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#### 1. ヴィエトナム政府要請書

# TERMS OF REFERENCE FOR MASTER PLAN AND FEASIBILITY STUDY ON WATER SUPPLY SYSTEM AND ENVIRONMENT PROJECT IN HAI PHONG CITY, VIETNAM

September, 1997

HAI PHONG PEOPLE'S COMMITTEE

#### I Title of the Project

Master Plan and Feasibility Study on Water Supply System and Environment Project in Hai Phong City

#### Il Responsible Agency & Executive Agency

Hai Phong People's Committee

#### III Background of the Project

Hai Phong city, located at the mouth of the Hong River and 100 km eastward far from Hanoi (Fig. 1), was developed about 100 years ago when French began to settle done there. During the governing of French, Hai Phong was built in a way to imitate Paris. Because of the succession wars after the World War Two, the urban planing and infrastructure remained stagmant. However, since 1988 after the removal of economic sanction and the adoption of Doimoi policy, Hai Phong has regained its vitality with vast increases of foreign investments. And in the Dec. of 1993, the overall urban development plan of Hai Phong was approved by the central government of Vietnam.

Hai Phong, with a total population of 1,696,000, is the third largest city in Vietnam. Its annual population is estimated to be 1,8%-2.0% (Courtesy to Hai Phong Statistics Department). The population of the central urban area is projected to increase from 706,000 in 1995 to 930,000 in 2010.

Hai Phong is also the only port metropolitan in the triangular economic circle including the capital of Hanoi in the north of Vietnam, as the center of land and marine transportation, it plays a very vital role in the industry of this circle region. Moreover, it is respected that Hai Phong is also quite attractive as a sightseeing resort.

The overall urban development plan was predetermined on the base of the prevision and expectation to those infrastructure which plays an important role in the national economic growth. For accomplishing this plan, at present, the existing old harbor is being dredged and a new one is under construction, the 4 industrial

complexes as large as 2,700 ha, are being developed. A new airport, as well as the national highway No. 5 connecting the central urban roads with Hanoi, etc., are all under energetically construction for improving and enhancing the city's functions.

However, for achieving the normal development and the normal function of these urban facilities, it is indispensable to upgrade further the city's infrastructure majored in water supply, environment, transportation, communication, and electric power.

Among these, specially, water supply system and environmental systems such as rain and waste water sewerage system, solid waste disposal system, air and noise pollution control system, from the point of civilian, hold the utmost key position in bringing about a coexistence society with earth environment from the point of civilians, in other words, in creating a good urban environment and realizing an amenity.

However, the progress of improvement and extension in water supply system and other environment systems, even comparing to other infrastructure of the city, is far unbalanced with the demand of the overall urban development plan and the rapid urban development situation. This would hinder the sound urban development if no more countermeasure is taken. Therefore, it is needed to settle on urgently a master plan that could balance the current development progress with the future urban growth prediction, and an implementation plan that would be feasible to the urban normal development. Furthermore, based on these plans the consolidation of urban infrastructure majored in water supply and environment system should be carried out as early as possible.

#### 3.1 Water Supply System

The existing water supply system in Hai Phong city is managed by four water treatment plants including Anduong, Caunguyet, Vatcach and Doson. These plants in a designed capacity of 136 mld in total were constructed in 1960's when the city was under control of French Administration. Now they provide 115 mld of water by a pipe network of water aqueduct in about 200 km.

However, the current water supply system has been expanded at different

stages since 1935 in such a way that the following project was just attached to the former existing one without making a long term planning. Besides, its facilities have also deteriorated. Therefore, it leads to a restriction on water supply area, an uneven water supply pressure and a water leakage of as high percentage as 73% at certain spots. After all, the degradation of the water supply ability makes the water supply service even more aggravated.

Some urgent water supply projects to improve these lower efficient water supply service have been executed with the technical assistance of Finland from 1991 to 1993 and also by the financial aid of Finland from 1994 to 1996. Benefiting from these projects, the capacity of Anduong water treatment plant was expanded, and the rehabilitation and expansion of water supply network was covered 50% of the central area. Moreover, it is scheduled that the improvement of water supply network in the remaining area and the expansion of existing water treatment will be carried out with the technical assistance of Finland and the financial aid from the World Bank amounting to about 20 million USS from 1997 to 2000.

However, the above urgent water improvement plan with a designed water supply potential of 133,000 m<sup>3</sup>/d was obtained based on the standard of 1990. It is predicted that the water demand in 2000 would be 209,600 m<sup>3</sup>/d according to the new overall urban development plan authorized by the central government in 1993, so the designed water supply capacity would be only 63% of the demand in 2000. Likewise, only the water supply network in the central urban area could be almost improved, the water supply system of the newly urbanized area would be not served or unimproved. Furthermore, the neighboring industrial development area under construction is also remained almost not served, thus results in an absolute shortage of water supply.

Since 1993, the city has achieved a very fast speed of development, further, the water demand in 2010 is predicted to be 406,000 m<sup>3</sup>/d as much as 2 times of that in 2000. When this situation is taken into account, it would be not difficult to understand that the current progressive step of the water supply consolidation would thereby hinder the normal urban growth. Therefore, it is needed to settle on a water supply master plan and accomplish the water supply system consolidation, so that the sound and normal development of the city would not be retarded.

#### 3.2 Rain and Waste Water Sewerage System

To the central urban area, the waste water sewerage was involved in the urban consolidation from the birth of the city in 1887 to 1925. However, it had neither been improved nor augmented after the World War Two because of the uninterrupted wars. With the degradation of waste water sewerage facility, at the same time, the load for waste water sewerage is very greatly increased both qualitatively and quantitatively because of the rapid acceleration of industrialization and urbanization. The deterioration of environment and the flood damage caused by high tide and rains have become pressing issues.

Existing waste water of the central urban area is mostly drained by a combined sewer system along with rain water. Only one area (Dongboc area) is served by a separate system. The house-buildings in the central urban area are connected to the combined sewer pipes. However, the collected sewerage is mostly gray water such as washing/cooking/bathing water. Less than 20% of the toilet waste is disposed by the combined sewer pipes after septic tank treatment. The other toilet wastes are disposed on farm lands as fertilizer by an unsanitary collection system.

The waste water sewerage is also in a very poor condition. Due to lack of the discharge capacity of the combined sewer pipes, waste water is also flooded along with rain water at the time of heavy rainfall. Further, most of the waste water is discharged into the lakes, drainage channels and rivers without treatment, thus results in water pollution of lakes and drainage channels.

These unsanitary environments will become worse and worse with the increase of population. The urgent improvement of the existing waste water sewerage system is necessary.

Although the new urbanized areas in the south and southeast of the city have been equipped with water supply facilities, no countermeasures of waste water sewerage has been taken at all resembling those areas without water supply facility. The deterioration of environment is becoming much more bothersome than any before. And the countermeasure of waste water sewerage in the projected

industrial complex areas takes up an important position in the water environment conservation of the city.

Lying at the Hong River delta, the base of the central urban area is quite low as about 2.0-4.5 m at average comparing with a 4.5 m of the highest tide at Tonkin Bay. The existing city area consists of five drainage basins; that is, the central urban area, southwest urban area, northeast urban area, undeveloped area and airport & its surrounding area (Fig. 2).

Rain and waste water are drained by combined drainage system. Water of the central urban area is directly drained into the Cam and Tambac Rivers by the drainage pipes. The southwest urban area is discharged into the Lachtray River through the Viehniem drainage channel after being retarded by the lakes. Similarly, the northeast urban area is drained into the Cam River through the Dongkhe drainage channel after being naturally controlled by the lakes. The undeveloped area is drained through the irrigation and drainage channels (main channel length is more than 20 km). Further, the airport & its surrounding area is discharged into the Lachtray River after being retarded by the lakes.

The existing rain and waste water sewerage facilities for the urban area are summarized below.

Trunk drainage pipe of combined system ( \$\phi\$ 400-1,200 mm): 62 km

Drainage channel (width: 10-20 m): two routes, 6.5 km

Storm water retarding lake: 12 lakes

Waste water lift pump (240 m³/h); one place

Tide gate: six places

However, the existing rain water drainage system is at a very unsatisfactory standard. The covered area and discharge capacity of the drainage networks are small. No drainage pump station is provided. During high tide, the gates are closed and rain water on the city area is not drained to the surrounding rivers.

According to the overall urban development plan approved by the central government, almost the entire urban area will be developed to accommodate the increasing population in 2010. And the existing undeveloped area will mostly be filled up for urbanization in the near future, thus leads to a great reduction of the

existing flood retarding effects.

Therefore, the existing rain and waste water sewerage system should be improved and expanded to keep pace with the urban development. In other words, it is indispensable to improve the city's environment, protect the city from the flood damage and conserve water environment. These could be achieved through improvement and expansion of rain and waste water sewerage system in the central urban area, construction of waste water sewerage facilities in the newly urbanized area, and taking countermeasures of waste water sewerage including industrial waste water in the new industrial complex area.

#### 3.3 Solid Waste Disposal

With the development of the urban liveliness, the load of the solid waste disposal is increasing year by year, and moreover, the contents of solid waste are also becoming diversified. At present, in the central urban area, the solid wastes from family and road cleaning at midnight are collected and reclaimed. While in the new urbanized area, no measures are taken at all administratively. Family solid waste are either dealt with by the households or thrown away, as a result, the urban environment is being deteriorated gradually. With the proceeding of the new industrial complexes, the occurrence of both toxic and nontoxic solid waste are predicted. An early and effective countermeasure is hoped for.

As the collection ratio of the family disposal in total is no much than 50%, the deterioration of the urban environment and the damage to water environment have become a serious issue. Furthermore, with the advancement of industrialization, it is anxietied as that of detriment of environment from those toxic solid waste that would be produced and are conceived to be produced.

Under this circumstance, for creating a good living environment and water amenity environment and strengthening the rapid development of the city, a master plan of solid waste disposal management should be settled on as early as possible, based on which a comprehensive solid waste disposal management should be enforced in the further

#### 3.4 Air and Noise Pollution Control

At present, motorcycle and bicycle are the main traffic tools of the civilians. Air and noise pollution in the central urban area is not so worsening. However, there are lots of traffic including large trucks on the national highway No. 5 and No.14 connecting the central part of the city. As it signifies the rapid development of the city, however, air and noise pollution is becoming more and more troublesome. It is also envisioned that this inclination would possibly stretch out to the central urban area through the expansion of the city. Moreover, the air and noise pollution is likely to be aggravated with the development of industrial complexes.

For such a reality, a master plan for air and noise control is needed to lay out and implement. In which, it will not only take the city's air and noise pollution into account, such as the moving of the cement factory from the central part to the industrial complex, but also the global environment into consideration.

#### IV. Outline of the Project

The project is aimed to make a master plan and its implementation plan for improvement of the urban infrastructure in the fields of water supply and environment in order to promote a timely and appropriately scaled project that could balance with a high and sound urban development.

In favor of achieving the important mission that Hai Phong takes up in the national economy, the embodiment of the overall urban development plan is requested for a high and normal urban development. For realizing this kind of a high and normal urban development, it is necessary to make a timely and appropriately scaled urban infrastructure consolidation especially in the fields of water supply system and environment relations such as rain and waste water sewerage system, solid water disposals, air and noise pollution control which have immediately relation to civilian's daily life and which progress are much later than that of other ones. Accordingly, an improvement and expansion of these urban infrastructure should be given priority.

#### V Object of the Study

The objective of this study is to make a master plan and feasibility study aimed to carry out a timely and appropriately scaled urban infrastructure consolidation project on water supply and those fields related to environment such as rain and waste water sewerage, solid waste disposal, air and noise pollution control, which have directly relation to civilian's daily life and which progress are much later developed than other infrastructure fields.

#### VI Main Items of the Study

- 1) Survey on the current condition for water supply and environment system.
- 2) Survey on the social/economic condition.
- 3) The state of the municipal development and its future plan.
- 4) Relation with the future municipal development plan.
- 5) Estimation of demand.
- 6) Basic plan and preliminary design for water supply and environment system.
- 7) Environmental impact assessment
- 8) Management plan.
- 9) Cost estimation
- 10) Financial evaluation and social/economic evaluation.
- 11) Implementation plan

#### **VI** Reports

The following reports in English will be prepared and submitted.

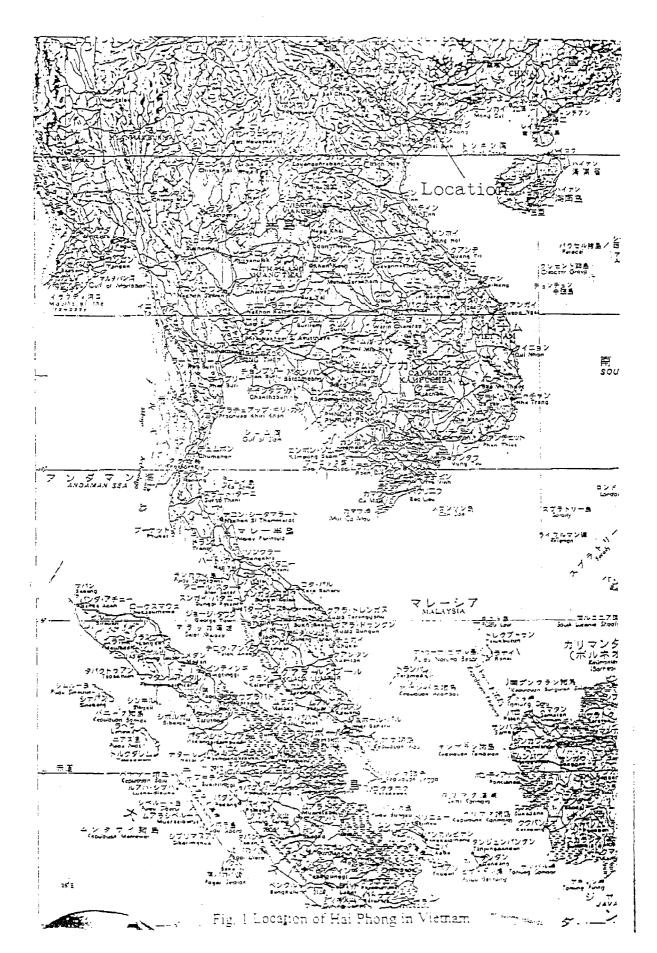
- 1) Inception report.
- 2) Progress report.

- 3) Interim report
- 4) Draft report
- 5) Final report

#### VII Time Schedule of the Study

Study Item		Month												
	1	2	3	4	5	6	7	8	9	10	11	12	13	
1. Socio-economic survey	_	$\vdash$												
2. Engineering study	-										ļ			
3 Socio-economic evaluation														
4. Receipt of comments	,													
5. Preparation of final reports												_		
Reports	*			*			×				*			
	Inception			Progress		S	Interior				Draft Fir			
	Re	Report			Report		Report				Report		Rep	

Field work
Home work



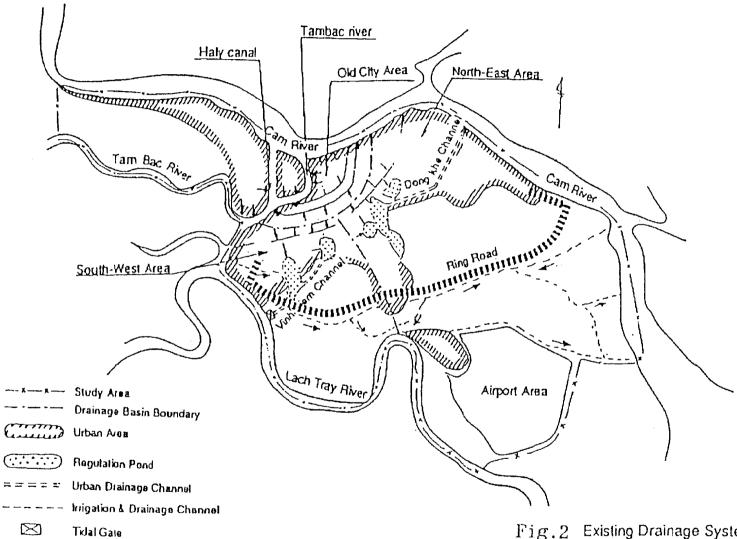


Fig. 2 Existing Drainage System of Haiphong

#### Scope of Work

For

## The Study on Sanitation Improvement Plan for Haiphong City in the Socialist Republic of Vietnam

Agreed upon between

#### Haiphong People's Committee

And

#### Japan International Cooperation Agency

Haiphong, December 2, 1999

Dr. Pham Tien Dung

Vice Chairman,

Haiphong People's Committee

Mr. Yyıkihisa Sakurada

Team Leader,

Preparatory Study Team,

Japan International Cooperation Agency (JICA)

Dr. Duong Duc Ung Director General,

Foreign Economic Relation Dept.,

Ministry of Planning and Investment

#### I. INTRODUCTION

In response to the request of the Government of the Socialist Republic of Vietnam (hereinafter referred to as "the Government of Vietnam"), the Government of Japan decided to conduct the Study on Sanitation improvement plan for Haiphong City (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Government of Vietnam.

The present document sets forth the Scope of Work with regard to the Study.

#### II. OBJECTIVES OF THE STUDY

The objectives of the Study are;

- 1. to formulate sanitation improvement plan for Haiphong city on the water supply, sewerage (including drainage) and solid waste management system,
- 2. to conduct feasibility study on drainage and sewerage system and/or solid waste management system for the project identified in the master plan study
- 3. to transfer technology to the counterpart personnel in the course of the Study.

#### III. STUDY AREA

The study area shall cover the area of Urban 4 districts, Do Son district, new development area and newly planning industrial area in Haiphong City. Those area is shown in the attached sheet of Annex-I.

#### IV. SCOPE OF THE STUDY

### PHASE I: FORMULATION OF MASTER PLAN [Basic Study]

- 1. Collection of existing data and information relevant to the Study
  - a. natural conditions
  - b. economic and social conditions
  - c. national, regional and urban development plans
  - d. existing land use patterns
  - e. legislation, regulations and policies related to the Study
  - f. present institutions, organizations, administration and their function related to the Study
  - g. on-going / planned projects and plans relevant to the Study
- 2. Review and analysis for existing system
  - a. present condition of existing system on water supply, sewerage (including drainage) and solid waste management.
  - b. maintenance and operation of equipment and facilities
  - c. institutional aspects
  - d. financial and economic aspects
  - e. social aspects
  - f. projects conducted by other donors
  - g. others

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- 3. Field reconnaissance
  - a. present condition and public consciousness on public health and sanitation
  - b. amount of water and waste water and their quality
  - c. amount of solid waste and its composition
  - d. soil composition and soil pollution
  - e. present condition of inundation and flood damage
- 4. Identification of existing problem

#### [Formulation of Master Plan]

- 1. Determination of planning framework
  - a. socio-economic framework
  - b. determination of project goal
  - c. identification and evaluation of the alternative plan
  - d. selection of best alternative
  - e. cost estimates (construction, operation and maintenance)
  - f. organizational and institutional plan
  - g. implementation plan
- 2. Initial environmental evaluation
- 3. Evaluation of the master plan
  - a. economic and financial evaluation
  - b. social evaluation
  - c. technical evaluation
- 4. Identification of the priority project(s)

#### PHASE II: FEASIBILITY STUDY ON THE PRIORITY PROJECT(S)

- 1. Necessary supplemental survey and data collection
- 2. Confirmation of planning framework
- 3. Facility plan
- 4. Construction plan
- 5. Environmental impact assessment
- 6. Organization, operation and maintenance plan including institutional framework
- 7. Cost estimation
  - a. construction
  - b. operation and maintenance

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#### 8. Project evaluation

- a. economic and financial evaluation
- b. social evaluation
- c. technical evaluation

#### 9. Implementation plan

#### V. SCHEDULE OF THE STUDY

The tentative schedule of the Study is shown in the attached sheet of Annex-II.

#### VI. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Vietnam:

1. Inception Report:

Twenty (20) copies at the commencement of the first work in Vietnam.

2. Interim Report:

Twenty (20) copies at the commencement of the second work in Vietnam.

3. Draft Final Report:

Twenty (20) copies at the beginning of the third work in Vietnam.

The Vietnam side shall submit their comments within one (1) month after the receipt of the Draft Final Report.

Final Report:

Fifty (50) copies within one (1) month after the receipt of the comments by the Vietnam side on the Draft Final Report.

#### VII. UNDERTAKINGS OF THE GOVERNMENT OF VIETNAM

- 1. The Government of Vietnam shall accord privileges, exemptions and other benefits to the Japanese study team (hereinafter referred to as "the Team") in accordance with the Agreement on technical cooperation between the Government of Japan and the Government of the Socialist Republic of Vietnam.
- 2. To facilitate the smooth conduct of the Study, the Government of Vietnam shall take the following necessary measures:
  - a. to secure safety of the Team.
  - b. to permit the members of the Team to enter, leave and sojourn in Vietnam for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees.
  - c. to exempt the members of the Team from taxes. duties, fees and any other charges on equipment, machinery and other materials brought into and out of Vietnam for the conduct of the Study.
  - d. to exempt the members of the Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Team for their services in connection with the implementation of the Study.
  - e. to provide necessary facilities to the Team for remittances as well as utilization of the funds introduced into Vietnam from Japan in connection with the implementation of the Study.
  - f. to secure permission for the Team to enter into private properties or restricted areas for the implementation of the Study.
  - g. to secure permission for the Team to take all data and documents including photographs and maps related to the Study out of Vietnam to Japan in accordance with the Laws of Vietnam.
  - h. to provide medical services as needed. Its expenses will be chargeable on the members of the Team.
- 3. The Government of Vietnam shall bear claims, if any arises, against the members of the Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Team.
- 4. The Haiphong People's Committee shall act as counterpart agency to the Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
- 5. The Haiphong People's Committee shall, at its own expense, provide the Team with the following in cooperation with other relevant organizations:
  - a. available data and information related to the Study,
  - b. counterpart personnel
  - c. suitable office space with necessary equipment in Haiphong City, and
  - d. credentials or identification cards.

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#### VIII.UNDERTAKING OF JICA

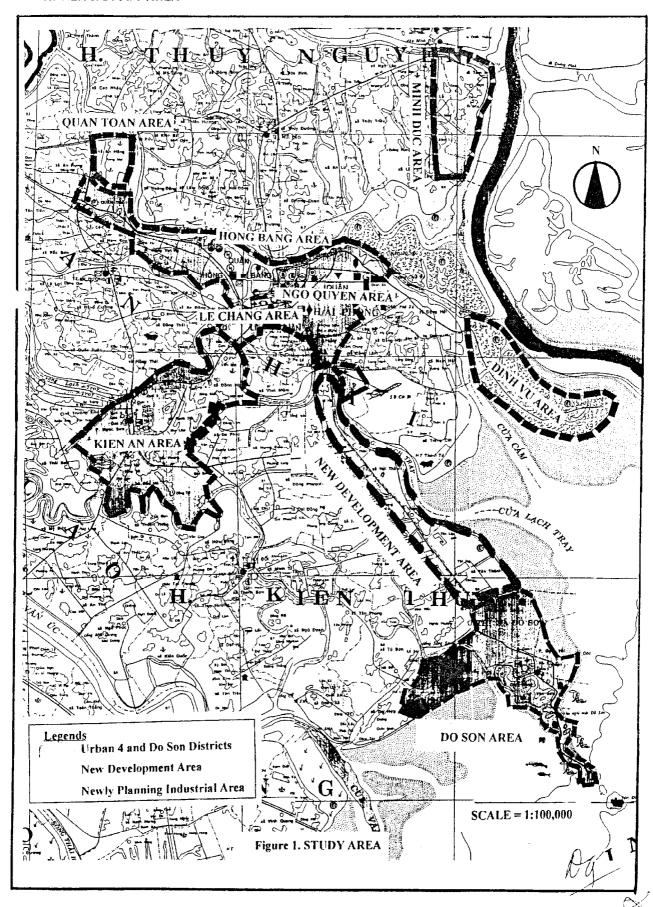
For the implementation of the Study, JICA shall take the following measures:

- 1. To dispatch, at its own expense, the study team to Vietnam,
- 2. To pursue technology transfer to counterparts personnel in the course of the Study.

IX. CONSULTATION

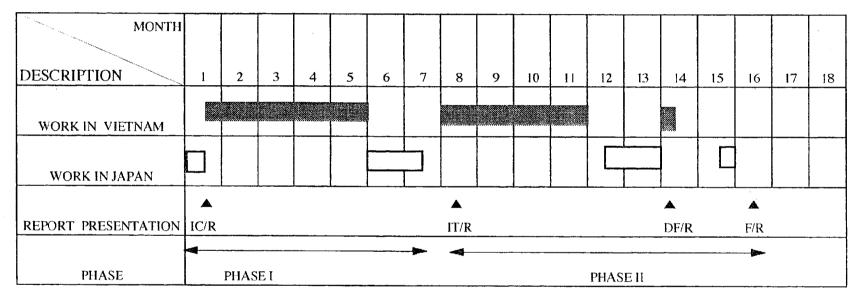
JICA and the Haiphong People's Committee will consult with each other in respect of any matter that may arise from or in connection with the Study.

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## The Study on Sanitation Improvement Plan for Haiphong City in the Socialist Republic of Vietnam

#### TENTATIVE SCHEDULE



NOTE

IC/R : Inception Report

IT/R : Interim Report

DF/R : Draft Final Report

F/R : Final Report

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#### 3. MINUTES OF MEETINGS

#### MINUTES OF MEETINGS

On

#### Scope of Work

For

## The Study on Sanitation Improvement Plan for Haiphong City in the Socialist Republic of Vietnam

Agreed upon between

#### Haiphong People's Committee

And

#### Japan International Cooperation Agency

Haiphong, December 2, 1999

Dr. Pham Tien Dung

Vice Chairman,

Haiphong People's Committee

Mr. Yukihisa Sakurada

Team Leader,

Preparatory Study Team,

Japan International Cooperation Agency (JICA)

Dr. Duong Duc Ung

Director General,

Foreign Economic Relation Dept. Ministry of Planning and Investment In response to the request of the Government of the Socialist Republic of Vietnam (hereinafter referred to as "the Government of Vietnam"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Study Team, headed by Mr. Yukihisa SAKURADA (hereinafter referred to as "the Team"), to Vietnam from November 22nd to December 11th, 1999 to discuss and agreed with the Scope of Work (hereinafter referred to as "S/W") for "the Study on Sanitation Improvement Plan for Haiphong City in the Socialist Republic of Vietnam" (hereinafter referred to as "the Study").

During its stay in Vietnam, the Team held a series of meetings with Haiphong People's Committee (hereinafter referred to as "HPC") and other authorities concerned of the Government of Vietnam and conducted field reconnaissance on the Study. The list of those who attended these meetings is shown in the Appendix.

The Minutes of Meetings have been prepared for the better understanding of the S/W agreed upon between HPC and the Team on December 2, 1999. The main items which were discussed and agreed by both sides are as follows.

#### I. Cooperation and Coordination

It was confirmed that the Study will be conducted jointly by the Study Team and Vietnamese counterpart personnel. Close cooperation and coordination between them should be ensured to facilitate efficient implementation of the Study and achieve fruitful Study results.

#### II. Target year for the Study

Both sides agreed that the target year for the Study will be the year of 2020.

#### III. Maximum use of the existing studies, plan and data.

The Study will be formulated taking into consideration the existing related studies and data. HPC is responsible for collecting and providing those maps, studies, plan and data to the Team.

#### IV. Feasibility Study

Both sides agreed that the content of the feasibility study on the priority project(s) would be chosen according to the master plan study and discussed at the commencement of the second work in Vietnam.

#### V. Steering Committee

Both sides agreed that HPC would organize and chair the steering committee to coordinate the Vietnamese institutions for smooth implementation of the study. The member of the steering committee would be assigned at the commencement of the Study.

The member would be comprised of the following authorities concerned:

- A. Chairman or Vice Chairman, Haiphong People's Committee
- B. Director General, Foreign Economic Relation Dept., Ministry of Planning and Investment
- C. Director, National Institute for Urban and Rural Planning
- D. Director, National Environmental Agency, Ministry of Science, Technology and Environment
- E. Director, Haiphong Department for Planning & Investment
- F. Director, Haiphong Urban Planning Institute
- G. Director, Haiphong Service of Communication and Urban Public Works
- H. Director, Haiphong Department for Science, Technology & Environment
- I. Director, Haiphong Finance Department
- J. Others

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#### VI. Counterpart

Both sides agreed that HPC would organize a counterpart team which would cooperate with the Study Team. The members of the counterpart team would be chosen by the authorities, in addition to the staff of HPC, at the commencement of the Study. Fluency of English conversation is preferable for the counterpart personnel. It is preferable to include counterpart personnel from the following authorities concerned:

- A. Department of Planning & Investment, HPC
- B. Haiphong Urban Planning Institute
- C. Haiphong Service of Communication and Urban Public Works
- D. Haiphong Water Supply Company
- E. Haiphong Sewerage and Drainage Company
- F. Haiphong Urban Environment Company

#### VII.Coordination with International Organizations

The Team requested The Vietnamese side to coordinate with international organizations concerned such as World Bank and FINNIDA to exchange view and information with these organizations as well as to avoid any duplicated works, and the Vietnamese side agreed to this point.

#### VIII.Reports

Both sides agreed that all the reports would be open to the public in order to achieve maximum use of the Study results.

The Vietnamese side requested that JICA provide executive summaries for interim, draft final and final reports as a reference in Vietnamese for better understanding of the Study result. The Team recognized this necessity and promised to provide those reports in Vietnamese.

#### IX. Seminar

The Vietnamese side requested that JICA hold two seminars for the technology transfer in the course of the Study (Mid term, End of the Study). The Team recognized the necessity and promised to hold those seminars.

#### X. Undertakings of the Vietnamese side

The Team requested that the Vietnamese side would provide a suitable office space with necessary equipment such as furniture and telephone line. The Vietnamese side confirmed that the office space enough to work would be prepared. The Vietnamese side would inform to JICA if there is any difficulty for providing office equipment.

The Vietnamese side promised to the Team to do its best to take all data and documents including photographs and maps related to the Study out of Vietnam to Japan in accordance with the Laws of Vietnam. However, if any difficulty arises on this matter, HPC and JICA will discuss to seek a suitable solution.

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#### Appendix

#### List of Participants

#### (Vietnamese side)

Hai Phong People's committee (HPC)

Mr. Pham Tien Dung Vice chairman

Vice director, Department for Planning & Investment Mr. Dan Duc Hiep

Mr. Nguyen Ngoc Quynh Director, Haiphong Urban Planning Institute

Mr. Trinh Dac Te Vice Director, Department for Public Works &

Communication

Mr. Dao Viet Tac Director, Department for Science, Technology &

Environment

Mr. Hoang Ngoc Tuan Vice director, Department for Science, Technology &

Environment

Mr. Phi Van Luc Vice director, Foreigh Affairs Department Mr. Nguyen Manh Cuong Head of ODA & Foreign Loan Division

Ministry of Planning & Investment, Department of Foreign Economic Relations

Mr. Duong Duc Ung Director General Mr. Ho Quang Minh Deputy Director Mr. Nguyen Xuan Tien Senior Expert

Haiphong Sewerage & Drainage Co.

Mr. Nguyen Ba Can Director

Haiphong Water Supply Co.

Mr. Vu Phong Vice Director

Haiphong Urban Environment Co.

Mr. Tran Huy Tan Director

#### (Japanese side)

Preparatory Study Team

Mr. Yukihisa Sakurada Leader Mr. Masami Mizuguchi

**Environmental Consideration** Mr. Hiroshi Ochi Solid Waste Management Administration Mr. Ryuji Uematsu Sewerage and Drainage Administration

Study Planning Mr. Hiroshi Murayama Mr. Katsuyoshi Tomono Water Supply Facility Planning Mr. Kaoru Suzuki Sewerage Facility Planning

Mr. Shinsuke Sato Solid Waste Management Facility Planning

Ms. Izumi Takahashi Interpreter

Embassy of Japan

Mr. Shoichi Miyazaki First Secretary

JICA Vietnam Office

Mr. Takanori Jibiki Resident Representative

Mr. Takashi Hatakeyama Deputy Director