Japan International Cooperation Agency(JICA)

Water Supply Authority, Department of Housing and Urban Planning, Ministry of Communication, Transport, Post and Construction, Lao PDR

The Study on Vientiane Water Supply Development Project in Lao People's Democratic Republic

Final Report

Volume IV Annex for Master Plan

January 2004

Nihon Suido Consultants Co., Ltd.

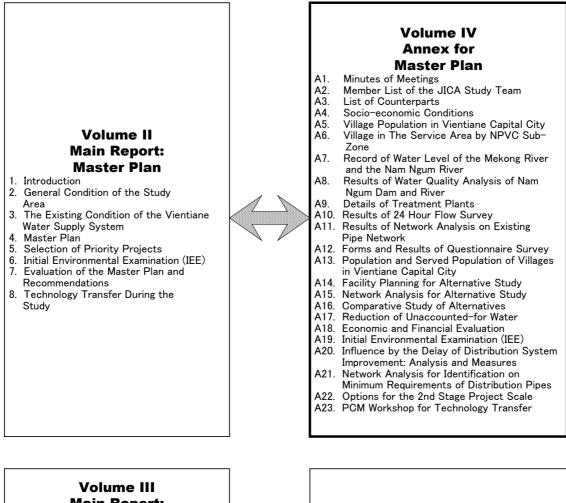
Exchange Rate Applied 1 US Dollar = Yen 119 as of April30, 2003 1 US Dollar = Lao Kip 10,720 as of April30, 2003

Volume I Executive Summary

- Introduction
 Development Plan of Vientiane
- Capital City
- 3. Existing Conditions
- 4. Master Plan
- 5. Feasibility Study
- 6. Conclusions and Recommendations

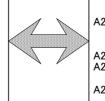
Final Report

Structure of the



Main Report: Feasibility Study

- 1. Introduction
- Framework of the Feasibility Study
 Preliminary Design of the Priority
- Projects
- 4. Strengthening of Institutional Capacity
- 5. Preliminary Cost Estimates for the 1st Stage Project
- 6. Project Implementation and
- Disbursement Schedule
- 7. Economic and Financial Analysis
- 8. Environmental Impact Assessment
- 9. Project Evaluation
- 10. Conclusions and
 - Recommendations



Volume V Annex for Feasibility Study

- A24. Served Population and Water Demand of Respective Villages Covered by the Priority Projects
- A25. Details of Preliminary Design A26. Analysis on Non-Domestic Water
- Consumption
- A27. NPVC Challenges for Water Conservation/ Water Demand Management (WC/WDM)
- A28. Economic and Financial Analysis
- A29. Drawings

THE STUDY ON VIENTIANE WATER SUPPLY DEVELOPMENT PROJECT IN LAO PEOPLE'S DEMOCRATIC REPUBLIC

FINAL REPORT

List of Annex

THIS VOLUME

Volume IV : Annex for Master Plan

- Annex 1 MINUTES OF MEETINGS
- Annex 2 MEMBER LIST OF THE JICA STUDY TEAM
- Annex 3 LIST OF COUNTERPARTS
- Annex 4 SOCIO-ECONOMIC CONDITIONS
- Annex 5 VILLAGE POPULATION IN VIENTIANE CAPITAL CITY
- Annex 6 VILLAGE IN THE SERVICE AREA BY NPVC SUB-ZONE
- Annex 7 RECORD OF WATER LEVEL OF THE MEKONG RIVER AND THE NAM NGUM RIVER
- Annex 8 REAULTS OF WATER QUALITY ANALYSIS OF NAM NAGUM DAM AND RIVER
- Annex 9 DETAILS OF TREATMENT PLANTS
- Annex 10 RESULTS OF 24 HOUR FLOW SURVEY
- Annex 11 RESULTS OF NETWORK ANALYSIS ON EXISTING PIPE NETWORK
- Annex 12 FORMS AND RESULS OF QUESTIONNAIRE SUREVEY
- Annex 13 POPULATION AND SERVED POPULATION OF VILLAGES IN VIENTIANE CAPITAL CITY
- Annex 14 FACILITY PLANNING FOR ALTERNATIVE STUDY
- Annex 15 NETWORK ANALYSIS FOR ALTERNATIVE STUDY
- Annex 16 COMPARATIVE STUDY OF ALTERNATIVES

- Annex 17 REDUCTION OF UNACCOUNTED-FOR WATER
- Annex 18 ECONOMIC AND FINANCIAL EVALUATION
- Annex 19 INITIAL ENVIRONMENTAL EXAMINATION (IEE)
- Annex 20 INFLUENCE BY THE DELAY OF DISTRIBUTION SYSTEM IMPROVEMENT: ANALYSIS AND MEASURES
- Annex 21 NETWORK ANALYSIS FOR IDENTIFICATION ON MINIMUM REQUIREMENTS OF DISTRIBUTION PLPES
- Annex 22 OPTIONS FOR THE 2ND STAGE PROJECT SCALE
- Annex 23 PCM WORKSHOP FOR TECHNOLOGY TRANSFER

SEPARATED VOLUME

Volume V : Annex for Feasibility Study

- Annex 24 SERVED POPULATION AND WATER DEMAND OF RESPECTIVE VILLAGES COVERED BY THE PRIORITY PROJECT
- Annex 25 DETAIL OF PRELIMINARY DESIGN
- Annex 26 ANALYSIS ON NON-DOMESTIC WATER CONSUMPTION
- Annex 27 NPVC CHALLENGES FOR WATER CONSERVATION / WATER DEMAND MANAGEMENT (WC/WDM)
- Annex 28 ECONOMIC AND FINANCIAL ANALYSIS
- Annex 29 DRAWINGS