

**THE FEASIBILITY STUDY
ON
THANH TRI BRIDGE AND THE SOUTHERN SECTION
OF RING ROAD NO. 3
IN HANOI
IN
THE SOCIALIST REPUBLIC OF VIETNAM**

FINAL REPORT

VOLUME II: MAIN REPORT

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Package No.	Description	1999	2000	2001	2002	2003
1, 2 and 3	Detailed Design					
1	Land Acquisition and Resettlement					
	Construction					
2	Land Acquisition and Resettlement					
	Construction					
3	Land Acquisition and Resettlement					
	Construction					

Figure 2 Project Implementation Schedule

As shown in Figure 2, the completion of the construction in all packages will be set at the same time of the end of 2003 to attain the optimum investment schedule and to consider the time required for land acquisition and resettlement.

8. Recommendations

(1) Implementation of the Project

The results of the Study indicate that the Project is technically sound (no serious technical difficulty is anticipated for the construction) and economically feasible. Taking into account the direct and enormous indirect benefits towards regional development other than the quantified savings in travel costs, the Project should be implemented at the earliest opportunity.

(2) Land Acquisition and Resettlement

Delay of implementation would entail increasingly difficult land acquisition and resettlement due to the rapid development of the region, especially in Thanh Tri area. Arrangement of land acquisition and resettlement should commence immediately.

(3) Project Implementation Schedule

Proposed implementation schedule is to emphasize simultaneous commencement of services in all three construction sections, subject to due consideration on inevitable lead-time for land acquisition and resettlement, to optimize investment schedule.

(4) Construction Scheme for Thanh Tri Bridge

Such a stage construction scheme as widening from four lanes to six lanes in due time will entail diverse technical difficulties when applied to Thanh Tri Bridge. Thus it is recommendable to provide whole six lanes in the initial and single construction stage.

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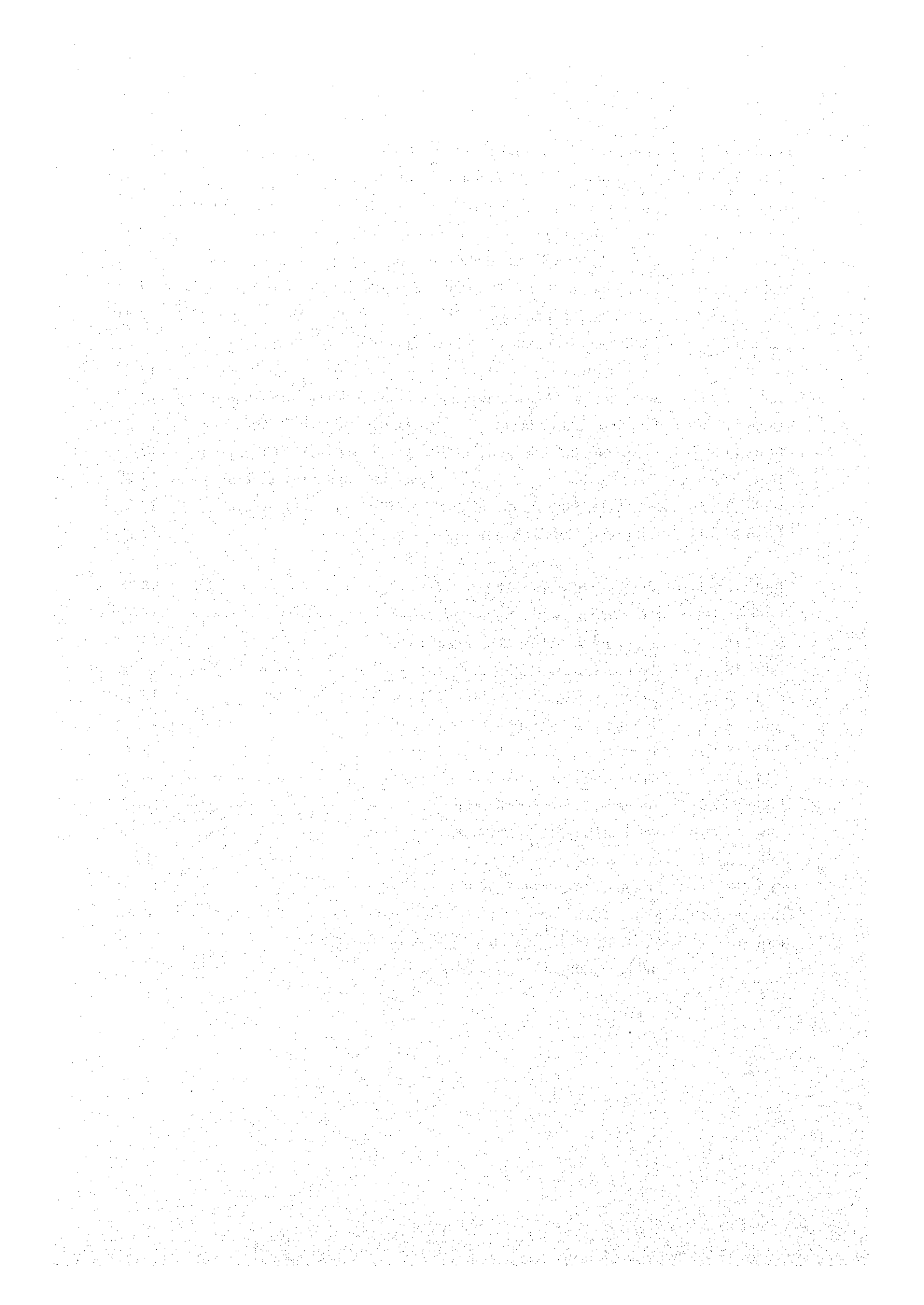
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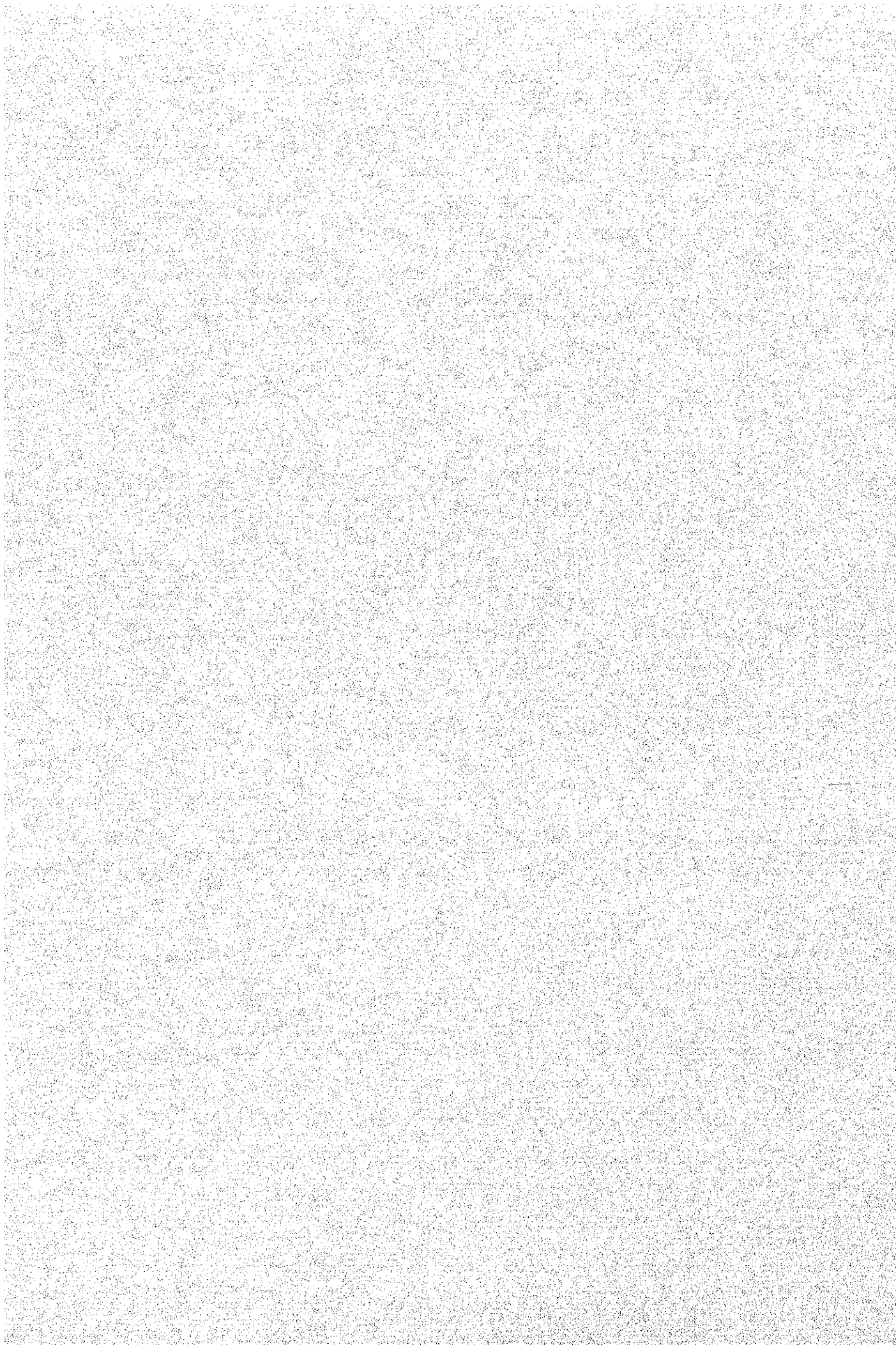
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CHAPTER 1
INTRODUCTION



CHAPTER 1 INTRODUCTION

1.1 Background

The Government of the Socialist Republic of Vietnam (hereinafter referred to as "the Government") has embarked on a profound remodelling of the country under the "Doi moi" policy and introduced the marketing economy principle. The economic growth in recent years has been quite rapid.

Hanoi, the capital city, has approximately 2.3 million population at present and is the main focus of human activities of the nation and the centre of commerce, finance, industry and transportation in the Red River Delta and Northern Focal Economic Area.

Since an effective transport system is a basic requirement to achieve the future socio-economic development of the region, a number of transport infrastructures improvement projects are either planned or under construction.

National Highway No. 5 which connects Hanoi and Hai Phong is now under construction with completion scheduled in 1998. National Highway No. 1 which is the main transportation artery connecting Northern, Central and Southern Provinces with Hanoi is now being implemented. A new by-pass of National Highway No. 1 is at the detailed design stage and some sections are under construction. National Highway No. 18 starts at Noi Bai International Airport, traverses Quang Ninh Province and terminates at Bac Luan border gate. Some sections of National Highway No. 18 are under construction and the remaining sections are scheduled to start detailed design shortly.

Many industrial zones are now either in operation or in the construction stage around Hanoi and along the transport arteries mentioned above. The traffic entering in and originating from Hanoi will increase drastically in the near future.

In Hanoi, the total length of the road network is not sufficient for this increased usage, a ring road system has not been implemented, road widths are insufficient to allow heavy vehicles, pavement structure is poor and bridges are deteriorating. Two wheeled vehicles are predominant and traffic congestion is always observed in the central area of Hanoi and there is no room for access by larger vehicles.

In order to solve the above-mentioned problems, the Master Plans of Urban Transport for Hanoi City was formulated by JICA in 1996. According to results of the study, the

existing bridges over the Red River have not enough traffic capacity corresponding with increasing traffic volume in the future. And the concept of Hanoi Third Ring Road (hereinafter referred to as "HTRR") to collect and distribute all incoming and outgoing traffic was proposed.

Under such circumstances, the Government has decided to construct the most urgent section of HTRR that is the Southern Section of Ring Road No. 3 in Hanoi including Thanh Tri Bridge (hereinafter referred to as "the Project").

In regards to the background mentioned above, the Government requested the Government of Japan to implement a feasibility study on Thanh Tri Bridge and the Southern Section of Ring Road No. 3 in Hanoi.

In response to the request of the Government, the Government of Japan decided to conduct the Feasibility Study on Thanh Tri Bridge and the Southern Section of Ring Road No. 3 in Hanoi (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

The Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, carried out the Study in close cooperation with the concerned authorities of the Government.

Project Management Unit Thang Long (hereinafter referred to as "PMU Thang Long") had act as the counterpart agency to the Japanese Study Team (hereinafter referred to as "the Study Team") and coordination with other relevant organisations had been exercised in order to accomplish a smooth implementation of the Study.

JICA sent the Study Team to Vietnam, several times between August 1997 and July 1998 and the Study Team held discussions with PMU Thang Long and the concerned officials of the Government and conducted field surveys and studies in Vietnam.

After the Study Team returned to Japan, further studies were made and the present report was prepared.

1.2 Objective of the Study and Study Area

The objective of the Study is to study the feasibility of the construction of Thanh Tri Bridge over the Red River and the Southern Section of Ring Road No. 3 between the intersection of National Highway No. 1 and the intersection of National Highway No. 5 in Hanoi. In addition a further objective is to transfer technology to the Vietnamese counterparts during the execution of the Study.

The Study Area is defined as the direct and indirect influence area of the Project. This includes such administrative districts as Hanoi City and its surrounding 6 provinces (Ha Tay, Vinh Phuc, Thai Nguyen, Bac Gian, Bac Ninh and Hung Yen).

1.3 Execution of the Study

The Study was carried out in the following 7 steps:

- Step 1; Review of the existing data and preparation of inception report
- Step 2; Data collection, field survey and formulation of the alternative plans
- Step 3; Selection of the best alternative plan
- Step 4; Preliminary design
- Step 5; Project evaluation
- Step 6; Explanation of the draft final report
- Step 7; Preparation of the final report

The basic flow diagram, which identifies major work items carried out in each step, is indicated in Figure 1.3.1.

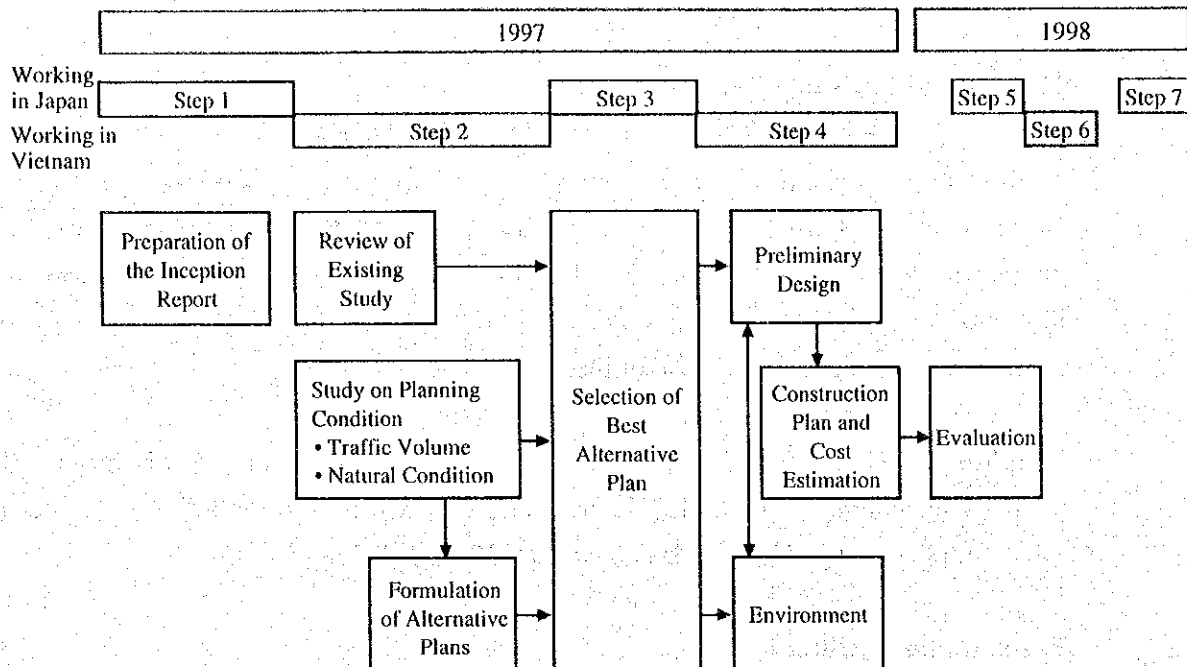


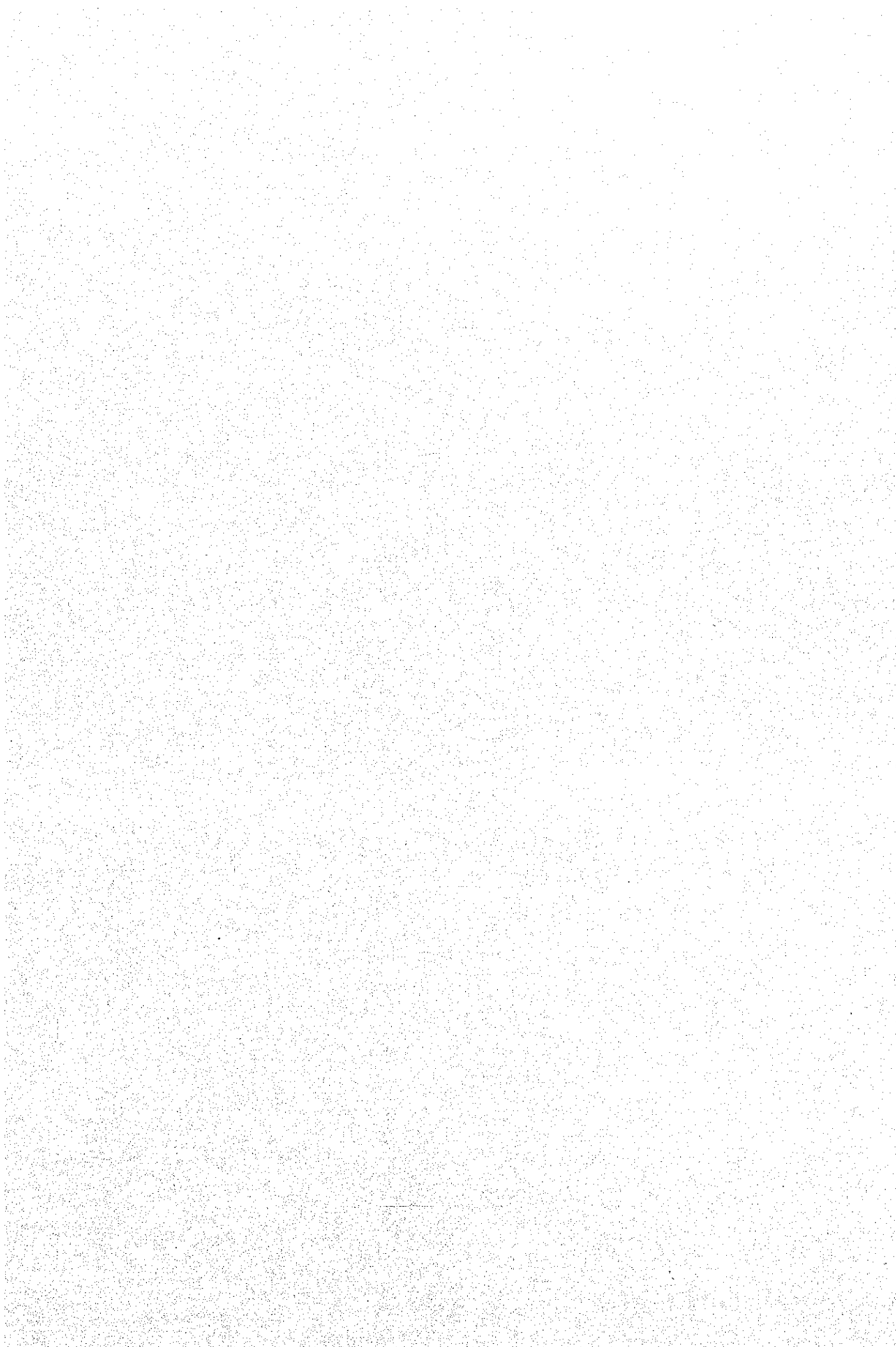
Figure 1.3.1 Basic Flow of the Study

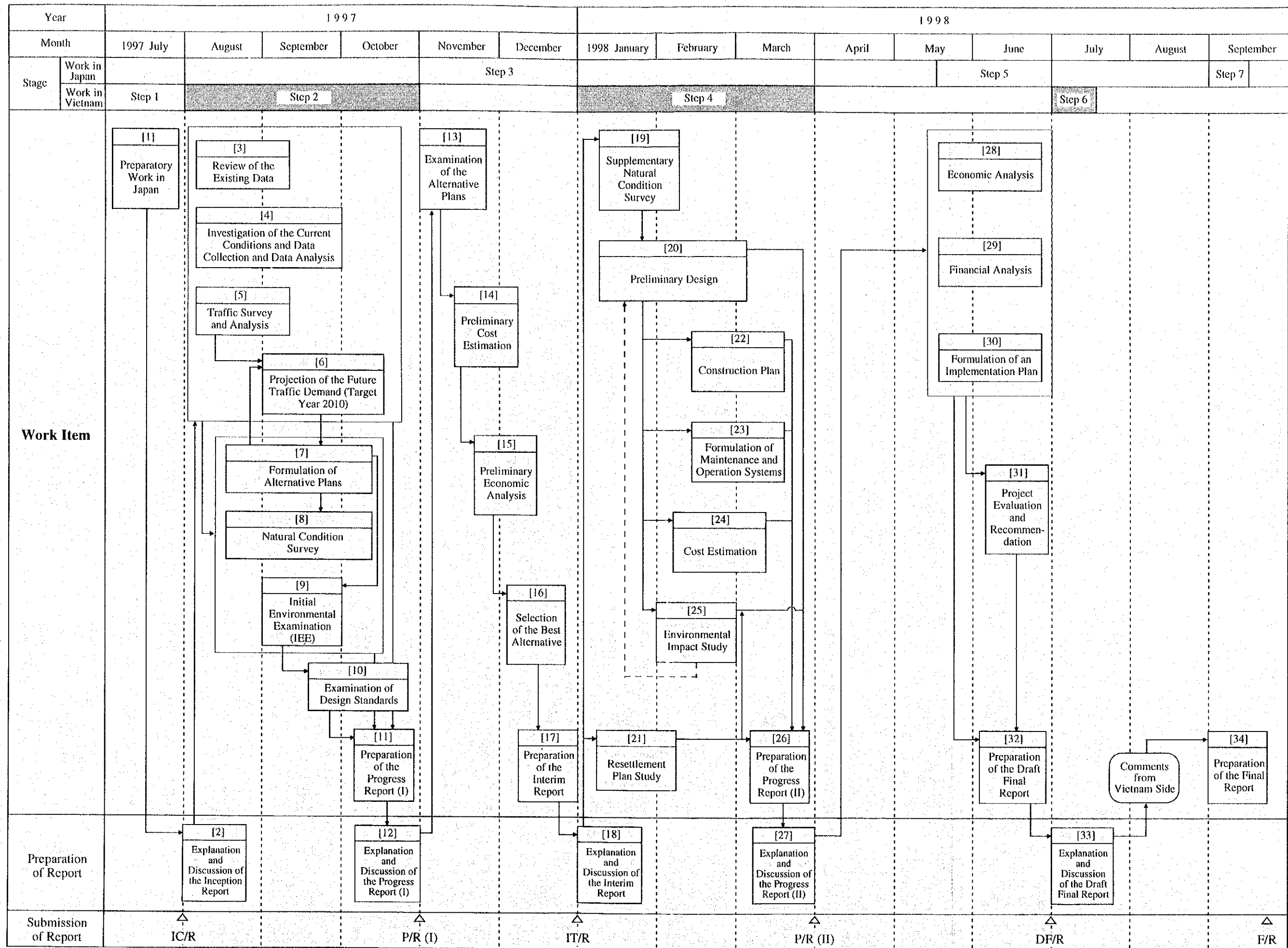
1.4 Scope of the Study

In principle, the Study was carried out based on the scope of work which was agreed upon between PMU Thang Long and JICA Preparatory Study Team in March 1997 and the Study covers the following items.

- 1) Data collection and analyses
- 2) Site survey
- 3) Traffic forecast
- 4) Comparative study of alternatives
- 5) Evaluation of alternatives
- 6) Preliminary design
- 7) Planning and scheduling of construction works
- 8) Maintenance program
- 9) Cost estimate
- 10) Environmental Impact Assessment (EIA)
- 11) Economic and financial analyses and project evaluation
- 12) Implementation program
- 13) Conclusions and recommendations

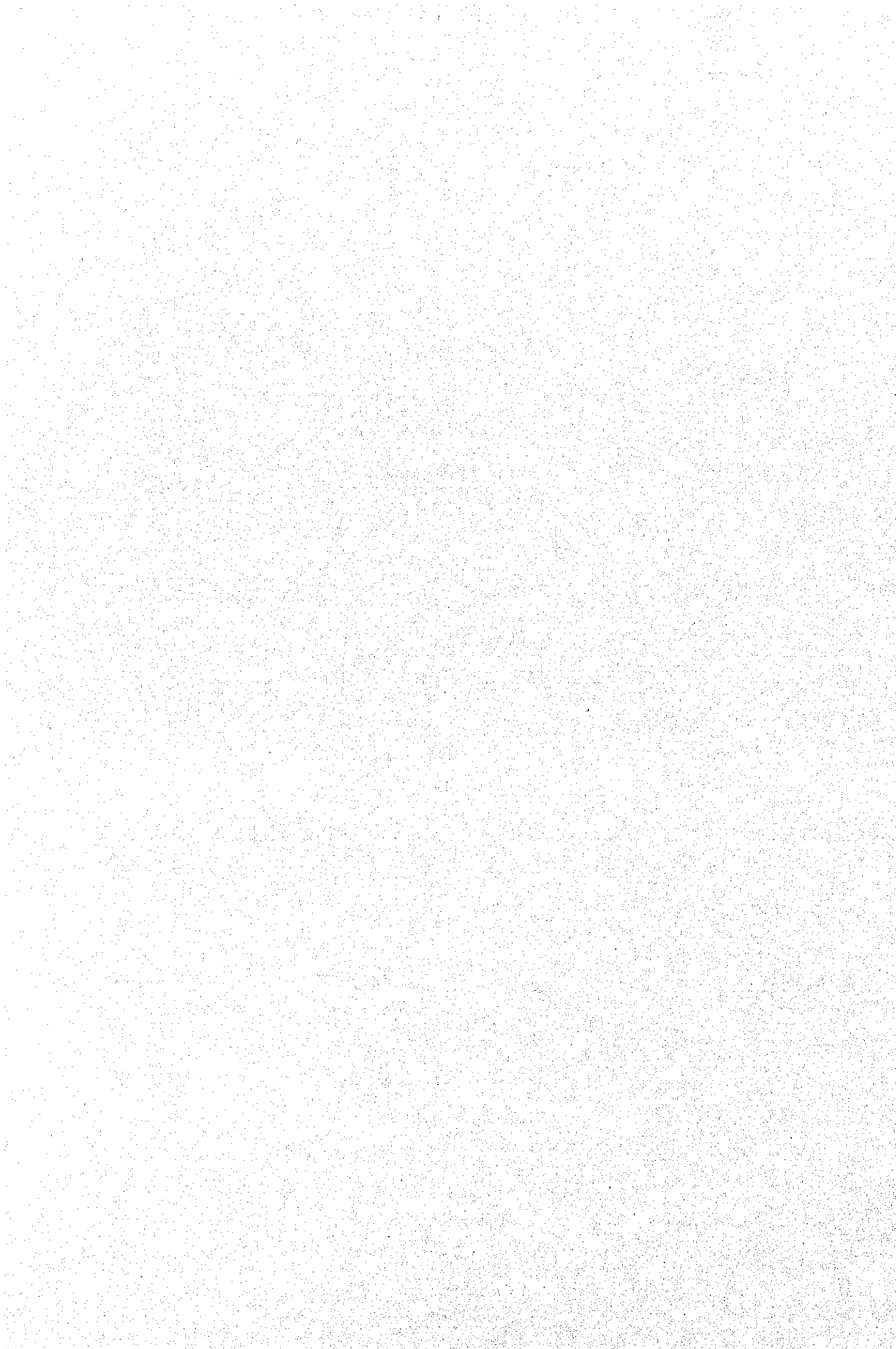
A general work diagram of the Study which indicates both approximate timing to carry out each work item and their relation is shown in Figure 1.4.1.





IC/R: Inception Report, P/R (I): Progress Report (I), IT/R: Interim Report
P/R (II): Progress Report (II), DF/R: Draft Final Report, F/R: Final Report

Figure 1.4.1 Work Flow Chart



1.5 Study Organization

The Study was carried out by the Study Team organized by JICA, which was comprised of members of Pacific Consultants International (PCI) and their Vietnamese counterparts organized by the Government. The Study Team was headed by Mr. Minoru Shibuya of PCI. For the duration of the Study the following committees were set up.

- JICA Advisory Committee
- Vietnam Steering Committee

The Study organisation is shown in Figure 1.5.1.

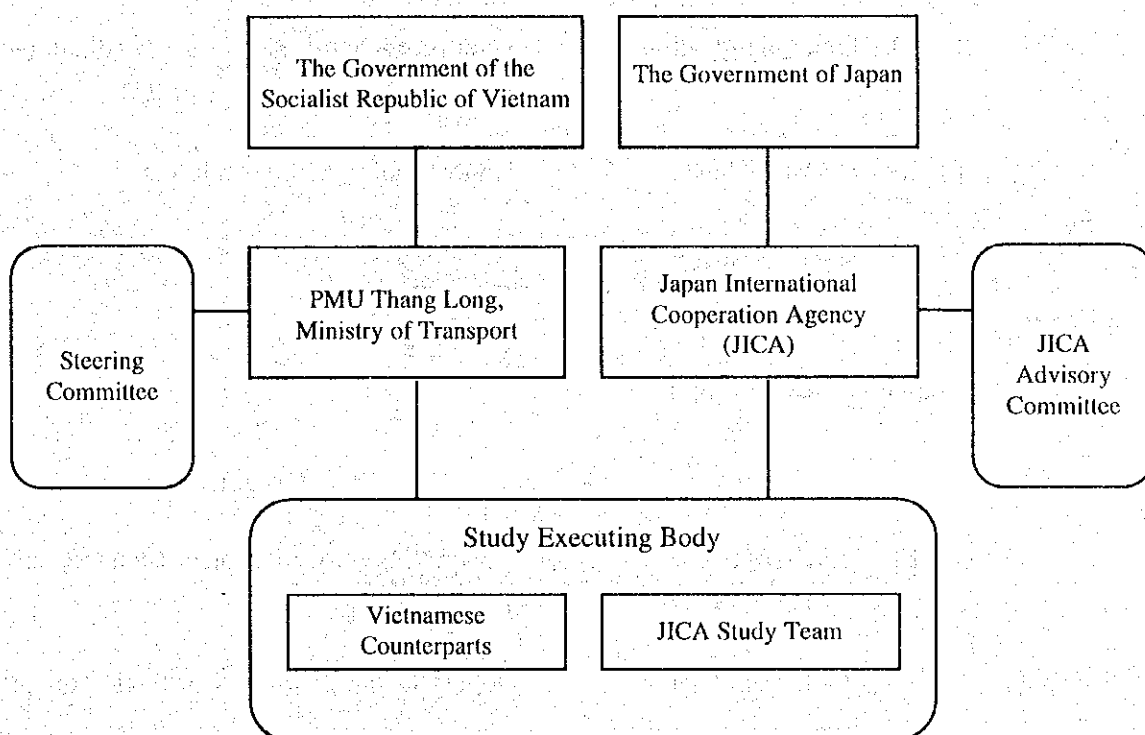


Figure 1.5.1 Study Organisation

The members of the Government's steering committee (Vietnamese Steering Committee) and counterparts (Vietnamese Counterparts), JICA Advisory Committee and JICA Study Team, for execution of the study are as follows:

(1) Vietnamese Steering Committee

<u>Name</u>	<u>Organisation</u>
1) Mr. Pham Quang Tuyen	Vice Minister of Transport as the Chairman
2) Mr. Nguyen Manh Kiem	Vice Minister of Construction
3) Mr. Nguyen Ngoc Nhat	General Director of Infrastructure of MPI
4) Mr. Vu Van Tri	Director of Evaluation Committee of Transport Construction Quality Control and Management Bureau
5) Mr. Tran Quang Minh	Deputy General Director of Planning and Investment Department of MOT
6) Mr. To Anh Tuan	Hanoi Deputy Chief Architect
7) Mr. Tran Trung Tru	General Director of Project Management Unit Thang Long

(2) Vietnamese Counterparts

<u>Name</u>	<u>Organisation</u>
1) Mr. Tran Trung Tru	General Director of Project Management Unit Thang Long
2) Mr. Pham Van Khanh	Deputy General Director of PMU Thang Long
3) Mr. Dang Dinh Thai	Director of Technical Department of PMU Thang Long
4) Mr. Vu Dinh Hoa	Chief Administration/Project Manager of PMU Thang Long
5) Mr. Vu Hoc Le	Senior Engineer of PMU Thang Long
6) Mrs. Giang Thi Phuong	Manager of Economic and Planning Department of PMU Thang Long

(3) JICA Advisory Committee

<u>Name</u>	<u>Organisation</u>
1) Mr. Nobuyuki Kashima	Chairman Honsyu-Shikoku Bridge Authority
2) Mr. Takeshi Honda	Ministry of Construction
3) Mr. Satoshi Iijima	Overseas Economic Cooperation Fund
4) Mr. Motonori Tsuno	Overseas Economic Cooperation Fund

(4) JICA Study Team

<u>Name</u>	<u>Assignment</u>
1) Mr. Minoru Shibuya	Leader/Bridge Planning/Transport Planning
2) Mr. Kenji Maruoka	Road Planning
3) Mr. Osamu Ohtsu	Traffic Survey/Analysis and Demand Forecast
4) Dr. J. Fisher	Bridge Design (Superstructure)
5) Mr. Satoshi Watabe	Bridge Design (Foundation)
6) Mr. Akira Shikichi	Construction Planning/Cost Estimation
7) Mr. Tsuyoshi Ito	Environmental Assessment
8) Mr. Takeshi Omura	Resettlement Plan Study
9) Mr. Noriaki Arai	Natural Condition Survey
10) Mr. Masamitsu Toriyama	Socio-Economic/Financial Analysis
11) Mr. Yoshiyuki Arita	Coordinator

1.6 Final Report

The Final Report contains summarised findings and recommendations followed by the descriptions of all the works carried out in the Study, including cost estimates and all analyses which support our conclusion and recommendations.

The Final Report consists of the volumes as listed below:

- Volume I : Summary
- Volume II : Main Report
- Volume III : Appendix
- Volume IV : Drawings