

8.3 Corridor Landuse

8.3.1 East-West Axis Corridor

- (1) Tangerang to Western part of Jakarta Outer Ring Road (JORR) Section (Fig. 8.3.1)

Industry and mixed industry and trade are predominant in the land use along the existing Jl. Daan Mogot which is the trunk road between Jakarta and Tangerang as well as Jakarta-Merak Freeway. Jl. Daan Mogot has been widened to 4 lanes recently. In the north of this corridor Soekarno-Hatta (Cengkareng) International Airport is located. However, the limited development and flood detention area is designated in the surrounding of the airport.

Tangerang railway line runs westward parallel to Jl. Daan Mogot, and it lies the southern boundary of industrial landuse. In between Tangerang line and Jakarta-Merak Freeway, the category of settlement area with all its facilities is widely spread where development potential is deemed high. In the southern part of this corridor, some industrial and housing development are found along Jl. Raya Serpong, Tangerang Bypass and Tangerang-Cipondoh-Cileduk road. Tangerang Bypass connects to Jl. Raya Serpong, which is designated as a circumferential road in Jabotabek (Jabotabek Ring Road), bypassing Depok. Two city planning roads are found in this area, one is along the railway and another is located in the middle of the area. A proposed LRT (Light Rail Transit) is planned on the railway.

- (2) Western part of JORR to South-West Arc (S-W Arc) Section (Fig. 8.3.2)

In the south of the railway, Cengkareng Drain and Kali Sekretaris make the area free from flood and grid patterned arterial road network is planned to sustain dense development. The West sub-center and Grogol secondary center are located in this corridor. In the West Sub-center, residential and commercial development are in progress prior to the establishment of city hall.

Development of JORR is now under way. The frontage roads of JORR have completed and are open to the public. The toll road is being developed by BOT scheme and is scheduled to be completed by the year 2000. S-W Arc and its the Northern Extension of S-W Arc of Jakarta Intra Urban Tollway are being implemented and its possession of land is almost finished.

(3) S-W Arc to North-South Link (N-S Link) Section (Fig. 8.3.3)

This section covers the area of Jakarta Harbour Road in the north and Monas south upto Jl. Pramuka. There are two metropolitan centers (M.C) as per the ARSDS; namely Kota M.C and Monas M.C. The Kota M.C. is integrated commerce and business functions. On the other hand, the Monas M.C has public and administration functions. Following three sub-corridors further divided can facilitate to disclose its corridor landuse;

Kota M.C. Sub-Corridor
Central M.C. Sub-Corridor
Monas M.C. Sub-Corridor

Each sub-corridor consists of three zones, namely western peripheral area of CBD (Western CBD), central CBD and eastern peripheral area of CBD (Eastern CBD). The Western CBD has sparse east-westward arterial roads and few north-south arterial road.

The Central CBD has been densely developed and has a ladder patterned road network. No east-westward city planning road is added in the structure plan of Jakarta 2005. East-Westward arterial roads such as Jl. Mangga Dua, Jl. Mangga Besar and Jl. Sukarjo Wiryopranoto/Jl. K.H. Samanhudi have been widened.

Ex-Kemayoran Airport is designated as the Special Area to be being developed as an intensive sub-center of commerce cum housing complex.

The central line has been elevated in the section from Kota to Manggarai. A north-southward city planning arterial road is planned in both sides along the elevated railway.

i) Kota M.C Sub-Corridor

This sub-corridor is located in the area along Jl. Mangga Dua and its surrounding. Major physical constraint is historical buildings and monuments of Kota which consist of Jakarta Museum, Kota station and so forth. Recent development of Pasar Pagi flyover and improvement of Jl. Mangga Dua results in booming modernization and stimulating redevelopment in old built-up area.

ii) Central M.C Sub-Corridor

This sub-corridor is located in the area along Jl. Mangga Besar and its surrounding. Dense commercial development has been taken place along Jl. Gajah Mada and Jl. Hayam Wuruk. A east-westward city planning arterial road is planned on the line of western and eastern extension of Jl. Mangga Besar. The western extension goes towards Jl. Jembatan Besi and connects with Jl. Daan Mogot after crossing Jl. Latumeten and the Northern Extension of S-W Arc. The eastern extension passes ex-Kemayoran Airport in the middle and goes towards the established housing complex of Sunter Agung Podomoro.

iii) Monas M.C Sub-Corridor

This sub-corridor is located in the south of Monas monument and in the area along Jl. Kebon Sirih and its surrounding. Monas square and its surrounding is designated as the Special Area to secure the environment under strictly governmental control. The original scheme of Jakarta-West Java Tollway System had proposed the East-West Connection in this sub-corridor, which a linkage was planned to connect S-W Arc with N-S Link and to form an inner ring road. Finally, the proposed East-West Connection has been deferred due to preservation of social environment and prevention of adverse aesthetic view. However, Jl. Kebon Sirih and east-westward connecting roads presently have improvement plan to widen the road right-of-way up to 70 m.

(4) N-S Link to Eastern part of JORR Section (Fig. 8.3.4)

Western part of this segment is developed rather dense with grid patterned road network, but in the eastern part, sparse road density and scattered development exist. The East sub-center is located at the corner of JORR and Jl. I. Gusti Ngurah Rai. To support the East sub-center, a city planning arterial road is planned to run east-westward in the north of the East sub center. Another north-southward city planning arterial road is located in its western fringe.

In the north of Jl. Bekasi Raya, Kelapa Gading housing development has been settled progressively along north-southward Kelapa Gading Boulevard and along east-westward Raya Barat/Timur Boulevard. In the eastern part, Cakung Drain flows northward and medium scale industry is predominant in the landuse along Jl. Bekasi Raya.

In the southern part of this corridor, housing development is widely developed in the western part and the established Pulo Gadung industrial estate exists in the middle. In the eastern part the Buaran river flow northward and connects to Cakung Drain. Medium industry has been settled along Jl. Bekasi Raya. Bekasi railway line disrupts landuse from the south of Jl. I. Gusti Ngurah Rai. The East sub center has a new city hall with its own access to frontage roads of JORR.

(5) Eastern part of JORR to Bekasi (Fig. 8.3.5)

Jakarta-Cikampek Tollway and Jl. Bekasi Raya run parallel to Bekasi railway line in the south of this corridor. Mixed industry and commerce are longitudinally spread along Jl. Bekasi Raya. In the north of the railway, scattered industry and housing development are found sustained by sparse road network. To strengthen poor road network in the north of corridor, Bekasi Bypass is planned in the north of the railway and partially completed. One bridge which crosses the Bekasi river was completed on

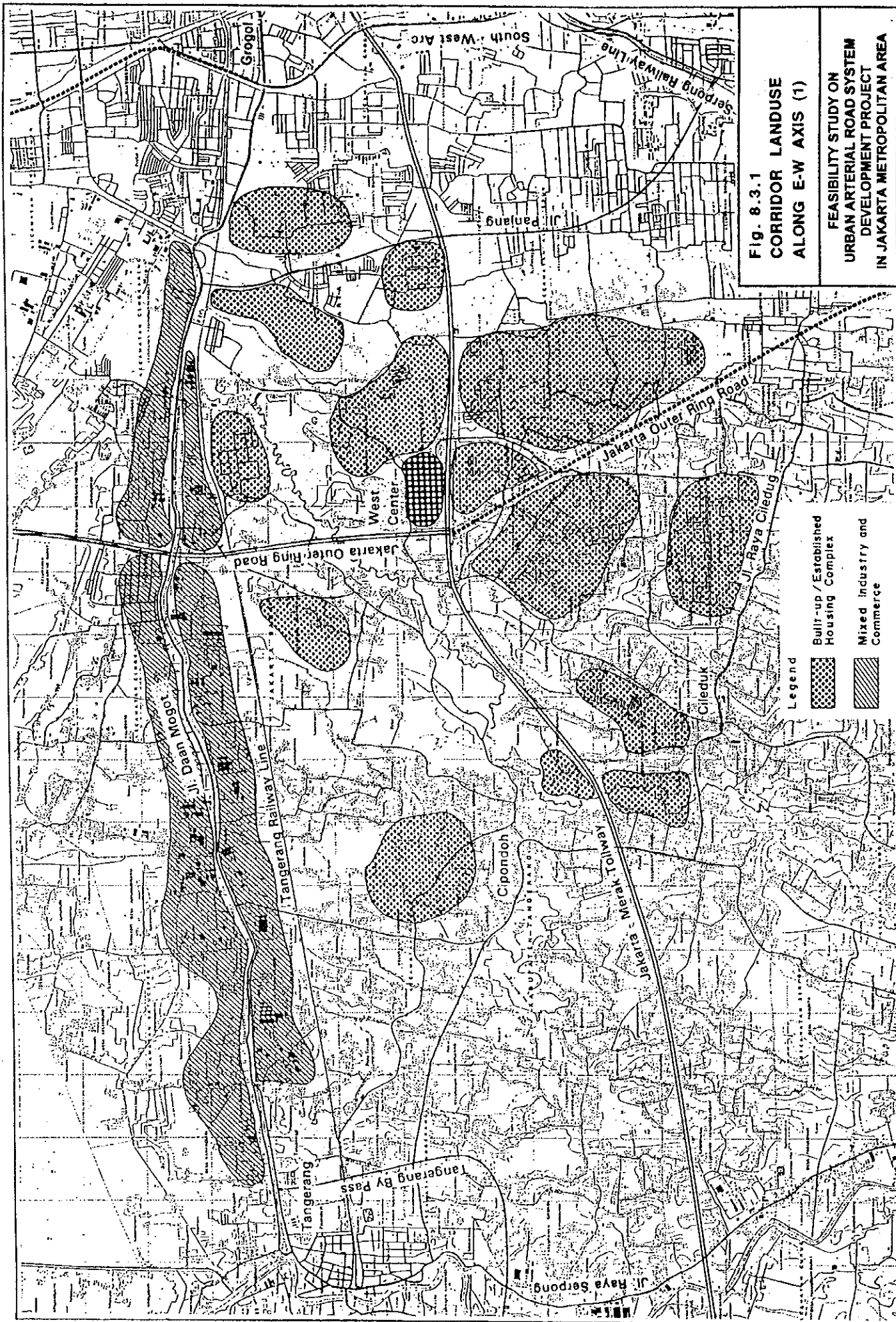




Fig. 8.3.1

**CORRIDOR LANDUSE
ALONG E-W AXIS (1)**

**FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA**

Legend

	Built-up / Established Housing Complex
	Mixed Industry and Commerce

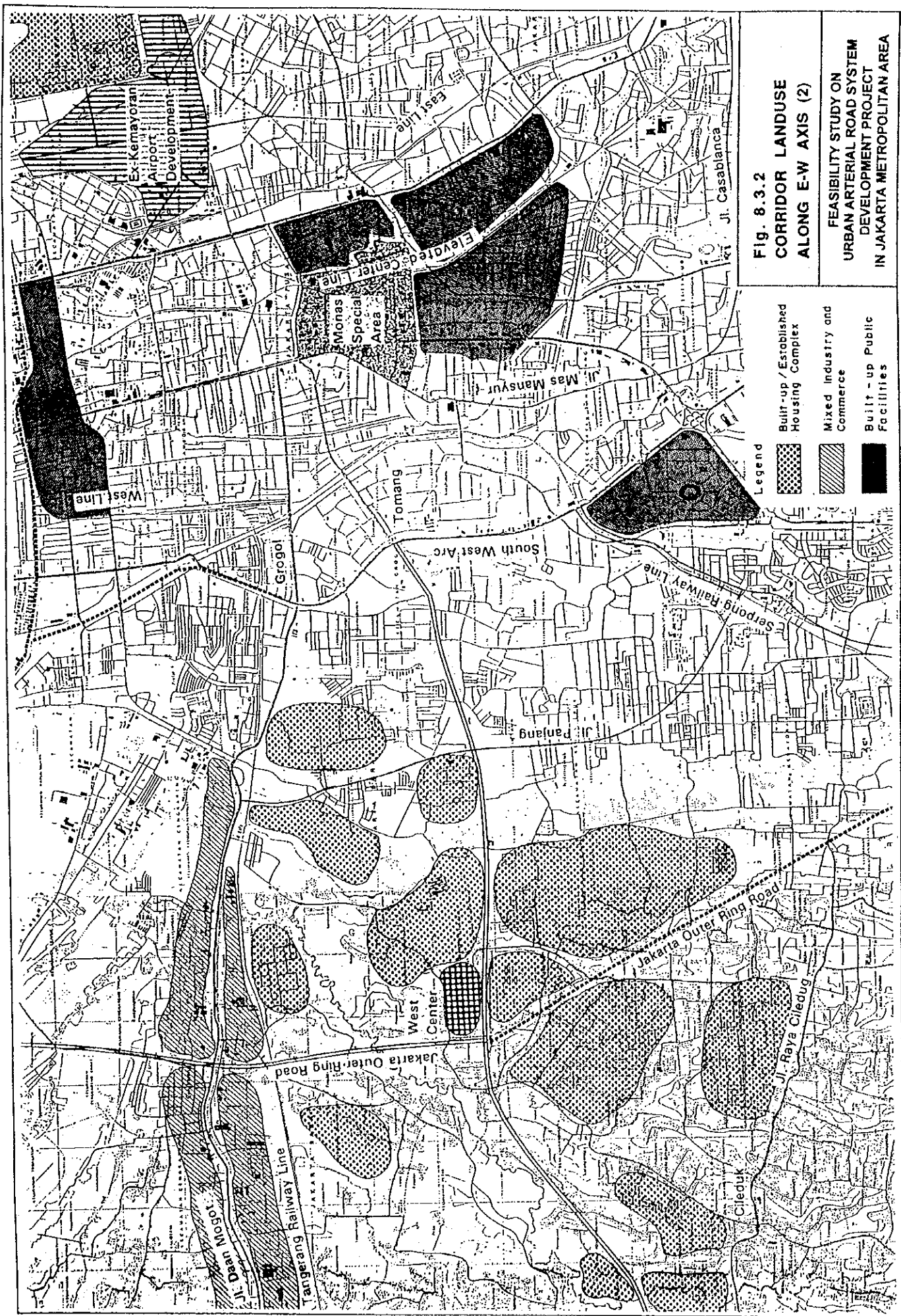


Fig. 8.3.2
CORRIDOR LANDUSE
ALONG E-W AXIS (2)

FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA

Legend

	Built-up / Established Housing Complex
	Mixed Industry and Commerce
	Built-up Public Facilities



Fig. 8.3.3
CORRIDOR LANDUSE
ALONG E-W AXIS (3)

FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA



Fig. 8.3.4
CORRIDOR LANDUSE
ALONG E-W AXIS (4)

FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA

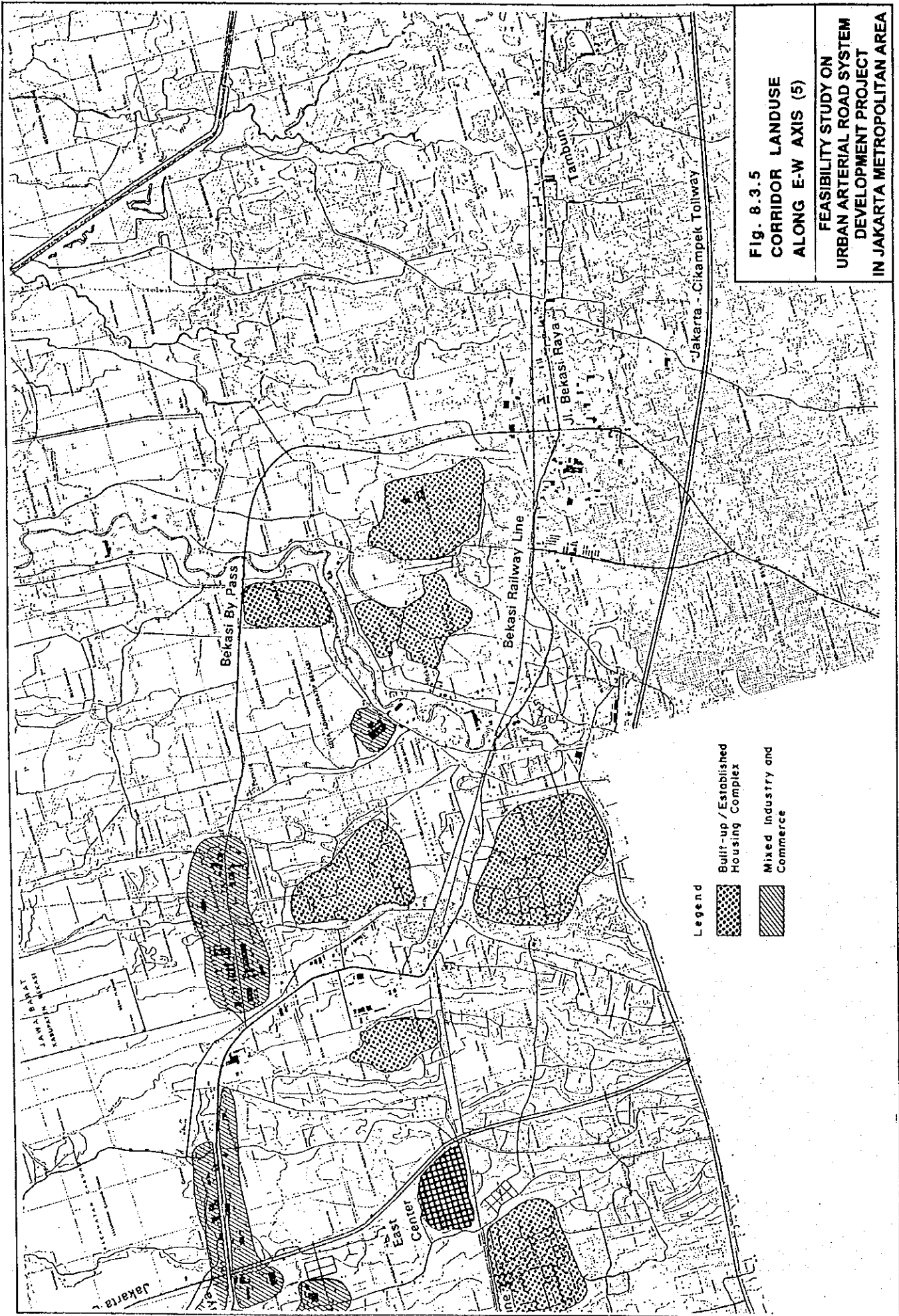




Fig. 8.3.5
CORRIDOR LANDUSE
ALONG E-W AXIS (5)

FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

- Legend**
-  Built-up / Established Housing Complex
 -  Mixed Industry and Commerce

Bekasi Bypass in August, 1990. However, traffic is presently limited to light vehicles due to damages of slab. Along Jl. Bekasi Raya, there exist municipalities of Tambun, Cibitung and Cikarang. Planned Bekasi Bypass will terminate near by Tambun and will connect Bekasi-Cileungsi road which is designated as a circumferential road in Jabotabek (Jabotabek Ring Road), bypassing Depok. The Kranji flyover is under construction at railway crossing.

8.3.2 North-South Axis Corridor

(1) Jakarta Harbour Road to South-West Arc (S-W Arc) Section (Fig. 8.3.6)

This section covers the area of the CBD in DKI Jakarta and its surrounding. However, both the eastern area beyond ex-Kemayoran Airport and the western area beyond the western railway line are out of the corridor because either S-W Arc or N-S Link have their own functions similar to the targeted roles and functions of N-S Axis.

Two major arterial roads in the north-southward, Jl. Gajah Mada/Hayam Wuruk and Jl. Gunung Sahari exist in the north, and Jl. M.H. Thamrin/Jend. Sudirman and Jl. Salemba Raya/Matraman Raya/Otista in the south.

As the N-S Axis is designated as an alternative toll road to these arterial roads, the corridor is split into two sub-corridor, namely

Monas East Sub-Corridor
Monas West Sub-Corridor

i) Monas East Sub-Corridor

Ex-Kemayoran Airport Development is located in the northern end, in which it is planned to re-develop 454 ha and to generate 120,000 jobs. The former north-southward runway is converted to 12 lanes public road and it is planned to connect with both Jl. R.E. Martadinata and Jakarta Harbour Road

In the south of ex-Kemayoran Airport, densely urbanized area with low cost housing is predominant landuse and it is subject to urban betterment with the first priority.

In the east of Monas, there are two built-up urbanized areas, namely Senen secondary center and Cikini. The former is densely developed commercial area centered at Pasar Senen.

The latter is well developed institutional area where there exist hospitals, university, administrative offices, embassies and other public facilities.

In the southern part of this sub-corridor, residential landuse is predominant including established housing Complex of Tebet. However, it is subject to urban betterment with second priority.

ii) Monas West Sub-Corridor

Kota railway station and its surrounding have a number of historical monuments in old Jakarta and are assumed to be preserved appropriately. Presently, mixed industrial and commercial landuse are developed and scattered housing will require rehabilitation.

Along Jl. Gajah Mada/Hayam Wuruk, predominant ribbon development are found. Pasar Glodok centers commercial landuse in the north and Presidential Palace surrounded with office buildings exist at the southern end.

Tanah Abang secondary center is located in the south of Monas where Pasar Tanah Abang centers commercial landuse surrounded by public and private office buildings. Typical ribbon development are found along Jl. Fachrudin and Jl. Mas Mansyur.

(2) S-W Arc to southern part of Jakarta Outer Ring Road (JORR) Section (Fig. 8.3.7)

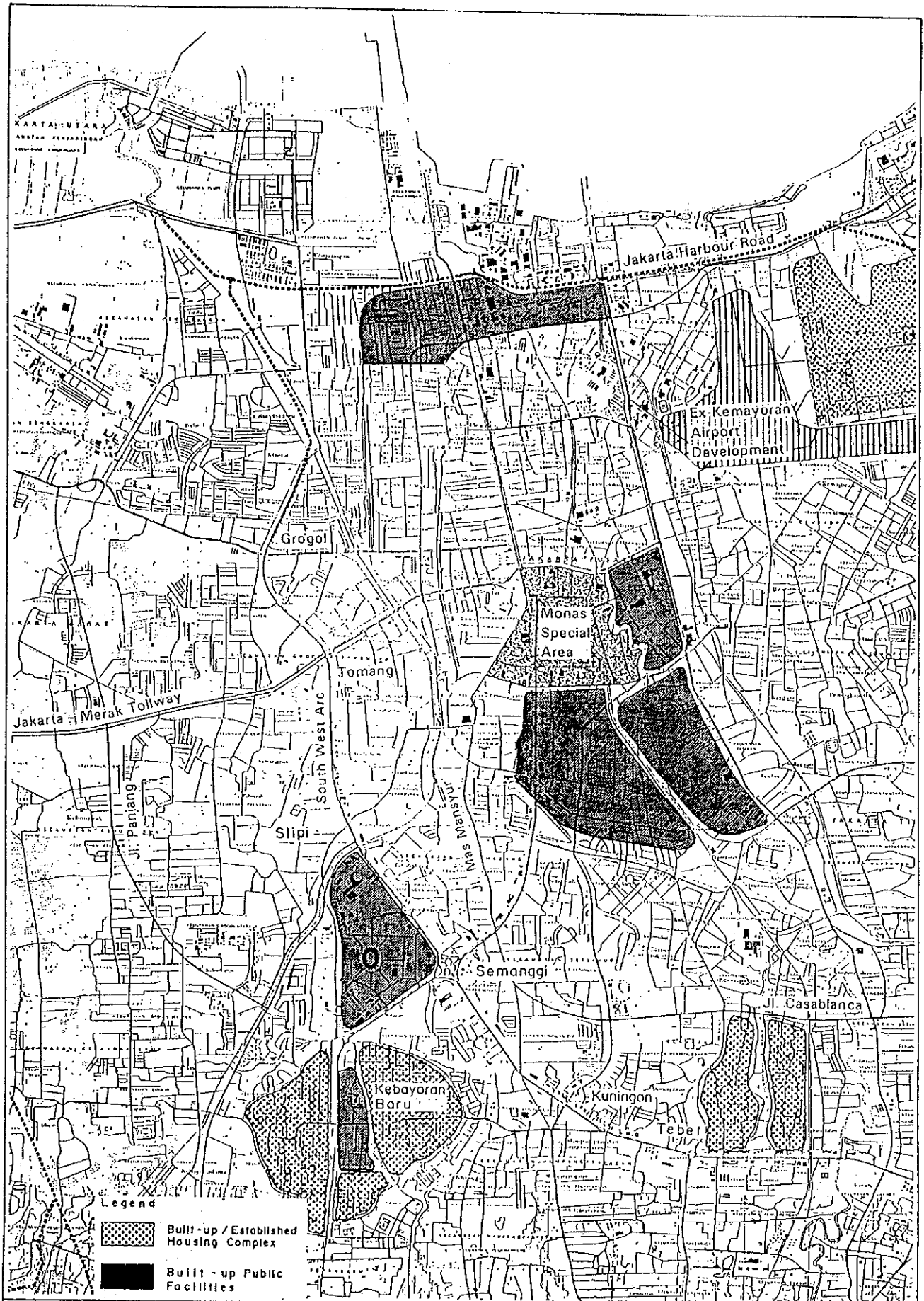
There are three north-southward arterial roads, namely, Jl. Ciputat Raya, Jl. Fatmawati, and Jl. Pasar Minggu Raya.

Some collector roads such as Jl. Metro Pondok Indah, Jl. Pangeran Antasari, Jl. Ampera Raya and Jl. Mampang Prapatan exist complementary among these arterial roads. Four sub-corridors are set in this section to aim at diverting traffic from these arterial roads.

Residential landuse is predominant in this section, including established housing complex of Kebayoran Baru and Pondok Indah. However, Parliament Building with relevant facilities and Senayan Olympic Stadium with Sports Complex are designated as an established area.

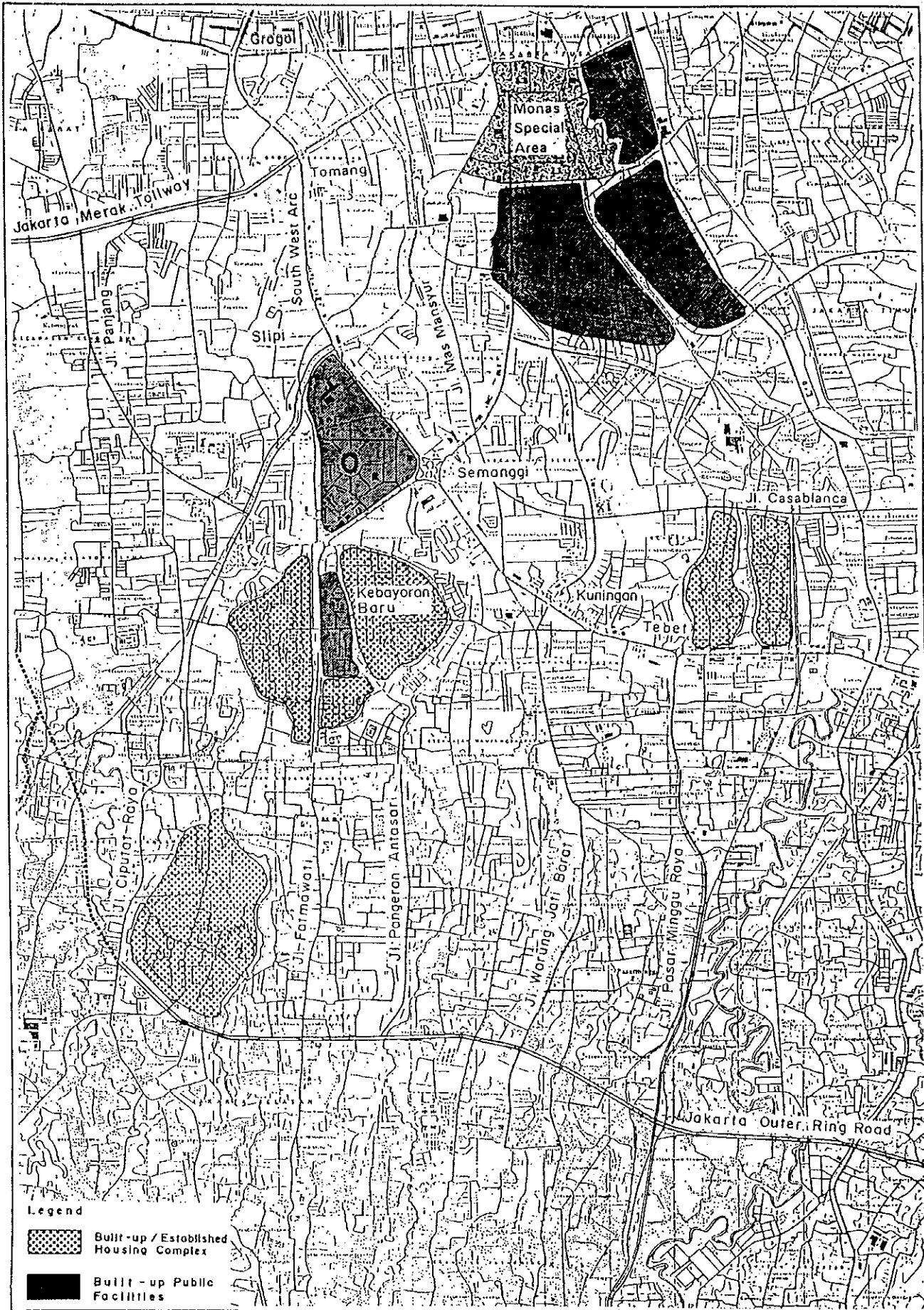
Kebayoran Baru subcenter has central core of commercial area of Blok-M and Jakarta South City Hall surrounded by public and private office buildings. In its surrounding, established housing complex and public facilities are found.

Intensive development of public and private office buildings and housing complex are found along frontage roads of JORR, in particular in the vicinity of major intersections between JORR and radial roads.



FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

Fig. 8.3.6 CORRIDOR LANDUSE ALONG N-S AXIS (1)



FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA

Fig. 8.3.7 CORRIDOR LANDUSE ALONG N-S AXIS (2)

8.4 Physical Constraint

8.4.1 General

Physical constraint denotes what it should be taken into considerations major points or area where a route will pass or avert by physical reasons. They are such as built-up housing complex, established industrial estate, well-planned public facilities, programmed projects, city planning roads, special area and so forth. These physical constraint generally is regarded as so-called "control points" to control a route alignment to be set. However, it is noted that physical constraint sometimes vary its character and criteria according to targeted roles and functions of road.

8.4.2 East-West Axis

(1) Tangerang-Western Part of JORR Section (Fig. 8.4.1)

No major physical constraint is found. Tangerang Bypass is undivided two lanes highway, which starts from Jl. Daan Mogot and go southward to encompass Tangerang City and ends at Jl. Raya Serpong. Tangerang Bypass will be able to collect from and disperse to traffic on East-West Axis. In the eastern part of this corridor, recent widening of Jl. Daan Mogot and development of JORR spur housing development. The existing Tangerang-Cipondoh-Cileduk road and Cileduk-Kembangan (Kembangan Raya) work as a rural secondary road. The southern city planning road will aim at connecting these housing development with the West sub-center and the Central Business District (CBD) in DKI Jakarta.

Tangerang Line is single track and is operated by diesel locomotives. Since the level of operation is in no wise high, an intensive operation by LRT is planned to make full use of the existing facilities.

(2) Western Part of JORR to S-W Arc Section (Fig. 8.4.2)

North-western part of this section lies in the flood prone area and eastern part comprises industrial and residential area. The area where Jl. Pangeran Tubagus Angke encompasses presently has poor road network. One city planning road is planned to connect Jl. Daan Mogot with Jl. Latumeten, passing the center of the area.

North-bound Latumeten will run on the west dike of the Kali Grogol and the Northern Extension of S-W Arc and south-bound Latumeten will keep its existing alignment on the east dike. The elevated Northern Extension will go northward on the dike between the Kali Grogol and Banjir Kanal and North-bound Latumeten will cross the Kali Grogol to joint the existing route.

Two city planning roads extend in the south. Tangerang railway crosses Jl. Daan Mogot and goes eastward in the north of Jl. Daan Mogot. However, major physical constraints such as railway, dense housing and commercial

development lie in the eastern part. Even city planning road has been developed not straight line but crank shape (refer to RBWK). The existing road network has been improved partially, and three north-south ward arterial roads, Jl. Perjuangan (Panjang) which is called as Middle Ring Road to connect Jl. Daan Mogot with Kebayoran Baru sub-center and two planned roads, will terminate at Jl. Daan Mogot.

S-W Arc has complicated related facilities (interchange ramps, ON/OFF ramps, flyover, etc.), in this section.

(3) S-W Arc to N-S Link Section (Fig. 8.4.3)

A large number of physical constraint will make the project road pass both the CBD and its peripheral area by viaduct because of limited land availability and expected level of mobility. However, in central CBD, type of road will vary according to anticipated road users whose purpose and origin/destination of trip are located in the CBD or outside of the CBD. At-grade scheme will aim at serving road users access to/from the CBD, while viaduct scheme will keep service to through-traveled users. In case of viaduct scheme, since the elevated central railway line lies north-southward with 1500 voltage catenary at 19 m high from the existing road, an elevated road on viaduct will fly over railway at about 21 m high, where it is equivalent to third level of interchange. Both scheme will require elaborate traffic maneuvering at either eastern or western ON/OFF ramps at the CBD due to anticipated heavy traffic demand.

(4) N-S Link to Eastern Part of JORR Section (Fig. 8.4.4)

In the western part, major physical constraints such as large-scale housing complexes and well integrated industrial estates are widely spread. A proposed LRT line is planned on Jl. Bekasi Raya. Bekasi railway line and high voltage power transmission line exist nearby East subcenter. However, some public spaces such as city planning roads, the Cakung Drain and the Cakung river will let the project road manage to escape severe these physical constraints.

In the eastern part, no remarkable physical constraint except the ribbon development along the existing arterial roads is found.

(5) Eastern Part of JORR to Bekasi Section (Fig. 8.4.5)

No major physical constraint is found except the Bekasi river and industrial estates in the area where it is encompassed by Jl. Bekasi and JORR. Four interchanges on Jakarta-Cikampek Tollway have been provided in Bekasi. At the eastern end, interchange rampway is newly built in between Tambun and Cibitung. Therefore, no interchange of Jakarta Cikampek Tollway is provided to both north-southward existing roads from Tambun and Cibitung.

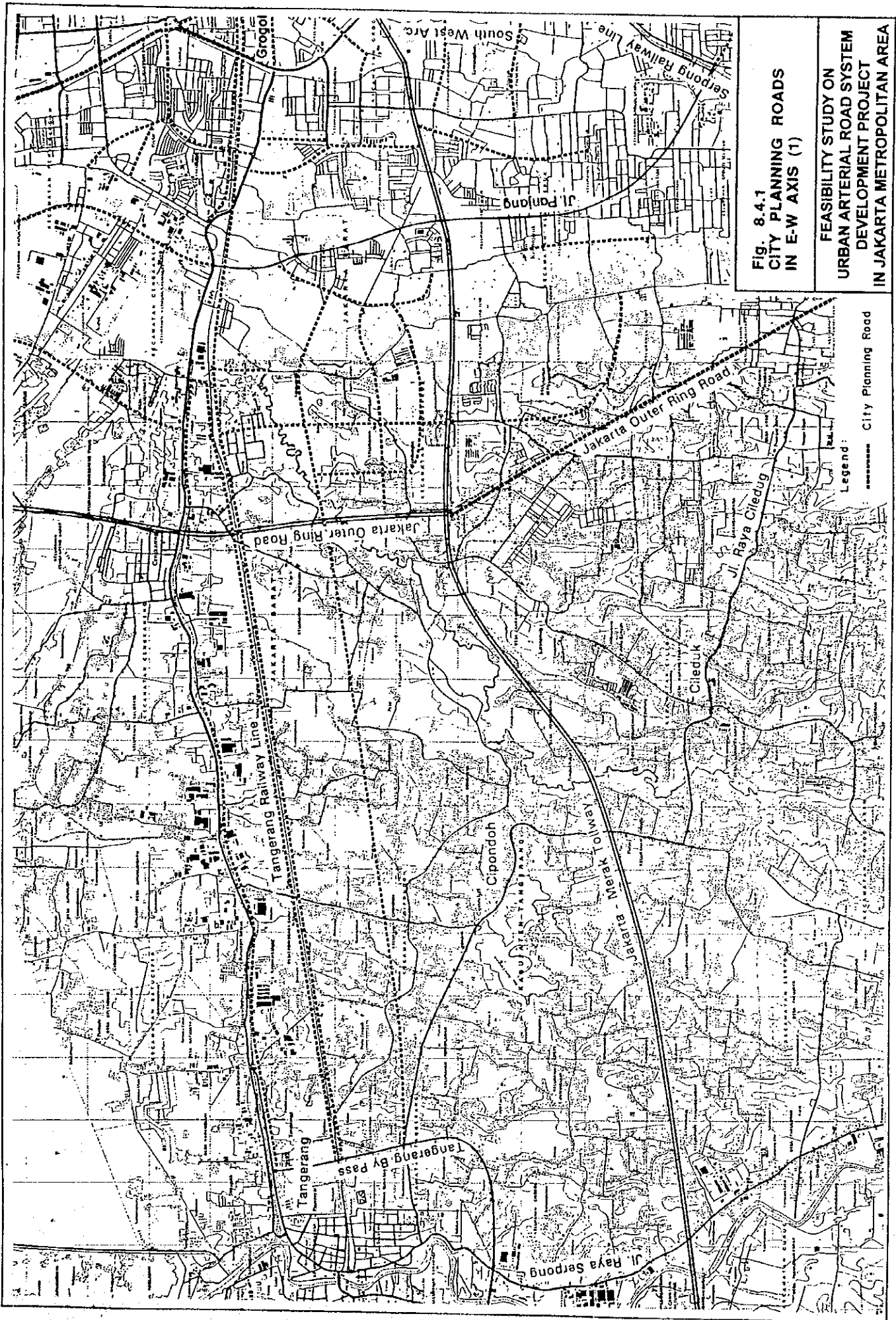


Fig. 8.4.1
 CITY PLANNING ROADS
 IN E-W AXIS (1)

FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA



Fig. 8.4.2
CITY PLANNING ROADS
IN E-W AXIS (2)

FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

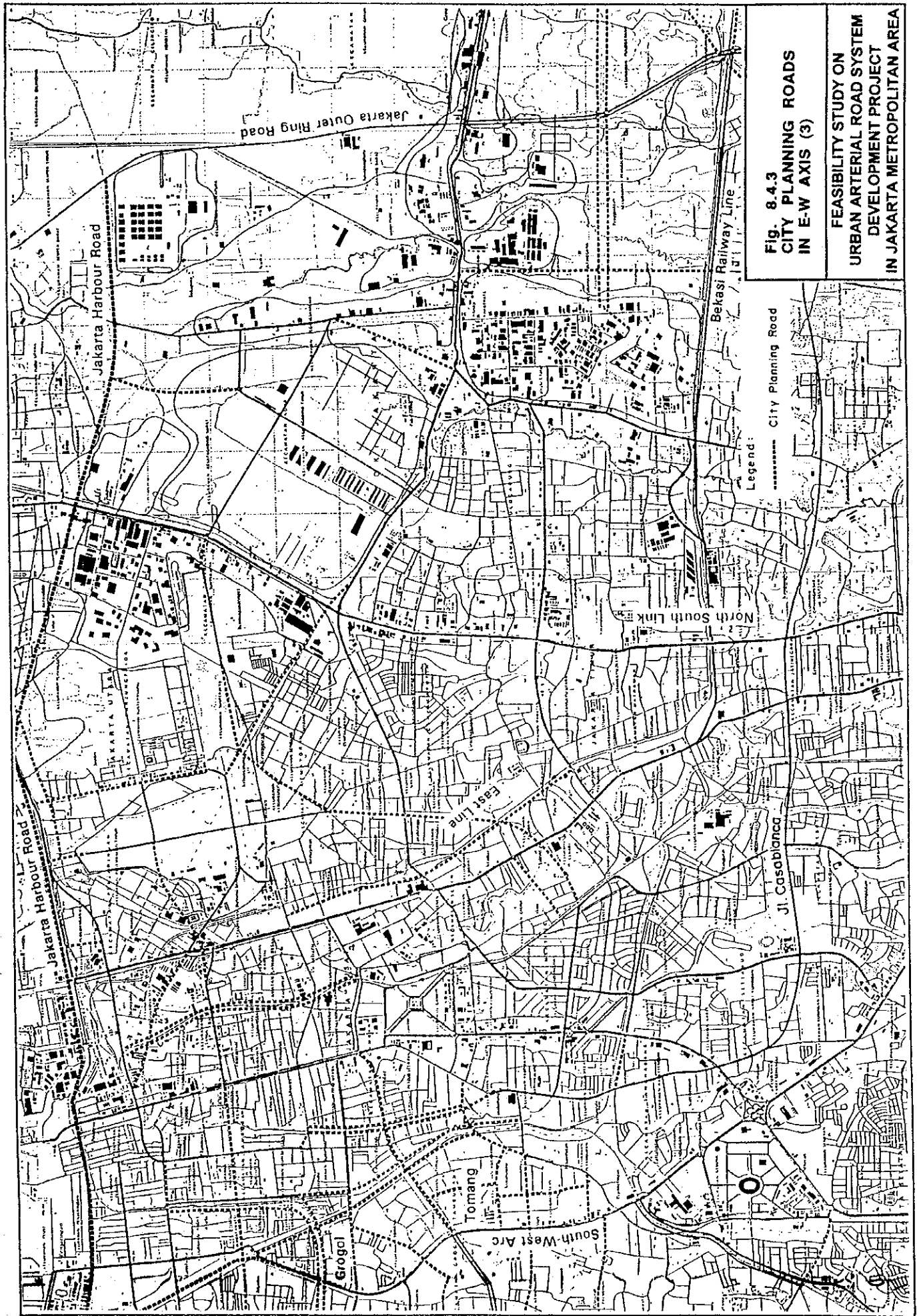


Fig. 8.4.3
CITY PLANNING ROADS
IN E-W AXIS (3)

FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

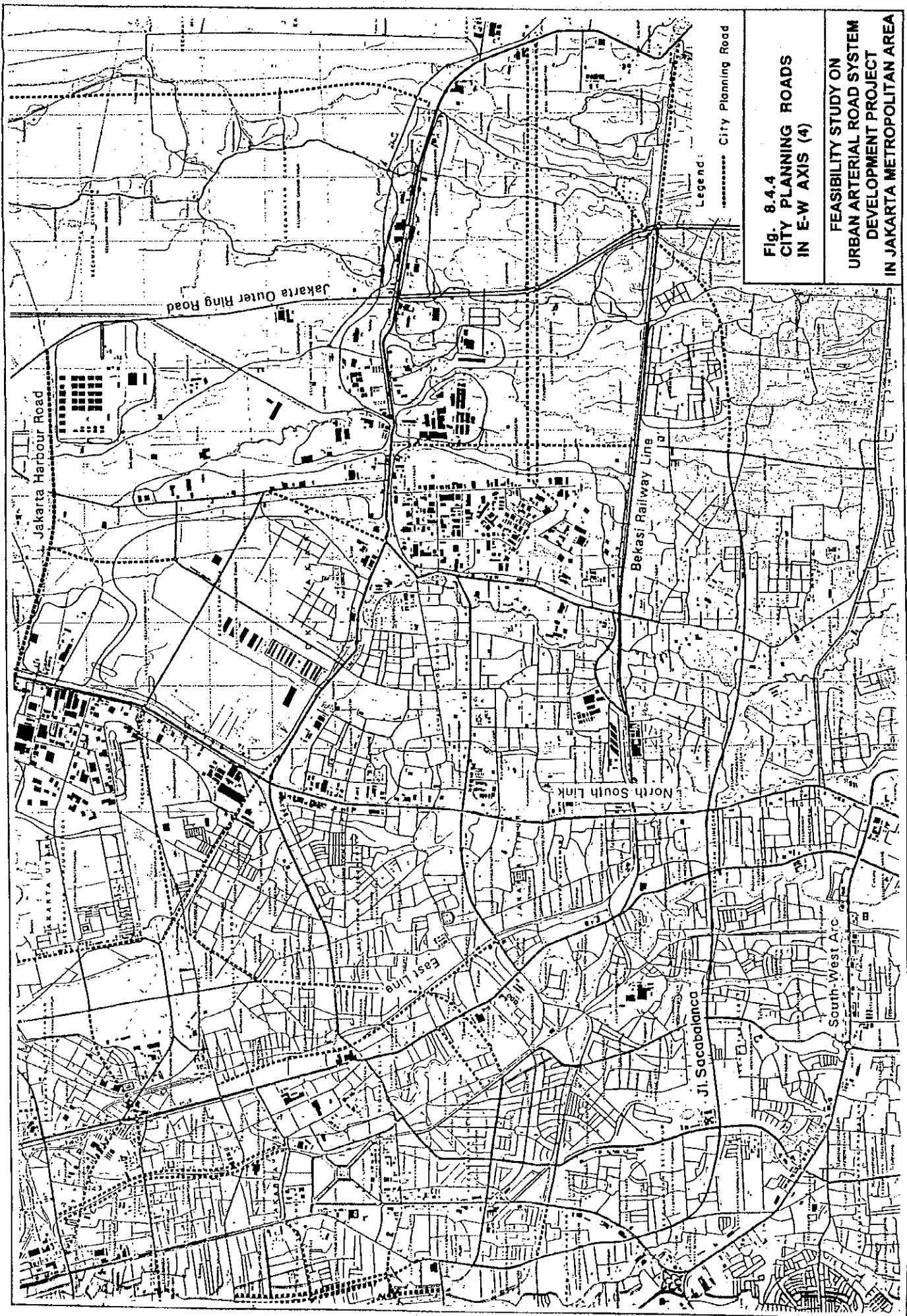


Fig. 8.4.4
 CITY PLANNING ROADS
 IN E-W AXIS (4)

FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM
 DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA



Fig. 8.4.5
CITY PLANNING ROADS
IN E-W AXIS (5)

FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA

Two east-westward city planning roads extend up to Jl. Bekasi Raya in the north of the railway. The existing main road in the north of Bekasi is so limited that an intensive improvement shall be required even if Bekasi Bypass is improved. A terminus of the project road will be selected at either intersections of Bekasi-Cileungsi road or interchange rampway in between Tambun and Cibitung.

8.4.3 North-South Axis

(1) Jakarta Harbour Road to S-W Arc Section (Fig. 8.4.6)

Although this section lies in densely developed area of Jakarta and number of physical constraints exist, there are several major physical constraints. They are Kota with historical and monumental buildings, ex-Kemayoran Airport redevelopment, Monas special area, Senen Secondary Center, built-up public facilities in Cikini and Menteng, and so forth.

The Central railway line has been elevated in between Kota and Manggarai and the Eastern line is planned to be elevated.

Intensive road improvement including construction of flyovers and underpass have been implemented and still many projects as described in the sub-section of 5.5 are programmed.

(2) S-W Arc to JORR Section (Fig. 8.4.7)

Major physical constraints are established Gelora legislative and administrative complex, Senayan Sports Complex, Kebayoran Baru Subcenter and Pondok Indah housing and commercial complex. However, this section still lies in densely developed urbanized area and then many physical constraints are widely spread.

Along several north-southward arterial roads, well-designed small to medium scale housing complex are scattered.

On the other hand, many built-up or on-going office and housing buildings are found along the frontage roads of Jakarta Outer Ring Road. Therefore, the site of interchange to JORR, which it usually require 10 ha or more, will become one of major control points to select an alignment and to conduct a preliminary design.

Among several north-southward arterial roads, there are some public spaces such as beside or above the rivers of the Kali Grogol, the Kali Krukut, the Kali Mampang and the Kali Baru Barat.



FEASIBILITY STUDY ON
 URBAN ARTERIAL ROAD SYSTEM DEVELOPMENT PROJECT
 IN JAKARTA METROPOLITAN AREA

Fig. 8.4.6 CITY PLANNING ROADS IN N-S AXIS (1)



8.5 Alternative Corridor Study

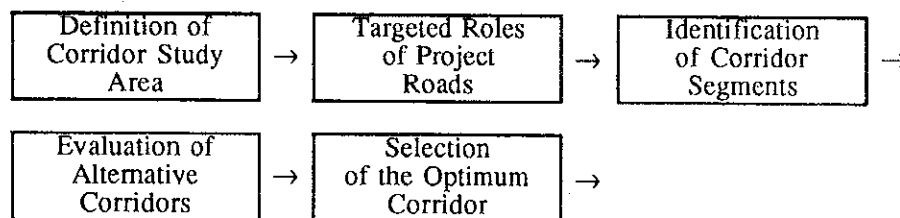
8.5.1 Basic Concept

(1) General

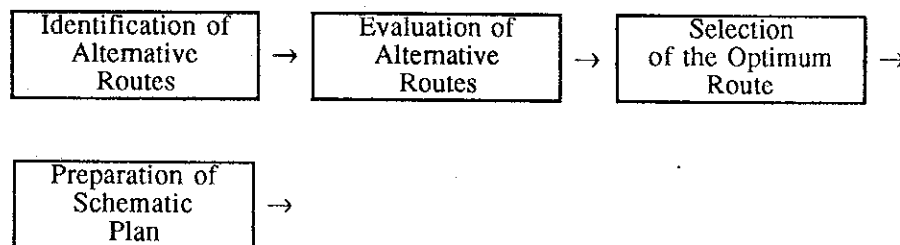
The optimum corridor is selected through the alternative corridor study to meet targeted roles of the project roads in the study area, while succeeding route study identifies the optimum routes in the selected optimum corridors. The preliminary engineering study is carried out along the optimum route to determine vertical and horizontal alignment of the project roads.

The process of route selection is presented as follows:

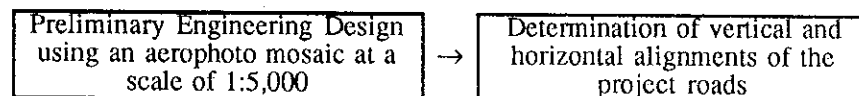
1) Corridor Study



2) Route Study



3) Alignment Study (Preliminary Engineering)



(2) Area for Corridor Study

Potential areas for the East-West and the North-South corridors are shown in Fig. 8.5.1 from the following reasons;

- i) Jabotabek Metropolitan Development Plan Review (JMDPR) compares alternative development strategies and recommends a schematic of linear city development strategy with an emphasis of the East-West Axis development. The east and west ends of the axis are enclosed with the green wedge to prevent the urbanization from sprawling further to the east and west.

The east-west axis is delineated to cover Kotamadya Tangerang to the west, and Kotif. Bekasi/Tambun to the east. Therefore, the area for the East-West corridor study should extend so as defined above in its east and west end coverage.

- ii) The 1985 home interview survey revealed that a travel pattern of "To Work" purpose is concentrated to following five (5) traffic zones;

Glodok (North Kota)
Cideng (South Kota)
Gambir (Monas)
Menteng, and
Kebayoran Baru (Blok M)

- iii) Excluding Kebayoran Baru zone, remaining four (4) zones are defined as the CBD in DKI Jakarta.

The comparison of 1980 and 1990 census results indicates that population in these zones were decreased, and as seen in the diagram presented herein, many of highrise buildings are constructed along major arterial roads of these zones; and also their adjacent zones. Therefore, it will be certain to conceive that the commuting demand to these zones has been lasting in a rising trend, and to define it as the CBD. This can be confirmed by estimated 1993 OD matrix and verified by screen line traffic volumes.

- iv) As stated in the study objective, the north-south corridor is to lie between Harbour Road and Outer Ring Road. Therefore, it can be acceptable that a south terminus of the corridor will fall somewhere between Jagorawi Tollway and the planned Jakarta-Serpong Tollway, and the north terminus will appear between Jl. Jembatan Tiga and the former Kemayoran Airport. The corridor study area will eventually cover the CBD.

(3) Type of Road

The targeted roles and functions of project roads are as follows;

East-West Axis :

- i) to stimulate the development of planned east and west primary centers;
- ii) to enhance the road capacity in the new housing development area; and
- iii) to support through traffic in the central urban area.

**Fig. 8.5.1
DEFINITION OF
CORRIDOR STUDY AREA**

LEGEND :

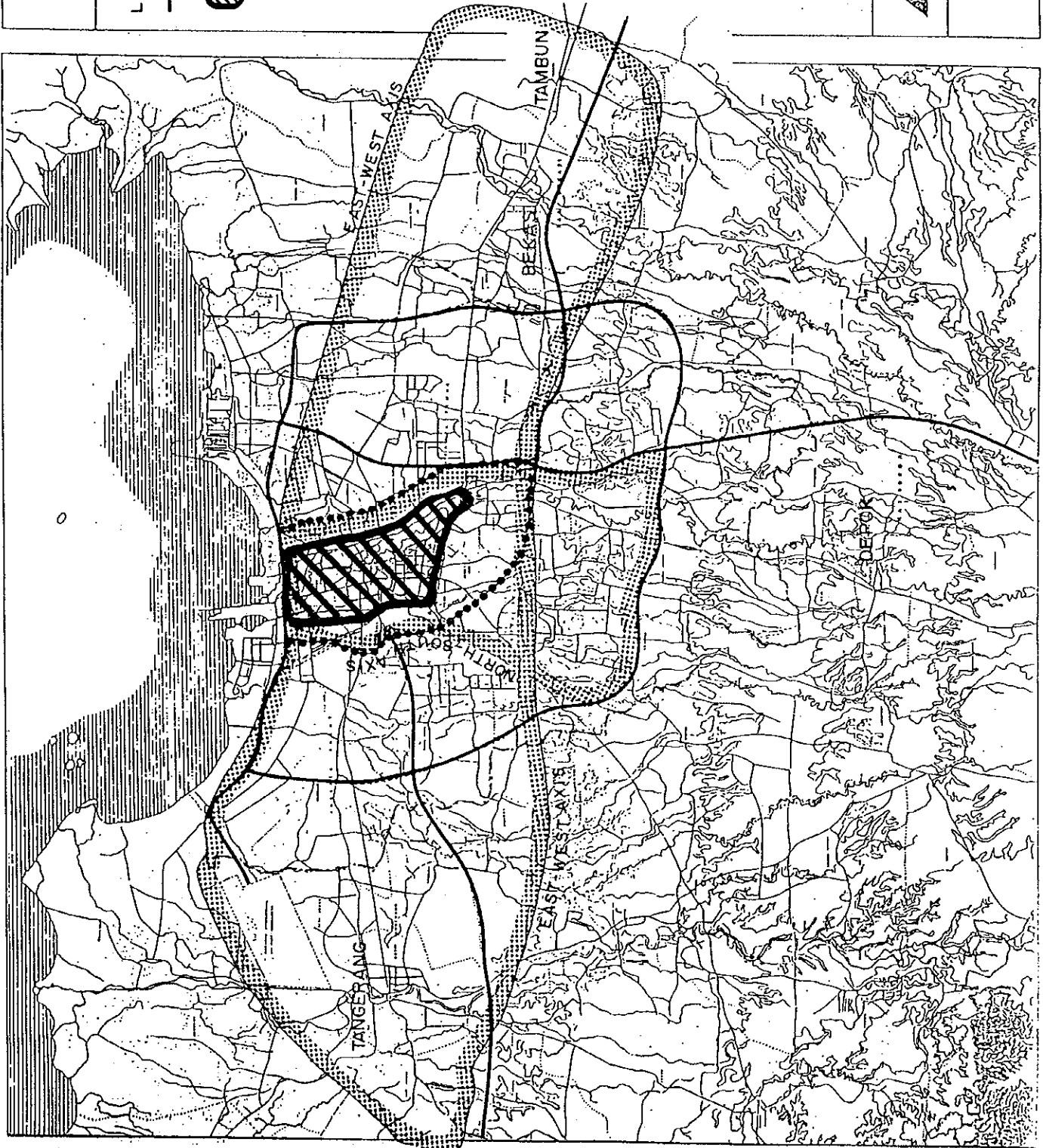
— TOLLWAY



Central Business District
(CBD) in DKI Jakarta



FEASIBILITY STUDY ON
URBAN ARTERIAL ROAD SYSTEM
DEVELOPMENT PROJECT
IN JAKARTA METROPOLITAN AREA



North-South Axis :

To strengthen the existing north-south thoroughfare.

All the types of road have been examined from viewpoints of characteristics of road and traffic as it would have to be clarified to what extent project roads can be expected to accommodate services. The following two items are deemed vital to contemplate the scheme of project roads;

East-West Axis : Traffic volume and trip length of through traffic in the CBD

North-South Axis : Traffic volume of anticipated diversion from the existing north-south thoroughfare.

Figs. 8.5.2 thru 8.5.3 present some potential combinations of type of project roads from low through/low diversion up to high through/high diversion and Table 8.5.1 enumerates its salient features.

It is also possible to see that the scheme of low through/low diversion is an initial stage and that of high through/high diversion delineates an ultimate stage.

In compliance with the agreed scope of work for this project, the corridor study is to be done in line with the content of the above-mentioned initial stage.

As for the North-South Axis, higher degree of mobility may be required to divert traffic from the existing north-south thoroughfare. It is, therefore, recommended that it designates a freeway, having full access control and constant serviceability and safety by means of higher specification and reliability. Usually, a freeway may fall under the category of toll road in Indonesia, but it shall be determined by President.

The type of road for the East-West Axis, on the other hand, will vary from characteristic of traffic and land use along road by each segment. To fulfill targeted roles and functions of the E-W Axis, it is required that an arterial road or higher shall be designated.

The E-W Axis is to have separated through lanes of fast-moving from slow-moving to keep the function of partial access control. This configuration of cross section will hardly be kept inside of densely developed central area of Jakarta. Considerable volume of through traffic in the CBD may warrant an elevated road on viaduct. On the contrary, small through traffic in the CBD will imply that it is an optimum solution to efficiently disperse land access traffic to make full use of present road network in the CBD.

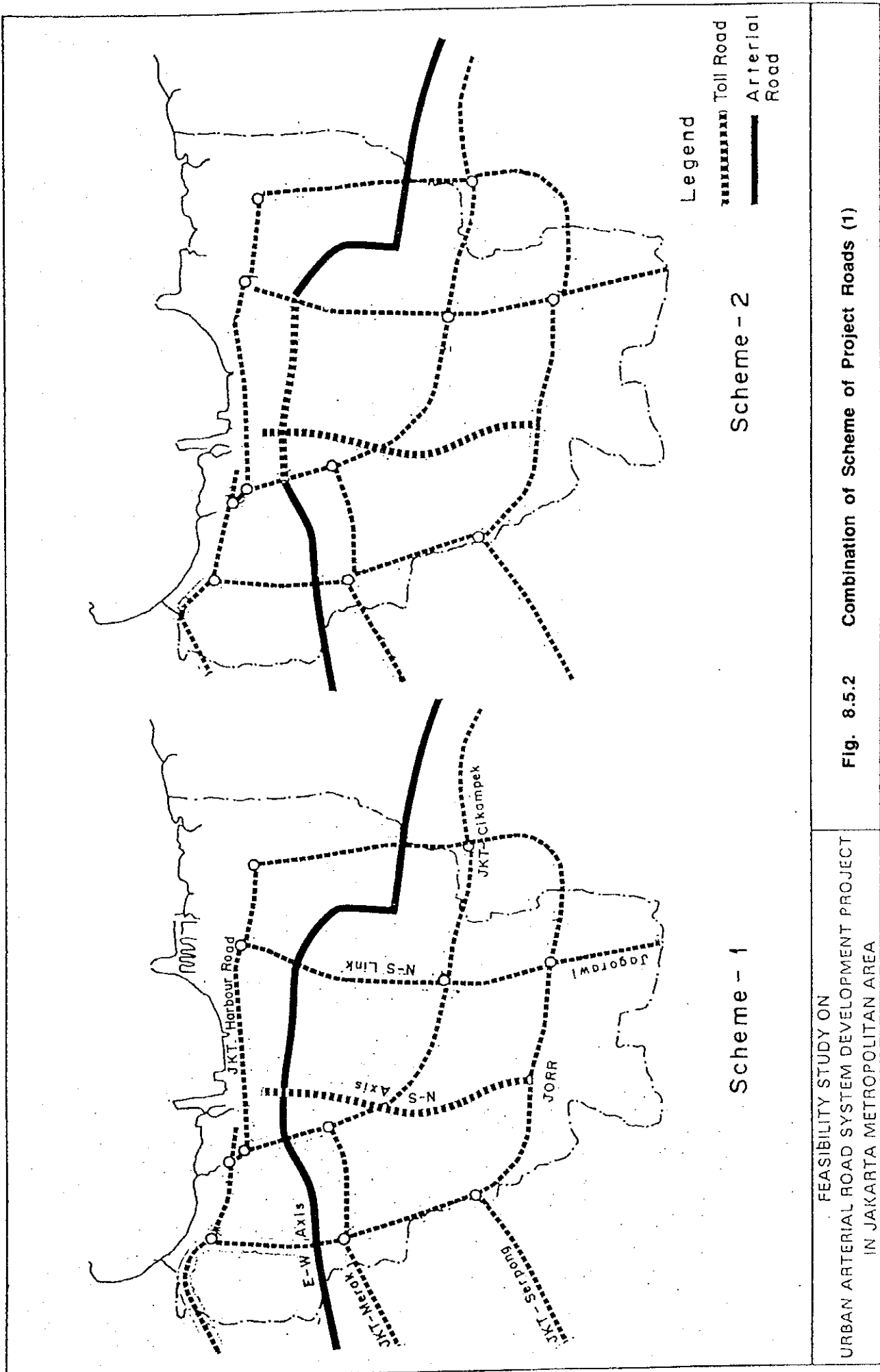
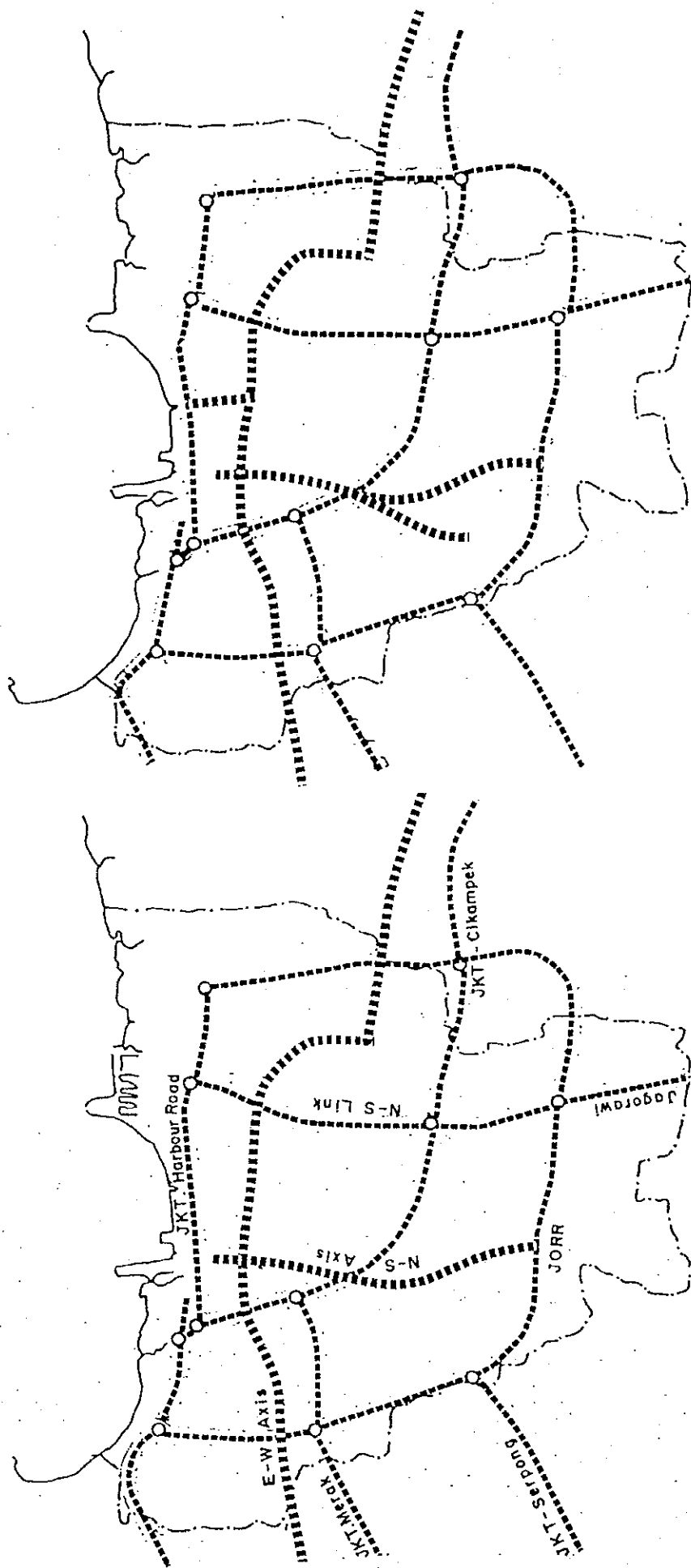


Fig. 8.5.2 Combination of Scheme of Project Roads (1)

FEASIBILITY STUDY ON
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IN JAKARTA METROPOLITAN AREA



Legend

----- Toll Road
 ————— Arterial Road

Scheme - 4

Scheme - 3

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Fig. 8.5.3 Combination of Scheme of Project Roads (2)

Table 8.5.1 Combination of Scheme of Project Roads

COMBINATION OF TYPE OF PROJECT ROADS				
	Scheme - 1 (low thru/medium div.) Freeway Arterial Road	Scheme - 2 (medium thru/medium div.) Freeway Arterial Road with partial freeway	Scheme - 3 (high thru/medium div.) Freeway Freeway with partial frontage road	Scheme - 4 (high thru/high div.) Freeway with branch routes Freeway with partial frontage
N-S Axis				
E-W Axis				
Salient Features	<ul style="list-style-type: none"> - sole function of diversion on N-S thoroughfare - weak linkage between N-S and E-W - weak connection between Tangerang and Bekasi 	<ul style="list-style-type: none"> - high level of diversion on N-S and E-W thoroughfares in the CBD - good linkage between N-S and E-W - fair connection between East and West Jakarta 	<ul style="list-style-type: none"> - high level of diversion on N-S and E-W thoroughfares within JORR - good linkage between N-S and E-W - good connection between Tangerang and Bekasi 	<ul style="list-style-type: none"> - higher level of diversion on N-S and E-W thoroughfares - good network of freeways - good connection among Tangerang, Bekasi, Ex-Kemayoran Airport and Lebak Bulus

8.5.2 Segment Selection and Its Alternatives

1) General

In order to achieve targeted roles of the project roads, the area of corridor study will be horizontally and vertically divided into segments. The paralleled segments are compared each other and a likely combination of the selected segments will constitute one alternative corridor, and it will be eventually compared with others to determine the optimum corridor.

Alternative corridor study is carried out to identify potential alternatives pertaining to similar planning scheme with 2-4 km in width in each segment of axis. However, comparison and evaluation of each alternatives require a certain representative route to delineate characters of corridor and envisage a qualitative feasibility of route in case of selecting the corridor to a next study step. It is assumed that each representative routes in adjoining segments enable to link together at a stage of sequent alternative route study. It is noted that a representative route is not final but tentative within the corridor because topographic maps at a scale of 1 to 25,000 are rather old and revision by site survey has been made locally.

2) Segmentation

A segment will be extracted from the study area referring to the existing land uses and future urban and regional structures. Geographical barriers and man-made permanent structure are also major separators that include rivers, at-grade railways and freeways. Consequently, corridor segments were identified as shown in Figs. 8.5.4 and 8.5.5.

3) Preliminary Selection for E-W Axis

As for E-W Axis, only hatched area is proceeded to the alternative corridor study from the following reasons;

(1) Segment EW-I


EW-A is located in developed area along Jl. Daan Mogot and is sandwiched by the limited development and flood detention area in the north and Tangerang railway line in the south. Few potential to the targeted roles of the project road is found.

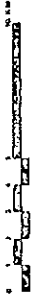
On the other hand, EW-D is so far from Tangerang and is disrupted by Jakarta-Merak Freeway. This has no advantage in alternative study.

(2) Segment EW-II

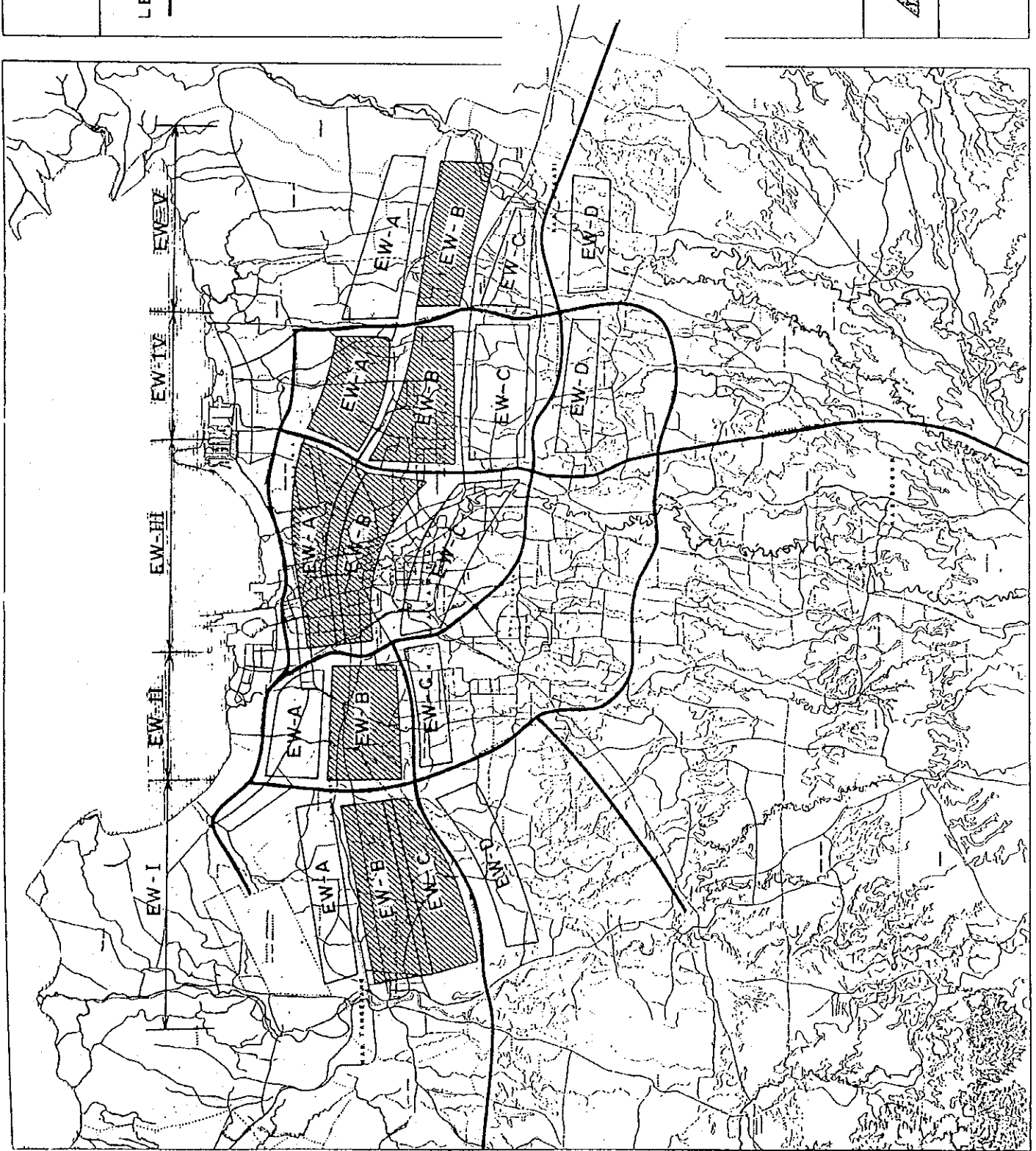
West sub-center is located in EW-B and then EW-A and EW-C are disrupted by railway line and Jakarta-Merak Freeway respectively. Therefore, one of targeted roles, development impact to West sub-center is limited in these two alternatives. Furthermore, EW-C has already been developed and future city planning road is found scarcely.

**Fig. 8.5.4
CORRIDOR ALTERNATIVES
FOR EAST-WEST AXIS**

LEGEND :
 TOLLWAY



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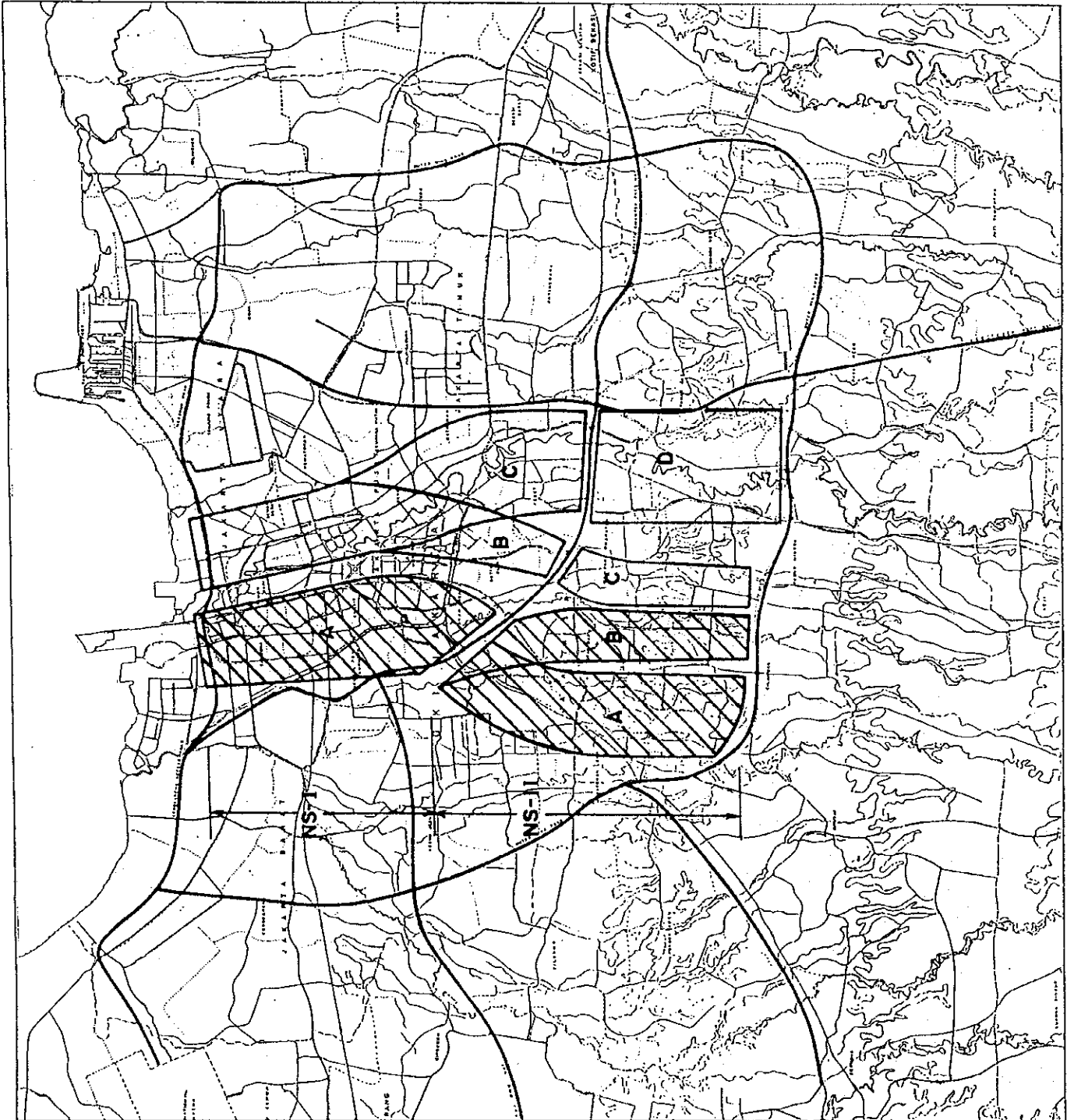


**Fig. 8.5.5
CORRIDOR ALTERNATIVES
FOR NORTH-SOUTH AXIS**

LEGEND
 _____ TOLLWAY



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(3) Segment EW-III

It is true that EW-C has high potential as well but recent new east-westward road development in the CBD exist in this alternatives. This also has disadvantage of poor connection with ex-Kemayoran airport development and technically difficult linkage with EW-II and North-South Axis. Therefore, EW-A and B remain for further comparison.

(4) Segment EW-IV

East sub-center is located in EW-B and then EW-C and D are disrupted by Bekasi railway line. Potential alternatives are found in EW-A and B, not EW-C and D.

(5) Segment EW-V

Kotif Bekasi has been developed in the south, being sustained by Jl. Bekasi Raya and Jakarta-Cikampek Freeway. On the contrary, the north of Bekasi remains undeveloped due to lack of infrastructure, especially road. However, EW-A is too far from built-up area in Bekasi to bring development impact and to enhance road capacity. Therefore, only EW-B is regarded as potential alternative.

4) Preliminary Selection for N-S Axis

Alternative corridors of N-S Axis are preliminary compared in each segments from planning viewpoints. As the targeted roles and functions are discussed in section 8.2, N-S Axis is anticipated to play roles of strengthening the existing north-south thoroughfare to divert medium and long trip traffic from the existing arterial roads.

(1) Segment NS-I

NS-A is located in the west of Monas and is expected an alternative road to Jl. Gajah Mada/Hayam Wuruk and Jl. Thamrin/Sudirman, while NS-B and C are located in the east of Monas and Jl. Gunung Sahari/Salemba Raya/Matraman Raya/Otista and the north-south former runway at ex-Kemayoran Airport are existing arterial roads. These existing arterial roads have considerable volume of traffic and typical ribbon development along roads. However, NS-A is higher level than NS-B and C and bigger potential in planning aspects is found in NS-A. On the other hand, NS-B and C exist in densely urbanized area with low cost housing which is subject to urban betterment with the first priority in Jakarta Structure Plan 2005 and it implies that adverse effects on social environment will induce re-settlement problem. Therefore, higher potential is found in NS-A.

(2) Segment NS-II

There are three arterial roads, namely Jl. Ciputat Raya, Jl. Fatmawati and Jl. Pasar Minggu Raya. Four alternative Corridors are set in between these arterial roads to provide an alternative road to existing arterial roads. Future development potential is surely higher in the western part than in the eastern because Condet, which is designated the special area as traditionally reserved area, exists in the east. In the middle, NS-C is in densely urbanized area with low cost housing which is subject to urban betterment with the first priority in Jakarta Structure Plan 2005 and it implies that adverse effects on social environment will induce re-settlement problem.

The scheme of NS-A and NS-B have almost the same level in planning aspects. Therefore, NS-A and NS-B remain for further comparison.

As discussed in section 8.1, circular and radial arterial road system is contemplated in a long span of time in Jabotabek Metropolitan Area. For the sake of future study about the development of north-south thoroughfare in the east of Monas, the following comparison and evaluation of alternatives includes some alternative corridors in the east of Monas to reveal salient features of corridors and its potential.

8.5.3 Evaluation of Alternative Corridors

1) Comparison Items

For the purpose of comparison of each alternative, these criteria are taken into account in descending order as :

- a) Land Availability
- b) Impact on the Social Environment
- c) Traffic Demand
- d) Construction Economy
- e) Road User Benefits
- f) Development Impact

2) Evaluation Criteria

a) Land Availability

Well begun is half done. Once the right-of-way acquisition problems are solved in an early stage it may fairly be said that the urban road development is successfully completed in its major parts.

However, the right-of-way acquisition in urban area is one of the most difficult problems as the following sufferings are always associated with :

- Vast amount of cost
- Influence to the social environment

Potential routes in each corridor will be able to manage to escape major physical constraint such as historical buildings and monuments, reserved area for environment and special area designated as undisturbed. Land availability will be evaluated by degree of difficulty of land acquisition and scale of eviction.

b) Impact on the Social Environment

Good social environment should be maintained otherwise the project road could not be acceptable to the public.

Community disruption such as disturbance of built-up area and resettlement of squatters is considered to be a serious suffering to the social environment.

When developing an urban road network, not only reducing traffic congestion but also promoting high amenity in an urban area are the main focus.

c) Traffic Demand

The enhancement of functional road network to meet future traffic demand is one of the most practical solution to maintain an urban activity in a preferable level.

Mobility and accessibility are most essential element to make plan functional road network, while element of passenger and commodity will make type of road practical. Nature and volume of traffic demand will be evaluated to meet targeted role and function of each segment.

d) Construction Economy

Cheaper is better. However, the construction cost of project road is not always independent of the relevant infrastructures. Thus, due investment should be done to achieve the objectives of project road. Furthermore, the project viability is carefully examined to compute overall benefits generated from due investment.

Ease of construction and construction period are also important factors.

e) Road User Benefits

In general, the following aspects are acceptable :

(i) Shorter road has more advantages such as time saving, reducing vehicle operating cost and so forth;

(ii) High standard road can serve safety and confort to road users, namely low rate of traffic accident, certainty of travel and time and so forth.

f) Development Impact

An efficient road network can encourage urban activity to induce desirable economic growth through promoting residential, commercial, industrial, institutional and recreation development.

3) Evaluation of Alternatives

The comparison and comprehensive evaluation of each alternatives are summarized in Table 8.5.2 through 8.5.8.

These optimum routes are combined with each segment which is deliberated on technical feasibility and selected among alternatives through its comparison and evaluation as shown in Fig. 8.5.6.

Table 8.5.2 Comparison and Evaluation of Alternatives in between Tangerang and JORR (Segment EW-I)

Alternatives	AL-I : Railway Corridor (EW-B)	AL-II : South Corridor (EW-C)	
Background	Running parallel to Tangerang railway line in both sides	Following city planning road in the south of railway	
Road Length	9.5 Km	9.5 Km	
Potential Interchanges	Two (Tangerang Bypass IC and JORR IC)	Two (Tangerang Bypass IC and JORR IC)	
Flyovers	Seven (Railway Station : 4, Road : 3)	Four (Road : 4)	
Proposed R.O.W.	2 x 40 m	70 m	
Physical Constraint/ Landuse/Environment	To run eastward in both sides of Tangerang railway line which is planned to be converted to LRT To provide frontage road to secure accessibility to neighbourhood To form an interchange with Tangerang Bypass, which widening of the existing 2-lane is deemed necessary To make elevated throughway on viaduct in the vicinity of 4 stations to provide access at a station square To form an interchange with frontage roads of JORR	To run eastward on city planning road of which R.O.W. is 26 m wide To pass potential zone of real estate development such as built-up housing complex and its future expansion To provide frontage road to secure accessibility to neighbourhood To form an interchange with Tangerang Bypass, which widening of the existing 2-lane is deemed necessary To form an interchange with frontage roads of JORR	
Salient Features	1. Land Availability	City planning roads have future right-of-ways of 40 m in the south and 20 m in the north. Additional 20 m wide R.O.W in the north is necessary	City planning road has future right-of-way of 26 m. Additional 44 m wide R.O.W is necessary.
	2. Impact on Social Environment	No adverse effect on social environment is expected because of minimizing the violation of physical constraints.	It is inevitable to take place excessive land acquisition and barrier effect in order to allow an effective road network to be developed.
	3. Traffic Demand	High traffic diversion from Jl. Daan Mogot is expected	Medium traffic diversion from Jl. Daan Mogot as well as high attraction along road are expected
	4. Construction Economy	Initial investment seems to be too big to appropriate a feasibility of project	It regards as due investment if additional land is available
	5. Road User Benefit	Route location is preferable to present road users	Route location is preferable to new road users
	6. Development Impact	It is possible to accommodate desirable route focusing on the linkage between Tangerang and Jakarta West	Significant impacts on both Tangerang, West Subcenter and along road are found
Evaluation	Step 1 : Both scheme have almost the same level in the aspect of Land Availability		
	Step 2 : Comprehensive evaluation of these three items of Impact on Social Environment, Traffic Demand and Construction Economy is likely favour to AL-II because of uncertain LRT development		
	Step 3 : As for Road User Benefit and Development Impact AL-II is slightly superior to AL-I		
	Step 4 : Thus, it is recommended that AL-II be selected in this segment.		
Comparison	1. Land Availability	Fair	Fair
	2. Impact on Social Environment	Good	Fair
	3. Traffic Demand	Good	Good
	4. Construction Economy	Poor	Good
	5. Road User Benefit	Fair	Good
	6. Development Impact	Fair	Good

Table 8.5.3 Comparison and Evaluation of Alternatives in between JORR and S-W Arc (Segment EW-II)

Alternatives Background	AL-I : Railway Corridor (EW-E) Running parallel to Tangerang railway line in both sides	AL-II : South Corridor (EW-B) Following city planning road in the south of railway and in Kel. Jelambar
Road Length	7.5 Km	8.5 Km
Potential Interchanges	Two (Panjang IC and Latumeten IC)	Two (Panjang IC and Latumeten IC)
Flyovers/Viaduct	7.5 km viaduct	Three (Road : 3) and 4 km viaduct
Proposed R.O.W.	2 x 30 m	70 m (4.5 km) and 40 m (4 km)
Physical Constraint/Landuse/Environment	To run eastward in both sides of Tangerang railway line which is planned to be converted to LRT To provide frontage road with On/Off ramps and to secure accessibility to neighbourhood To form an interchange with Jl. Panjang To form an interchange with Jl. Latumeten nearby Grogol, where the elevated Northern Extension of S-W Arc runs on viaduct To make elevated thoroughway on viaduct in whole stretch due to successive crossings and severe physical constraints	To run eastward on city planning road of which R.O.W. is 26 m wide To pass potential zone of real estate development such as built-up housing complex and its future expansion To provide frontage road to secure accessibility to neighbourhood To form an interchange with Jl. Panjang To form an interchange with Jl. Latumeten, where the elevated Northern Extension of S-W Arc runs on viaduct 1.2 km apart from Grogol intersection To form an interchange with frontage roads of JORR To make 4 km long elevated thoroughway on viaduct in the eastern end
1. Land Availability	City planning roads have future right-of-ways of 40 m in south and 20 m in the north. Additional 10 m wide R.O.W in the north is necessary	Generally following city planning roads which have future right-of-ways, but additional R.O.W and new gazettement are deemed necessary in built-up housing complex and its future expansion
2. Impact on Social Environment	No adverse effect except adverse aesthetic view by viaduct is expected because of minimizing the violation of physical constraints.	It is inevitable to take place excessive land acquisition and barrier effect in order to allow an effective road network to be developed
3. Traffic Demand	Some traffic diversion from Jl. Daan.Mogot is expected but complicated lanumeten IC will discourage traffic diversion.	Very high traffic diversion from existing roads as well as new traffic attraction are expected
4. Construction Economy	Related investment to LRT development seems to be so big that complicated matters such as cost shearing and timing of construction will impair a feasibility of project	It will become rather expensive but still regard as due investment if additional land is available
5. Road User Benefit	Route location is preferable to present road users but both Panjang IC and Latumeten IC will let users manoeuvre inconveniently	Route location is preferable to new road users of West Subcenter and future housing complex
6. Development Impact	Poor impact to West Subcenter is expected	Direct and significant impacts on West Subcenter and its neighbourhood are found
Evaluation	Step 1 : Both scheme have almost the same level in the aspects of Land Availability, Impact on Social Environment and Traffic Demand Step 2 : The scheme of AL-II seems to be slightly superior to AL-I in the aspect of Construction Economy because of uncertain LRT development Step 3 : The scheme of AL-II significantly has advantages in the aspects of Road User Benefit and Development Impact Step 4 : Thus, it is concluded that AL-II is selected in this segment	Good

Table 8.5.4 Comparison and Evaluation of Alternatives in between S-W Arc and N-S Link (Segment EW-III)

Alternatives	AL-I : Kola Corridor (EW-A)	AL-II : Monas North Corridor (EW-B)
Background	Running parallel to Jl. Mangga Besar and Jl. Danau Sunter Utara	Running parallel to Jl. Zainul Arifin and Jl. Sukarjo Wiryopranoto in the west and to the east-westward former runway at ex-Kemayoran Airport and Jl. Taman Sunter Indah in the east.
Road Length	11.5 Km	12 Km
Potential Interchanges	Five (Mansyur IC, Gajah Mada IC, Gunung Sahari IC, Kemayoran IC and Yos Sudarso IC)	Five (Mansyur IC, Gajah Mada IC, Gunung Sahari IC, Kemayoran IC and Yos Sudarso IC)
Flyovers/Viaduct	11.5 km viaduct	12.5 km viaduct
Proposed R.O.W.	40 m	40 m
Physical Constraint/Landuse/Environment	<p>To run eastward on Jl. Mangga Besar, to cross the north-southward former runway at ex-Kemayoran Airport in the middle and to run on Jl. Danau Sunter Utara.</p> <p>To utilize city planning roads and to make full use of existing right-of-way</p> <p>To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints.</p> <p>To provide frontage roads with On/Off ramps to avert excessive concentrated traffic</p> <p>To form an interchange with Jl. Moh. Mansyur</p> <p>To form an interchange with Jl. Gajah Mada/Hayam Wuruk where the elevated North-South Axis and proposed LRT runs on viaduct</p> <p>To fly over elevated Central line at 21 m high</p> <p>To form an interchange with Jl. Gunung Sahari</p> <p>To form an interchange with the north-south former runway at ex-Kemayoran Airport which connects to Jakarta Harbour Road and Jl. R.E. Martadinata</p> <p>To pass Sunter Agung Podomoro housing complex on existing Jl. Danau Sunter Utara</p> <p>To form an interchange with Jl. Yos Sudarso where the N-S Link runs on viaduct</p>	<p>To run eastward in both sides of railway, on Jl. Zainul Arifin, Jl. Sukarjo Wiryopranoto, to utilize the east-westward former runway at ex-Kemayoran Airport, where proposed LRT is planned to run.</p> <p>To run on Jl. Taman Sunter Indah in the eastern end</p> <p>To utilize city planning roads and to make full use of existing right-of-way</p> <p>To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints</p> <p>To provide frontage roads with On/Off ramps to avert excessive concentrated traffic</p> <p>To form an interchange with Jl. Moh. Mansyur</p> <p>To form an interchange with Jl. Gajah Mada/Hayam Wuruk where the elevated North-South Axis and proposed LRT runs on viaduct</p> <p>To fly over elevated Central line at 21 m high</p> <p>To form an interchange with Jl. Gunung Sahari</p> <p>To utilize the existing interchange with the north-south former runway at ex-Kemayoran Airport which connects to Jakarta Harbour Road and Jl. R.E. Martadinata</p> <p>To pass the southern fringe of industrial complex in Kel. Sunter Jaya</p> <p>To form an interchange with Jl. Yos Sudarso where the N-S Link runs on viaduct</p>
1. Land Availability	City planning roads of eastern and western extension of Jl. Mangga Besar have future right-of-ways of 26 m and 47 m respectively. Additional 14 m wide R.O.W. in the east is necessary.	Generally following existing road which have widened recently but additional R.O.Ws are deemed necessary where On/Off ramps are provided.
2. Impact on Social Environment	Adverse effect of deteriorating the existing environment and adverse aesthetic view by viaduct are expected in the established housing complex of Sunter Agung Podomoro in the eastern stretch.	No adverse effect except adverse aesthetic view by viaduct is expected because of minimizing the violation of physical constraints
3. Traffic Demand	Considerable traffic diversion from Jl. Hasyim Asyahari and Jl. R.E. Martadinata are expected	Considerable traffic diversion from Jl. Hasyim Asyahari in the western section and Jl. Let. Jen. Suprpto in the eastern section are expected.
4. Construction Economy	It will become rather expensive but still regard as due investment in case that through traffic volume in the CBD is sufficient	Related investment to LRT development in the western section seems to bring complicated matters such as cost shearing and timing of construction and to impair a feasibility of project.
5. Road User Benefit	Both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network	Both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network
6. Development Impact	It is no doubt to spur modernization in the CBD and re-development of ex-Kemayoran Airport and to induce spacious redevelopment from present ribbon development	It is no doubt to spur modernization in the CBD and re-development of ex-Kemayoran Airport and to induce spacious redevelopment from present ribbon development
Evaluation	<p>Step 1 : Both scheme have almost the same level in the aspect of Land Availability</p> <p>Step 2 : Comprehensive evaluation of these three items of Impact on Social Environment, Traffic Demand and Construction Economy may imply that the scheme of AL-I is superior in the western section but the scheme of AL-II is superior in the eastern section.</p> <p>Step 3 : The scheme of AL-I and AL-II have almost the same level in the aspects of Road User Benefit and Development Impact.</p> <p>Step 4 : Thus, it is recommended AL-II be selected in the western half and AL-I be selected in the eastern half.</p>	<p>Fair</p> <p>Good</p> <p>Good</p> <p>Poor</p> <p>Good</p> <p>Good</p>

Table 8.5.5 Comparison and Evaluation of Alternatives in between N-S Link and JORR (Segment EW-IV)

Alternatives	AL-I : North Corridor (EW-A)	AL-II : Middle Corridor (EW-B)	
Background	Running in different landuse in the northern fringe of Kelapa Gading housing complex	Passing in the middle of Kelapa Gading housing complex and following city planning roads in the east of Pulogadung Industrial Estate	
Road Length	7 Km	10 Km	
Potential Interchanges	Three (Kelapa Gading IC, Pegangsaan Dua IC and JORR IC)	Four (Kelapa Gading IC, Pegangsaan Dua IC, Pulogadung IC and JORR IC)	
Flyovers/viaduct	3 km viaduct and one flyover (Road : 1)	8 km viaduct and one flyover (Road : 1)	
Proposed R.O.W.	40 m (3 km) and 70 m (4 km)	40 m (8 km) and 70 m (2 km)	
Physical Constraint/Landuse/Environment	To run eastward in the south of Pertamina Fuel Depot, to pass the northern fringe of Kelapa Gading housing complex and to run on city planning road in Kel. Cakung Barat To provide frontage road with On/Off ramps and to secure accessibility to neighbourhood To form an interchange with Kelapa Gading Boulevard To form an interchange with Jl. Pegangsaan Dua which has access to/from Jakarta Harbour Road and Jl. Bekasi Raya To form an interchange with frontage roads of JORR To make 3 km long elevated throughway on viaduct in the western stretch due to severe physical constraints	To pass in the middle of Kelapa Gading housing complex on Raya Barat/Timur Boulevard and to run on city planning roads in the east of Pulogadung and in the north of East Subcenter To provide frontage road with On/Off ramps and to secure accessibility to neighbourhood To form an interchange with Kelapa Gading Boulevard To form an interchange with Jl. Pegangsaan Dua which has access to/from Jakarta Harbour Road and Jl. Bekasi Raya To form an interchange with city planning road in the east of Pulogadung Industrial Estate To form an interchange with frontage roads of JORR To make 8 km long elevated throughway on viaduct the western and central stretches due to severe physical constraints	
1. Land Availability	Totalling 4 km long new gazettement of future R.O.W in two sections are necessary. Remaining section generally follow existing roads and city planning road but additional R.O.Ws are deemed necessary where On/Off ramps are provided.	Generally following city planning roads which have future right-of-ways, but additional R.O.W and 2 km long new gazettement are deemed necessary in built-up housing complex and its future expansion	
2. Impact on Social Environment	It is inevitable to take place excessive land acquisition and barrier effect in order to allow an effective road network to be developed	No adverse effect on social environment except in Kelapa Gading housing complex is expected because of minimizing the violation of physical constraints	Fair
3. Traffic Demand	Some traffic diversion from Jl. Bekasi Raya to the north of CBD is expected because of direct and shorter connection.	Very high traffic diversion from Jl. Bekasi Raya as well as new traffic attraction are expected	Fair
4. Construction Economy	If additional land acquisition is practical, it is rather reasonable because of shorter length of route	It will become rather expensive because of longer length of route but it will still regard as due investment	Good
5. Road User Benefit	Route location is preferable to medium to long trip users	Route location is preferable to new road users of East Subcenter and future expansion of Kelapa Gading housing complex	Fair
6. Development Impact	Poor impact to East Subcenter is expected	Direct and significant impacts on West Subcenter and its neighbourhood are found	Good
Evaluation	Step 1 : The scheme of AL-II is slightly superior in the aspect of Land Availability Step 2 : The scheme of AL-I has advantage regarding Construction Economy Step 3 : As for items other than these two, AL-II is slightly superior to AL-I Step 4 : Thus, it is reasonable that AL-II is proposed in this segment.		Good

Table 8.5.6 Comparison and Evaluation of Alternatives in between JORR and Bekasi (Segment EW-V)

Alternatives Background	AL-I : North Corridor (EW-B) Running parallel to Bekasi Bypass in the north	AL-II : Middle Corridor (EW-B) Following city planning road in the west and passing in the middle of corridor
Road Length	20 Km	18 Km
Potential Interchanges	Three (Bekasi West IC, Bekasi Bypass IC and Tambun IC)	Four (Bekasi West IC, Bekasi Raya IC, Bekasi North IC and Tambun IC)
Flyovers	Seven (Railway : 1, Road : 6)	Five (Railway : 1, Road : 4)
Proposed R.O.W	70 m	70 m
Physical Constraint/Landuse/Environment	To run eastward in the north of Bekasi Bypass where the northern fringe of urbanization is found. To form an interchange with city planning road, which is planned to form a circumferential road along the eastern boundary of DKI Jakarta To form an interchange with Bekasi Bypass in Desa Satria Java To fly over Bekasi railway line To form an interchange with Jl. Bekasi Raya at Tambun where Bekasi-Cileungsi road designated as a circumferential road in Jabotabek terminates	To run eastward in the middle of area where Jl. Bekasi Raya and planned extension of Jl. I. Gusti Ngurah Rai encompass and to pass along the northern fringe of present urbanized area in between Jl. Bekasi Raya and Bekasi Bypass To provide another arterial road to strengthen road network in the north of Bekasi railway line To form an interchange with city planning road, which is planned to form a circumferential road along the eastern boundary of DKI Jakarta To form an interchange with Jl. Bekasi Raya in the west To form an interchange with the existing road which connects to Jl. Bekasi Raya in the center To fly over Bekasi railway line To form an interchange with Jl. Bekasi Raya at Tambun where Bekasi-Cileungsi road designated as a circumferential road in Jabotabek terminates
1. Land Availability	Generally new gazetting of future R.O.W is necessary except city planning road in western stretch	Generally new gazetting of future R.O.W is necessary except city planning road in western stretch
2. Impact on Social Environment	No adverse effect on social environment is expected because of presently undeveloped area	It is inevitable to take place excessive land acquisition and barrier effect in order to allow an effective road network to be developed
3. Traffic Demand	Modest traffic diversion from Jl. Bekasi Raya is expected	Considerable traffic diversion from Jl. Bekasi Raya and the north of Bekasi are expected
4. Construction Economy	It will become rather expensive because of longer length of route and rather big investment related to north-southward crossing road development will be required	It will become rather expensive but still regard as due investment if land is available
5. Road User Benefit	Route location is preferable to through road users in Bekasi	Both local and through traffic can enjoy benefits due to development of efficient road network in the north of Bekasi railway line
6. Development Impact	It is possible to accommodate desirable route focusing on the linkage between Bekasi and the north of Jakarta	Significant impacts on both North Bekasi and built-up Bekasi are found. It will induce spacious redevelopment in Bekasi where typical ribbon development is presently developed
Evaluation	Step 1 : The scheme of AL-I is superior to AL-II in the aspect of Impact on Social Environment Step 2 : As for other items, AL-II is overwhelmingly superior to AL-I Step 3 : Thus, it is recommended that AL-II be selected in this segment	

Table 8.5.7 Comparison and Evaluation of Alternatives in between Jakarta Harbour Road and S-W Arc (Segment NS-I)

Alternatives	AL-I : Monas West Corridor (NS-A)	AL-IIa : Monas East Corridor (NS-B)	AL-IIb : Monas East Corridor (NS-C)
Background	Running parallel to Jl. Gajah Mada/Hayam Wuruk and Jl. Thamrin/Sudirman	Running parallel to the north-south former runway at ex-Kemayoran Airport, to follow city planning road along the Kali Sentiong and to run parallel to Jl. Rasuna Said	Running parallel to the north-south former runway at ex-Kemayoran Airport, to follow city planning road along the Kali Sentiong and to run parallel to Jl. Dr. Saharjo/Supomo
Road Length	18 Km	13 Km	14 Km
Potential Interchanges	Five (Kota IC, Mangga Besar IC, Monas North IC, Monas South IC and Slipi IC)	Seven (Kemayoran North IC, Kemayoran South IC, Suprpto IC, Salemba IC, Casablanca IC and Gatot Subroto IC)	Seven (Kemayoran North IC, Kemayoran South IC, Suprpto IC, Salemba IC, Casablanca IC and Haryono IC)
Flyovers/viaduct	8 km viaduct	13 km viaduct	14 km viaduct
Proposed R.O.W.	40 m	40 m	40 m
Physical Constraint/Landuse/Environment	<p>To run southward on Jl. Gajah Mada/Hayam Wuruk and on Jl. Abdul Muis, to pass Tanah Abang along the Banjir Kanal and to run on Simpruk Bypass</p> <p>To run parallel to proposed LRT on Jl. Gajah Mada/Hayam Wuruk</p> <p>To utilize public spaces and to make full use of existing right-of-way</p> <p>To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints</p> <p>To provide frontage roads with On/Off ramps to avert excessive concentrated traffic</p> <p>To make terminus on Jl. Pint. Besar Selatan because of physical constraint at Kota and successive ICs on Jakarta Harbour Road</p> <p>To form an interchange with Jl. Mangga Besar, where the elevated East-West Axis will run on viaduct</p> <p>To form an interchange with Jl. Sukarjo Wiryopranoto in the north of Monas</p> <p>To form an interchange with Jl. Kebon Sirih in the south of Monas</p> <p>To form an interchange with Jl. S.Parman where the S-W Arc runs in the middle</p>	<p>To utilize 3 km long north-south former runway at ex-Kemayoran Airport which connects to Jakarta Harbour Road and Jl. R.E. Martadinata, to run southward on city planning road on the Kali Sentiong and to run parallel to Jl. Rausana Said in hinterland</p> <p>To utilize city planning roads and to make full use of the existing right-of-way but to pass housing area without any city planning road in the southern end</p> <p>To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints</p> <p>To provide frontage roads with On/Off ramps to avert excessive concentrated traffic</p> <p>To utilize the planned interchanges with Jakarta Harbour Road and Jl. R.E. Martadinata in the north of ex-Kemayoran Airport and with the east-westward former runway in the south</p> <p>To form an interchange with Jl. Suprpto</p> <p>To form an interchange with Jl. Salemba Raya</p> <p>To fly over the Eastern line which is planned to be converted to LRT</p> <p>To fly over elevated Central line at 21 m high nearby Cikini</p> <p>To form an interchange with Jl. Casablanca</p> <p>To form an interchange with Jl. Gatot Subroto where the S-W Arc runs in the middle</p>	<p>To utilize 3 km long north-south former runway at ex-Kemayoran Airport which connects to Jakarta Harbour Road and Jl. R.E. Martadinata, to run southward on city planning road on the Kali Sentiong and to run on Jl. Dr. Saharjo and Jl. Supomo</p> <p>To utilize city planning roads and to make full use of the existing right-of-way</p> <p>To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints</p> <p>To provide frontage roads with On/Off ramps to avert excessive concentrated traffic</p> <p>To utilize the planned interchanges with Jakarta Harbour Road and Jl. R.E. Martadinata in the north of ex-Kemayoran Airport and with the east-westward former runway in the south</p> <p>To form an interchange with Jl. Suprpto</p> <p>To form an interchange with Jl. Salemba Raya</p> <p>To fly over the Eastern line which is planned to be converted to LRT</p> <p>To fly over elevated Central line at 21 m high nearby Cikini</p> <p>To form an interchange with Jl. Casablanca</p> <p>To form an interchange with Jl. Haryono where the S-W Arc runs in the middle</p>
1. Land Availability	Generally following existing roads and public spaces but additional R.O.Ws are deemed necessary where On/Off ramps are provided Fair	Following existing roads and city planning roads up to the Kali Malang but new gazetting of future R.O.W is deemed necessary in between the Kali Malang and Jl. Gatot Subroto Bad	Generally following existing roads and city planning roads but additional R.O.Ws are deemed necessary where On/Off ramps are provided Fair
2. Impact on Social Environment	No adverse effect except adverse aesthetic view by viaduct is expected because of minimizing the violation of physical constraints. Good	It is inevitable to encounter protests from residents to take place excessive land acquisition in between the Kali Malang and Jl. Gatot Subroto Poor	No adverse effect except adverse aesthetic view by viaduct is expected because of minimizing the violation of physical constraints Good
3. Traffic Demand	Considerable traffic diversion from Jl. Gajah Mada/Wuruk and Jl. Thamrin/Sudirman are expected Good	Considerable traffic diversion from Jl. Gunung Sahari/Salemba Raya/Otista and Jl. Rasuna Said are expected Good	Considerable traffic diversion from Jl. Gunung Sahari/Salemba Raya/Otista are expected Good
4. Construction Economy	It will become rather expensive but still regard as due investment in case that additional land is available Fair	Initial investment seems to be too big to appropriate a feasibility of project even if additional land is available Poor	It will become rather expensive but still regard as due investment in case that additional land is available Fair
5. Road User Benefit	Both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network Good	Both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network Good	Both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network Good
6. Development Impact	It is no doubt to spur modernization in the CBD and to induce spacious redevelopment from present ribbon one Good	It is no doubt to spur re-development of ex-Kemayoran Airport and to induce spacious redevelopment from present ribbon one Good	It is no doubt to spur re-development of ex-Kemayoran Airport and to induce spacious redevelopment from present ribbon one Good
Evaluation	<p>Step 1 : The scheme of AL-IIa is unlikely practical solution from the view points of Land Availability and Impact on Social Environment.</p> <p>Step 2 : The scheme of AL-I and AL-IIb have almost the same level in aspects of Land Availability, Impact on Social Environment and Development Impact.</p> <p>Step 3 : As for Traffic Demand and Road User Benefit, AL-I is slightly superior to AL-IIb because of predicted bigger Volume of diversion traffic</p> <p>Step 4 : As for Construction Economy, AL-IIb is likely superior to AL-I because of utilization of 3 km long existing road and interchanges.</p> <p>Step 5 : Thus, it is recommended that AL-I be selected in this segment, considering ambignousness of rough cost estimate</p>		

Table 8.5.8 Comparison and Evaluation of Alternatives in between S-W Arc and JORR (Segment NS-II)

Alternatives	AL-I : Fatmawati West Corridor (NS-A)	AL-II : Fatmawati East Corridor (NS-B)	AL-III : Mampang Prapatan Corridor (NS-C)	AL-IV : Pasar Minggu Raya Corridor (NS-D)
Background	Running parallel to Simpruk Bypass and following city planning road along the Kali Grogol	Running parallel to Jl. Asia Afrika/Jl. Pattimura and following the Kali Krukut	Following the Kali Mampang and running parallel to Jl. Warung Jati Barat	Running parallel to Jl. Pasar Minggu Raya
Road Length	10.5 Km	10.5 Km	7 Km	7 Km
Potential Interchanges	Four (Panjang IC, K. Baru West IC, Pondok Indah IC and JORR IC)	Five (K. Baru North IC, Trunojoyo IC, Kemang IC, Cipete Raya IC and JORR IC)	Two (Pejaten IC and JORR IC)	Three (Pahlawan Kalibata IC, Pejaten IC and JORR IC)
Flyovers/viaduct	10.5 km viaduct	10.5 km viaduct	7 km viaduct	7 km viaduct
Proposed R.O.W.	40 m	40 m	40 m	40 m
Physical Constraint/Landuse/Environment	To run southward on Simpruk Bypass and to follow city planning road along the Kali Grogol To utilize city planning roads and to make full use of the existing right-of-way and public spaces To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints To provide frontage roads with On/Off ramps to avert excessive concentrated traffic To form an interchange with Jl. Panjang To form an interchange with Jl. Ciledug Raya in the west of Kebayoran Baru Subcenter To form an interchange with Jl. Marga Guna to provide access to Pondok Indah housing complex To pass the eastern periphery of Pondok Indah housing complex To form an interchange with both the frontage roads and tollway of JORR nearby the Kali Grogol crossing	To run southward on Jl. Gelora/Asia Afrika/Pattimura/Jl. Sultan Iskandarsyah/Prapanca and to follow the Kali Krukut in the east of Jl. Pangeran Antasari To make full use of the existing right-of-way and to utilize river space with the improvement of Kali Krukut To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints To provide frontage road with On/Off ramps and to secure accessibility to neighbourhood To form an interchange with Jl. Sudirman in the north of Kebayoran Baru Subcenter To form an interchange with Jl. Trunojoyo in the center of Kebayoran Baru Subcenter To form an interchange with Jl. Kemang in the south of Kebayoran Baru Subcenter To form an interchange with Jl. Cipete Raya/Puri Mutiara To form an interchange with both the frontage roads and tollway of JORR nearby the Kali Krukut crossing	To follow the Kali Mampang in the west of Jl. Mampang Prapatan and to run parallel to Jl. Warung Jati Barat To utilize river space with the improvement of Kali Mampang To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints To provide frontage road with On/Off ramps and to secure accessibility to neighbourhood To pass present low-cost housing area in the east of Jl. Warung Jati Barat To form an interchange with Jl. Pejaten Raya To form an interchange with both the frontage roads and tollway of JORR in between Jl. Warung Jati Barat and Jl. Rawa Bambu Raya	To run parallel to Jl. Pasar Minggu Raya in the west side To utilize existing road right-of-way and river space To make elevated throughway on viaduct in whole stretch due to successive crossings and severe physical constraints To provide frontage road with On/Off ramps and to secure accessibility to neighbourhood To form an interchange with Jl. Pahlawan Kalibata To form an interchange with Jl. Pejaten Raya To follow present urban drain in the west of Jl. Pasar Minggu Raya to keep distance to form an interchange with both the frontage roads and tollway of JORR
1. Land Availability	Generally following city planning road and existing roads or public spaces but additional R.O.Ws are deemed necessary where interchanges are formed and On/Off ramps are provided <p style="text-align: right;">Fair</p>	Generally following existing roads and space of the river but additional R.O.Ws are deemed necessary where On/Off ramps are provided <p style="text-align: right;">Fair</p>	Following space of the river in the northern half but new gazetting of future R.O.W is deemed necessary in the southern half <p style="text-align: right;">Poor</p>	Generally following existing roads and space of urban drain but additional R.O.Ws are deemed necessary where On/Off ramps are provided <p style="text-align: right;">Fair</p>
2. Impact on Social Environment	Adverse effect of deteriorating the existing environment and adverse aesthetic view by viaduct are expected in the established housing complex of Pondok Indah <p style="text-align: right;">Poor</p>	Adverse effect of deteriorating the existing environment and adverse aesthetic view by viaduct are expected in the established housing complex of Kebayoran Baru <p style="text-align: right;">Poor</p>	It seems to encounter protests from residents because of no gazetting of city planning but recent improvement of Jl. Warung Jati Barat/Mampang Prapatan <p style="text-align: right;">Bad</p>	Adverse effect of deteriorating the existing environment and adverse aesthetic view by viaduct are expected along Jl. Pasar Minggu Raya <p style="text-align: right;">Poor</p>
3. Traffic Demand	Considerable traffic diversion from Jl. Sudirman/Fatmawati and Jl. Kebayoran Lama/Ciputat Raya are expected <p style="text-align: right;">Good</p>	Very high traffic diversion from Jl. Pangeran Antasari, Jl. Ampera Raya/Kemang and Jl. Fatmawati are expected <p style="text-align: right;">Good</p>	Modest traffic diversion from Jl. Warung Jati Barat/Mampang Prapatan are expected due to a lesser degree of combination with existing collector roads <p style="text-align: right;">Poor</p>	Considerable traffic diversion from Jl. Pasar Minggu Raya are expected in spite of a lesser degree of combination with existing collector roads <p style="text-align: right;">Fair</p>
4. Construction Economy	It will become rather expensive but still regard as due investment <p style="text-align: right;">Fair</p>	It will become reasonable and regard as due investment in case that the river improvement may take place simultaneously <p style="text-align: right;">Good</p>	It unlikely regards as due investment even if the river improvement may take place simultaneously <p style="text-align: right;">Bad</p>	It unlikely regards as due investment because of presently intensive improvement of Jl. Pasar Minggu Raya with flyover construction <p style="text-align: right;">Bad</p>
5. Road User Benefit	Both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network <p style="text-align: right;">Good</p>	Both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network <p style="text-align: right;">Good</p>	It is true that both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network but it will cause major road users to make detour to incur a higher transport cost <p style="text-align: right;">Poor</p>	Both local and long-distant traffic can enjoy benefits due to development of functional and efficient road network <p style="text-align: right;">Good</p>
6. Development Impact	It is expected to bring effect of agglomeration of activities located around interchanges <p style="text-align: right;">Fair</p>	It is no doubt to directly stimulate modernization in Kebayoran Baru Subcenter and to bring effect of agglomeration of activities located around interchanges <p style="text-align: right;">Good</p>	It is limited to bring effect of agglomeration of activities located around interchanges <p style="text-align: right;">Fair</p>	It is unlikely to induce spacious redevelopment from present ribbon one because of poor feeder system but to bring effect of agglomeration of activities located around interchanges <p style="text-align: right;">Poor</p>
Evaluation	<p>Step 1 : The scheme of AL-III is inferior in almost every aspects</p> <p>Step 2 : The scheme of AL-IV seems to have lower priority than that of AL-I and AL-II, considering predicted traffic volume</p> <p>Step 3 : The scheme of AL-I and AL-II have almost the same level in aspects of Land Availability Traffic Demand and Road User Benefit</p> <p>Step 4 : As for Construction Economy and Development Impact, AL-II is slightly superior to AL-I</p> <p>Step 5 : As for Impact on Social Environment, AL-II has less degree of adverse effects than AL-I because of its scale and location</p> <p>Step 6 : Thus, it is recommended that AL-II be selected with branch line up to Jl. Marga Guna in the north of Pondok Indah housing complex as an ultimate scheme.</p>			

