CHAPTER TWO:

FUTURE PERSPECTIVE OF BANGKOK

2.1 GENERAL/OVERVIEW

Being the capital city of Thailand, the future of Bangkok is naturally deeply concerned with national interest. National level plans therefore, devote several pages on the future of the city, though many of them do not mention in detail.

The Ninth National Economic and Social Development Plan (Ninth Plan) has been compiled this year, and is in effect for five years from October 2001. Various national and local governments have also formulated and started implementing their plans following the same span of time with the Ninth Plan.

After the establishment of the current constitution in 1997, and consequent promulgation of the Decentralization Act, all the government plans have been formulated under the same direction: seeking the way of decentralization and promotion of peoples' participation.

In fact, having the basic concept of creating an efficient society, the Ninth Plan basically follows the policies established in the Eighth Plan. According to the National Economic and Social Development Board (NESDB), in the formulation of the Ninth Plan, efforts are made to provide a concrete path to achieve the targets in the Eighth Plan.

In the following sections, existing major spatial plans and large-scale projects are reviewed, as they may have a considerable influence on the future structure of the city.

2.2 EXISTING SPATIAL DEVELOPMENT POLICIES

2.2.1 Metropolitan Regional Structure Plan

The recent national socioeconomic development plans have increasingly devoted their pages to the spatial development issues. Urban development has been clearly identified as one of the major activities to support socioeconomic development in

the Eighth Plan, and continues to be in the Ninth Plan, since it would impede sustainable growth if not properly managed.

The Urban Development Coordination Division of NESDB is particularly concerned with economic and urban development strategies and is attempting to establish a framework for coordination of these. In 1999, the "Metropolitan Regional Structure Plan" was presented, in line with the national socioeconomic development plans. The plan recommends a broad decentralization of development in BMR and proposed three new major centers as follows:

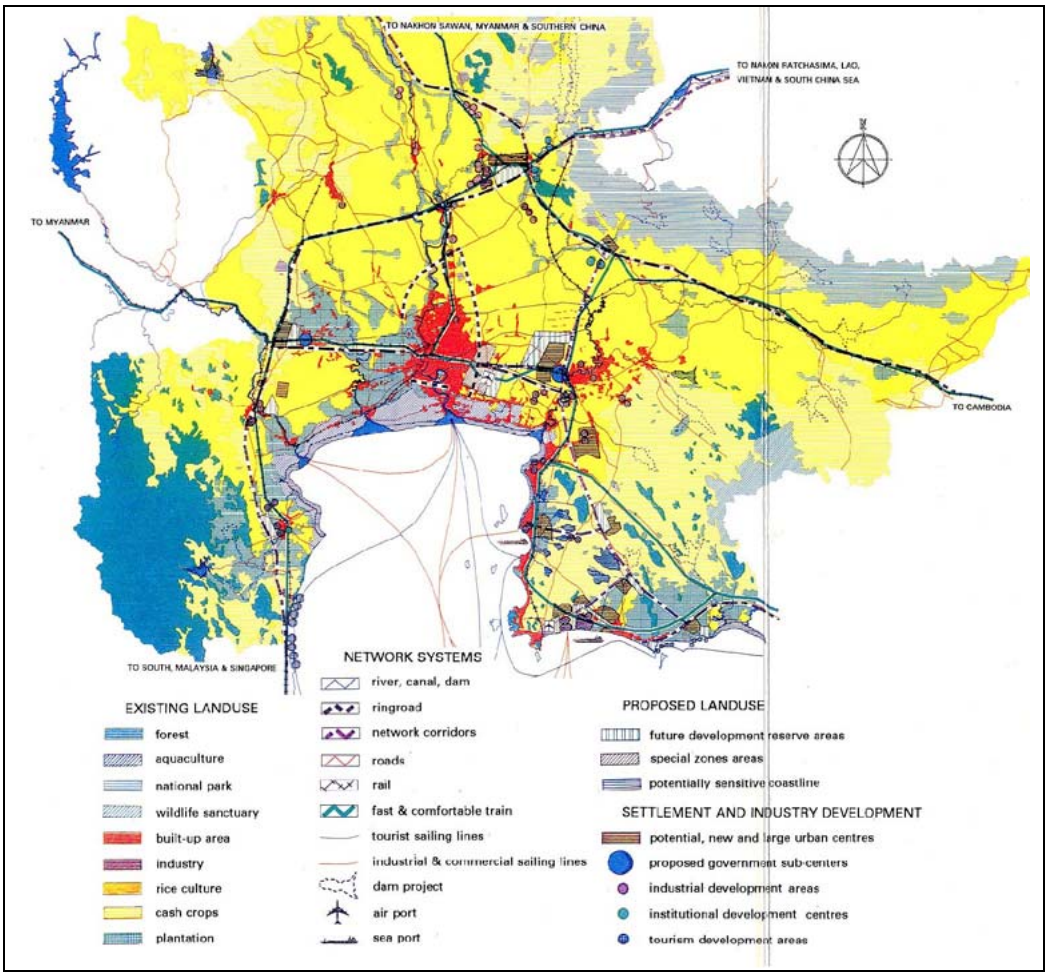
1) Nakhon Pathom to the west, anchoring a Western-Seaboard development corridor;
2) Chachoengsao to the southeast, providing a center for the Eastern Seaboard development corridor; and
3) Saraburi to the north for the spread of development in the Upper Central Region.

The decentralization process might bring this multi-polar metropolis system and the spread of new industrial and residential development along the Eastern Seaboard is expected. NESDB proposes several ways to achieve these targets. These are as follows:

- Utilize the Metropolitan Regional Structure Plan as an indicative plan for land development and expansion of infrastructure networks and facilities to ensure higher efficiency of urban land use;
- Formulate measures to relieve congestion from the city center, such as construction of new towns, adoption of the Land Readjustment Project on empty and unused urban land, together with measures to prevent additional housing sprawl along main highways;
- Designate promotion zones and control the growth of high-rise buildings, together with measures to prevent detrimental impacts on the environment;
- Improve and rehabilitate rundown urban communities, and designate local authorities to prepare district plans for these areas; and
- Promote the conservation of historical and culturally significant areas, together with the promotion of a wide distribution of recreation areas throughout BMR.

Figure 2.1 shows schematic drawing of the Metropolitan Regional Structure Plan.

Figure 2.1: Metropolitan Regional Structure Plan



Source: Metropolitan Regional Structure Plan, NESDB

2.2.2 The Second Bangkok General Plan

The Bangkok General Plan is designated as a framework to guide the physical development of the city in line with the BMA's five-year development plan. According to the Town and Country Planning Act (1975), a General Plan is defined as the plan formulated to provide the general policies, projects, and control measures to be used to help guide development and maintenance of the city and its environs. The General Plan thus sets the physical framework for development of transportation and other infrastructure, provision of public services, and improvement of the environment.

The Plan covers the entire 1,568 km^2 of BMA's administrative area. The first Bangkok General Plan was prepared by the Department of Town and Country Planning (DTCP) of MOI. It was enacted on July 6th, 1992 for an initial duration of

five years and was extended twice for one-year period each until mid-1999. A major revision of the plan was made by BMA and was enacted in July 1999. This represents a major new step in the field of planning in Thailand, and it was the first time that the local authority, rather than a central government agency, formulated a master plan for the development of the area under its administration. The Second Bangkok General Plan is in effect for five years until mid-2004. Key concepts of the plan are as follows:

1) Promoting polycentric development by expanding the existing or by creating new metropolitan sub-centers. Some of these are in the area around the Central Business District while others are toward the outskirts of the city;
2) Conserving "Krung Rattanakosin" (the old city area) and the immediate surrounding areas of historical and cultural value;
3) Reorganizing land uses of the areas in the inter-modal centers to ease the potential for provision of new infrastructure;
4) Creating special development areas to enhance Bangkok as a regional center for South East Asia;
5) Improving the urban environment, by reducing air, water, and noise pollution, and by providing services and infrastructure to improve the standard of living of the city's residents;
6) Improving the mobility of the city's residents, by improving the transportation system;
7) Bringing balance to the locations of employment and residence. To improve the standard of living and the urban environment, people should be able to live near their place of employment; and
8) Limiting major urban development to areas inside the outer ring road, to preserve the natural resources of the areas around Bangkok.

The Second Bangkok General Plan consists of three major components: 1) Land Use Plan, 2) Transportation Plan, and 3) Open Space Plan. These are briefly introduced below.

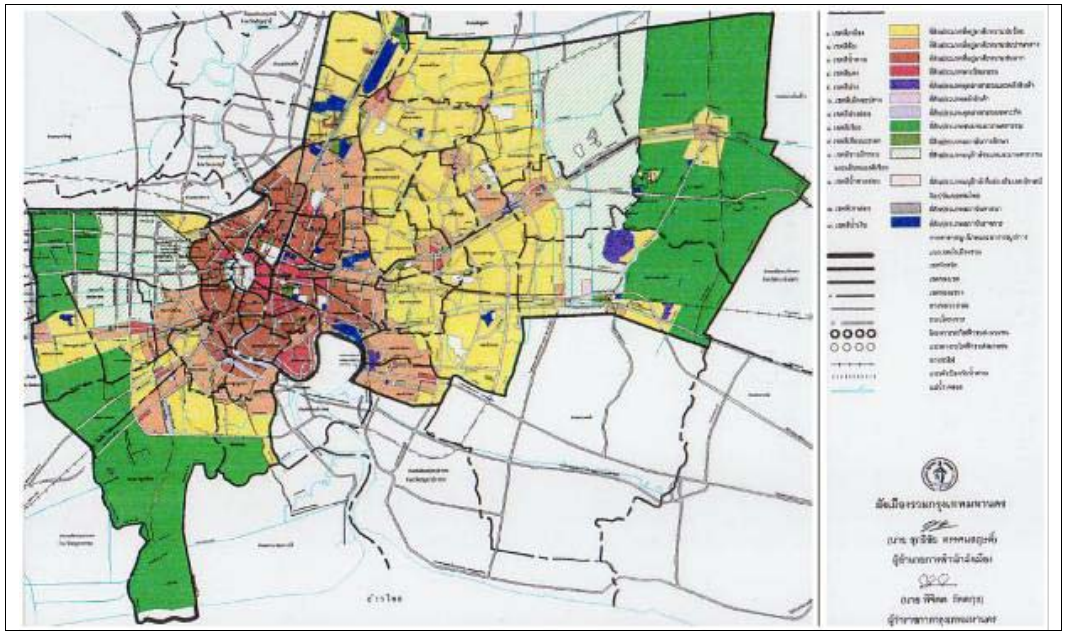
(1) Land Use Plan

The complete land use plan of the Second Bangkok General Plan is presented in Figure 2.2.Comparing it to the First General Plan, the following items are the major points of revision.

The proportions of solely residential and agricultural areas have been reduced, while the proportion of commercial and mixed land use areas are increased. The objective of this conversion is to promote the development of areas related to transportation and other infrastructure projects.

- The industrial and warehouse areas have been decreased in response to the policy to reduce heavy industry within the city limits. In contrast, open space areas for recreation and environmental protection have been increased to support policy to improve environmental quality and standard of living of the city's residents.
- The number of categories of land use remains at 14 as in the previous Plan, but they have been further subdivided in order to strengthen the control mechanisms to protect the environment of the community.

Figure 2.2: Land Use Plan in the Second Bangkok General Plan



(2) Transportation Plan

The Transportation Plan is presented in Figure 2.3. The main purposes of the Transportation Plan are to alleviate the problem of traffic congestion and to facilitate infrastructure development to promote the role of Bangkok as a regional economic center. The Transportation Plan comprises three major systems: 1) the expressway, 2) the mass transit system, and 3) the road system.

The road plan consists of those roads proposed but not yet completed under the First General Plan, along with newly proposed primary and secondary roads. Although it is not under the authority of BMA, proposals of expressways and mass transit systems are incorporated in the plan, in order to give a complete view of the future transportation system.

The main concepts used for the Transportation Plan are as follows:

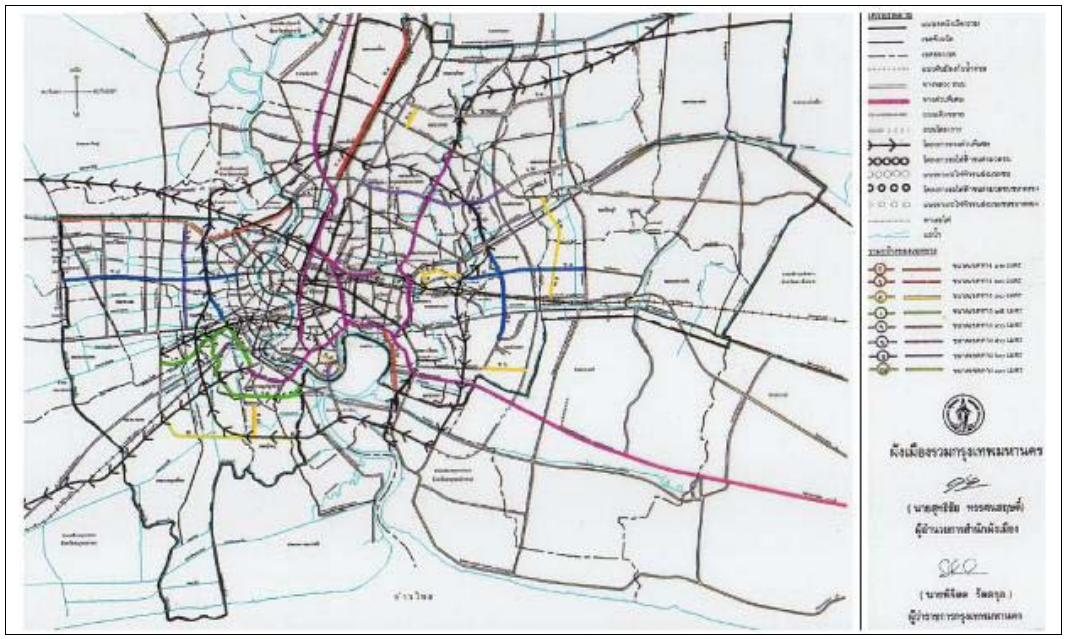
- Primary road system, ring roads, and expressway system are the basic network for traffic flow between major areas of the city and to/from its environs. There should be as few crossings or obstructions as possible;
- New transport infrastructure such as the mass rapid transit system (MRT) should serve special development zones at the inter-modal stations; and
- There should be an increase in primary roads to link major areas, and increase in secondary roads to ease accessibility in and out of these areas.

Special emphasis is given to the road networks of the proposed sub-centers, in order to increase the potential to develop these areas, promote growth where desired, and reduce the super-blocks that plague much of the city.

In addition, the following items are introduced as special policy on transportation plan;

- Support the main mass rapid transit system with smaller-scale mass transit systems, such as a light rail system, to serve people living and working in high-density areas. These include nine light rail routes approved by the Office of the Commission for the Management of Land Traffic (OCMLT); and
- Support other public transport such as buses, riverboats, ferries, canal boats, and river transport for cargo.

Figure 2.3: Transportation Plan in the Second Bangkok General Plan



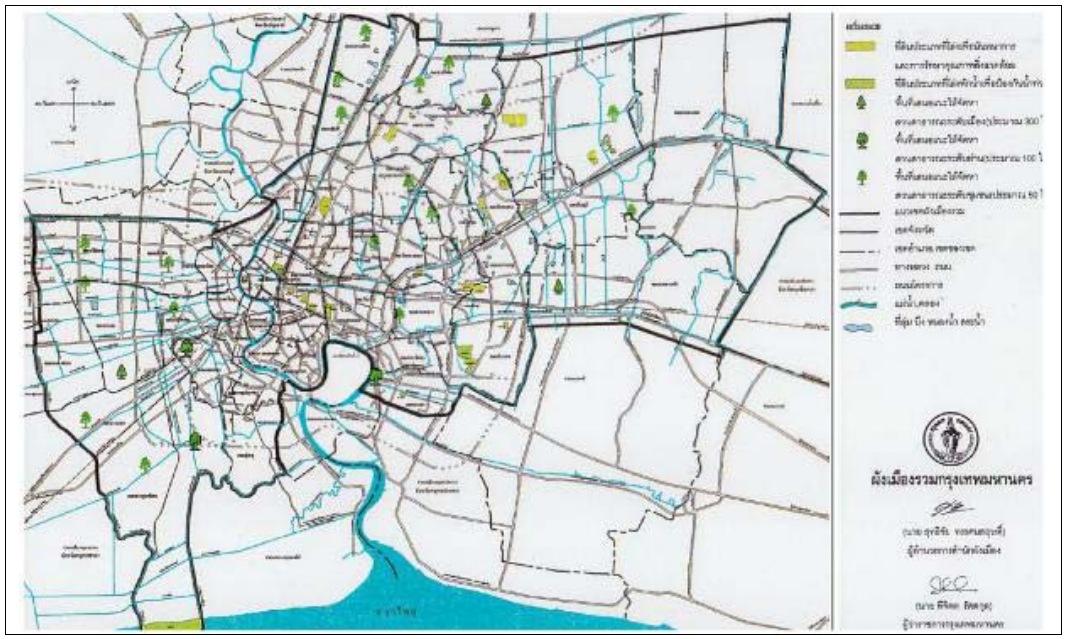
(3) Open Space Plan

The Open Space Plan is presented in Figure2.4.

Bangkok has less public park space per capita than most large cities in the world. Moreover environmental problems, particularly air pollution, make the provision of public space and green areas even more critical and urgent. Other environmental concerns, such as the need for open space for flood mitigation and the need to preserve the environment of the river and canals, can also be met through the preservation of open spaces and the creation of public areas. Thus the Second Bangkok General Plan has added Open Space Plan as another major component, in addition to the Land Use Plan and the Transportation Plan. The main principles of the Open Space Plan are itemized below.

- Increase open spaces for flood mitigation: in order to preserve the flood retention areas in what is known as the “Monkey Cheek” project.
- Preserve the environment of the banks of the Chao Phraya River.
- Add more public parks to Bangkok, which now has only 0.86 square meters of area per capita.
- Add strips of green area between the roads and buildings to reduce air and visual pollution caused by increase of tall buildings along the main roads.

Figure 2.4: Open Space Plan in the Second Bangkok General Plan



Those new public parks indicated in the plan, however, are only committed projects. They are as yet neither officially proposed nor budgeted, because most of the land in the planned project areas is now private property. The Open Space Plan cannot stipulate any private lands for public park projects, unless those lands have been expropriated or purchased by the government. However, the Plan recommends appropriate sites for public parks. Though there is no legal enforcement to develop these sites as parks, since they are privately owned, the Plan is intended to provide guidelines to concerned agencies to acquire lands close to the recommended sites for park development.

These principles have been translated into four types of actions to create open spaces as follows:

1) Open Space for Recreation and Environmental Conservation

This comprises 19 areas designated in the First Bangkok General Plan and 23 new areas proposed in this Plan, to be developed for Open Space for Recreation and/or for Environmental Conservation.

2) Water Retention Area for Flood Protection

As Bangkok needs water retention areas to help ease flooding during periods of heavy rain, an area of 650 km^2 in eastern Bangkok has been set aside as the main

flood protection area. It can be flooded with 43.94 million m^3 of rainwater in a three hour period, of which 18.45 million m^3 would be drained out via the main drainage system within three hours. The remaining 25 million m^3 would be retained in the area**.**

Of the 18.45 million m^3 of water to be drained, 12.6 million m^3 cannot be drained immediately. Sufficient area is thus needed to hold and manage this water. In the new Open Space Plan, only public land owned by government agencies is being reserved for water retention. These lands can be filled up to no more than 35% of each plot.

3) Open Space for Promoting Road Side Environment

The objective of this type of open space is to create an attractive landscape and shading along the sides of roads. This open space is also intended as a green buffer between the road and areas of activities alongside the roads. Trees planted along the road will function as filters of dust and exhaust from vehicles. The Road Side Open Space will be added to the 15-meter setback made compulsory through a BMA by-law currently applied to 22 main roads.

The area assigned for these open spaces are at least two meters wide in lands along the roadsides. However, fences, walls, guard kiosks, building signs, entrances facilities to buildings, and car parks are exempted.

4) Open Space for the Conservation of Rivers and Canals

BMA has proposed another by-law to control the construction of buildings along the Chao Phraya river. The purpose of this control is to maintain the worth of the river by preventing activities that spoil the beauty or access to the river. In particular, it is intended to control the construction of buildings along the riverside. During the economic boom, when there were no effective controls over construction, several large and tall buildings blocked access, and even at times extended over the river.

The two proposed principles of the by-law are as follows:

- Within 15m from the riverbank, the height of buildings must not exceed 8m and must be set back at least 3m from the riverbank. Construction of shop houses and row houses are prohibited; and

- In the area beyond 15 m but not more than 45 m from the riverbank, the building height must not exceed 16 m.

2.3 EXISTING PLANS OF MAJOR TRANSPORT SYSTEM DEVELOPMENT PROJECTS

2.3.1 New Bangkok International Airport Project

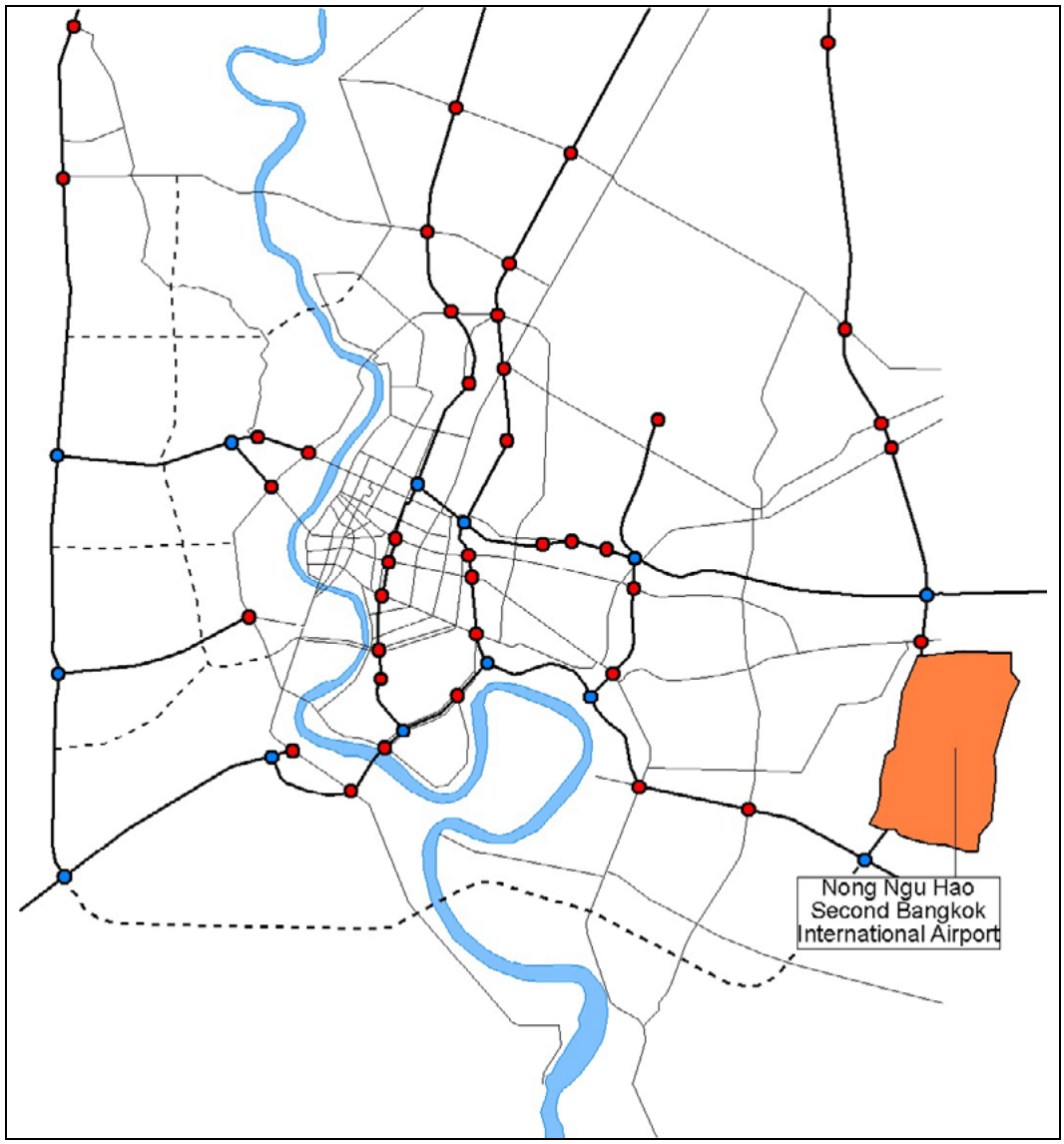
The Second Bangkok International Airport (SBIA) project is to develop a new airport in the vicinity of Bangkok to meet the increasing demand of international and domestic air passengers and cargo. In the stage of studies, the Airport Authority of Thailand (AAT) and the Ministry of Finance (MOF) established the New Bangkok International Airport Co., Ltd. (NBIA Co.) to implement the project. The project is financed by the Japan Bank for International Cooperation (JBIC), and construction is underway. Outline of the project is summarized below.

Table 2.1: Outline of SBIA Project

Item	Description
Location	Nong Ngu Hao, Amphoe Bay Pli, Samut Prakan Province (30km east of Bangkok)
Land Area	Approx. 3,200ha
Airport Capacity	30 million per annum of international and domestic passengers
Runways	2 * 3,700m (Phase-1)
Passenger Terminal Complex	550,000m^2 consisting of terminal, concourse, and associated facilities

Figure 2.5 shows location of SBIA.

Figure 2.5: Location of SBIA

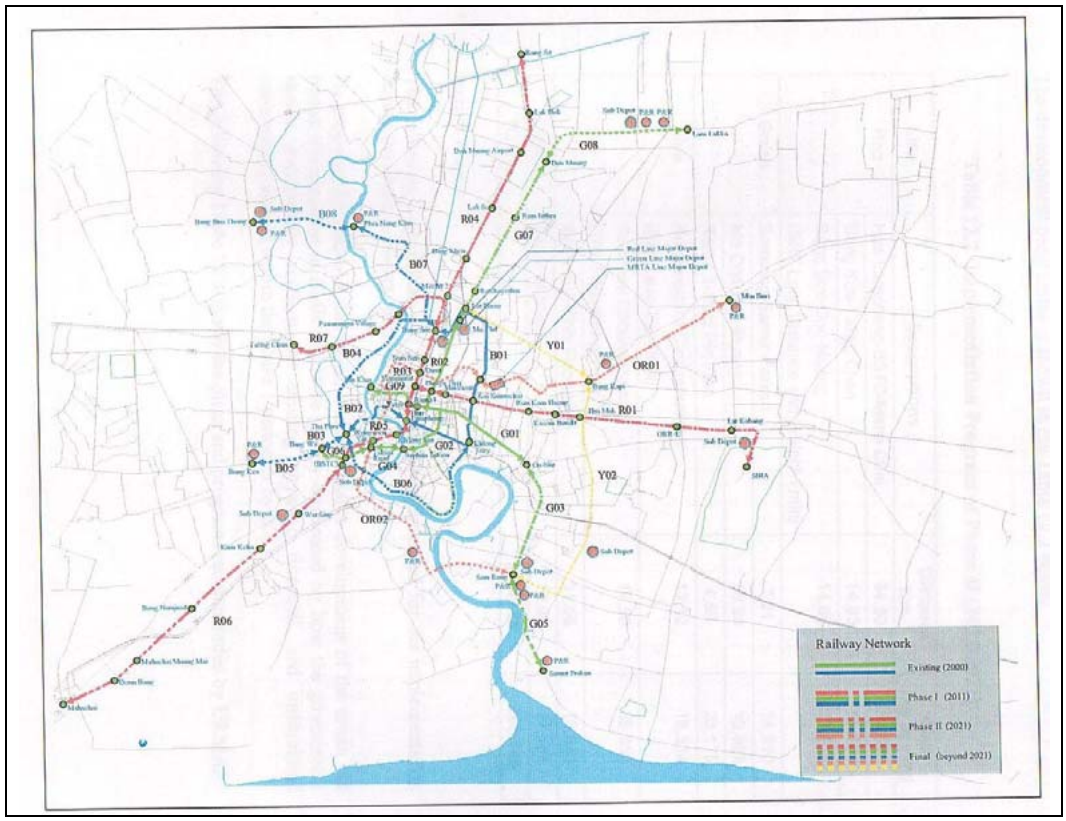


2.3.2 Railway/Mass Transit System Development

For railways and MRTs, there were two streams of master planning efforts: 1) plans under the Conceptual Mass Rapid Transit Implementation Project (CMIP), and 2) additional feeder routes plans under the Mass Transit Feeder System Study. These are being integrated under the Urban Rail Transportation Master Plan (URMAP) by OCMLT. URMAP is at the stage of awaiting Cabinet approval of the second draft final report.

Figure 2.6 shows the rail transit master plan proposed in the second draft final report of URMAP. A brief description of component lines follows.

Figure 2.6: Proposed Rail Transit Master Plan by URMAP



Source: 2nd Draft Final Report, URMAP, OCMLT, May 2001

(1) Red Line Commuter (RLC)

The RLC is proposed to be an electrified commuter system with station spacing between one and three kilometers depending on proximity to development. It will include a local (urban) and an express (suburban) services. The direct extension of the Red line west (CMIP) is replaced with an extension of the Green Line west from the National Stadium to Pin Klao Bridge and the Orange Line. The proposed RLC is to be extended to Taling Chan along the existing SRT alignment. The routes of RLC link Taling Chan in the west with SBIA in the east whilst the other RLC line runs from Rangsit in the north to Maha Chai in the south. There is a major interchange at Bang Sue. The extension of the Green Line will interchange with RLC at Yothi. This extension line is likely to increase passengers on both lines and will provide direct access to many government offices.

(2) Green Line

At present in the northeast of Bangkok there is a proposed Feeder Line, Khlong Lat Phrao. The proposed extension of the Green Line along Phahon Yothin Road to Lam Lukka will result in rail transit access being provided to the Lat Phrao/Rarm Intra super block incorporating the Khlong Lat Phrao Feeder.

It is also proposed to extend the Green Line to Samut Prakhan crossing the Orange Line. A bus feeder line replaces the original Green Line Southern Extension to SBIA. The principal rail access to SBIA is provided by RLC.

(3) Blue Line

At present there are two proposed feeder lines in the immediate vicinity of the Chao Phraya River: Charan Sanit Wong and the Rama III Circular. The URMAP proposal is to add missing links across the river. The link across the Chao Phraya River from Bang Sue will form part of the Blue Line Circumferential Route together with the proposed extension of the Blue Line from Hua Lamphong. The Rama III Road feeder line will be replaced by a link from the Blue Circumferential at Tha Phra to the Circumferential in the vicinity of the Rama IV road. The Green and this additional Blue Line Spur will be linked along Naradhiwas Rajanagarindra Road by the existing busway.

The Blue circumferential route is then proposed to distribute passengers around the city. Commuters will come to the city on the major lines such as the red or green systems and then be distributed around the city along this circumferential route. The proposed timing of this is such that it will provide mass transit within Charan Sanit Wong Road corridor early in the development of the Mass Transit Plan. In the northwest, the proposed Bang Yai Feeder (URMAP) would extend the blue line to Bang Khae and add feeder buses to provide additional access to Bang Yai.

(4) Orange Line

URMAP proposes no change to the existing alignment. The Orange Line runs from Min Buri to the Blue Line Depot and then across the city, crossing the Chao Phraya River close to the Memorial Bridge. The alignment then crosses the river again to meet the extended Green Line and the proposed Yellow Line at Samrong.

The alignment will meet the proposed BMA Tram route on Rattanakosin Island. Chulalongkorn University is currently planning the development of a local tram system in the vicinity of the Grand Palace and Pin Klao Bridge for the BMA.

(5) Purple Line

The timing of the Purple Line is uncertain and the URMAP Study Team believes that this line should be indefinitely postponed beyond 2021. It is our contention that this area is best served by an additional bus service.

(6) Yellow Line

The Bang Chan Feeder and Srinagarindra Feeders are combined to form the proposed new Yellow Line. The Yellow Line will run from the Lat Phrao/Phahon Yothin intersection along Lat Phrao Road to Bang Kapi. It then turns south along Srinagarindra Road to meet the extended Green Line and the Orange Line at Samrong.

2.3.3 Road System Development

For development of roads in Bangkok, several agencies are concerned as follows.

1) The Expressway and Rapid Transit Authority of Thailand (ETA), mainly responsible for construction of expressways.
2) The Public Works Department (PWD) of MOI, responsible for implementation of major bridge structures and associated connecting roads.
3) The Department of Highways (DOH) of MOTC, mainly implementing intercity highways, as well as linkages to the intercity highway system.
4) BMA undertaking numerous programs of transportation infrastructure projects.

Unlike URMAP in the field of railways and mass transit systems, OCMLT has not yet officially compiled a consolidated master plan for road system development. However, in the course of formulating the Second Bangkok General Plan, BMA had integrated all the major road development plans proposed by other agencies, and had acquired approval of OCMLT.

Major roads in the Transportation Plan included in the Second Bangkok General Plan are as follows:

(1) Expressway System

To assure that the transportation plan is comprehensive and can meet the needs of Bangkok's residents in the most efficient manner, all expressways under construction or to be completed before 2002 are included in the Plan. These are:

1) The Second Stage Expressway part D, from Rama IX - Srinagarindra, which links the main expressway system to the Motorway to Chonburi;
2) The Bang Na - Chon Buri Expressway, which also links the city with Chonburi and the Eastern Seaboard;
3) North part, Third Stage Expressway (Wong Sawang - New Bangkok Chon Buri), connecting important sections of the eastern part of the city;
4) South part, Third Stage Expressway (At Narong - Bang Na), connecting the northeast to the southeast parts of the city; and
5) The Bang Pa-in - Pak Kret Expressway, extending the north leg of the expressway to Bang Pa-in in Ayutthaya Province.

(2) Urban Trunk Routes

The Transportation Plan in the Second General City Plan of BMA proposes 25 new roads, of which 10 are primary roads and 15 are secondary roads. The major aims of the construction of these roads are:

1) To supplement the linkage between outer and inner parts of the city, and to give drivers more traveling alternatives, especially from the major suburban areas to the inner city. Following are the major examples:
    - The road along the Prem Prachakon Canal will be an alternative to Vibhavadi Rangsit and Phahon Yothin Roads and the expressways from the north;
    - The Ratchadaphisek - Rarm Intra Road will divide the Lat Phrao super block; and
    - The road along the Southern Railway and the Pran Nok - Phuttha Monthon IV Road are alternatives for the now overcrowded west-bound Borom Baromarajajonani Road and Phet Kasem Roads.
2) To get rid of passing-by traffic from the inner city areas, and create better road networks in the proposed sub-centers:

- The Nawamin - Udom Suk Road will link the northeastern part of the city with the southeastern part, without having to travel through the center of the city; and
- The Tak Sin - Rama II Road will link several densely populated areas.

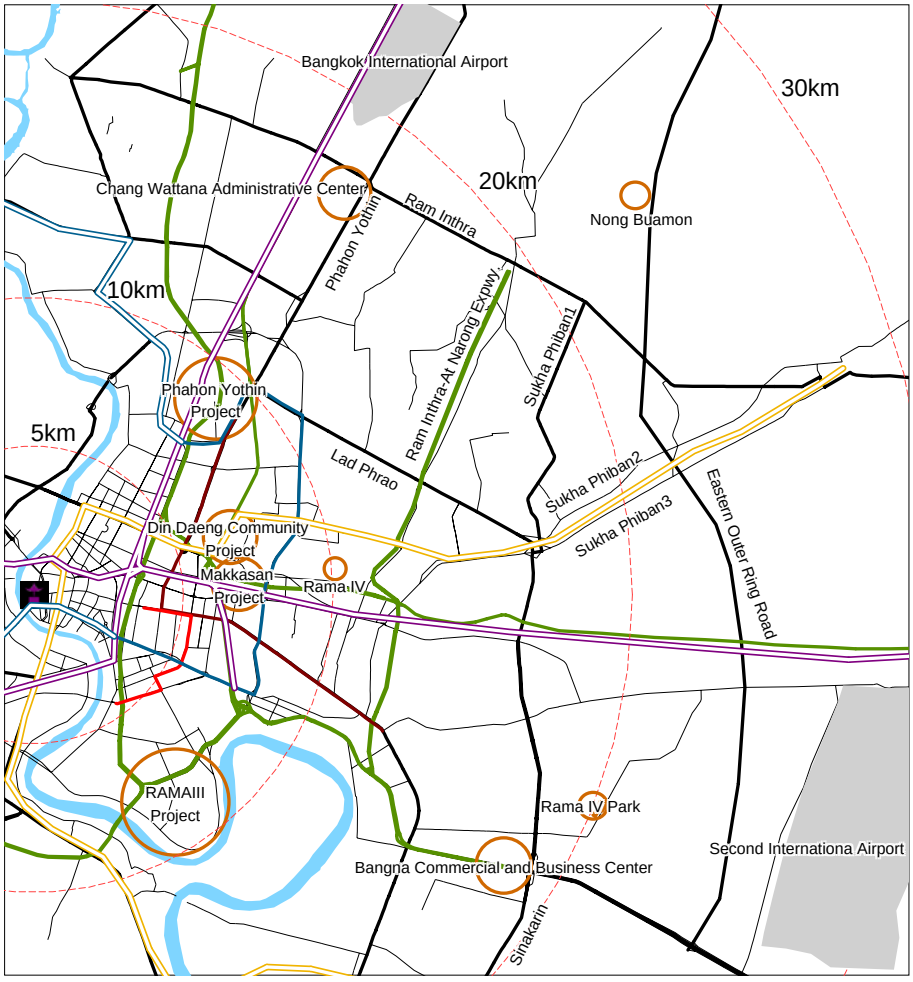
3) To add alternative routes to link major areas in the city:

- The Si Ayutthaya - Rama IX Road will allow people to travel from the major business and commercial area of Pathum Wan and Ratchathewi to the newly developed areas of Rama IX and Ramkhamhaeng in the city's west without passing through the highly congested Victory Monument area.

2.4 EXISTING PLANS OF MAJOR URBAN DEVELOPMENT/RENEWAL PROJECTS

There are a number of large-scale urban development/renewal projects being planned in Bangkok, and most of them heavily involve government agencies: for some projects, the land is owned by the government, while for some, the government has addressed strong commitment. BMA, in its General Plans, has expressed several key projects in line with concept of poly-centric development of the city. These include 1) Metropolitan Sub-centers, 2) Inter-modal Centers, and 3) Special Development Areas. Existing major plans are summarized in table 2.2 and their locations are depicted in Figure 2.7

Figure 2.7: Location of Major Urban Development/Renewal Projects



Source: JICA Study Team

Table 2.2: Outline of Major Urban Development/Renewal Projects

Project	Principle	Agency	Area ('000 m²)	
Din Daeng Housing Complex Redevelopment	Redevelopment of NHA flats and improvement of residential environment.	NHA	Land: 1,000 Building: 1,970	
	Construction of BMA new city hall	BMA		
RAMA III	Development of a new international financial district by planning techniques and implementation incentives in implementing the project.	BMA	Land: 7,300	
Phahon Yothin development	Redevelopment of SRT railway yard and its vicinity to create an international traffic center, business & commercial centers and a large park and open space.	SRT	Land: 2,000 Building: 14,800	
Makkasan development	Redevelopment of SRT railway yard, factories and housing to construct an east gateway, business & exhibition center, hotel & residence, and light-industrial commercial center.	SRT	Land: 375 Building: 2,900	
Chaeng Watthana Administrative Center	Development of government center, and relocating many government agencies from northern Bangkok.	Govt.	-	
Bang Na – Sinagarindra Commercial & Business Center	Development of a new commercial, business office and high-density residential center.	BMA	-	
Metropolitan Sub-Centers	・Min Buri and Nong Chok in the northeast of the city. ・Lat Krabang and Bang Na to the east. ・Nong Buamon to the north, and ・Bang Khun Thian to the southwest.	BMA	-	
Inter-modal Centers	Development at the stations of the rapid rail transit system, namely Mor Chit, Hua Lamphong, Silom, Makkasan, Victory Monument, Siam Square, Cultural Center, Sukhumvit, Asok, and Wongwian Yai.	BMA	-	
Chatu Chak-Ratchadaphisek development	Development of business offices and high-density residential area stretching from Mor Chit terminal.	BMA	-	

Source: JICA Study Team

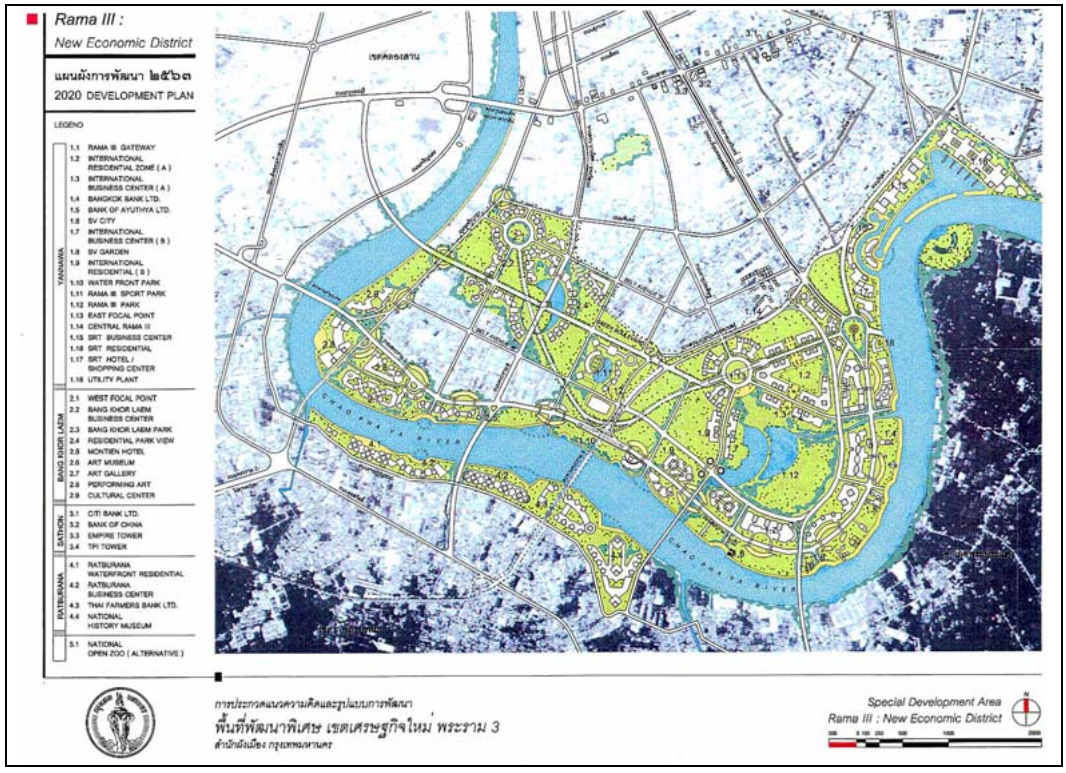
Among all the projects listed above, the following projects seem to have advantageous conditions for realization, and will certainly bring significant impacts on the settlement pattern of Bangkok. An outline of these projects is briefly introduced below.

(1) Rama III Special Economic Development Area

The Rama III Special Economic Development Area is one of those designated as a Special Development Area in the Second Bangkok General Plan, and is to be developed as a new Central Business District that emphasizes the financial and banking businesses. This area is in a part of the city along the Chao Phraya River that had not been easily accessible by land transport until recent years, even though it was not very far from the Silom-Surawong Central Business District.

The land along the river had earlier been used for warehouses for river transport, while the area situated farther inside was prime vegetable and fruit production land. This area is now being developed for high technology telecommunications and infrastructure to support computer-based banking and financial businesses in the coming years.

Figure 2.8: Rama III Special Economic Development Area Master Plan



(2) Phahon Yothin/Bang Sue Project

Phahon Yothin/Bang Sue area is located about 8 km north of Hua Lamphong terminal along Phahon Yothin Road. The entire land is 2,325 rai (372 ha) in area. The main existing facilities are Bang Sue station, warehouses, SRT employees' housing compound, bus terminal, large public park, weekend market, agricultural production land, market, and golf course. Major roads such as Vibhavadi Rangsit Road, Phahon Yothin Road, elevated Expressway and elevated railway run around the area.

Because of the existing railway-associated facilities and the city's important roads, the area has outstanding potential to be the transportation hub of Bangkok. Its proximity to downtown has raised land values, calling for more intensive use of land in terms of floor area ratio. Moreover, buildings and other infrastructure are old and require modernization. Consequently SRT has attempted to redevelop the area as a transportation hub and business commercial zone.

SRT entrusted a group of Thai consultants with the formulation of a master development plan, which was completed in 2000. The plan is being reviewed by the SRT's Board of Committee to be submitted to the Cabinet for approval.

Figure 2.9: Phahon Yothin Development Master Plan

(3) Makkasan Project

Makkasan is located in the eastern part of Ratchathewi districtnorth of New Phetchaburi Road. The whole land is 57 ha (356.3 *rai*) in area. The main existing facilities are SRT's Makkasan station and repair shops. Major roads such as Vibhavadi Rangsit Road, Soi Asok (Ratchadaphisek road) run around the area. As its south boundary is formed by a canal, and the north boundary faces the Makkasan pond, the area offers a good chance of creating a waterfront park and water transportation facilities.

SRT is planning to relocate the existing repair shops outside the city, which would then leave a vast open land behind. There is also a plan to modify the marshalling yard to cater to the new railway system toward the southeast provinces. The important roads running around it and the proximity to Sukhumvit - one of the most commercially active areas in Bangkok - makes Makkasan ideal for large scale commercial development.

SRT, with the same intention as the Phahon Yothin/Bang Sue area, engaged a group of Thai consultants to formulate a development master plan, which was completed in 2000.

Figure 2.10: Makkasan Development Master Plan

(4) New BMA City Hall Project

BMA has a plan to relocate its city hall in Din Daeng district from the old town of Rattanakosin. The design has been completed and construction has partly started. The project site is involved in the Din Daeng Community Area, which is selected as the priority area in this Study. The detail on the New City Hall project is discussed in Part III of this report, along with redevelopment of NHA's Din Daeng Housing Complex.

2.5 CONSIDERATION ON FUTURE PERSPECTIVE OF BANGKOK

2.5.1 Need for Restructuring of Current Urban Structure

Due to the foregoing characteristics of urban structure, the urbanized area of Bangkok has expanded greatly, but has formed a rather sparsely utilized built-up area. This results in high costs to extend urban infrastructure to integrate the built-up areas, as well as for the individual households that commute long distances every day.

As substantial population growth is unlikely in the future, the current urbanization pattern will no doubt be a significant social burden. The hollowing out phenomenon in the inner city and urban sprawl toward the suburbs may lead to weakening of the city itself, and therefore is a major issue in view of achieving sustainable urbanization.

Although there are several plans and policies seeking formulation of cluster type capital region by national, regional and provincial administration levels, efficient and quick dispersion of business function to these clusters is difficult under the present urban structure.

Consequently, in order to achieve the goal of sustainable urban growth, it is necessary to restructure the present urban structure such that the tide of private sector investment could be re-oriented.

2.5.2 Key Elements for Successful Restructuring

(1) Measures for Restructuring Existing Urban Structure

The key to reorganizing the present urban structure is how the ribbon type urbanization along the two urban axes can be curbed. Given this, the following measures need to be initiated:

- Transformation of traffic pattern (especially shift of transport mode from personal cars to public mass transit systems);
- Creation of peripheral urban cores based on decisive implementation of the polycentric city scheme; and
- Regeneration of the inner city by improvement of the living environment.

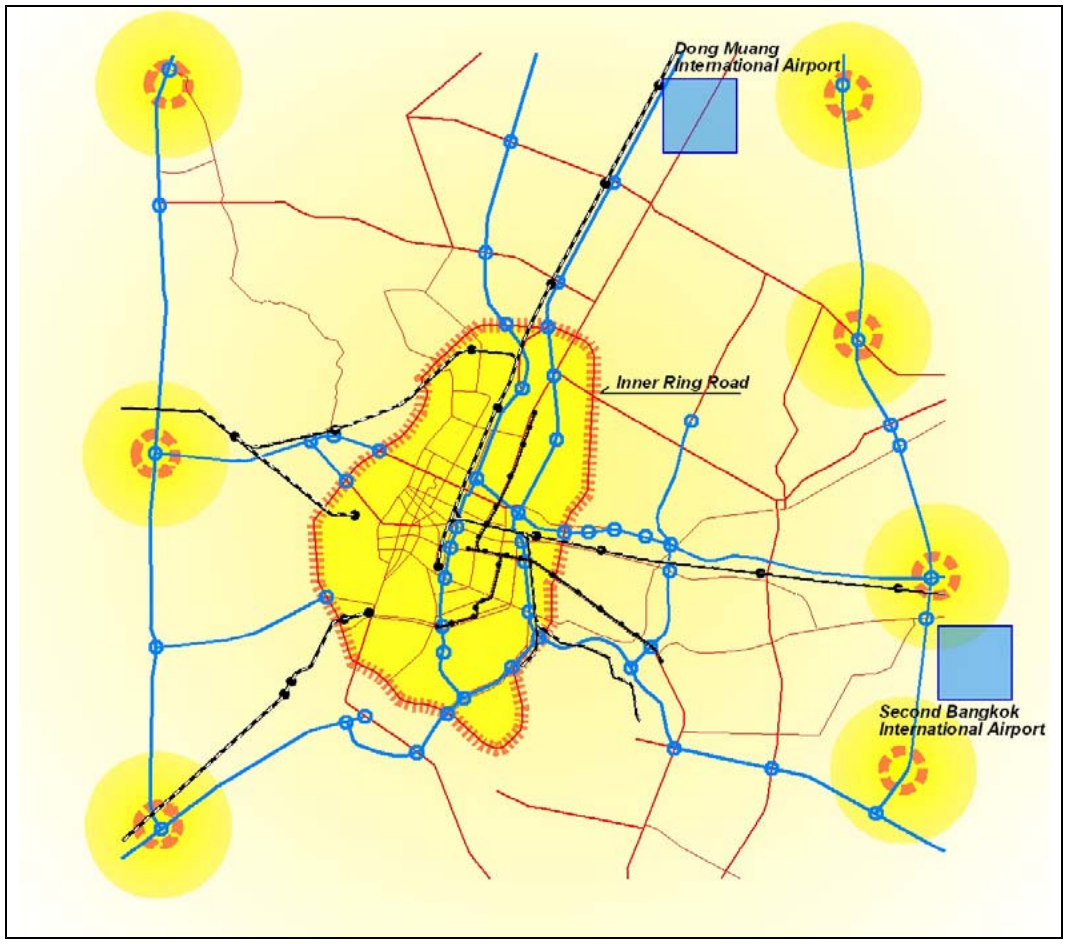
Of these three items, the first two are largely recognized in Thailand as policies and/or in master plans. The last item, however, has not been well recognized as there have been no concrete plans and/or policies formulated, though its significance is keenly recognized in some government agencies such as OCMLT and MRTA.

(2) Conditions for Effectively Reorganizing Inner City Area

For revitalization of the inner city, the following points should be taken into consideration:

- The existing stock of public facilities, especially transport infrastructure (preferably inside the inner ring road);
- Avoiding dependence on the existing two urban axes, especially for access from the north-eastern residential area;
- Good access to the existing urban cores, especially the three busy areas of Rattanakosin old town, Silom CBD and Dusit central government area;
- Strategic location in view of future transport system, especially from the stand point of mass transit system development plans; and
- Strong interest/attention by private sector investors.

Figure 2.11: Recommended Future Urban Structure in Bangkok



PART II:

BASIC DIRECTIONS

ON URBAN RENEWAL

OF THE STUDY AREA

CHAPTER THREE:

EXISTING CONDITIONS OF THE STUDY AREA

3.1 GENERAL/OUTLINE OF THE AREA

Although it was a suburb of Bangkok only a half century ago, the Study Area now is located at the geographical center of the capital city after the rapid and extensive urban growth. Currently, the area has good access to major parts of the city connected by urban trunk routes and expressways. The accessibility will be further enhanced in the near future by completion of the Rapid Rail Mass Transit (Blue Line) construction.

The Study Area largely belongs to Din Daeng district, and partly to Ratchathewi district at its southern part, which is mostly occupied by the marshalling yard of SRT. Because of this administrative composition, statistical data available for the exact area is limited. Therefore, some of the data in this chapter are from Din Daeng district alone.

The Study Area is characterized by accumulation of many row-houses and shop-houses serviced by narrow roads. There are, however, several large-scale land uses such as the public sport complex (Thai-Japan Youth Center) and BMA's branch office buildings. NHA has developed housing complexes within the area, namely Din Daeng Housing Community (Din Daeng 1 and 2, total 24ha) and Huai Khwang Housing Community (30ha).

Development of Din Daeng Housing Community was initiated by the Ministry of Social Welfare to provide low cost housing for slum/squatter residents widely spread in Bangkok. The site had been used for solid waste disposal, and therefore has been vacant. Because of this situation, the surrounding area had also been left with a low level of land use. In other words, the urbanization of the Study Area was prompted by the development of Din Daeng Housing Community.

The following figure shows a general map of the Study Area.

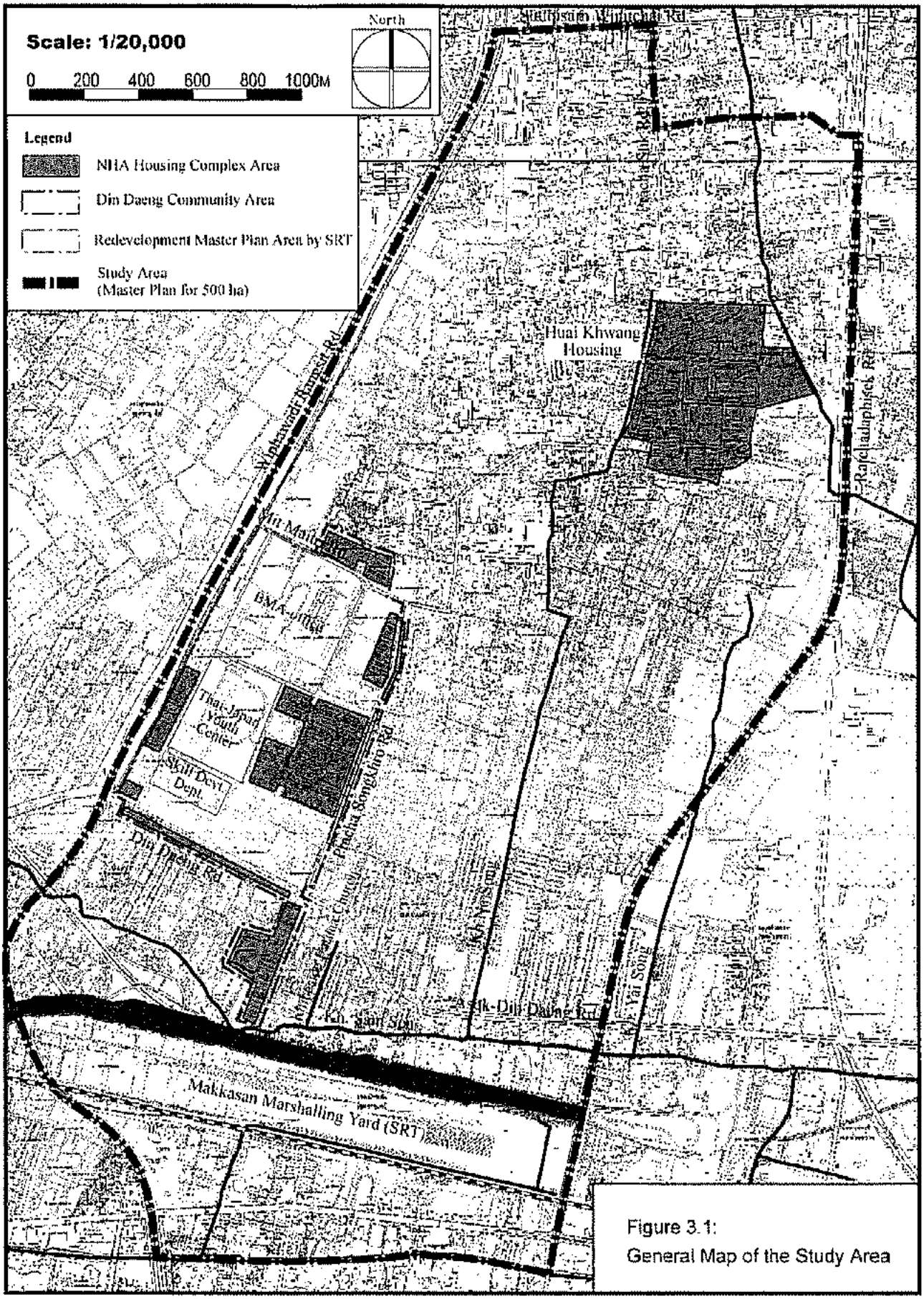


Figure 3.1:
General Map of the Study Area

3.2 SOCIO-ECONOMIC CHARACTERISTICS

3.2.1 Demographic Composition

In 1999, the Study Area had a population of 188,251 and households of 52,789. The proportion of male to female was 0.93 to 1.00, and population density was about 17,698 people/km^2. During the period of 1995 to 1999, population in the Study Area has decreased by 1.68% due to natural emigration, impact of the highway project, and fire incident.

Basic statistics of the Study Area are presented in the tables below. Based on the data, the Study Area can be characterized by the following:

- Densely inhabited area with population density of 17,698 persons/km^2, or the fourth highest density among the total 50 districts in BMA;
- Smaller household size (3.58 persons/household) comparing to the average of BMA (3.9 persons/household); and
- Average age group structure similar to BMA, though of a slightly higher composition of economically active population.

Table 3.1: Population and Household in the Study Area (1999)

District/ Sub-district	Populations			Area (km^2)	Density (Psn/km^2)	Houses
	Male	Female	Total			
Din Daeng						
/Din Daeng	79,736	86,451	166,187	8.354	19,893.11	46,388
Ratchathewi						
/Makkasan	10,816	11,248	22,064	2.283	9,664.48	6,401
Total	90,552	97,699	188,251	10.637	29,557.59	52,789

Source: Statistic of BMA, 2000, Department of Policy and Planning, BMA.

Table 3.2: Population and Household Change (1995-1999)

Items	Years					(%)
	1995	1996	1997	1998	1999	
Population						
Din Daeng	177,685	173,672	171,062	168,552	166,187	1.66
Makkasan	23,748	23,473	22,680	22,317	22,064	-1.82
Total	201,433	197,145	193,742	190,869	188,251	-1.68
Households						
Din Daeng	45,922	45,634	45,900	46,219	46,388	0.25
Makkasan	6,671	6,454	6,324	6,388	6,401	-0.01
Total	52,593	52,088	52,224	52,607	52,789	0.01

Source: Statistic of BMA, 2000, Department of Policy and Planning, BMA.

Table 3.3: Age Group Structure

	Din Daeng District (1999)			BMA (1999)		
Age Group	Total	Male	Female	Total	Male	Female
-14	273	141	133	10,253	5,266	4,988
	-18%	-19%	-16%	-20%	-21%	-18%
15-59	1,131	537	594	37,006	17,754	19,252
	-73%	-72%	-73%	-71%	-71%	-71%
60-	155	66	90	4,821	2,074	2,747
	-10%	-9%	-11%	-9%	-8%	-10%
Total	1,560	743	817	52,080	25,094	26,986
	-100%	-100%	-100%	-100%	-100%	-100%

Source: Statistic of BMA, 2000, Department of Policy and Planning, BMA.

3.2.2 Household Income Level

Based on the results of social survey conducted for this study, the average household income in the Study Area is about 18,700 baht/month, implying that the whole population of the Study Area can be classified as upper lower class using the classification system of the NHA for the 2001-2006 period (Table 3.4). The Upper Lower Class makes up 35% of the population, followed by Medium Lower Class 27.9%.

Table 3.4: Economic Classes of the Residents in the Study Area

Economic Class	Composition (%)	Family Income (Baht/month)
Lowest Lower Class (LLC)	8.9	< 5,000
Medium Lower Class (MLC)	27.9	5,001 – 10,000
Upper Lower Class (ULC)	35.0	10,001 – 20,000
Lowest Middle Class (LMC)	14.7	20,001 – 30,000
Medium Middle Class (MMC)	9.2	30,001 – 50,000
Upper Middle Class (UMC)	4.3	50,001 – 80,000

Source: JICA Study Team

3.2.3 Registered Communities

In order to promote and effectively support efforts of it's citizens for improving their living conditions, BMA has a registration system of community organizations based on voluntary application by the organizations. These are commonly called "Registered Communities", or simply "Communities". Reflecting this application based registration system, the Registered Communities usually have some problems in their living condition and environment, and in many cases these are slum/squatter communities.

There are 16 Registered Communities in the Study Area, ten in Din Daeng district and six in Ratchathewi district. The population and the number of households are

9,852 and 2,093 respectively, in only 1,613 total buildings. The average history of these communities is about 21 years. As shown in the table below, there are significant differences between the Din Daeng and Ratchathewi communities. In Din Daeng district, the majority of residents possess land with a few exceptions in rented lands by legitimate contract. In Ratchathewi district, in contrast, illegal squatters on the land of SRT predominate with a few exceptions renting private land without legitimate contract. It is also clear that households in Din Daeng Registered Communities have higher economic status than those in Ratchathewi district.

Table 3.5: Characteristic of Registered Communities in the Study Area

District/sub-district	Com. Age	H.H.	Fam.	Pop.	Land Owner	Land Holder Condition	Economic Status
Din Daeng District							
1. Soi Mae Nieo 2	30	60	94	477	Privates	Themselves	MLC
2. Soi Mae Nieo 3	20	60	115	635	Privates	Themselves	MLC
3. Soi Sombun Phattana2	30	52	88	369	Single Private	RWC	LLC
4. Soi Suphannika 2	20	55	72	354	Single Private	RWC	MLC
5. Soi Inthamara 55)	40	89	96	708	Dual Privates	RWC	MLC
6. Soi Chan Mueang	30	193	201	1,164	Privates	Themselves	MLC
7. Soi Pemsin-Somboonsuk	20	52	55	284	Privates	Themselves	ULC
8. Soi Kun-Nathi	35	62	70	337	Privates	Themselves	ULC
9. Soi Saensuk	43	233	345	1,530	Privates	Themselves	ULC
10. Soi Phasuk	3	97	97	764	Privates	Themselves, RWC	MLC
Total/Average	25.97	953	1233	6622	-	-	MLC
Makkasan Sub-district							
1. Rimthang Rotfai	20	167	197	744	SRT	Squatter	LLC
2. Rong Che Makkasan	15	64	86	320	Privates	RWOC/Squatter	LLC
3. Thap Kaew	30	131	179	607	SRT	RWOC	LLC
4. Rim Khlong Samsen	9	189	256	964	Privates	Squatter/ Themselves,	LLC
5. Nikhom Makkasan	15	47	74	318	SRT	Squatter	LLC
6. Khang Wat Makkasan	20	62	68	250	SRT	Squatter	LLC
Total/Average	18.17	660	860	3,203	SRT	Squatter	LLC
Both	21.97	1,613	2,093	9,852	Privates	-	-

Sources: Din Daeng and Ratchathewi District, 1999
Note RWC = Rent with Contract, RWOC = Rent without Contract, SRT = The State Railway of Thailand

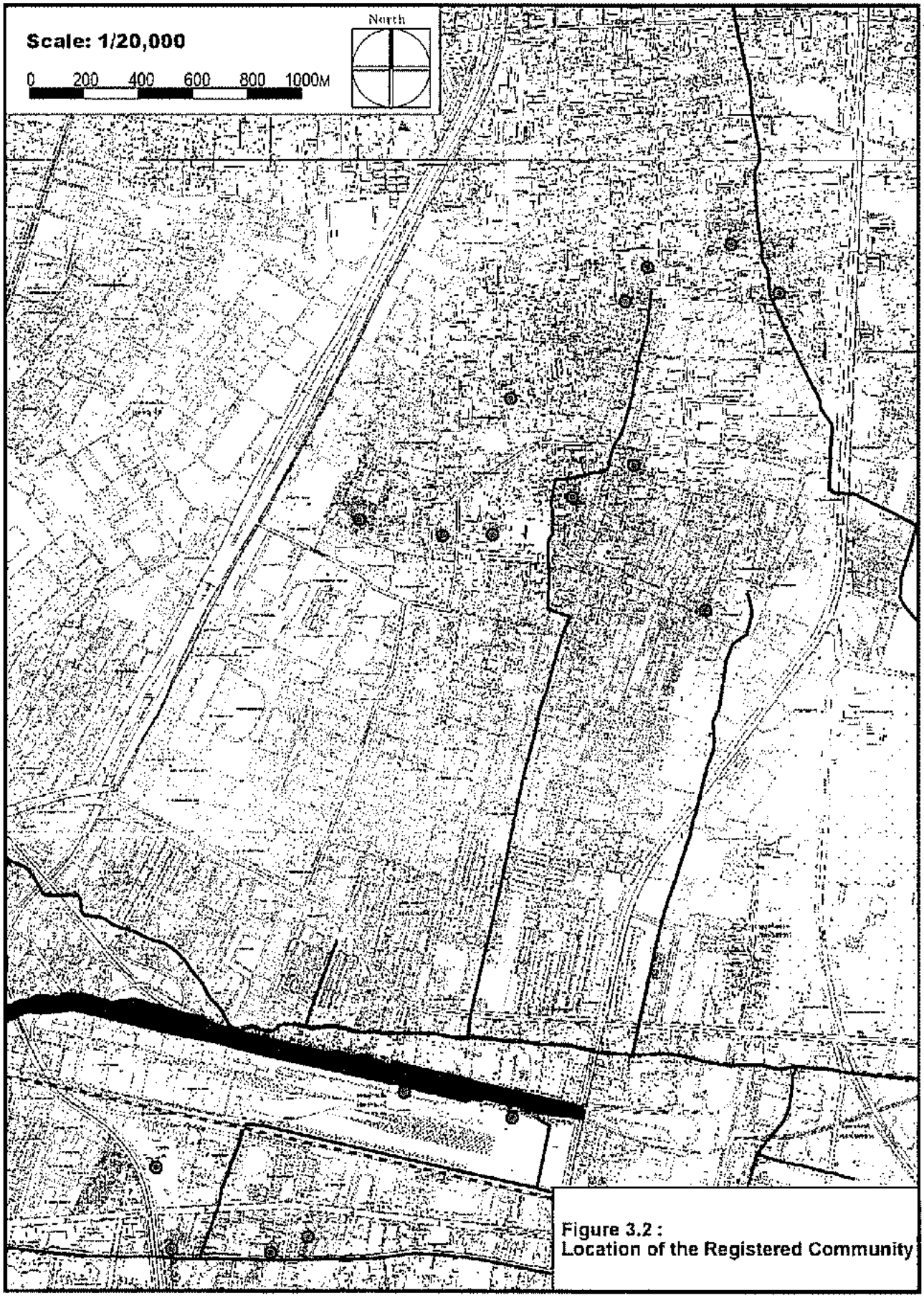


Figure 3.2 :
Location of the Registered Community

According to the results of the social survey undertaken for this study, the average household income of the surveyed households in the Registered Communities is around 15,900 baht per month, which can be classified according to the NHA classification outlined in Table 3.4. Compared to the entire Study Area and NHA flat dwellers, households in the 5,001-10,000 baht monthly income class are more prevalent in the Registered Communities, as shown in the table below.

Table 3.6: Economic class of the Registered Communities in the Study Area

(Composition in the Surveyed Households (%))

Economic Class	Entire Study Area (%)	Registered Communities (%)	NHA Flats (%)
LLC < 5,000	8.9	9.3	11.4
MLC 5,001-10,000	27.9	34.0	25.6
ULC 10,001-20,000	35.0	34.3	38.7
LMC 20,001-30,000	14.7	13.5	14.6
MMC 30,001-50,000	9.2	6.3	7.9
UMC 50,001-80,000	4.3	2.8	1.7

Source: JICA Study Team (Social Survey on February 2001)

Unlike in an ordinary neighborhood, the Registered Communities have suffered from a low quality living environment, and therefore have a strong desire for improvement. Opinions on the problematic situation in their communities were collected at a workshop conducted by the Study, as tabulated below.

Table 3.7: Problems of Registered Communities

Categories	Problems
Economic Aspect	・ Increasing number of unemployment and occupational uncertainty. ・ Dependency on informal creditors. ・ Excessive competition in small-scale retail business. ・ Brutal and out-law control of market places (for use of retail shop operation).
Social Aspect	・ Increase of drug addiction cases among residents. ・ Spreading of many kinds of gambles. ・ Shortage of public facilities (public health center, exercise center, Public Park, and recreation ground). ・ Increasing number of illegal immigrants (from Cambodia and Myanmar).
Environmental Aspect	・ Intolerable traffic noise generated by motorcycles. ・ Heavy air pollution (with high provability of causing allergy). ・ Bad smell of garbage rejected by collecting cars due to a breach of the rules caused by ignorance. ・ Unsanitary condition of public spaces (pavements, parks, etc). ・ Small-scale traders have penetrated footpaths.
Infrastructure Aspect	・ Insufficient traffic safety caused by narrow roads. ・ Shortage of public parks/open spaces. ・ Shortage of public telephones. ・ Insufficient maintenance of utilities.

Source: JICA Study Team