

Water Supply and Sanitation Project Preparation Handbook

Volume 2: Case Studies

Identification Report for Port City
Immediate Improvement Project for Port City
Pre-Feasibility Report for Farmville
Pre-Feasibility Report for Port City

Brian Grover, Nicholas Burnett and Michael McGarry



A contribution to the International Drinking Water Supply and Sanitation Decade by the World Bank, the United Nations Development Programme, the Canadian International Development Agency, and the Swiss Directorate of Development Cooperation.

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UNDP Project Management (INT/82/002) Report Number 1

This is one of three companion volumes which, together, comprise the Water Supply and Sanitation Project Preparation Handbook.

Volume 1: Guidelines

Volume 2: Case Studies

Identification Report for Port City
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Pre-Feasibility Report for Port City

Volume 3: Case Study

Feasibility Report for Port City

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Volume 2

CASE STUDIES

Identification Report for Port City Project
Immediate Improvement Project for Port City
Pre-Feasibility Report for Farmville
Pre-Feasibility Report for Port City

Volume 3

CASE STUDY

Feasibility Report for Port City

FOREWORD

Close to three billion people in the developing countries will need improved water supply and sanitation services by 1990. This is the ambitious goal of the International Drinking Water Supply and Sanitation Decade (IDWSSD).

Among the major impediments to meeting this goal are a scarcity of expertise for planning good projects and the lack of globally accepted project preparation standards. The limited human and financial resources in developing countries can be used more efficiently if water and sanitation projects are initially prepared to standards meeting requirements of approving authorities and financing agencies.

The Steering Committee of United Nations Agencies involved in promoting the Decade was urged by developing country representatives to set out, and make uniform to the extent practicable, the information requirements of the agencies which provide financial assistance for water supply and sanitation projects. At the request of this Steering Committee, the World Bank commissioned the development of this Project Preparation Handbook by three consultants, as part of the Bank-executed United Nations Development Programme (UNDP) Project "Information and Training for Low Cost Water Supply and Sanitation".

The Handbook consists of a set of Guidelines, setting out the information requirements, and accompanying Case Studies which illustrate how the Guidelines might be followed for specific projects. The Guidelines and Case Studies are mainly addressed to proponents of water supply and sanitation projects in the developing countries. They explain the process of project development from the perspective of the agencies which might be asked to provide financial assistance. Guidelines are suggested and illustrated for the reports expected on completion of three successive stages of pre-investment planning for specific projects: identification, pre-feasibility and feasibility. In addition a Guideline is provided for preparing a program of rural water supply and sanitation.

Guidelines cannot be a substitute for professional judgement. They provide guidance, suggest approaches and methods of evaluation, and must be sufficiently comprehensive to be useful in many situations, covering projects of various complexities. They must be used flexibly. The extent to which specific suggestions are followed, and in what detail, must be left to the professional judgement of the planner. As a consequence, the selection of staff responsible for project preparation, and local and foreign consultants to assist them, if necessary, is the most important step an agency takes in project development.

Flexibility in the application of the Guidelines has been a major consideration in their preparation. The three project Guidelines of Volume 1 do not distinguish between urban, semi-urban or rural projects because the principles and methods elaborated, properly applied, will

result in the most cost effective project, regardless of location or size. The final Guideline, however, is specially designed for a rural program, involving a number of sub-projects for water supply and sanitation.

Because urban and semi-urban projects provide better opportunities for demonstrating the full scope of the Guidelines, urban projects have been selected for the Case Studies of Volumes 2 and 3. Even within that framework, the Case Studies demonstrate different levels of preparation, reflecting projects of different complexities: a simple project for a small town; an immediate improvement program and a large and complex project for a major city.

Many individuals in the bilateral and multilateral agencies and other organizations named in the following list have reviewed the Guidelines and, in most cases, the Case Studies. Their thoughtful comments, all of which are gratefully acknowledged, led to substantial revisions and improvements to the Handbook. Listing these reviewers does not imply in any sense that these documents reflect all their comments or represent the official policies of their institutions. Given the variety of institutional objectives, it would be impossible, indeed, undesirable, to have one single, rigid standard. What the authors have attempted to do is to present a methodology and approach which will result in a plan for a quality project whatever its complexity. Project proponents and development agencies should together decide on the degree of detail that any specific project requires. In this sense, hopefully, the documents do represent a standard acceptable to many institutions. The IDWSSD Donor Catalogue is a first source of information about the particular requirements of various international development agencies.

This Handbook will remain valuable only as long as it remains up to date. We therefore anticipate future revisions to reflect new developments and experience gained in the use of the documents. Similarly, the addition of other Case Studies might be helpful. We would appreciate receiving comments and suggestions for incorporation in future volumes. Users of the Handbook are encouraged to send comments derived from its practical application to the address below.

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November 1983

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This Handbook is a product of the World Bank-executed UNDP Project INT/82/002 "INFORMATION AND TRAINING FOR LOW COST WATER SUPPLY AND SANITATION" . Other project outputs which will become available during 1984 are films, audio-visual training modules, manuals, guidelines and visual learning kits. A Project Brochure describing objectives and target audiences as well as the format and content of the material to be produced is available from the Applied Research and Technology Division, Water Supply and Urban Development Department (WUD), World Bank, 1818 H Street, N. W., Washington, D. C. 20433, U.S.A.

Project INT/82/002 was initiated with financial support from the Canadian International Development Agency (CIDA), the National Film Board of Canada (NFB), the United Nations Center for Human Settlements (UNCHS), the United Nations Development Programme (UNDP), and the World Bank. Subsequently, the United Nations Children's Fund (UNICEF), the Finnish International Development Agency (FINNIDA), the Gesellschaft fur Technische Zusammenarbeit (GTZ) of the Federal Republic of Germany and the Directorate of Development Cooperation of Switzerland provided financial assistance.

In addition to INT/82/002, the following UNDP projects executed by the World Bank contributed to this Handbook: the Regional Offices for the Preparation of Water and Sanitation Projects in Asia (RAS/81/001) and in Africa (RAF/82/004), the Field Testing and Technological Development of Rural Water Supply Handpumps Project (INT/81/026) and the Research and Development in Integrated Resource Recovery Project (GLO/80/004).

Finally, we wish to express our gratitude to the authors of the Handbook, Brian Grover, Nicholas Burnett and Michael McGarry, who deserve credit for a difficult job well done, and to the collaborators whose contributions have greatly improved these documents: Mr. Leo Lawson, Director of Engineering of the National Water Commission of Jamaica; Mr. John Sipper, Economic Editor, Asian Development Bank; and Mr. Joseph Freedman, Rural Water and Sanitation Adviser of the World Bank's Water Supply and Urban Development Department.

The support of all these agencies, projects and individuals is gratefully acknowledged.

LIST OF REVIEWERS

The following organizations have reviewed one or more volumes of the Project Preparation Handbook. Their comments have greatly contributed to the value of these documents and are hereby gratefully acknowledged by the International Drinking Water Supply and Sanitation Decade Steering Committee, the World Bank, and the authors. The list of reviewers includes those who commented on the initial version of the guidelines (Volume 1) beginning early in 1981. It is possible, therefore, that some of the individuals named no longer hold the positions described.

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PREFACE TO THE CASE STUDIES

The Case Studies in Volumes 2 and 3 of this Handbook are typical reports which illustrate the Guidelines in Volume 1. All refer to a fictional area including Port City and the town of Farmville, in a fictional developing country, Optima. While fictional, however, the Case Studies are loosely based on a real example and contain credible physical, engineering, financial, and economic information. And while the reports refer principally to a large urban area, they do include a component for a smaller town and for some rural villages.

There are five Case Study reports. The Identification Report would typically be prepared by a sector ministry or agency in the country, here the Port City Water and Sewerage Commission (PCWSC). The other four reports could have been prepared by the agency itself but in this example were prepared by consultants working with the agency.

The Immediate Improvement Project for Port City, the Pre-feasibility Report for Farmville, and the Pre-feasibility Report for Port City are examples of pre-feasibility reports, the first two in a form suitable for presentation to an international development agency for funding and the third as an interim report toward the preparation of the Feasibility Report for Port City. The Immediate Improvement Project and the Farmville Report both illustrate that a comprehensive feasibility report is often not necessary for some financing agencies to decide on a relatively small loan, either for the rehabilitation of existing systems in a large town like Port City or for a comprehensive project in a small town like Farmville. A full Feasibility Report is normally essential, however, before a lending agency can agree to help finance a major project like that proposed for Port City.

The variety of reports included in these Case Studies is intended to demonstrate that the Guidelines should be followed in a flexible manner. Indeed, none of the Case Studies conforms entirely to the Guidelines. The format of any report must be adapted to meet the needs of the particular project it covers and the audience for whom the report is intended.

An important lesson that the Case Studies illustrate is the need to build into the report-producing process some decision points to ensure that those preparing the project are complying with the instructions of their client. In these Case Studies, this is achieved through the inclusion of a rigid schedule for production of and comment upon the reports, as well as through the use of Technical Memoranda requesting decisions from the Steering Committee overseeing the consultants' work.

A second important lesson is the need to integrate data and skills from several disciplines, including engineering, financial, economic, sociocultural, health, and management, in the process of preparing

projects. As authors of these fictional Case Studies, using ideas and data from various sources, we found this very difficult to do, even among our small team. Yet, we urge all those concerned with preparing real projects to work together, right from the start - it may be difficult but it is essential.

These Case Studies have been prepared for educational purposes. While they demonstrate the reports that normally make up the project preparation process, they do differ from those that would be found in a real case in a number of ways and thus should not be imitated exactly:

- a) There is less technical substantiation here than would normally be provided. For reasons of space various items of background information, such as maps, geological records, and copies of legislation and regulations have been excluded. Many technical details concerning field conditions, choice of materials, technical specifications, alternative designs and other engineering matters are also omitted because such conventional topics are well understood by experienced project planners. In the feasibility study (Volume 3), many such details are assumed to be available in Technical Appendices which would normally be produced to substantiate the report but are not actually included herein.
- b) Design criteria, unit costs, and other technical data discussed in the Case Studies are specific to the Optima and Port City situation. Operation and maintenance assumptions are likewise specific to these hypothetical cases. Similar parameters for real projects should always be specific to those projects; they should also be analyzed carefully.
- c) The figures in the Case Studies have been specially prepared for reduction to single page size in black and white. In reality, they would usually be both larger and more comprehensive and might well include color.
- d) Some of the terminology used in these reports may not be standard in some countries. A figure illustrating some of the engineering terms used follows this preface. A list of units and acronyms is included in each Case Study. It is suggested that terms, units and acronyms acceptable to the local authorities be used for specific projects.

In writing these Case Studies, the authors have benefited tremendously from the assistance of many. The reports incorporate material that originated from Doug Manion, Elizabeth Harwood, and Harry McPherson of their firms and from Al Heron and Surong Bulakul of the World Bank. Production of the reports has been a major challenge involving Erika

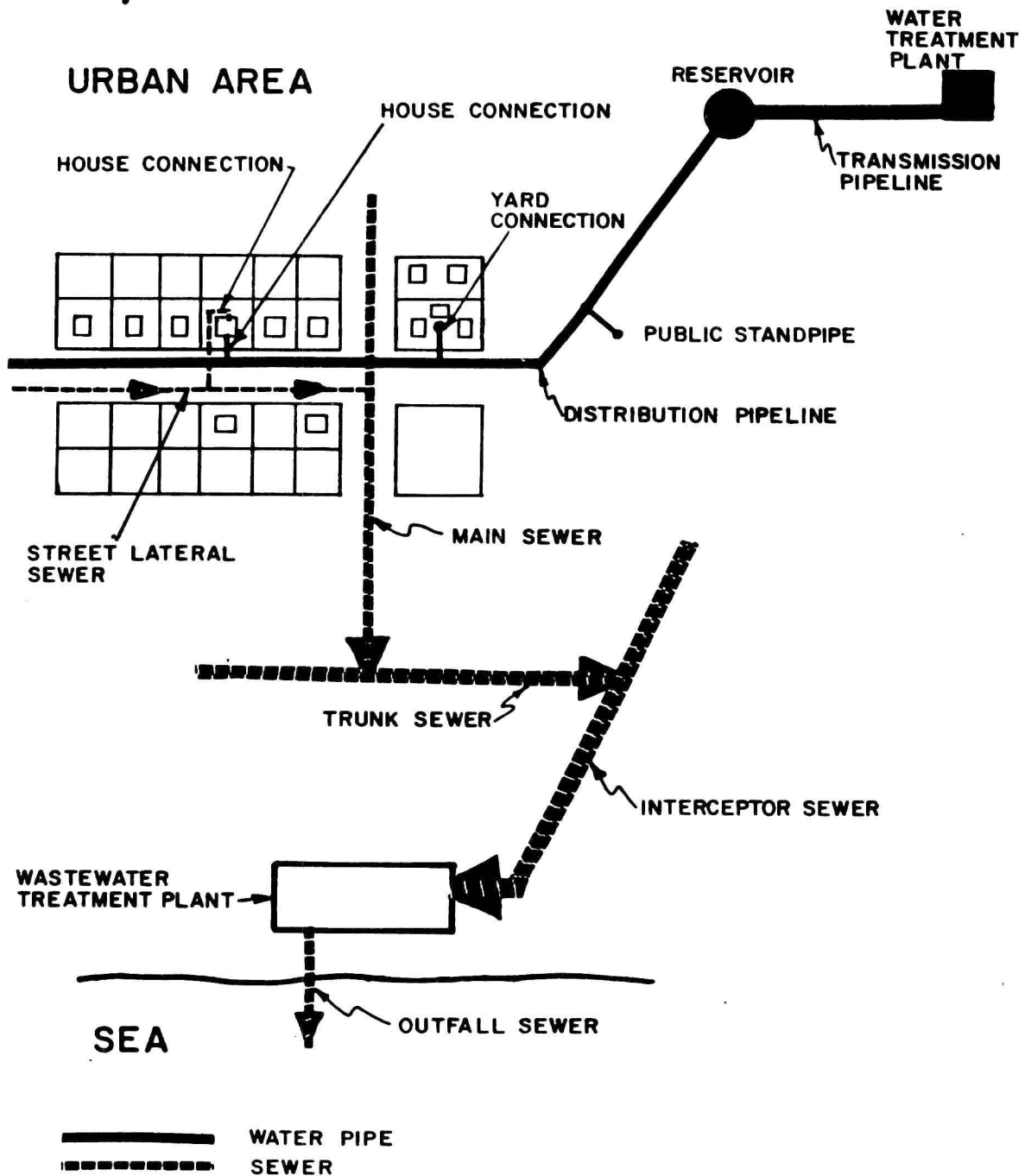
Sheehan, Dilshad Karim, Robert McWilliams and Maria Fenyvesi of their firms and Kathy Kerekes and Sylvie Brebion of the World Bank. The Review Committee of the World Bank, including Mr. Leo Lawson, provided invaluable guidance, as did the many external reviewers listed previously.

The entire exercise could not have been completed without the constant support of John Kalbermatten. To all of these we offer our thanks. We nevertheless accept full responsibility for the final product, a Handbook which we hope will benefit those faced with the task of preparing real projects to provide people with improved services for water supply and sanitation.

Ottawa
June, 1983

Brian Grover
Nicholas Burnett
Michael McGarry

SCHEMATIC DIAGRAM TO ILLUSTRATE TERMS



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Note

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