provided from the beginning.

By developing multi-use activity centers which can fulfill various demands of the residents, trip concentration to Jakarta, other than commuting trips, can be reduced.

#### SERVICE COVERAGE IN THE CENTRAL AND SUBURBAN AREAS

In consideration of the activity center hierarchy mentioned above, the ARSDS team also paid attention to the character and service coverage difference between those in the Central Area and suburban areas.

In the Central Area surrounded by the railway, the commerce and business area will definitely expand while enclosing the existing facilities in Kota and around Monas. Centering around these two Metropolitan Centers as growth poles, the expansion will definitely take over other commerce and business areas such as Lokasari, Pasar Baru, the Kemayoran ex-airport, Banteng, etc. and existing activity centers such as Senen and Tanah Abang. And this will form the CBD (Central Business District) of the Jakarta Metropolitan Area toward the year 2005, as shown in the Fig. 3.4.5.

The characteristics of the activity centers in the central area are summarized as follows:

- In the Central Area there are not big physical barriers between centers and it hardly forms a sphere such as a T.S.Z.
- The functions of the centers in the Central Area should be more manifold and dynamic
- The movement of people and the sphere of service are very flexible and fluid in the Central Area
- Priority should be given to high liberty of choice rather than to fixed service

Therefore, because the service spheres of the activity centers overlap in the Central Area as shown in Fig. 3.4.6, the people can go to and choose the activity center freely and flexibly. The activity centers create rather dynamic interactions.

Against this, the activity centers in the suburban area are designed so as to uniformly cover the area. From the viewpoint of efficiency, as shown in Fig. 3.4.6, the service spheres do not need to overlap each other as much as in the Central Area. The activity centers interact statically rather than dynamically.

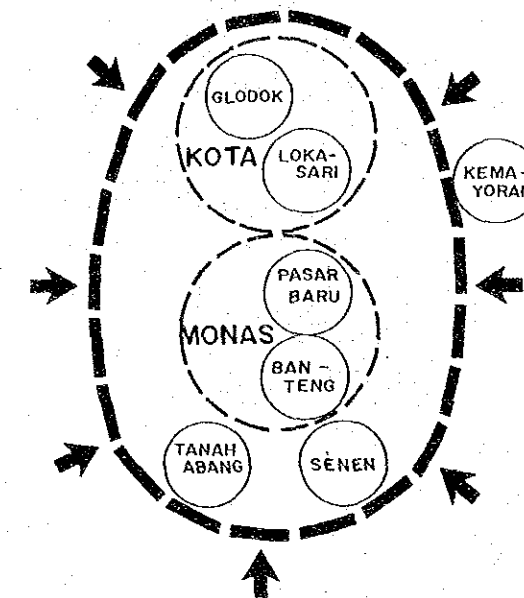


Fig. 3.4.5 FORMATION OF CENTRAL BUSINESS DISTRICT

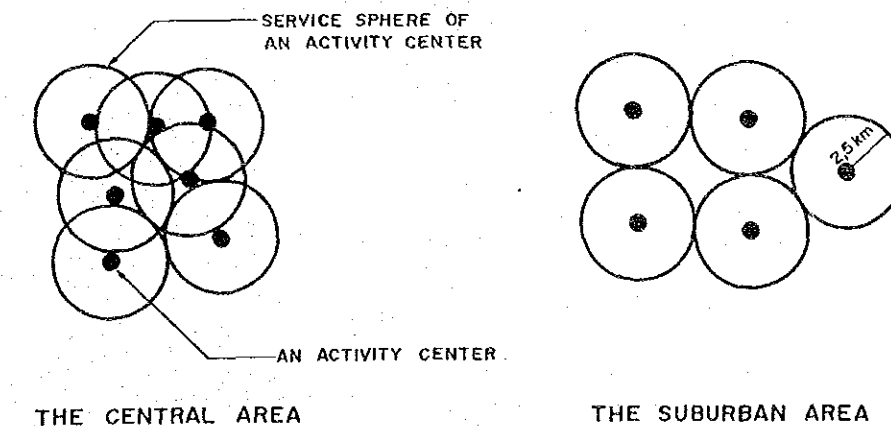
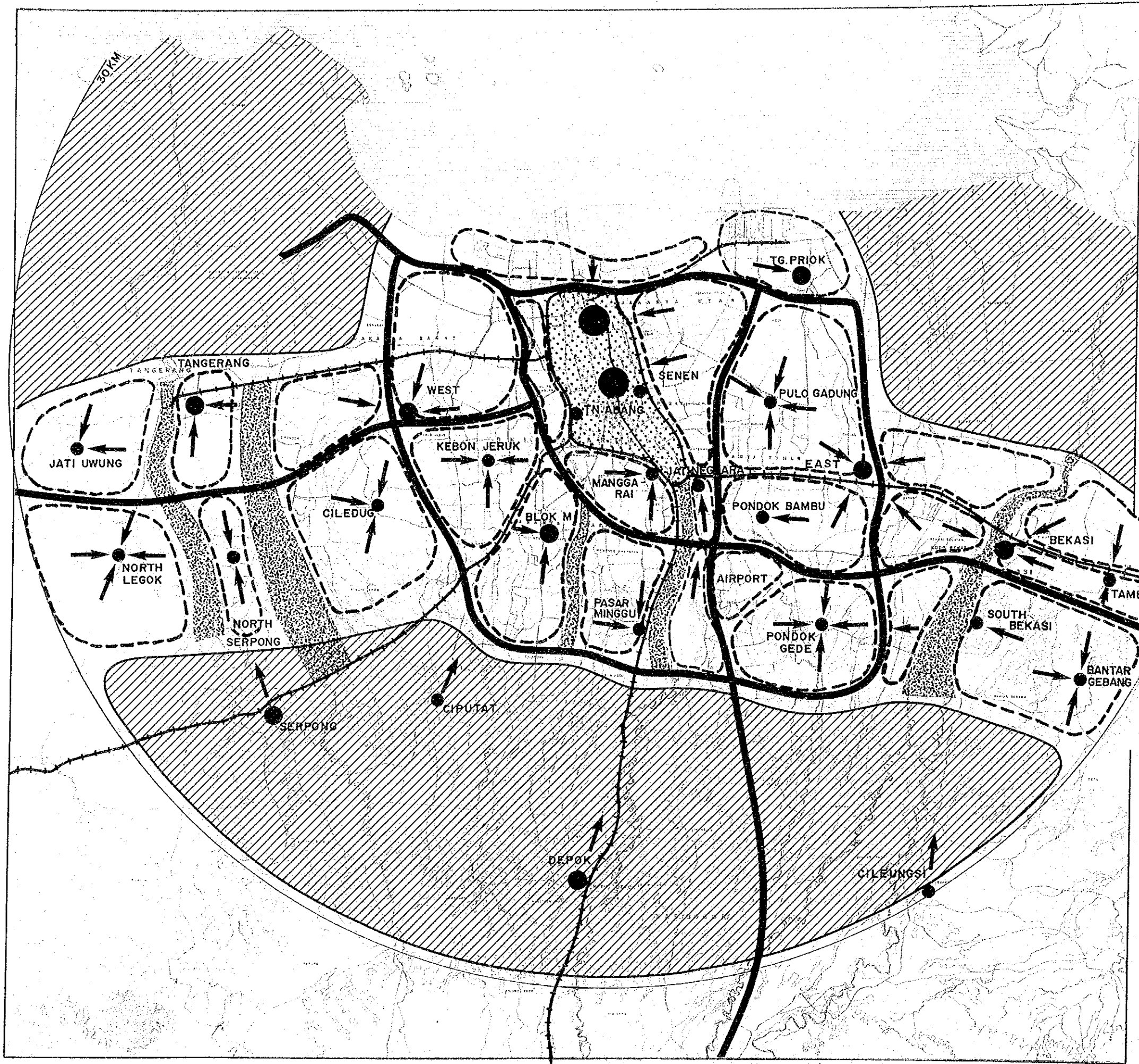


Fig. 3.4.6 SCHEMES OF ACTIVITY CENTERS IN THE CENTRAL AND SUBURBAN AREAS

Fig. 3.4.7  
 HIERARCHY AND ALLOCATION  
 OF ACTIVITY CENTERS



- LEGEND**
- METROPOLITAN CENTER
  - SUB CENTER
  - SECONDARY CENTER
  - ▨ GREEN PRESERVATION/ RECREATION ZONE
  - ▨ CENTRAL AREA
  - ⋯ TRAFFIC SECTORAL ZONE
  - ▨ LIMITED DEVELOPMENT ZONE
  - FREEWAY
  - +— RAILWAY



**ARTERIAL ROAD SYSTEM  
 DEVELOPMENT STUDY  
 IN JAKARTA METROPOLITAN AREA**