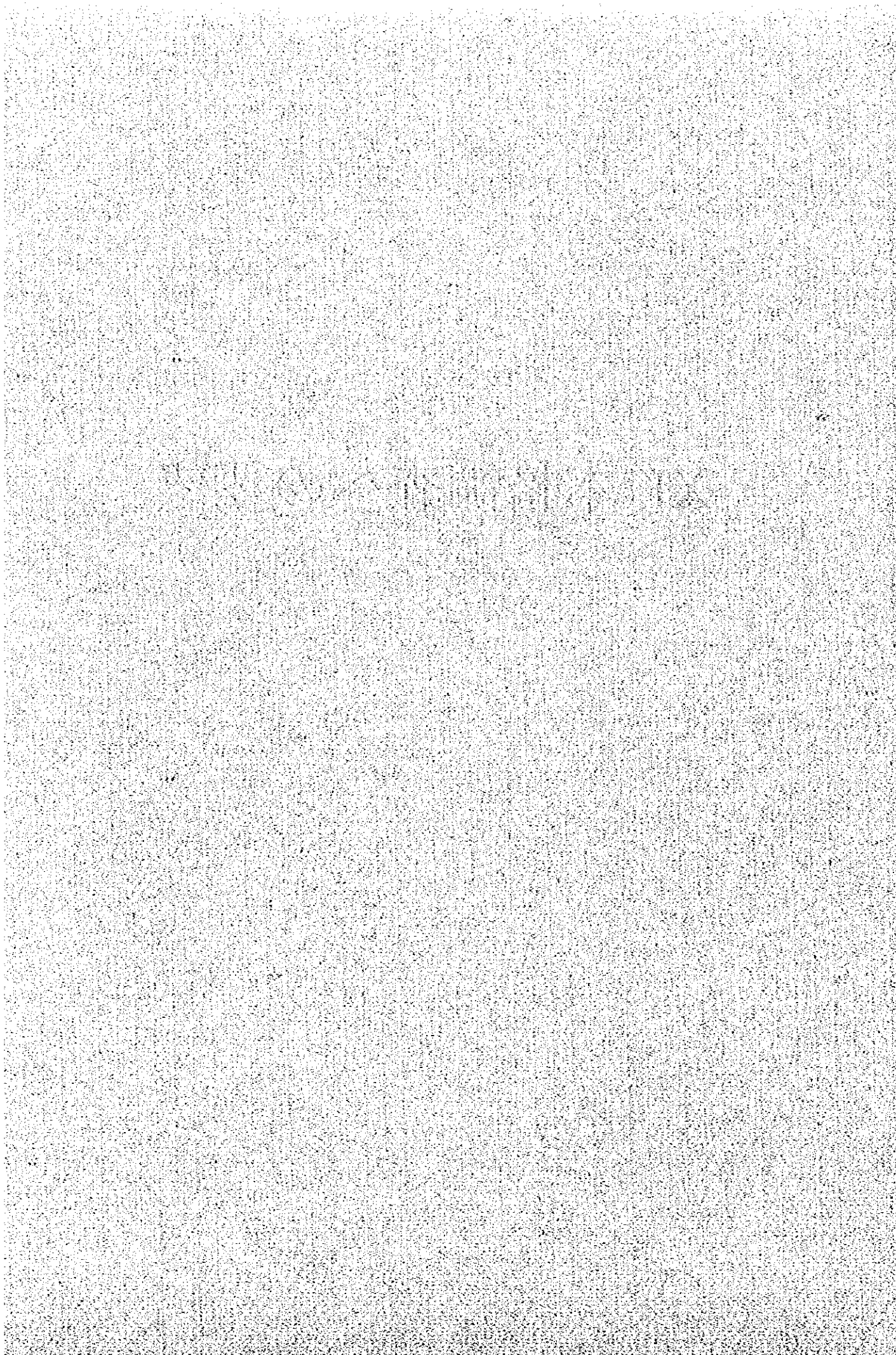


XI 本格調査への要望



XI 本格調査への要望

(1) 計画実現への段階的な機能設定

ベトナム政府側は、2020年に向けた科学技術振興の重要性を提言しながら、同時に現実的戦略を模索している。海外技術を習得するために外資系企業を誘致すべきとしながら、本計画は単なる工業団地開発ではないとしており、ハイテク産業育成への時系的理解の相違と思われる。一方で、新都市計画の実現に必要な基幹インフラ整備には多大な投資を要し、しかもその計画に未着手状態でのハイテク産業育成や科学技術振興は時期尚早とも言える。

従って、本格調査では、科学技術振興からハイテク産業育成を全体構想としたマスタープランを描きながら、そこに至る外資誘致政策や人材育成策、及び海外需要調査や基幹インフラ整備などの外部条件を配慮した、現実的なフェージング・プランの策定が重要である。また、第1次開発面積として800haのF/S調査が要請されているが、これに関しても現実的な機能区分を設定した上で、実現可能性の高いプロットの開発を提言することが望ましい。

(2) 開発方式および開発事業体への提言

本計画のハイテクパークは1,800haと広大であり、実施促進母体の下に幾つかの開発団体が組織され、相互に調整を図りながらも、夫々の責任範囲の開発を実施するものと想定される。それらは、複数の開発事業体、研究組合、訓練・教育実施機関、及び全体の運営管理組織等から構成されると思われる。更に、隣接するハノイ大学都市や工業団地、及び住居地域をも含む、新都市の運営事業体の提言が必要である。

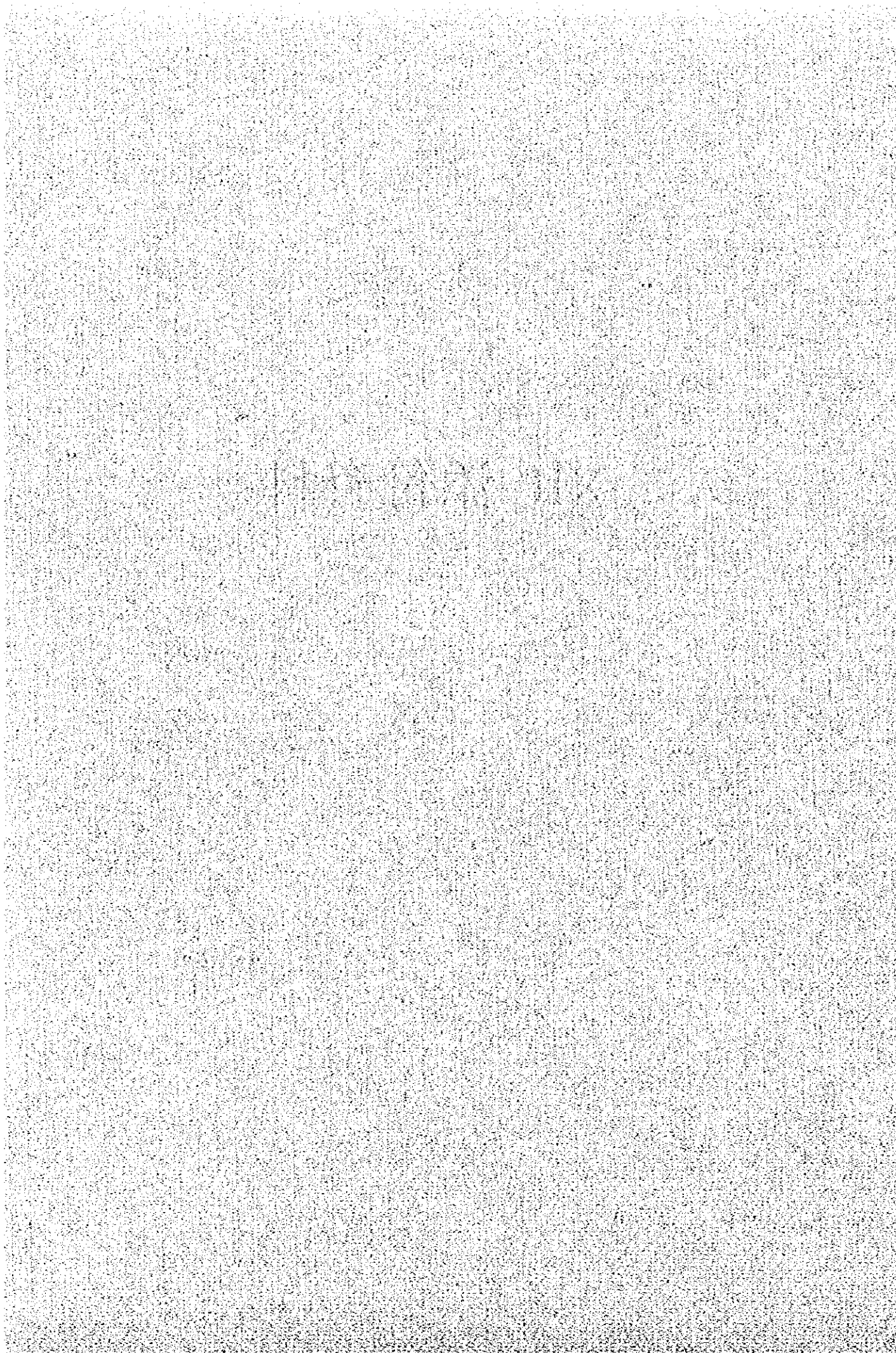
現在はハタイ人民委員会がその任に当たると想定されているが、将来は拡大するハノイ首都圏に組み込まれハノイ人民委員会の管轄となる予測もある。いずれにしても、本計画は新都市計画の主要部分であり、ベトナム政府に経験の無い都市経営のための組織体・事業体のあり方を提言すべきと思われる。

(3) カウンターパートの役割と技術移転

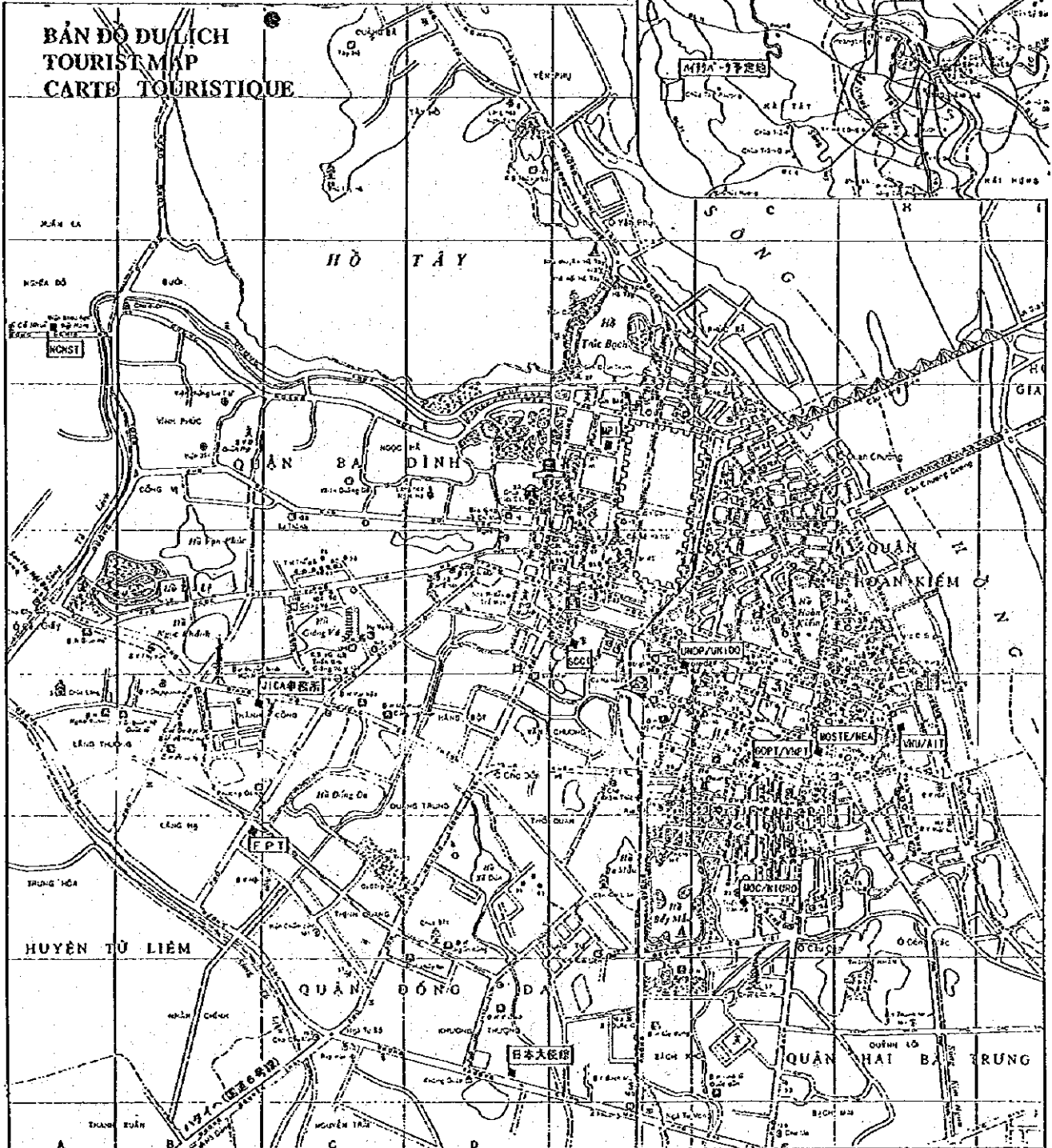
本計画では先方関連機関が多岐にまたがり、情報収集や調査実施に多くの労力が必要と予測される。特に、科学技術の振興に関してPPT/MOSTEは最高機関であるが、フィジカルな調査・設計段階での技術的対応は困難と思われる。現在はMOCが計画策定の任にあるが、今回の大規模な新都市計画では充分機能していない。特に、調査工程やその必要性などは理解されておらず、M/PからF/Sへの全作業は日本側役務と考えている。基幹インフラ整備についても、日本政府に多くを期待しており自主的な取り組姿勢が見られない。

一方、ベトナム側は本格調査の実施中に最大限の技術移転を希望している。従って、本計画実施に関わる諸担当機関の中から分野別に適切なカウンターパートを選定してワーキング・グループを組織し、これをステアリング・コミッティーの下に実務部隊として位置づける様な提言が望まれる。また本格調査期間中には、このワーキング・グループとの共同作業を通じた技術移転が望まれる。

XII 添付資料

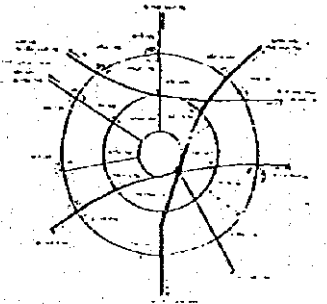
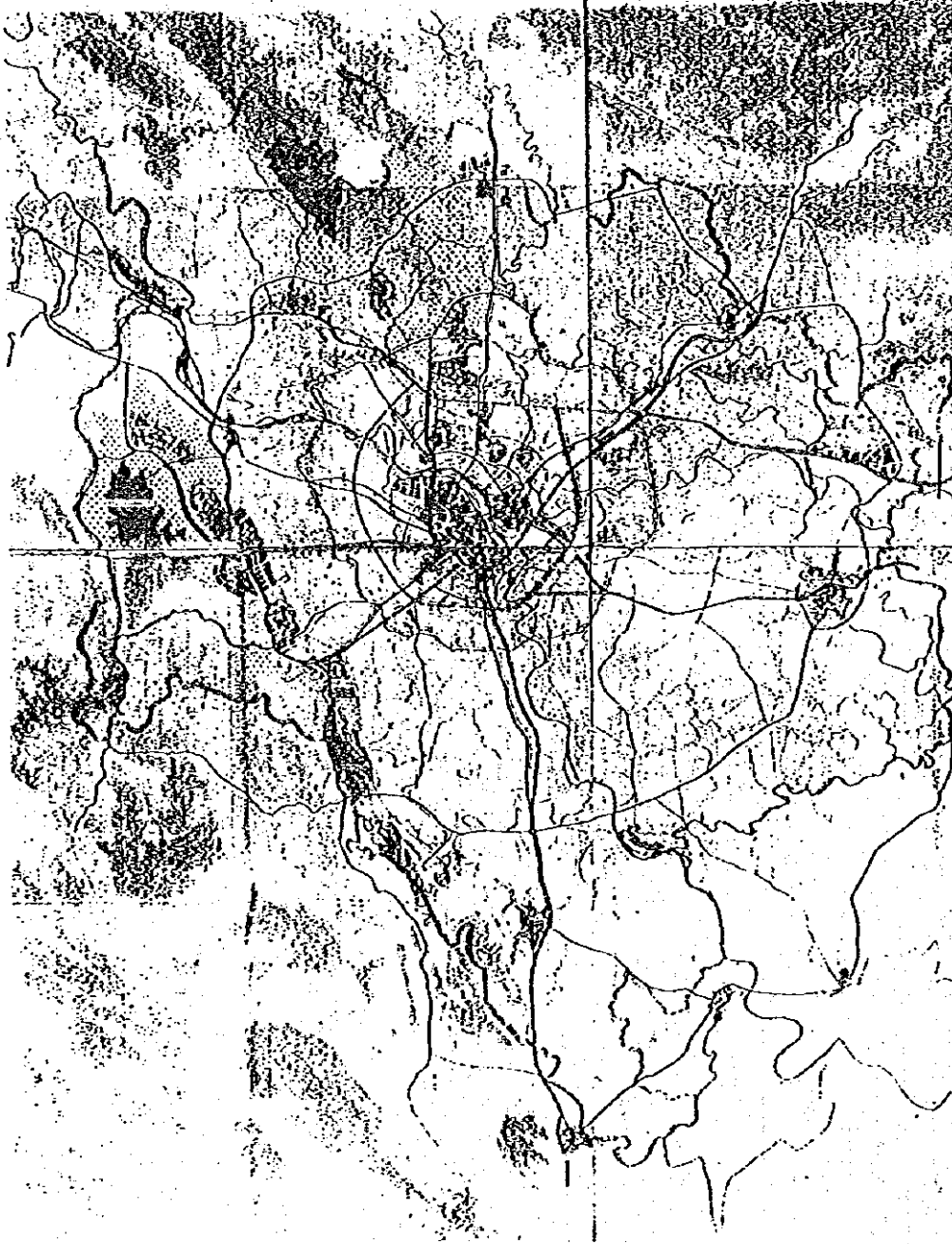


1. ハノイ市街地見取り図



2. ハノイ拡大首都圏構想図

QUY HOẠCH CHUNG XÂY DỰNG CỤM ĐÔ THỊ HÀ NỘI-HỒ LỊCH
SƠ ĐỒ ĐỊNH HƯỚNG PHÁT TRIỂN VÙNG.
TỶ LỆ: 1/100.000



3. 調査スケジュール (案) 工業団地設計

月	国内作業	現地作業	報告書
12	・調査方針・手法の検討		・IC/R作成
1		<ul style="list-style-type: none"> ・IC/Rの説明協議 ・調査基本方針の把握 ・現況調査 <ul style="list-style-type: none"> ・社会経済調査(1)(2)(8)(9) ・既存計画のレビュー ・基礎データ調査(10)(11)(12) ・周辺インフラ計画のレビュー ・都市・景観構想(13) ・環境現況調査(14) 	
2			
3			
4			
5	<ul style="list-style-type: none"> ・計画フレームワークの設定 <ul style="list-style-type: none"> ・社会経済フレームワーク ・HTP機能定義 ・開発計画策定・評価 <ul style="list-style-type: none"> ・開発インフラの設定 ・代替案の設定・評価 		
6		・IT/Rの説明・協議(1)(2)	・IT/R作成
7			
8		<ul style="list-style-type: none"> ・第1フェーズ計画立案(8)~(13) <ul style="list-style-type: none"> ・土地利用計画、空間利用計画 ・内部インフラ計画、外部インフラ接続計画 ・施設計画、景観計画 ・施工計画・建設コスト計画 ・環境影響評価(14) 	
9			
10			
11	<ul style="list-style-type: none"> ・F/S概略設計 <ul style="list-style-type: none"> ・施工計画 ・事業費概算 ・管理運営計画 ・事業実施計画 ・環境影響評価 ・経済・財務分析 ・総合評価・提言 		
12		・DF/Rの説明・協議	・DF/R作成
1			
2	・F/R作成		
3			・F/R提出

注) IC/R: Inception Report
 IT/R: Interim Report
 DF/R: Draft Final Report

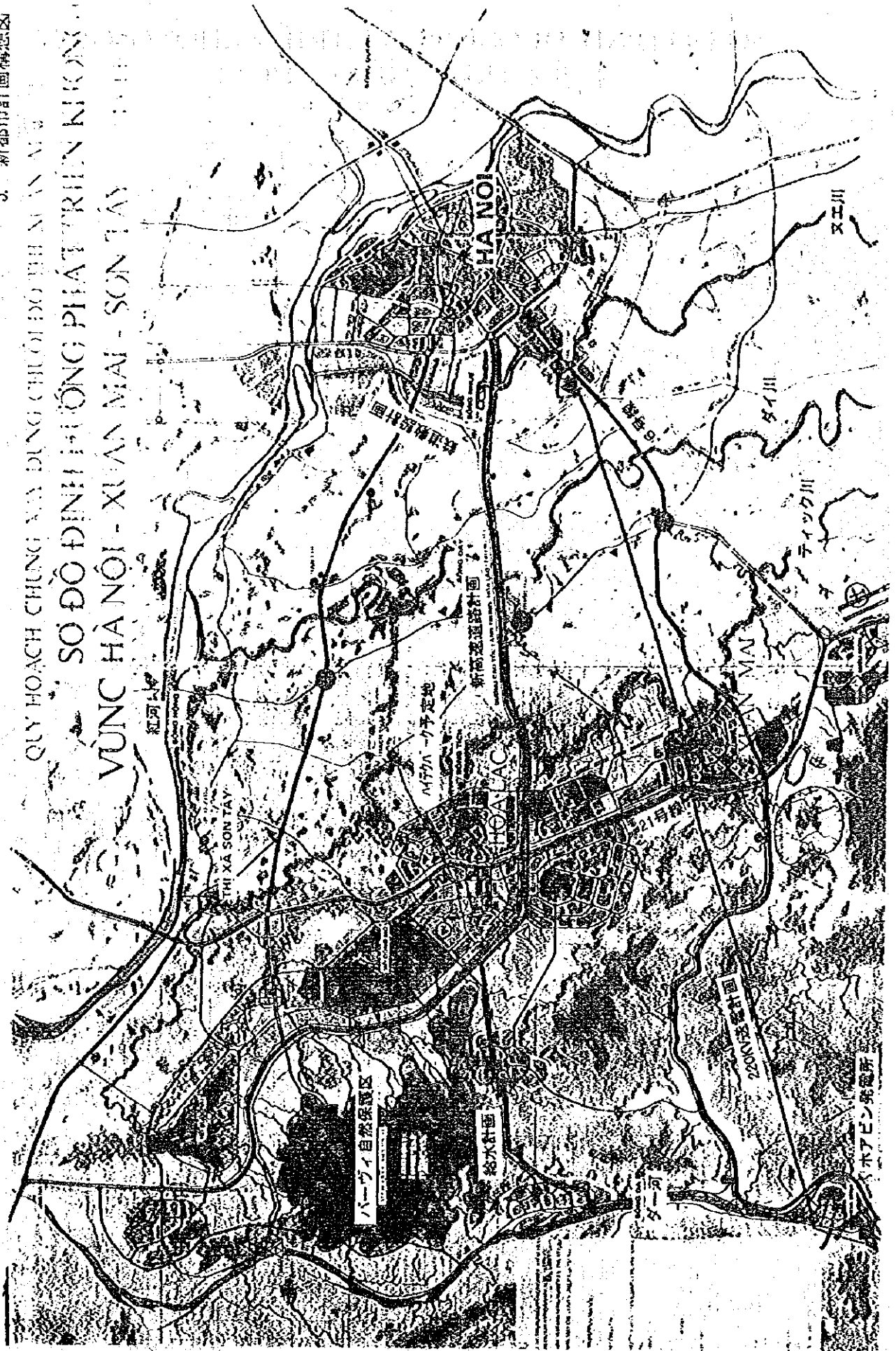
P/R(1): Progress Report(1) M/P概要書
 P/R(2): Progress Report(2) F/S概要書
 F/R: Final Report

4. ハタイ省の主要指標

	ハノイ市 (Ha Noi)	ハタイ省 (Ha Tay)	ハイフオン省 (Hai Hung)	ハイフォン省 (Hai Phong)	ナムハ省 (Nam Ha)	ニンビン省 (Ninh Binh)	タイビン省 (Tay Bin)	合計
1. 主要指標								
面積 (km ²)	921	2,147	2,551	1,504	2,493	1,388	1,509	12,512
人口 (1993)	2,155,000	2,218,000	2,658,000	1,584,000	2,586,000	840,000	1,768,000	13,809,000
GDP/Capita (US \$) (1993)	349	97	124	300	127	96	117	157
2. 土地利用								
農耕地 (ha)	44,188	122,723	159,815	67,681	158,234	63,939	104,064	720,910
森林 (ha)	6,782	9,930	11,120	3,925	1,476	12,641	1,519	47,604
牧草地 (ha)	133	1,071	300	394	92	2,467	291	4,748
灌漑地 (ha)	36,650	91,580	135,500	59,820	134,940	53,600	96,960	606,050
道路、水路、墓地等 (ha)	18,084	29,906	36,094	16,380	35,262	14,565	23,337	173,628
住宅地 (ha)	11,595	17,011	16,506	7,868	12,531	4,324	12,149	81,981
可耕地 (ha)	1,439	5,574	2,276	15,744	17,815	6,798	3,679	53,322
荒地 (ha)	9,968	29,543	29,331	38,550	23,620	36,283	6,124	173,619
土地利用率 (%)	2.18	2.23	2.27	1.58	2.61	1.75	2.32	2.11
平均耕作面積 (ha)	0.26	0.31	0.28	0.30	0.30	0.46	0.38	0.23
耕地分割数	7.6	9.2	7.0	9.0	8.7	9.2	7.7	8.4
3. 人口動態指標								
人口密度 (人/km ²) (1993)	2,341	1,033	1,042	1,053	1,038	605	1,172	1,183
人口増加率 1989-92年 (%)	2.59	2.57	2.22	2.45	2.06	2.50	2.17	2.37
年間都市人口増加率 1992-93年 (%)	3.00	1.83	1.74	1.33	1.94	2.33	1.58	1.96
年間農村人口増加率 1992-93年 (%)	2.25	1.85	1.70	1.97	1.50	2.23	1.60	1.93
総都市人口 (1993)	1,136,600	140,000	137,000	532,000	299,000	70,000	102,000	2,386,600
総農村人口 (1993)	1,049,600	2,078,000	2,521,000	1,052,000	2,287,000	770,000	1,666,000	11,423,000
農村人口 (1992)	719,000	1,831,000	2,232,000	963,000	2,028,000	632,000	1,487,000	9,833,000
4. 農業・畜産指標								
粗生産量 (1993) (ton)	206,464	799,706	1,065,985	357,421	1,018,300	275,417	633,927	4,572,220
平均収穫率 (1993) (ton/ha)	3.73	4.98	4.56	3.84	4.39	3.66	4.97	4.26
牛保有数 (1993) (1,000頭)	3.87	67.8	52.6	3.9	37.4	50.4	36.7	243
豚保有数 (1993) (1,000頭)	261.8	573.6	682.2	339.9	687.7	199.8	492.6	3,186
鶏保有数 (1993) (1,000羽)	2,213.4	4,321.6	8,256.7	2,049.5	3,621.8	1,235.6	3,340.9	25,046
5. インフラ整備指標								
道路延長距離 (国・省道) (km)	368	469	495	186	344	261	173	2,306
道路密度 (全道路) (km/km ²)	1.3	1.4	1.29	0.94	1.23	0.78	1.66	1.30
鉄道延長距離 (km)	79	48	71	15	63	19	6	301
水陸延長距離 (km)	80	139	400	245	275	291	258	1,719
電力購買量 (1991) (GWh)	1,025	262	317	347	272	32	116	2,400
固有産電用ダンプ機数	73	313	346	278	189	79	378	1,655
産電用電力使用量 (1991) (GWh)	31	53	75	7	62	9	27	264
6. 経済指標								
GDP成長率 (1991-92年) (%)	7.7	11.6	9.8	7.6	4.8	6.1	5.2	7.5
対GDP農業部門 (1993) (%)	7	53	50	19	49	54	71	43
対GDP工業部門 (1993) (%)	23	15	16	20	10	11	6	13
対GDPサービス部門 (1993) (%)	9	10	12	14	11	9	6	10
対GDP政府部門 (1993) (%)	26	9	9	19	14	10	8	14
対GDP貿易部門 (1993) (%)	20	3	6	8	7	0	3	7
対GDP輸送・建設部門 (1993) (%)	15	10	7	20	9	8	6	11

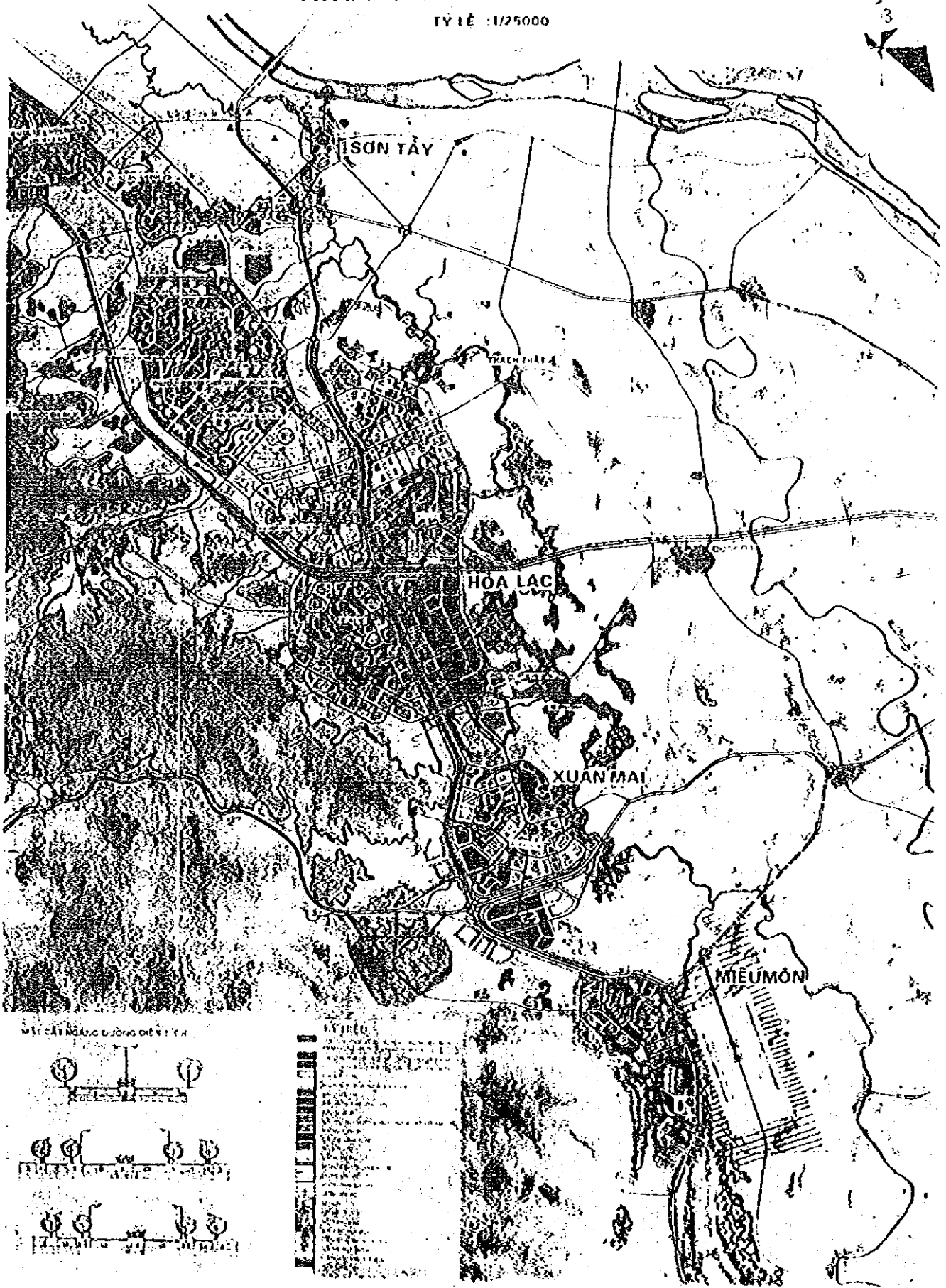
5. 新都市計画構想図

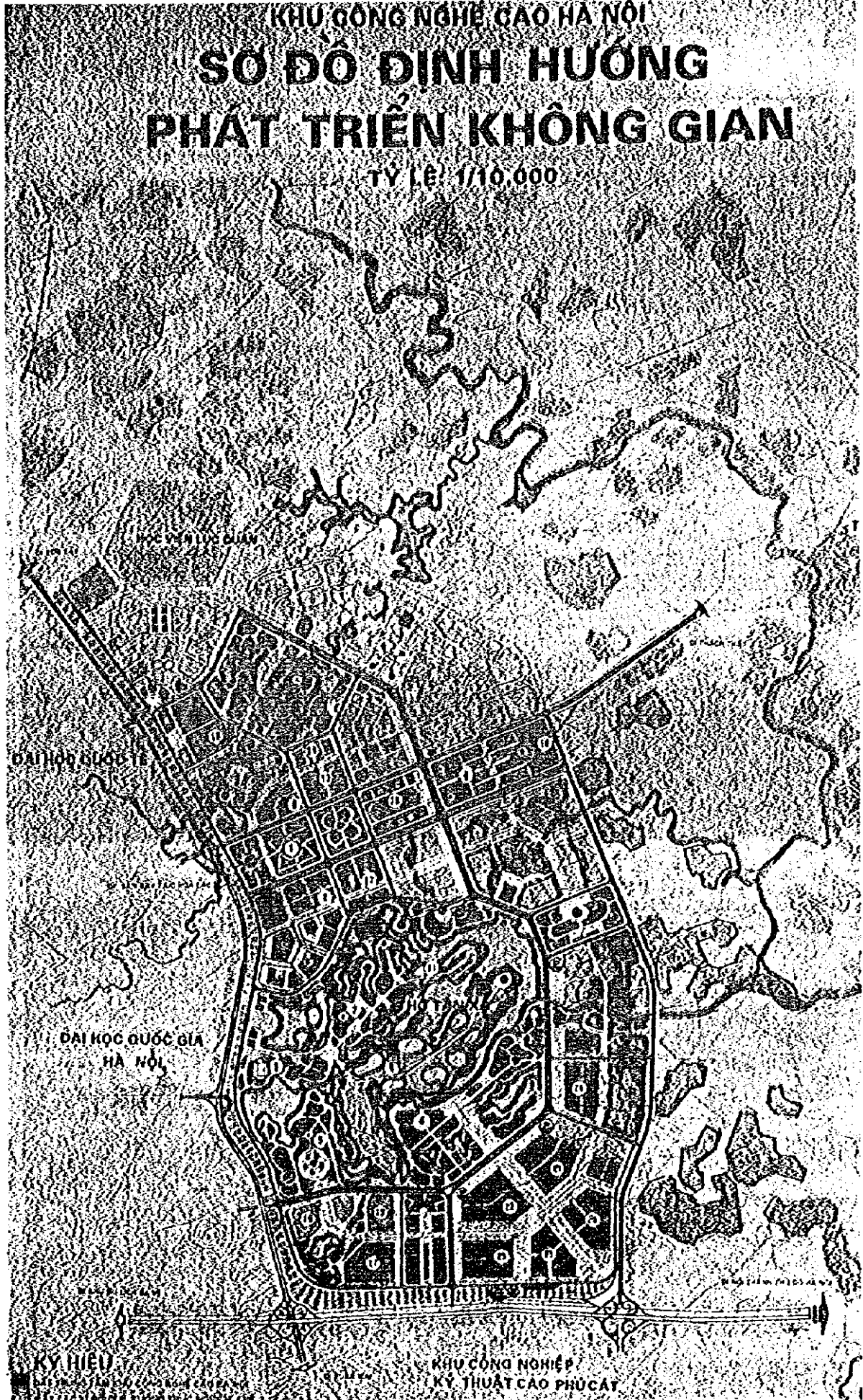
QUY HOẠCH CHUNG VÀ DỰNG CHUỐI ĐỒ THỊ AN MỸ
 SỐ ĐỒ ĐỊNH HƯỚNG PHÁT TRIỂN KINH
 VÙNG HÀ NỘI - XUÂN MẠI - SƠN TÂY



SƠ ĐỒ ĐỊNH HƯỚNG PHÁT TRIỂN KHÔNG GIAN KIẾN TRÚC, GIAO THÔNG

TỶ LỆ 1/25000

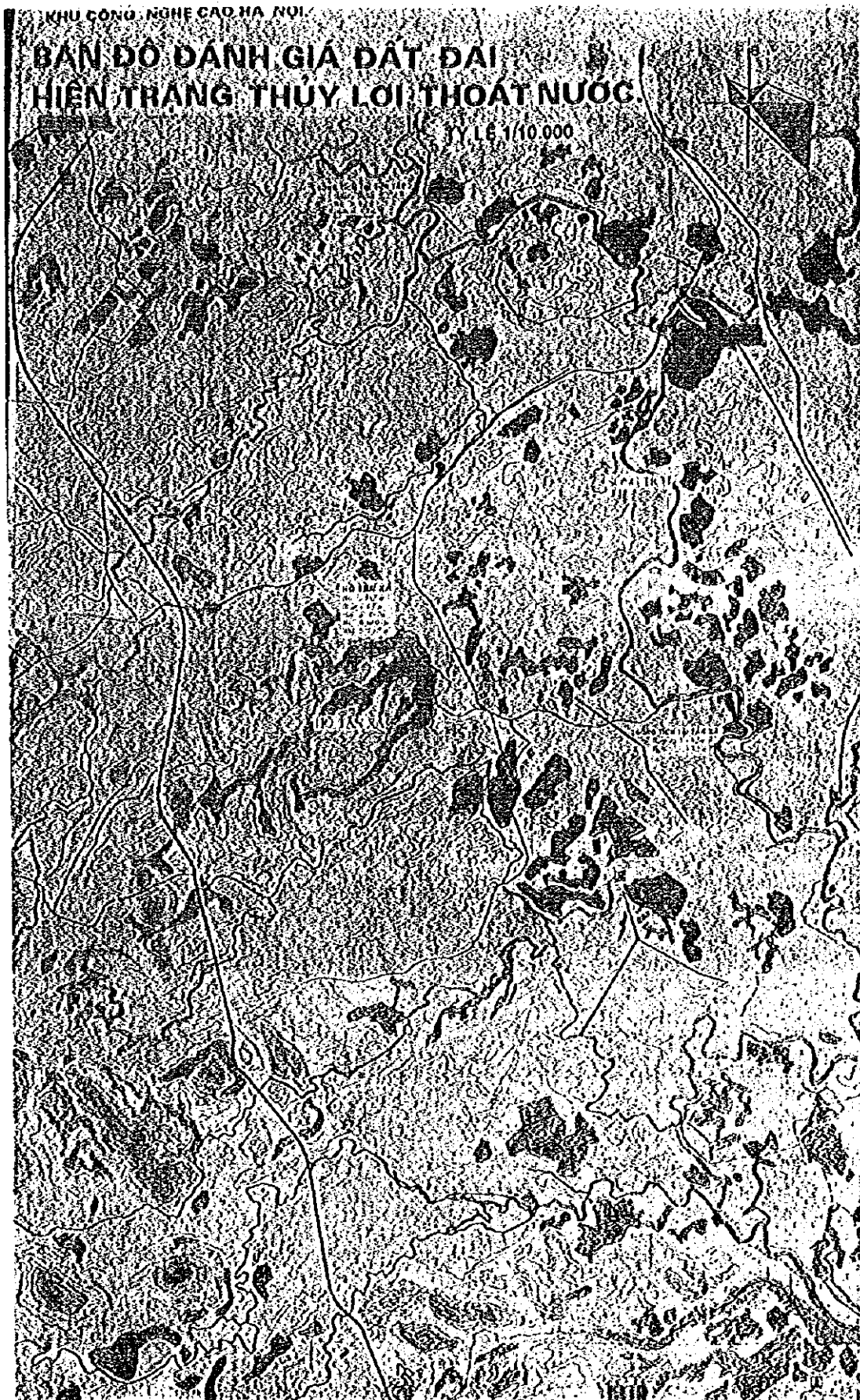




8. ハノイ・ハイテクパーク給排水計画図







HANOI PEOPLE'S COMMITTEE
MINISTRY OF CONSTRUCTION

SUBMISSION
ON PROPOSING TO APPROVE REGULATING THE HANOI MASTER PLAN TO
THE YEAR 2020,

TO: PRIME MINISTER

The Hanoi Masterplan to year 2020 approved by the Prime Minister in Decision 132/CT on 18th Apr., 1992. Due to many different reasons, its study scope was merely implemented in the inner city and its outskirts.

However, since then there has been many strategic studies, which identified the location and important role of Hanoi city in relation to the main industrial areas - Hanoi - Hai Phong - Quang Ninh, Northern Delta, the whole of Vietnam and overseas.

In the planning implementation process from 1992 up to now, Hanoi has developed strongly, with the GDP growth averaging 12.0% annual average rate. GDP per capita increased at 3 times the average for the whole of Vietnam in 1995. Many domestic and international investment projects have been carried out and have attracted billions USD. Population scale, land, technical economic standards, population allocation, selection of development land, organization of space planning structure, city planning, infrastructure, the privilege projects of construction at the first stage, the implementing measures and policies..., were objectives of previous plan but now some of them are no longer adequate, especially with the current rehabilitation and construction of Hanoi capital to become the Capital of modernization and civilization, worth with the dimension of a nation of population approximately 100 mil. at the beginning of XXI century, the point of time of country to develop in the line of industrialization and modernization.

In order to secure the development of the Capital permanently during many decades, and meet the requirement of construction for the country in the near future as well, the Prime Minister required the Hanoi People's Committee and Ministry of Construction to coordinate with the other relevant Ministries to undertake a study on the Hanoi Masterplan Regulation to the year 2020.

The current content of the Hanoi Masterplan Regulation as submitted to the Prime Minister is as follows:

I. CONTENT OF REGULATING MASTERPLAN OF HANOI CAPITAL

1. Regulating Plan on Developing the Capital up to year 2020

1.1 Scope of Study:

The scope of the Masterplan Study was previously limited in the City Centre, which includes 4 inner districts and other suburban districts with a total area of approximately 1000 km².

However, the scope of studying and regulating the Master Plan of Hanoi Capital has been expanded. It includes not only Hanoi area but also areas of Ha Tay, Vinh Phu, Ha Bac and Hai Hung, with their area of influenced of 30 - 50 km. These areas (Ha Tay, Vinh Phu, Ha Bac and Hai Hung) are directly related to the formative and developing process of the Hanoi Urban Resident Area with the area of 7,860 km².

1.2 Developing Motive Force

The Decision 08/BCT of the Politburo (as of 21/1/1983) stipulated: "Hanoi is a center of politics, culture, science, technique and a center of economic, international transaction of the whole country as well".

The major factors that influence to the development of capital are: industry, commerce, service, tourism, technology, science, administrative management, and domestic and international transactions. In 2010, the proportion of industry will gain 47.7 %, agriculture and forestry of 1% and service of 51.83%.

Hanoi Capital is the main center of development of all the urban area, in which is concentrated the major technical-economic bases and which creates the motive forces for development for the whole country.

The neighboring cities which include separate urban areas and satellite cities are playing a role of reconciling the developing process of the city centre, and the urbanizing of rural areas. It is depended on the location and condition of each to take part in the labor distribution process with the city centre and to link with the city centre to establish the Hanoi Capital area.

1.3 Urban Population Scale and Population Allocation

The Masterplan of 1992 determined the population of the city centre as follows: 1.3 million persons in 2000, 1.5 in 2010 (may be up to 1.7 - 2 million persons). At present, the population of the city centre is as set out on the following table:

Table 1

unit: 1000 persons.

	Urban Areas	Current People	Forecast		
			2000	2010	2020
1/	City Centre:	1,054	1,500	2,000	2,500
a/	Limited Developed Area	912	850	800	800
b/	City Outskirts (left bank and right bank of Red River inclusive)	142	650	1,200	1,700
2/	Balancing Urban Areas	85	190	603	1,500
a/	Xuan Mai - Hoa Lac - Son Tay - Mieu Mon - NH 21	54	132	450	1,000
b/	Soc Son - Xuan Hoa - Dai Lai - Phuc Yen - NH 18	31	58	153	500
3/	Satellite cities	294	300	414	500
	Total	1,433	1,990	3,017	4,500

Notes: the existing population figures by statistics of 1994.

1.4. Land Scale

The Masterplan of 1992 identified the land demand required to construct the city centre with an average standard of 52m²/pers. The total of urban construction area was planned as 7,500 - 8,000 ha. It is currently regulated as follows:

- for the city centre:
 - 2000: 60 m²/pers. - 9,000 ha
 - 2010: 80 m²/pers. - 16,000 ha
 - 2020: 100 m²/pers. - 25,000 ha
- for the other urban areas:
 - 2000: 80 m²/pers. - 3,920 ha
 - 2010: 100 m²/pers. - 10,500 ha
 - 2020: 120 m²/pers. - 24,000 ha

1.5. Criteria for Selecting Land to Develop the City

1.5.1. Improve the Urban Land Use Efficiency:

Exploit thoroughly the existing land resource, especially the land that is not used or used ineffectively in relation to the target of urban rehabilitation and development, in accordance with the following rules:

- a. Limit or ban the construction of high rise buildings in some parts of the inner city.
- b. Reduce the average population density, especially in the ancient quarters to lower than 600 pers./ha.
- c. Reduce the construction speed; enlarge the green trees area, public space and static transport area.
- d. Exploit and use fully and effectively the existing land resource. Increase the utility coefficient to 1.0 - 1.5 times.

1.5.2. Enlarge the New Quarters towards the Outskirts:

- a. On the right bank of Red River, the city is to be mainly expanded to Tu Liem, Thanh Tri.
- b. On the left bank of Red River, a new Hanoi city is to be established with the districts in the areas: North Thang Long Bridge - Van Tri, Dong Anh - Co Loa and Gia Lam - Sai Dong - Yen Vien.
- c. Towns and rural residential areas will be urbanized in order to resist against the spontaneous development along the National Highway towards the City.

1.5.3. Exploit the abundant land resource to establish the new very important urban area along NH 21 and NH 18 and enlarge the Capital step by step.

1.6. Criteria for Hanoi Capital Space Development Plan

1.6.1. Population Allocation

a. The city centre area is the main area currently developed, it includes 2 sectors:

- The limited development sectors:

- It is mainly limited from Ring Road 2 (La Thanh - Lang - Truong Chinh - Dai La - Minh Khai and along the right bank of Red River...) to the center, including the ancient quarters covering most of 5 districts: Ba Dinh, Dong Da, Hoan Kiem, Hai Ba Trung and West Lake.
- The existing population is over 910,000 persons, with an average rate of 41.14 m²/pers., the urban land area being 3842.77 ha. There is a limit on the construction of more high rise buildings here in order to prevent the overloading of some areas (center of old inner city) which were overloaded on infrastructure. Gradually remove some of factories, enterprises, administrations, schools, hospitals... which are the sources caused the pollution or are located in the available positions in order to reduce the population, increase the land use standard and improve the urban environment condition.
 - Population in the year 2000 will reduce to 850,000 persons, with the land standard of 45 m²/pers.
 - Population in 2010 will reduce to 800,000 persons, with the land standard of approximately 50 m²/pers.
 - The average height of the buildings in the residential areas is about 2 - 3 floors, the construction speed of 50%, the land use coefficient of 1.0 - 1.5 and enlarge the areas of growing green trees and of static transport on the basis of exploiting the land on the banks of rivers, sides of lakes and at the area, which covers the removed facilities.

- The extent development sectors:

- Sectors on the right bank of the Red River (existing in Hanoi), include:
 - Northwest sector:
 - includes the south Thang Long bridge area, along the NH 32. The existing population is 171,000 pers. It is expected that this will change as follows:
 - + The population will be 310,000 persons with the area of 2,372 ha (around 76,5 m²/pers) in the year 2000.

+ The population will be 450,000 persons with the area of 4,412 ha (around 98 m²/pers) in the year 2010.

+ The population will be 450,000 persons with the area of 5,600 ha (around 123 m²/pers) in the year 2020.

In this sector, there are the Cau Dien industrial zone, South Thang Long High Technology zone, Ciputra, the concentrated residential areas, such as: Nghia Do, Mai Dich, Cau Dien, West Nhue river, diplomatic zone, universities zone, research institutes, center of foreign trade - service - sport and the South Thang Long - Buoi resorts..

- Southwest sector:

includes the residential area along NH 6, Yen Hoa and along Ring Road 3. The existing population is 57,300 pers. It is expected that this will change as follows:

+ The population will be 90,000 persons with the area of 6,932 ha (around 76.9 m²/pers) in the year 2000.

+ The population will be 180,000 persons with the area of 1,289 ha (around 71.6 m²/pers) in the year 2010.

+ The population will be 180,000 persons with the area of 1,900 ha (around 103.8 m²/pers) in the year 2020.

In this sector, there are Thuong Dinh industrial zone, Me Tri park, the national sport center, the new urban area: Trung Yen, Yen Hoa, North Thanh Xuan, South Thanh Xuan... linked with Ha Dong town and established an integrated urban space.

- South sector:

includes the south Bach Mai Airport, Dinh Cong, Linh Dam tourism-service zone, along NH 1, Van Dien town, Cau Buou and Mai Dong. The existing population is 85,000 persons. It is expected that this will change as follows:

+ The population will be 130,000 persons with the area of 1,053 ha (around 81 m²/pers.) in the year 2000.

+ The population will be 200,000 persons with the area of 1,700 ha (around 85 m²/pers.) in the year 2010.

+ The population will be 200,000 persons with the area of 2,280 ha (around 114 m²/pers.) in the year 2020.

In this sector, there are the Phap Van industrial zone, Cau Buou - Van Dien and existing Minh Khai - Vinh Tuy industrial zone; the new residential areas along NHI, Mai Dong, Dinh Cong... Yen So and Linh Dam green park....

- Sectors at the left of Red River (new Hanoi) include:

- North Thang Long Bridge:

Includes the Thang Long Bridge-head zone, around Van Tri lake. The existing area is 5,000 ha. The population is about 20,000 persons. This area will be a new urban area developed all-round with many functions including: concentrated industrial zones and green parks, resorts, tourism, sport centers and residential areas of the City. They will be exploited thoroughly in order to establish a natural landscape area link with the Cau Doi sports green tree area, Co Loa and Me Linh historical monuments (Hai Ba Trung temple). It is expected that this will change as follows:

+ To the year 2000, a concentrated industrial area, a new urban area, an integrated sport, resort, and housing area with population of 20,000 persons and area of 137 ha (68.5 m²/pers.) [Total of urban area is 600 ha].

+ To the year 2010, population will increase to 100,000 persons, with the area of 1,200 ha and in 2020 it will be over 170,000 persons with the area of 3,000 ha, including water surface, greens and other sport center (average from 160 - 180 m²/pers.).

Located in this sector will be the North Thang Long industrial zone projects (Sumitomo), Northbridge, Golf-Deaha, SAS project, residential areas construction projects, sport center, green park, tourism and resorts, and a goods distribution center....

- East sector

Includes the towns: Gia Lam - Sai Dong - Yen Vien with an existing population of 54,000 persons. It is expected that this will change as follows:

- Population will be 100,00 pers. with area of 945 ha in 2000 (94.5 m²/pers.)
- Population will be 160,00 pers. with area of 1,588 ha in 2010 (99.3 m²/pers.)
- Population will be 300,00 pers. with area of 3,700 ha in 2020 (121.8 m²/pers.)

Sai Dong concentrated industrial zone A&B, Duc Giang industrial zone, Yen Vien railway, Gia Lam airport and Co Bi goods distribution center will be located in this sector.

- National Highway 3 Route

Includes the towns: Dong Anh - Co Loa and along NH3 with the existing population of 20,000 persons. It is expected that this will change as follows:

- The population will be 50,000 persons in 2000
- The population will be 90,000 - 100,000 persons in 2010, with area of 966 ha (107.3 m²/per)
- The population will be 400,000 persons in 2020, with the area of 5,000 ha

This sector includes Dong Anh concentrated industrial zone, Co Loa historical monument, other sport centers, green parks and resorts centers at the Red River bank.

All of the six new developing outskirts mentioned-above should be implemented in line with modern standards to ensure a clean urban environment. The average height of building should be about 5 floors, the land use coefficient is 2,0 times. For the first stage, the average housing standard is 12 - 18 m²/floor/persons and for the long period is 20 - 24 m²/floor/persons.

b/ The Balancing Urban Groups:

- Urban area: Xuan Mai - Hoa Lac - Son Tay - Mieu Mon - NHI

This area is a main developed area of Hanoi Capital where is convenient for construction (10,000 - 15,000 ha), it is 30 km far from Hanoi. It has good conditions for infrastructure development (Da River, Hoa Binh hydroelectric station), a beautiful landscape, is a place of cultural tradition, is deeply attached to the establishment and development of Hanoi Capital and it is in an important national defense position.

This urban group includes three cities: Xuan Mai, Hoa Lac, Son Tay linked with the tourism areas: Dong Mo, Ngai Son, Ba Vi mountain, Suoi Hai lake, Da Chong. The existing urban population is over 60,000 pers. It is expected that this will change as follows:

- The population will be 80,000 - 90,000 persons in 2000.

- The population will be 40,000 - 50,000 pers. in 2010, with the area of 5,770 ha (128m²/persons.)

- The population will be 1,000,000 pers. in 2020 with area of 10,750 ha (126,5 m²/persons)

Construction is expected of a high technology zone (1,600 ha), Xuan Mai concentrated industrial zone (200 300 ha), Son Tay industrial zone 50 -100 ha , National University (1,000 ha), International University (200 ha) and the Vietnamese cultural village (830 ha). Dong Mo Golf course, national defense sport center, the cinema center, natural protection area, forest park and resort centers.

Firstly, the necessary infrastructure should be constructed, such as: Hanoi-Hoa Lac expressway, water supply system, power supply system, airport and other infrastructure systems. In the future, this urban center will play the second important role after the city centre in Hanoi City.

- NH 18 urban center: Soc Son - Xuan Hoa - Dai Lai - Phuc Yen - NH 18, includes:

Soc Son, Xuan Hoa, Dai Lai and Phuc Yen linked with NH 18 and NH2 to Yen Bai, Lao Cai, South west China and Cai Lan port. The existing urban population is about 35,000 -40,000 persons. It is expected that this will change as follows:

- The population will be 100,000 persons in 2000

- The population will be 150,000 persons in 2010 with the area of 1,985 ha (130m²/pers.)

- The population will be 400,000 - 500,000 persons with area of 3,680 ha (123.7 m²/pers.)

This area includes: Soc Son Export processing Zone (100 ha - expected to be developed to 430 ha), Me Linh Motor/vehicle industrial Zone (100 - 200 ha), Xuan Hoa EPZ (50 - 70 ha). In future, it will be developed for more than 400 -500 ha of industrial area. In addition, there are tourism areas, such as : Dong Quang, Dai Lai and Tam Dao - Xa Huong.

The conditions for construction are very favorable because most of the land area is used for agriculture, with Hanoi international airport, strategic routes, and is near the city centre.

1.6.2 Orientation on Planning Industrial Zone

The previous Masterplan aimed to rehabilitate 9 existing industrial zones and develop new industrial zones, such as: South Thang Long, Sai Dong and Mai Dich as well. In order to implement the industrialization in Hanoi, the planning of newly concentrated industrial zones is currently regulated as follows: Sai Dong A and B, South and north Thang Long, Soc Son, Dong Anh, enlargement of Duc Giang industrial zone, Cau Dien and Cau Buou.

The two proposed industrial zones in previous planning, Mai Dich and Chem become residential areas. The industrial area in previous planning would be 500 ha in 2000 and 700 ha in 2010, now it is enlarged to 1560 ha in 2000 and 2,050 in 2010.

1.6.3 The resorts - Sport Center - Green Park System

The previous Masterplan determined the standard of public green park area of 1.4 m²/pers. In order to ensure the clean urban environment, improve the living condition, maintain the beautiful natural landscape of Hanoi Capital, it is currently regulated to 12 - 15 m²/pers., including: parks, greens area, sport centers and city stadiums.

In relation to the condition of existing green space and water, more green trees will be grown surrounding Yen So, Linh Dam, Me Tri, Nhue River, Phu Thuong, Van Tri, Co Loa, Gia Lam, Sai Dong and along the Rivers: To Lich, Lu, Set, Kim Nguu, Red River, Nhue River, Ca Lo and Duong to create a natural landscape and ecological environment.

In addition, in suburban areas, some forest parks and sport centers, national resorts will be constructed in Ba Vi, Suoi Hai, Tam Dao, Soc Son, Huong pagoda, Dai Lai.

1.6.4 Organizing Center System and Allocating Public Works

Ba Dinh is a center of politics and administration of the whole country. The center of politics and administration of the Hanoi City is still located in the center of Hoan Kiem district. In future, it will be planned in another more appropriate place.

Public works and center systems are organized in 3 levels: daily level, periodical level and irregular level. The daily public works are linked with residential areas, periodical public works with city areas in which their districts will be organized in the population scale of 200,000 - 250,000 pers. The irregular public works (city level, regional level) will be scattered and linked with the center system of the city (the Districts).

The target of constructing public works: The previous Masterplan regulated to use 2.4 m²/pers., now it is raised to 2 - 3 times to meet the abundant activities of Hanoi inhabitants.

1.6.5 Organizing System of Training Centers

a/ Offices, Training Institutes, Science Research Institutes:

The previous Masterplan regulated to use only 570 ha (3.8 m²/pers.) in 2010, now it is regulated to 6 - 8 m²/pers. The universities, research institutes, and resorts - tourism centers, such as: National University, sport and national defense centers will be located outside the City Centre. The National Management Administrations as well as national defense departments should be relocated in other places, with the aim of overcoming the scattered location situation.

b/ Health Centers:

Health centers serve the whole city so they will be located in the outskirts, linked with the main routes to The City and green areas.

c/ Resort, Sport Centers:

- The national sport center is located on the edge of the Nhue River, linked with the Hanoi - Hoa Lac route (in My Dinh) and the city sport center is in Xuan La (80 ha) and Van Tri (100 ha).

- The resort centers are: West lake, Me Tri, Linh Dam, Yen So, Red River bank, Nhue River bank and Co Loa - Van Tri.

- Tourism centers are: Ba Vi, Suoi Hai - Dong Mo - Ngai Son - Da Chong, Quan Son, Huong Pagoda, Dong Quang, Dai Lai, Xa Huong, Tam Dao, Van Tri, areas at the bank of Day river (Truc Son, Sai Son..) at the bank of Ca Lo river (Thanh Tuoc) and at the bank of Duong river (Thuan Thanh, Thien Thai, Doi Lim).

d/ Diplomatic Zones

Proposed to be relocated in 2 sectors: Xuan Dinh or Yen Hoa. The Ministry of Construction and HPC will have to submit a selection project to Prime Minister.

1.6.6 National Security and Defense Areas:

On the basis of the existing national security and defense areas, propose Prime Minister to allow National Defense Ministry and Interior Ministry to design the locations in accordance with Hanoi Materplan.

1.7 Orientating Plan on Developing Technical Infrastructure

1.7.1 Transport

- The previous planning was only fixed land use standard for transport of 5.6 m²/pers. without parking area.

In order to solve the congestion and construct a modern city, the land use is now regulated to 21m²/persons in which ensures the rate of land use is 25% - 30 % in which car parking area occupies 4 - 5% and road density is 7 km/km². Public transport will meet 50% of the transport requirement. Besides developing buses, it is necessary to develop railway transport in order to improve the links with Hanoi outskirts (Ring Road 3) and between City Centre and its surrounding cities, especially Soc Son and Hoa Lac.

- Inland:

The construction of Ring Road 3 will be started from Thanh Tri through Sai Dog, Duong river to Northern Yen Vien town, crossing Highway 3 (Northern Co Loa Citadel) and to southern Bac Hong station and back to Thang Long bridge.

In future, when Ring Road 3 becomes a the main road of the City, the Ring Road 4 in the west will be developed. It is the road 70 through Ba La and along the railway to Van

Dien, crossing Ring Road 3 by Thanh Tri bridge over the Duong river, connecting with NH 18 in the Eastern Dong Anh Towns.

- The centripetal routes: Highway 6, 32, route Hoa Lac, Noi Bai and Highway 5 will remain on their routes as regulated previously. Particularly, a part from Ring Road 4 is constructed a new route running parallel with the present Highway 1 (Southeast NH1) through eastern Van Dien town and linked with NH1 at Gie bridge (Phu Xuyen). In the north, from Ring Road at northern Yen Vien, it is constructed a new route is to be constructed parallel with NH1 towards Southeast Bac Ninh - Bac Giang town in order to combine with NH1 at Lang Giang.
- Develop a new route (after year 2000) from Noi Bai airport to Hanoi. This route runs over the Red River and connects with the main route of Ring Road 2 - Nhat Tan.
- Develop new route outside the Red River Dike, connect Nhat Tan with Yen Phu.
- Adjust the railway from Nhu Quynh to Phu Thuy, back to northern NH 5, connecting with eastern railway at Co Bi; constructing a station in Co Bi, and abandoning Thuong Dong station (as in previous Masterplan).
- The railway which runs from Yen Vien to Dong Anh that crosses Co Loa Citadel is proposed to be moved to the North east of Co Loa citadel, on the route of Ring Road 3.
- Upgrade and develop Noi Bai international airport, and Gia Lam and Hoa Lac airport to be used as taxi airports for tourist. In future, after year 2000, Mieu Mon airport will be constructed as the second International Airport.
- Dredge the channels of the Red River and increase the efficiency of using waterway transport.
- Upgrade Pha Den port for goods shipment, Vien Kiep passenger port, expand Khuyen Luong and develop a Red River port in the north (Thuong Cat and Vong La).
- Improve the inner city road system, construct some intersections, car-parking and some of urban public transport service agencies.

1.7.2. Drainage System:

- Construct the rain-water drainage system to run into the main rivers. Regarding to Center City area, besides the existing drainage river system (To Lich, Lu, Set, Kim Nguu), more should be developed in order to secure the density of 0.6 - 0.8 km/ha; and more new lakes and greens with the area of 5 -7%.
- Construct the drainage and sewerage system with the main sewerage density of 80 - 100 m/ha.
- It is necessary to clear the ground in order to create a surface average height of 1 - 1.5 m.
- In order to protect the City against flood, it is necessary to develop the Red River dike system. Study and reconstruct dikes of Nhue River, Day river as well as Ring Road 4 to prevent flood into Center City area.

1.7.3 Water Supply

- Water supply target for everyday life activity is identified, as follows:
 - in 2000: 150 litres/pers./day, to secure water for 85% urban inhabitants
 - in 2010: 180 litres/pers./day, to secure water for 90% urban inhabitants
 - in 2020: 200 litres/pers./day, to secure water for 95% urban inhabitants

- Water supply target for industrial activity: 45m³/ha/day
- Water supply demand: expected about 566,000 m³/day in 2000, 883,000 m³/day in 2010 and 1.2 mil. m³/day in 2020.
- Water source: Until 2010, the underground water source will still meet the demand to developed City. After the year 2010, it will be necessary to investigate a water supply supplementary system from surface water. Water of the Da river is run through a pipe to Hoa Lac (18 km) and to Hanoi (50 km). It is mainly used to supply the areas on the right bank of the Red River, and the areas on the left bank of Red River mainly use water sourced from Cau river (or Cong river) besides the underground water source to supply the North (Soc Son, Dong Anh).
- Increase the capacity of water producing factory to serve areas in the East.

1.7.4 Electricity Supply: (W/pers.)

- Using standard: (W/pers.)

Area	everyday life activity			Public illumination services		
	2000	2010	2010	2000	2010	2020
Inner city	530	795	954	255	383	460
Suburban	174	263	315	87	130	156

- develop more electrical wires and transformer stations for 220KV and 110KV. Modernize the wires and safety equipment.

1.7.5 Waste Water Drainage and Urban Sanitation:

- Waste water drainage is determined as follows:

- regarding to everyday life activity waste water:

- up to 2000: 150 litres/pers./day

- from 2010 - 2020: 180 litres/pers./day

- regarding to industrial waste water:

- Industrial waste water should be made clean with the new clean water of 70%.

- regarding to everyday life activity solid waste:

- up to 2000: 0,9 kg/pers./day

- up to 2010: 1,0 kg/pers./day

- up to 2020: 1,2 kg/pers./day

- and with respect to satellite cities:

- in 2000: 0,5 kg/pers./day

- in 2010: 0,6 kg/pers./day

- Criteria on waste water drainage:

- in the old inner city areas that still use one system of waste water and rain-water drainage more systems of sewerage will be installed and some pumpes stations will be constructed in order to pump waste water to treatment stations.

- in the new sites, separate systems will be constructed for waste water drainage and sewerage.

- Criteria on sanitizing solid waste:

- 100% solid waste will be collected and transported to treatment station.
- Construct a collection, transportation, waste water drainage system for the whole city by adequate technological solutions.
- Identify the protecting boundary of Mai Dich and Van Dien cemeteries in an adequate scale. Encourage cremation instead of organizing the traditional funerals in Van Dien cemetery and constructing some new cemeteries and crematoriums in surrounding areas.

2/ Tasks of Construction Plan at first stage (1996 -2000)

2.1 Improving Investment and the Priority Projects:

- a/ Complete the design and approval on Masterplan in inner city districts.
- b/ Improve the upgrade of existing technical infrastructure system; especially transportation, water drainage and supply; sanitize environment in order to resist against overloading and degrading, especially local traffic congestion and flood.
- c/ Improve some existing residential areas, firstly the spontaneously developed areas, quarters, and urbanized villages.
- d/ Complete the construction of service systems for health, education, public, sport and green centers, resort centers and business center.
- e/ Move the polluting manufacturing factories and services to suburban.
- f/ Develop the small projects in adequate locations in order to use the existing land resource or land not be used effectively for construction.

2.2 Content of Investment in new Construction and Priority Projects:

- a/ Construct the out of city and inner city transportation system and carry out the projects of constructing infrastructure for the proposed urbanized areas (Ring Road 3, Hanoi -Hoa Lac Expressway, intercity bus stations).
- b/ Design and implement the public transport project to improve the transport demand.
- c/ Develop projects for concentrated industrial zones: Sai Dong, South and north Thang Long and Soc Son.
- d/ Give priority to the development of new streets in the line of constructing infrastructure completely, urbanizing to meet the demand of housing. Establish the new service and business center in Xuan La - Co Nhue.
- e/ Prepare to establish and develop the new very important urban areas.
- f/ Develop satellite cities, strengthen the urbanization of rural residential areas.
- j/ Projects to renew and embellish the architectural monuments and heritage.

III/ Policies and Measures to Carry Out Hanoi Masterplan

- 1/ Regulate the administrative boundary of Hanoi to complete the Capital Planning structure in accordance with now and future situation.
Based on it, the regulation of managing planning areas is made up and will become a basis for controlling the development of the capital.
- 2/ Design and approve detail planning projects of regional developed areas, main city, outskirts, very important developing areas and others.
- 3/ Identify large infrastructure investment projects, concentrated development areas, and make a plan of raising investment capital and organizing implementation.

4/ Set up a policy of attracting capital, including: domestic investment capital, foreign investment capital; and especially implement land use program to create capital for constructing urban infrastructure.

5/ Solving fully the existing historical housing and land by implementing the Decisions 60/CP and 61/CP, Gradually restore order, make urban management in order, and then to create the manpower and financial resources to develop city.

6/ Increase the ability of investment consultant companies, create conditions for investment companies to take part in constructing City, and complete the organization of urban planning management companies.

7/ Adjust and strengthen the efficiency of urban management of the government at various levels, ensure the right and responsibility in implementing the state administrative management in region and take part in settling the administrative procedures and breaches of law on urban management as stated in Decision 38/CP of Government.

III. Proposal

We propose that the Prime Minister:

1/ Approve the content of the designing regulation Hanoi Materplan, so that Ministry of Construction and Hanoi People's Committee can coordinate with the other relevant Ministries, and Provinces to complete the design a Hanoi Masterplan up to the year 2020.

2/ Allow a Governmental organization department study on constructing and expanding the boundary of Hanoi Capital.

3/ Require the relevant ministries, provinces to coordinate with Hanoi People's Committee to set up a Hanoi rehabilitation and construction program to submit to the Prime Minister; and on that basis, identify the assistance policies in order to develop the City in the line of industrialization and modernization.

Ministry of Construction
Minister

Hanoi People's Committee
Chairman

Ministry of Construction

No.: /BXD-KTQH

The Socialist Republic of Vietnam
Independence - Freedom - Happiness

.....
Hanoi, 14th May 1996,

OFFICIAL REPORT
FOR APPROVAL OF
GENERAL PLAN OF URBAN SERIES XUAN MAI - HOA LAC

To: THE PRIME MINISTER,

Following the Prime Minister's program given in the Official Note No. 1805/KTN dated 18th April 1996 of the Government Office on carrying out master plan study of Xuan Mai - Hoa Lac - Ba Vi, the Ministry of Construction has conducted a general plan study for urban series Xuan Mai - Hoa Lac. The Ministry of Construction herein kindly submits to the Prime Minister the main outputs as follows:

1. REASONS TO CARRY OUT A GENERAL PLAN STUDY OF URBAN SERIES XUAN MAI - HOA LAC:

1.2 Following the strategy for development of National urban areas, of Northern part growing Corridor as well as of Hanoi Capital city.

1.3 Planning a series of cities for balancing, opening an appropriate and permanent way of space development to loose high growth rate into Hanoi. The critical advantages that Xuan Mai - Hoa Lac area has can be listed as follows:

- Resource of plain hilly land with area of 30 000 ha.
- Fairly close to the centre of Hanoi City: 30 km.
- Having basis for development of infrastructure: existing national roads No. 6, No. 32 and No. 21A are of good condition; near the national power source: Hoa Binh Hydro-electrics power plant; near large surface water sources: Da River, Hoa Binh.
- Having attractive environment landscape resorts and places of interest: Ba Vi national park, Suoi Hai lake, Dong Mo lake, ecology forest, Tay Phuong, Thay, Tram Gian, Tram pagodas, Den Va temple,...

1.3 Establishing basis for implementation of large-scale projects: Hanoi National University; tourism and culture miniature village of Vietnamese ethnics; Hanoi hightechpark; hightechcentral; Hanoi - Ba Vi express way, Golf course,...

1.4 Combining socio-economic development with security of national defence for the area, especially for Capital Hanoi.

1.5 Establishing legal basis guiding/instructing the management of land.

II. MAIJOR CONTENTS:

2.2 Boundary for urban development planning:

Development boundary is along National highway No. 21A corridor from Mieu Mon to Son Tay. The borders are:

- to the North: with Hong river;
- to the South: with Tea Lai lake - My Duc - Ha Tay;
- to the East: with Tich Giang river,
- to the West: with Ba Vi, Vien Nam mountains.

2.2 Urban development orientation planning:

2.2.1 Feature of the urban series:

- a) main development area (as urban environment for balancing) of the Capital Hanoi in the XXI century.
- b) centre for high-tech industry and military industry concentration.
- c) centre for training, science study, national high-tech of national and international scale/level.
- d) tourist resort and national culture area.

e) important location in term of national defence.

2.2.2 Population scale:

■ High growth rate of the population of the urban series will be mainly based on physical settle down of scientists, professors, students, high-tech technicians, workers and their families, following the regulation/accommodation rule. Another part will be from free migration of intellectuals, high skilled workers together with some shuttle working population from Hanoi and vicinity towns.

a) Population scale of whole urban series:

Unit	Existing situation 1996	Stage Distribution		
		Short term 2005	Medium term 2010	Long term 2020
Person	100,000	285,000	620,000	1,000,000

b) Population scale of each town:

No.	Items	Existing situation 1996	Stage Distribution		
			Short term 2005	Medium term 2010	Long term 2020
I	Son Tay town	40,000	60,000	80,000	100,000
II	Hoa Lac town	24,000	150,000	420,000	670,000
	of which:				
2.1	Dong Xuan resident area		80,000	294,000	400,000
2.2	HN Int. University		5,000	10,000	20,000
2.3	HN National University		30,000	60,000	110,000
2.4	HN hightechpark		10,000	21,000	36,000
2.5	Phu Cat hightechcentral		5,000	10,000	15,000
2.6	Dong Mo tourist, sport, entertainment resort		2,000	25,000	71,000
III	Xuan Mai town	35,000	60,000	100,000	170,000
IV	Miett Mon town	1,000	5,000	10,000	30,000
	Contingency		10,000	20,000	30,000
	Total	100,000	285,000	620,000	1,000,000

2.2.3 Land Scale:

c) Land use Index (m²/person) for whole urban series:

No.	Indexes	Unit	Stage Distribution		
			Short term 2005	Medium term 2010	Long term 2020
1	Land for civil use:	m ² /per.	80	78	75
	1a. Residence	-	48	40	35
	1b. Public facilities	-	40	08	06
	1c. Roads, Squares	-	12	15	17
	1d. Plantation, sport	-	10	15	17
2	Living houses:				
	2a. Floor area	m ² /per.	16	20	25
	2b. Average height	floor	02	03	03.5
	2c. Construction density	%	25	28	30
	2d. Land use coefficient		0.5	0.55	0.6
	2e. Population density	per./ha	1000	1500	1800
3	Indu. enterprises, storage	m ² /per.	35	3	25
4	Offices, training colleges	-	05	08	10
5	Outer transport roads	-	05	07	08
6	Military use	-	10	07	05
7	Ecological forests	-	50	40	30
8	Reserved land	-	50	20	05
9	Others	-	10	08	05

b) Summary of land use requirement for each planning stage of towns:

No.	Items	Stage Distribution		
		Short term 2005	Medium term 2010	Long term 2020
I	Son Tay town	700 ha	800 ha	900 ha
II	Hoa Lac town, of which:	3900 ha	8000 ha	12500 ha
2.1	Dong Xuan residence area	1000	3000	4000
2.2	HN International University	100	200	300
2.3	HN National University	500	1000	1200

- Urban general storage at Hoa Lac airport on the back side of Than Lan mountain, near metro station.

• Universities, science research institutes:

- Universities:

+ Graduate and post graduate universities belonging to Hanoi National University

+ General university;

+ Science university;

+ Social science university;

+ Universities belonging to International University

+ Polytechnics university of high-tech area

+ Science research institutes:

+ Hanoi National University's science research institutes for training purposes;

+ International University's science research institutes for post graduate training purposes;

+ Science research institutes of practical technologies for development and research of high technologies of Hanoi high-tech area.

The above universities and science research institutes to be located according to specific planning of Hanoi National University, International (west highway No. 21A), high-tech areas (east highway No. 21A) at the northern part of Hoa Lac town.

• Residence area:

- Residence area belonging to new civilisation area Dong Xuan:

■ Scale:

No.	Items	Unit	Stage Distribution		
			2005	2010	2020
1	Land	Ha	3,900	8,000	12,500
2	Population	Person	150,000	420,000	670,000

■ Frame organisation of the town includes the following function zones:

• Industry storage zone:

– Enterprise series of Phu Cat hightechcentral:

÷ Electronics, optical, precise mechanics industry series

÷ Consumer industry and high quality products processing.

to be located in Phu Cat village (south of Hanoi - Ba Vi express way) between national road No. 21A and Tich Giang river.

– Union of enterprises of high-tech products of Hanoi high-tech zone (150 enterprises by the year 2010).

÷ Enterprises of high-tech electronics, informatics, communications techniques

÷ Enterprises of new materials

÷ Enterprises of biotechniques

÷ Enterprises of precise mechanics

÷ Enterprises of new energies

÷ Enterprises of pharmacy

to be located in Tan Xa village (north of Hanoi - Ba Vi express way) on the southern part of Tan Xa lake.

2.4	HN hightechpark - of which, Tan Xa lake water surface	800 (300)	1200 (300)	1800 (300)
2.5	Phu Cat hightechcentral	600	850	1200
2.6	Dong Mo tourist, sport, entertainment resort - of which, exploited lake water surface	900 (500)	1750 (800)	4000 (1250)
III	Xuan Mai town	1000 ha	1500 ha	2500 ha
IV	Mieu Mon town - of which, Mieu Mon airport	400 ha (300)	700 ha (300)	1600 ha (1000 ha)
	Total urban source: - of which, extended area	6000 ha 4000	11000 ha 4900	17500 ha 6500

2.2.4 Land selection, development orientation and function division for each town of the urban series:

The urban series consists of 4 towns linked by national road No. 21A, from Mieu Mon through Xuan Mai, Hoa Lac to Son Tay.

Use plain hilly land source along national road No. 21A bordered to the east by Tich Giang river, to the west by high mountains: Ba Vi, Vien Nam,...

A. HOA LAC TOWN:

■ The borders of the town are:

- to the North: Kim Son, Co Dong villages;
 - to the South: with Binh Minh spring, Hoa Thach village;
 - to the West: with Ba Vi, Vien Nam mountains;
 - to the East: with Tich Giang river.
- Political, administration, commercial service, cultural, sport, tourist centre of new development area of Capital Hanoi.
 - Training, science study, high-tech, national high-tech industry concentration centre of international and South-east Asia level.
 - Important location in term of national defence.

- + Largest scale population concentration area of the urban series include all the staff of Phu Cat high-tech industry area, Hanoi National University, Hanoi International University and all families of staff of Hanoi high-tech area.
- + To be located in the area of Dong Xuan, Tien Phu, Phu Cat villages (south Hanoi International University, west highway No. 21A).
- Student residence (dormitory) in the area of Hanoi National University, Hanoi International University to be located as quarters at the suburb area.
- High standard residence of professors, researchers of high-tech area (garden street style) of high-tech industry area to be located north-east of Tan Xa lake.
- Military: Ground troops institute - existing location.
- Public service facilities divided into 2 classes:
 - First class public service facilities: for whole town as well as vicinity area, include 2 main areas:
 - ÷ Political, administration, commercial service centre of new development area of the Capital (Dong Xuan): from Doi Dun mountain to highway No. 21A.
 - + Cultural, sport, tourist, entertainment area Dong Mo - Ngai Son.
 - Second class public service facilities: for inner area and its vicinity, include:
 - + Management and training service centre of Hanoi National University to be located at National University central area from Than Lan mountain to highway No. 21A.
 - + Management and training service centre of high-tech area to be located at north-west Tan Xa lake, adjacent to highway No. 21A.
 - + Management and training service centre of Phu Cat high-tech industry concentration area to be located at east highway No. 21A. (mainly office style).
- Sport and plantation parks, urban water surface:

- To be located as of integrated style, combining models: point, piece, stretch, line,.. together with natural and man-made lakes, springs with main terrace of high hills and basins unsuitable for building construction.
- Large park combinations are: Doi Dun - Dong Xuan park, Tan Xa lake park, Than Lan mountain park, Phu Cat park, Dong Mo lake forest park.

■ Lay-out of urban architecture:

- Reserve natural topography form as much as possible;
- Plantation (forest, park, architectural, garden, landscape) and surface water system (Luu Thuy lake spring) to be integrated to form urban garden space.
- Building groups (of national, East-Asia, modern style) to be located with low density; higher building at central part and along highway No. 21A and lower to suburb area.

B. XUAN MAI TOWN:

■ The borders of the town are:

- to the North: with Co Thu, Co Tho villages - Luong Son - Hoa Binh
- to the South: with Nam Phuong Tien village - Chuong My - Ha Tay;
- to the East: with Dong Yen - Chuong My;
- to the West: with Hoai Son, Hung Son, Nhuan Trach - Luong Son - Hoa Binh

■ Town function:

- Industrial economic and concentrated commercial service centre;
- Important location in term of national defence.

■ Scale:

No.	Items	Unit	Stage Distribution		
			2005	2010	2020
1	Land	Ha	1000	1500	1,500
2	Population	Person	60,000	100,000	170,000

■ Frame organisation of the town includes the following function zones:

• Industry..storage zone:

- Thuy Xuan Tien concentrated industry area: combination of building materials, mechanical service and manufacturing enterprises to be located in Thuy Xuan Tien village, (Nam Xuan Mai), along both side of highway No. 21A.
- Hoai Son concentrated industry area (west Luot mountain) include high quality consumer goods manufacturing enterprises at Hoai Son village - Luong Son and west of Xuan Mai town.

• Special Military area:

- Existing military bases are mainly to be reserved in the general planning, only infrastructure outside the area would be re-arranged: Amour Brigade 210, Division 308, Commando Brigade 305, School of special interior duty, General Storage J 106.
- West of Xuan Mai town, at Coc spring area of Hop Hoa village - Huong Son - Hoa Binh there to be a new military base of 500 ha to gradually move some military units from Hoa Lac according to construction stages.

• Vocational Schools:

- Vocational schools will be re-arranged to concentratedly locate in the north of Xuan Mai town, between Xom Lang hill and Luot mountain.

• Residence Area:

- Based on partly rehabilitation, extension and new construction of 4 living quarters as follows:

+ Quarter Hoa Linh (north Bui river, west highway No. 21A);

- + Quarter Son Linh (south Bui river, west highway No. 21A);
- + Quarter North Thuy Xuan Tien (east central junction);
- + Quarter South Thuy Xuan Tien (south Bui river, east highway No. 21A).
- Average population scale of each quarter is 40 000, including families.

- Public Service Facilities:

- Town centre system
- + Administration, cultural centre: South of Luot mountain to highway No. 21A.
- + Commercial service centre: Xuan Mai junction.
- + Cultural, sport, tourist, entertainment centre: Thuy Xuan Tien lake.
- Area centre system: independent service for each functional area.

- Sport and plantation parks, urban water surface:

- To be green plantation, rivers, lakes system dividing functional areas and to be located radically to Thuy Xuan Tien park lake.
- High mountainous and hilly areas inside the town is ecology parks, forests.

- Lay-out of urban architecture:

- Main architectural group.
- High-rise central commercial service centre at the 4-leg intersection (existing fork junction).
- + Luot mountain cultural architecture assembly.
- + Spot architecture at fork junction of city gates.

- Average height: 3 floors.
- Highest construction density at 4-leg junction, gradually lower to directions. Architecture height reduction accompanied with park plantation.
- Natural topography will be reserved.

C. MIEU MON TOWN:

■ The borders of the town are:

- to the North: with Hoang Van Thu, Thong Nhat villages ;
- to the South: with Tea Lai lake, Tea Lai;
- to the East: with Doan Ket, Dong Lac villages, Bo Ho river;
- to the West: with Lien Son, Tien Son villages.

The town is at fork junction of national highway No.21 and provincial road 420 to Van Dinh, 10 km south-east of Xuan Mai.

■ Town function:

- International airport and airport service centre.
- Important location in term of national defence.

■ Scale:

No.	Items	Unit	Stage Distribution		
			2005	2010	2020
1	Land	Ha	400	700	1,600
2	Population	Person	5,000	10,000	30,000

■ Frame organisation of the town includes the following function zones:

- Mieu Mon international airport:

- + Runway and airport station
- + Airport safety area;
- + Airport to be improved and widened based on existing field combat airport.
- Airport and tourist service centre.
- + Airport services to be located north of Dap Xuong lake and along highway No. 21A
- + Tourist service centre: around Dap Xuong lake.
- Industry and Storage area:
- + Group of consumer goods manufacturing enterprises: Van Son Export Handicraft, west of Van Son Lake
- Residence Area and Public Service Facilities
- + Organised as of garden street groups: at Dong Ke area (south of Dap Xuong lake) and around Tay lake, Dap Xuong lake
- Sport and plantation parks, urban water surface:
- + Main subjects are Van Son lake park in the north and Dap Xuong in the centre. Suburb rock mountains, soil mountains will be forest park, golf courts.
- Lay-out of urban architecture:
- Main architectural group:
- + Airport;
- + North-west Dap Xuong lake service centre.
- Space: Green, clean city. Main subjects are forest, garden, park, water and outlined by small architecture groups with low construction density.

D. SON TAY TOWN:

■ The borders of the town are:

- to the North: with Hong river;
- to the South: with Thach That district;
- to the West: with Ba Vi district;
- to the East: with Phuc Tho district.

■ Urban function:

- Tourist service centre and tourist service industry;
- Important location in term of national defence.

■ Scale:

No.	Items	Unit	Stage Distribution		
			2005	2010	2020
1	Land	Ha	700	800	900
2	Population	Person	60,000	80,000	100,000

■ Frame organisation of the town includes 4 urban areas with the following functions:

- Former Son Tay Town:
 - + Residence area includes 3 Ngo Quyen, Quang Trung, Le Loi quarters, Phu Nhi, Thieu Khe, Mai Trai hamlets;
 - + Public service facilities: administration, culture centre;
 - + Industry: river port industry area, tourist facilities manufacturing;
- Son Loc Town:

+ Residence area belongs to Son Loc quarter, extended to Nghia Phu hamlet and part of Mai Truc hamlet;

+ Public service facilities: commercial and tourist service centre and transport terminal (Tong)

- Xuan Khanh Town:

+ Residence area is at Xuan Khanh quarter;

+ Industry: Combine and change function some of industry enterprises to form tourist service and processing units.

- Military Urban Area: Existing military base south of highway No. 87A.

- Sport and plantation parks, urban water surface:

+ Thanh Co (Ancient Rampart) is central museum park. Green trees along Tich Giang river and part of suburb ecology forest are extending while spotted with cultural and historical vestiges of the town.

■ Lay-out of urban architecture:

+ Main architectural group: Ancient town around Son Tay

+ Average height: 2.5 floors

+ Harmony of new construction area, rehabilitation area and ancient quarter; of architectural space and green plantation, water surface and interior vestiges. Garden-street style is main space subject of Xuan Khanh, Tong areas.

■ General forecast for whole industry group of the urban series:

No.	Item Location	Area	Main products
1	2	3	4
1	Hoa Lac Town	1700 ha	
1.1	Phu Cat Hightechcentral	1200 ha	

a	Optical, electronics, precise mechanical industry group	800 ha	- TV, computer, electronics tools, measurement equipments (various gauges..). Optical equipment (microscopes, telescopes..) telecommunication equipments (optic cable, telephone, ..)
b	Consumer and high quality processing industry group	400 ha	- Various garments of various materials for different use. High standard consumer goods. Clean food, high quality foodstuffs (clean vegetables, original rice, cereals). Special bio-standard brewery (fresh beer, healthy tea,..) - Oriental - Modern Pharmaceutical products of international standards.
1.2	Hightechpark	500 ha	
a	Trial and quality control enterprises group	50 ha	- Trial producing, quality insurance of special products
b	High-tech quality products producing and supplying enterprises group (150 - 200 companies of 6 technologies)	350 ha	- Producing series of high-tech products: biology, new material, energy, telecommunications, electronics, informatics, precise mechanics, special pharmaceutical products.
c	High-tech development study and training group	80 ha	-- Invention certificates - Products applying high-tech models
d	International commercial technology group	20 ha	- Transaction and trading of science and high-tech with international market.
II	Xuan Mai Town	600 ha	
2.1	Thuy Xuan Tien mechanics, building materials industry area	450 ha	
a	Building materials industry	300 ha	- Bricks, tiles, precast concrete products, readymix concrete, decoration products (WC, furnitures, plastics).
b	Mechanics manufacturing	150 ha	- Motor vehicles, motorcycles, spare parts.

	industry		
2.2	Hoai Son consumer industry group (west Luot mountains)	150 ha	- High-quality textile products, foodstuffs of high biotech standards. General tourist and sport equipments (service and facilities).
III	Mieu Mon Town	150 ha	-
3.1	Van Son export consumer goods enterprises group.	100 ha	- Cosmetics, garments, shoes, hats, silk products, souvenirs,..
3.2	Export handicraft enterprises group	50 ha	- Rattan, bamboo, wooden, carved, inlaid, lacquer products
IV	Son Tay Town	100 ha	-
4.1	Tourist service industry group	40 ha	- Foodstuffs for picnic: Cakes, sweets, canned brewery. Tourist and port facilities: tents, brocades, souvenirs (cultural, historical,..)
4.2	Tourist manufacturing industry group	60 ha	- Canoes, boats, mountain climbing facilities, golf-clubs, golf balls, horse racing facilities, water sport facilities: swimming, diving equipments,..

2.3. Development Orientation of Infrastructure System:

2.3.4. Transportation Orientation:

a) Outside transportation

■ National Roads:

- National highway No. 6 connecting north-west part with Hanoi through Xuan Mai (existing condition is of III-class flat terrain standards) will be improved to I-class standards. Road length will be 40 km. Cross-section will be 33 m wide.
- + National highway No. 32 connecting Hong, Da river basin with Hanoi through Son Tay will be improved to I-class flat standards. Road length will be 40 km.
- + Proposed Viettrans expressway from the south will join highway No. 21A to Mieu Mon and then connect with expressway system around Hanoi.

+ A 6-lane expressway with cross-section of 36,5m wide will be built from Mieu Mon international airport to Hanoi following the alignment of highway No. 6. Road length will be 32 km.

+ National highway No. 21A from Mieu Mon to Son Tay will be improved to be an expressway of the urban series. A new permanent bridge across Hong river to connect national expressway No. 18 with national highway No. 2 will be built west of Vinh Yen town.

- Area routes:

+ Expressway Hanoi - Hoa Lac - Ba Vi: 48 km, with 6 lanes. First stage: 30.2 km will be built.

+ Provincial roads connect the urban series with Ba Vi national park, highland ring roads along Da river west of Ba Vi mountain, Vien Nam with vicinity towns (Thach That, Quoc Oai, Chuong My,..) and with cultural historical vestiges in the east.

■ Railways:

- A new national railway from Nghi Son deep water port through the area to connect with Hanoi - Lao Cai railway at Bach Hac station, east of Viet Tri city.

- Area railway connects Hanoi with the urban series Xuan Mai - Hoa Lac and with Ba Vi - Suoi Hai tourist resort.

■ Waterways:

- Improve Son Tay river port, Da Chong, Xom Rieng, Ky Son passenger canoe wharves.

■ Airways:

- Construct Mieu Mon airport to be the second international airport south-west of Hanoi.

- Rehabilitate and re-function Hoa Lac airport to be helicopter airport for tourists and residents of the urban series.

a) Waste water: specific culverts with optimum treatment before discharge to Tich river.

- Total waste water volume (living, public, industry): 350,000 m³/day;
- Living waste water rate: year 2020 - 300 litres/person,day.

b) Environment Sanitation:

- Living waste garbage rate: year 2020 - 1.0 kg/person,day. Industry waste: year 2020 - 0.1 ton/ha,day
- Cemetery park and crematorium: Hoa Thach village;
- Waste treatment factory: Dong Yen village;
- Total solid waste: 320 tonnes/day.

c) Drainage, irrigation, landscaping: Large-scale rehabilitation of Tich Giang river.

2.3.4. Water Supply Orientation

a) Water source;

- Underground water source: Urban series Xuan Mai - Hoa Lac is of water shortage. Xuan Mai town maximum water capacity is 10,000m³/day, Son Tay town: 45,000m³/day.
- Surface water source: Plenty of lakes and river with huge volume.
- + Large lakes, such as Hoa Binh hydropower Hoa Binh, Suoi Hai, Dong Mo, Van Tien, Dong Xuong, Tan Xa,.. have big volume but only used for irrigation and tourist.
- + Big rivers are: Hong, Da, Tich Giang. Tich Giang and Hong river have high alluvium content and only used for irrigation. Da river has big flow and good quality.
- Selection of water sources: Hydro-electrics power Hoa Binh lake because of big volume, clean water and stable flow.

b) Standard water supply requirement:

No.	Town	Stage Distribution (m ³ /day)		
		2005	2010	2020
1	Son Tay	10,000	15,000	40,000
2	Hoa Lac	70,000	245,000	480,000
3	Xuan Mai	20,000	45,000	65,000
4	Mieu Mon	5,000	20,000	40,000
	Total water supply requirement	105,000 m ³ /day	325,000 m ³ /day	625,000 m ³ /day

- General requirement: year 2005 - 200 litres/person,day; year 2010 - 300 litres/person,day; year 2020 - 400 litres/person,day.

c) Terminal Works Group:

- At Hoa Binh lake, Hoa Binh town build the following terminal works:
 - + Da river surface water pumping station, capacity: 900,000 m³/day;
 - + Water treatment station, capacity: 900,000 m³/day (600,000m³/day for the urban series and 300,000 m³/day for Hanoi).

Pipe line: Water after treated will automatically flows through 3 pipe lines of 1200 mm diameter to supply for whole area (through 3 high -capacity pressure pumping stations)

2.3.5 Power Supply Orientation

a) Power source: State power system from Hoa Binh hydropower plant.

b) New construction station:

- + At Xuan Mai: 220/110 KV - 2 x 125 MVA.
- + At Hoa Lac: 220/110 KV - 2 x 250 MVA

c) Power supply rate:

No.	Items	Stage Distribution		
		2005	2010	2020
1	Living (W/person)	250	350	500
2	Industry(MW/ha)	0.15	0.20	0.25

III FIRST 10-YEAR STAGE CONSTRUCTION PLANING (1995-2005)

3.1. First stage construction requirements;

- During the next ten years, construct essential urban technical infrastructure system, such as transportation terminal, power supply, water supply works. Special priority is given to outer and area road system (in which, the construction of Lang Trung - Ba Vi expressway, Hoa Binh lake surface water supply system, 200 KV power stations is most urgent):
- + At Mieu Mon: Construct Van Son consumer, processing, handicraft industry group.
- + At Xuan Mai: Construct mechanics, Thuy Xuan Tien building materials industry group (Techcentral) and a part of Hoai Son consumer industry group (west Luot mountain).
- + At Hoa Lac: Equal investment for 5 areas in the first stage:
 - Hanoi National University, AIT-CV.
 - Hanoi Hightechpark;
 - Hightechcentral
 - Dong Xuan residence area (residence area of the above areas staff).
- + At Son Tay: Rehabilitate and re-function tourist service industry units.
- + Green planting of ecological forest Ba Vi, Luong Son, Thach That, Son Tay, Quoc Oai according to the project of Ministry of Agriculture and Rural Development.

3.2. Priority list of pre-feasibility study projects for short program of 10 years (1995-2005).

3.2.1 Urban Technical Infrastructure;

1) HNM Project 01: Transportation

- Construction of Lang Trung - Hoa Lac - Ba Vi expressway with 48 km long.
- Rehabilitation and improvement of Son Tay river port for tourist and the urban series.
- Safety management of national highway No. 21 A construction right-of-way.
- Rehabilitation and improvement of national highways No. 6 and No. 32.

2) HNM 02 Project: Water supply

- At Hoa Binh hydropower lake area construct the following terminal works:
 - + Hoa Binh lake surface water pumping station, capacity: 300,000 m³/day;
 - + Water treatment station, capacity: 300,000 m³/day;
 - + Installation of one pipe line of 1200 mm diameter, 60 km long (and 2 pressure pumping stations) from Hoa Binh to Xuan Mai and Hoa Lac.

3) HNM 03 Project: Power supply

- Total capacity for 10-year short term stage: 150 MVA
- + At Xuan Mai: construct one power station 220/110 KV - 2 x 125 MVA
- + At Hoa Lac : construct one power station 220/110 KV - 2 x 250 MVA

3 power stations for the following areas:

Hanoi National University 1 x 10 MVA, Hightechpark 1 x 20 MVA, Hightechcentral 2 x 40 MVA.

4) HNM 04 project: Technical preparation, storm water drainage, environment sanitary.

- Uniform construction of individual water drainage and waste water treatment stations for 3 areas of short term stage: Hanoi National University, Hightechpark, Hightechcentral.
- Construction of solid wastes burying area of 10 ha south of Dong Dam mountain - Luong Son (south-west Xuan Mai).
- Keep planting new ecological forest of 3000 ha buffer zone of Ba Vi national park, Tan Vien mountain, Vien Nam mountain.

3.2.2. Functional areas of the urban series:

5) HNM 05 projects:

- First stage construction of Hightechpark: 800 ha (of which, 300 ha Tan Xa lake water surface);
- First stage construction of Hightechcentral: 600 ha;
- First stage construction of Hanoi National University: 500 ha;
- First stage construction of Hanoi International University: 100 ha; (with Asian Technology Institute in Vietnam AIT-CV: 30 ha).
- First stage construction of Dong Xuan residence area: 1000 ha.

Total 68,000 persons (including residence areas of Hanoi National University, Hanoi International University, Hightechcentral staff and families of staff of Hightechpark area).

6) HNM 06: First stage construction of Tourism and culture miniature village of Vietnamese ethnics: 100 ha Tourism and culture miniature village of Vietnamese ethnics at Mo Vit peninsula in Dong Mo lake.

7) HNM 07 Project: First stage construction of Thuy Xuan Tien industry concentration area (Xuan Mai): 300 ha (mechanics, building materials).

8) HNM_08 Project: Large-scale rehabilitation and improvement: re-function of tourist service and tourist facilities factories Son Tay.

9) HNM_09 Project: First stage construction of group of consumer industry enterprises, Van Son export handicraft enterprises (Mieu Mon): 50 ha

IV. SUGGESTIONS:

It is kindly proposed that Prime Minister assign concerned ministries to handle the following tasks:

- 4.1. Concentrate on thorough study and investment of technical infrastructure works.
- 4.2. Ministry of Industry in co-operation with Ministry of Construction to carry out an investigation to select location for Xuan Mai 220/110 KV power station.
- 4.3. Ministry of Transport to carry out feasibility study on national railway through Hanoi terminal in relation with Xuan Mai - Hoa Lac urban series.
- 4.4. Survey to establish 1/500, 1/2000-scale map of Hoa Lac - Xuan Mai, Mieu Mon areas.
- 4.5. Carry out feasibility study on exploitation of Hoa Binh lake surface water for the urban series Xuan Mai - Hoa Lac and Hanoi.
- 4.6. Ministry of Water Resources to carry out, in large-scale, projects on rehabilitation and widening of Tich Giang river to provide water sources, drainage and permanent environment and landscape.
- 4.7. Ministry of Defence to carry out planing of economics, military bases and solders, families within master plan of Xuan Mai - Hoa Lac urban series.