

図 6.3

クローン網 (1910年) と地盤高 (1984年)

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK

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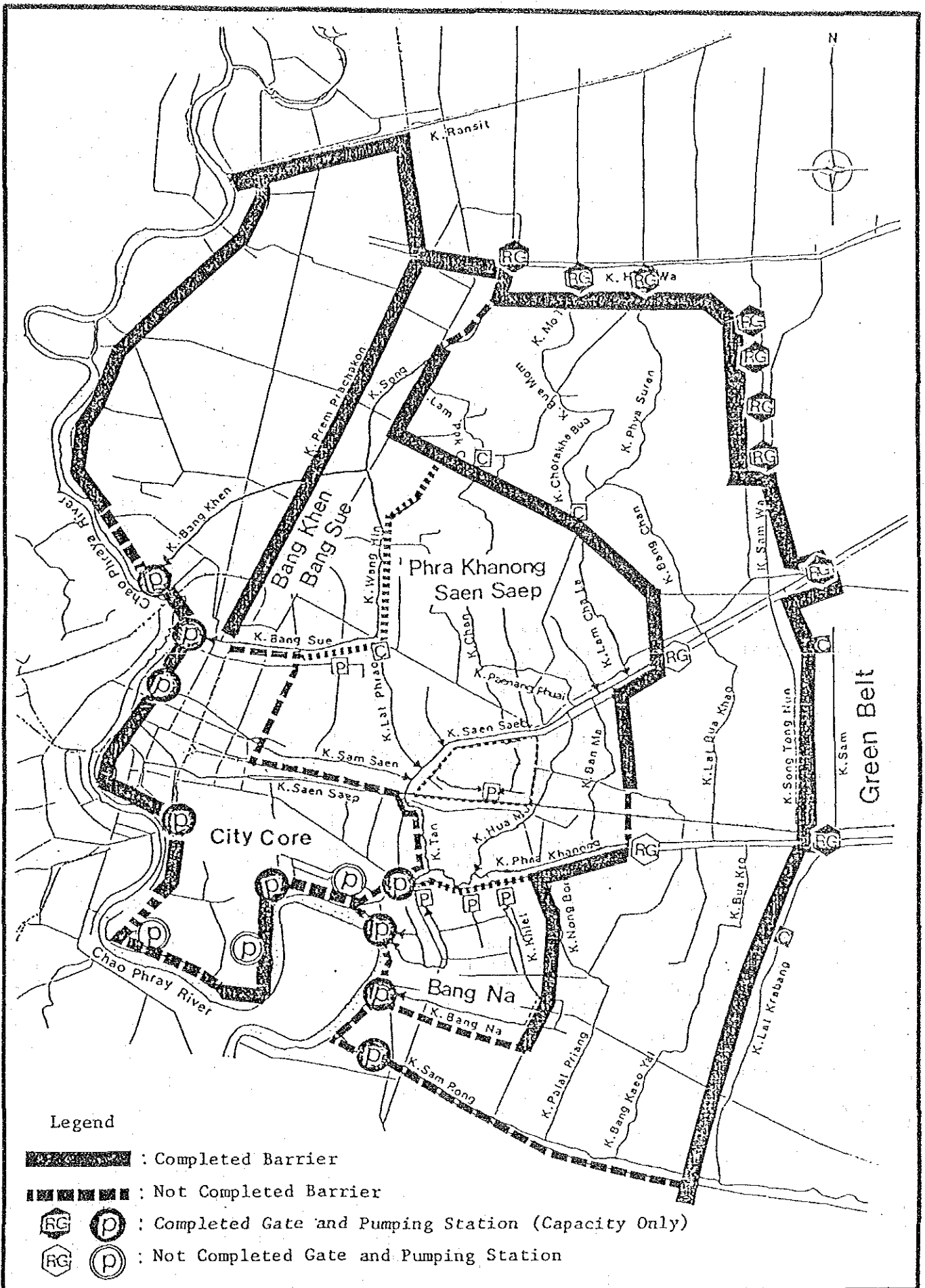
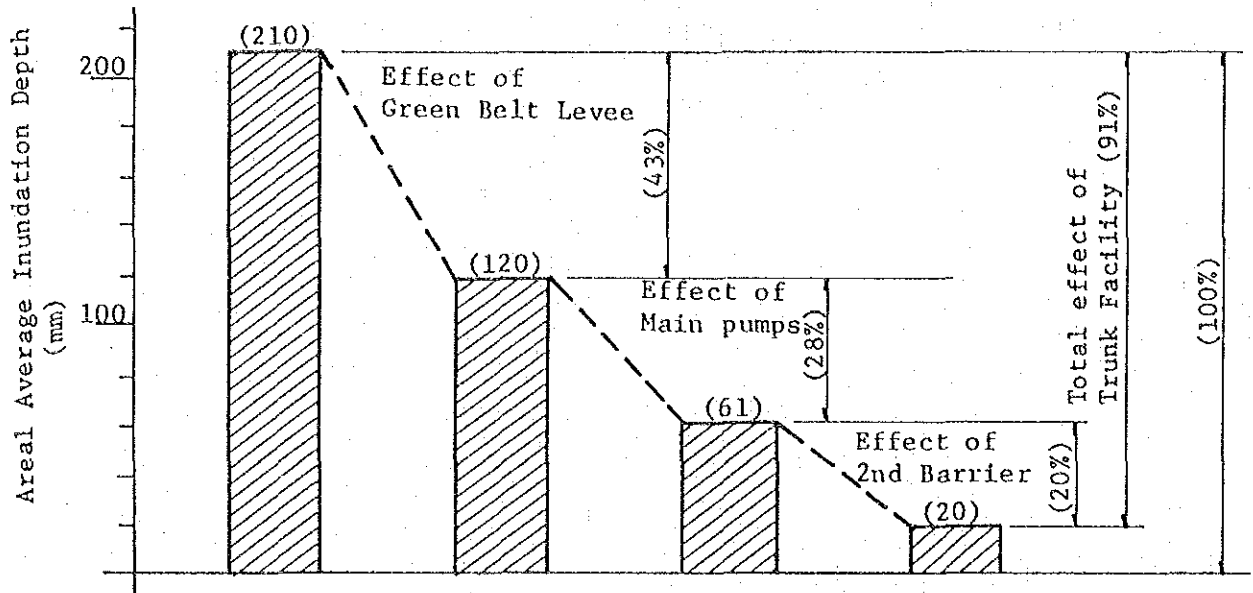


図 7.1

洪水対策基幹施設の建設状況 (1985年)

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(1) Hydraulic Effects of Trunk Facilities
(In the Master Plan Area)



Note Topography condition: Present, 1985
Model: 9 Basin storage Model

(2) Observed Effect in Klong Saen Saeb

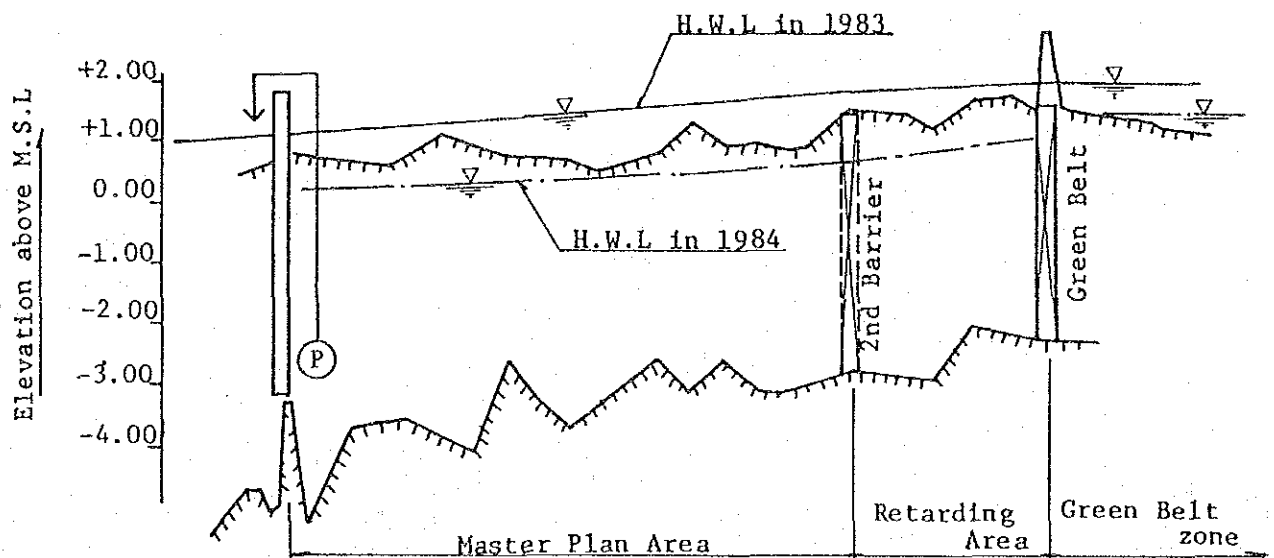
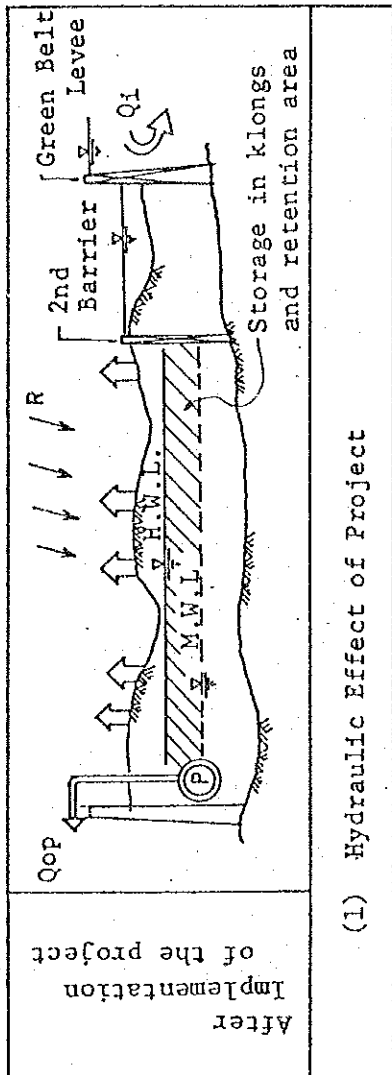


図 7.2

洪水対策基幹施設による水理的効果

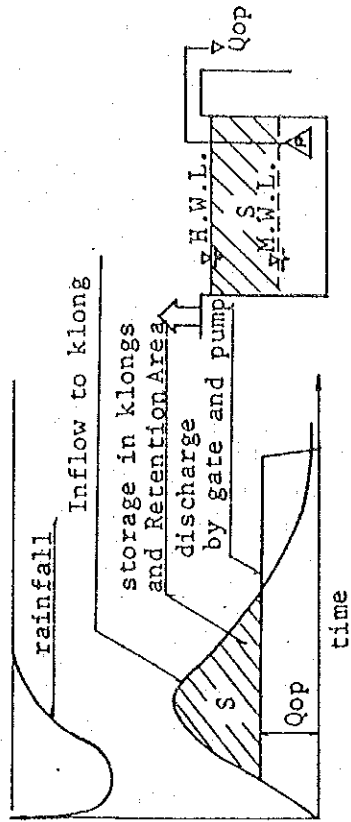
1. Concept of Rainwater Storage



Implementation of the project After

(1) Hydraulic Effect of Project

Rainfall-Discharge-Storage



(2) Relationship between rainfall, discharge and storage

Legend

- Q1: Inflow from outer area
- Qo: Drain by pumping station and gate
- R: Rainfall
- S: Storage in klong and retention area
- Ri: Accumulated rainfall
- H.W.L.: High water level
- M.W.L.: Maintenance water level

2. Design Storage Capacity

Polder	① Areal Average Design Rainfall	② Storage Capacity in Klong & Retention Area	③ Storage Capacity in (%)
Bang Khen Bang Sue	* 90mm	23mm	26%
Phra Khanong	** 82mm	48mm	58%
Bang Na	* 76mm	34mm	45%

Note: *--Design point rainfall is 91mm/day as 2 years frequency.

**--Design point rainfall is 120mm/day as 5 years frequency.

図 7.3

雨水貯留機能の概念と計画貯留規模

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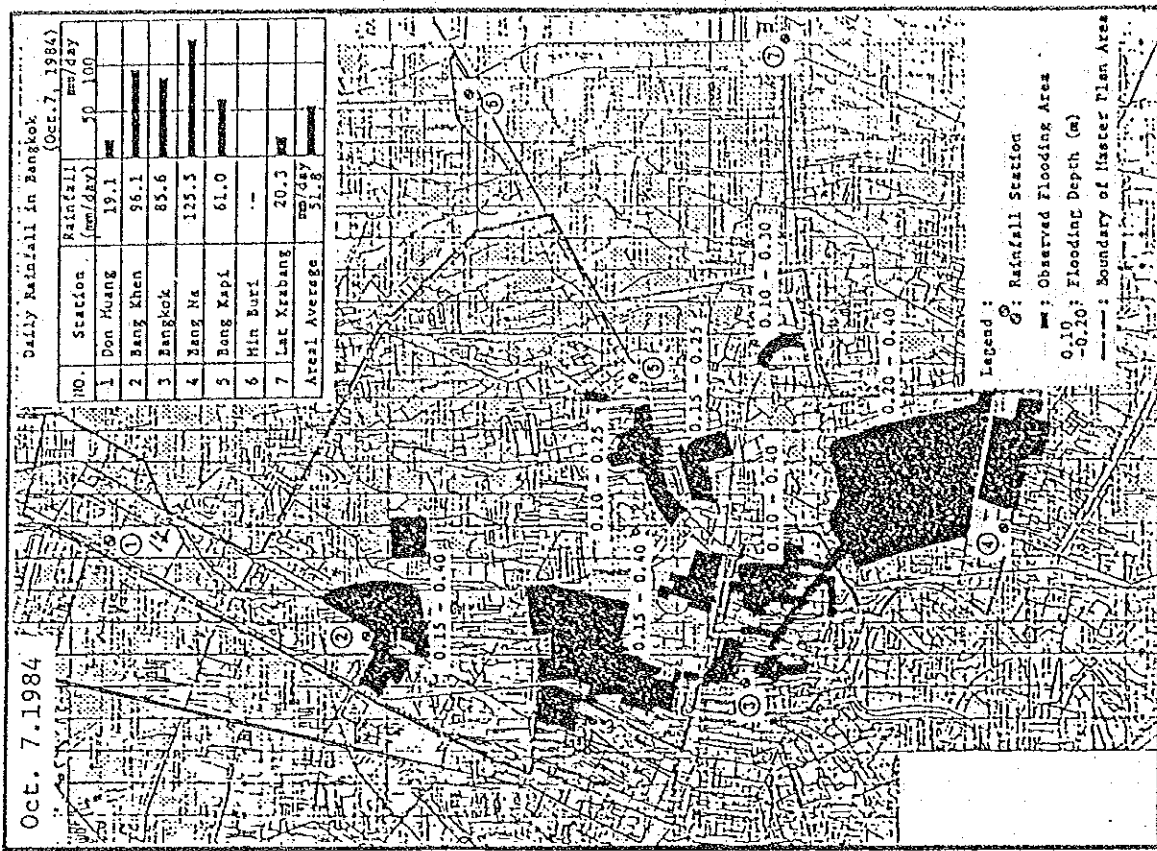
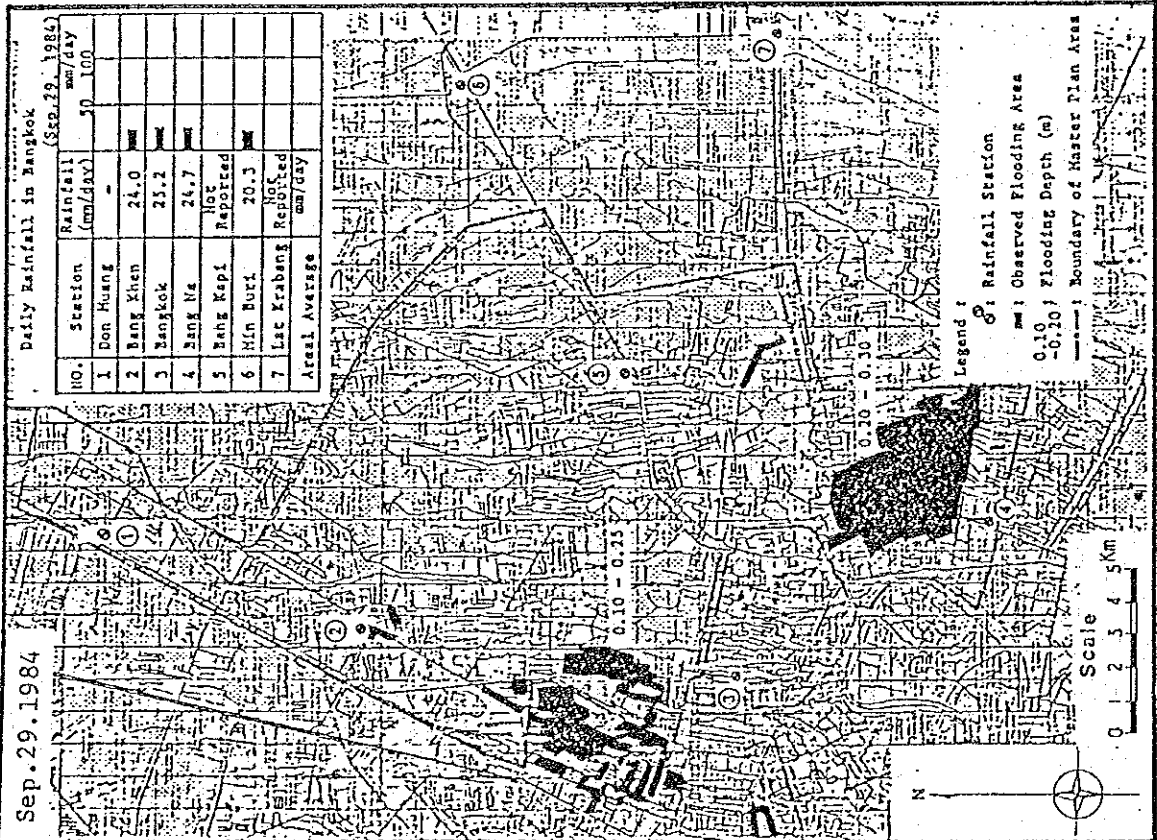


図 7. 4 局所浸水解消のための重点地区

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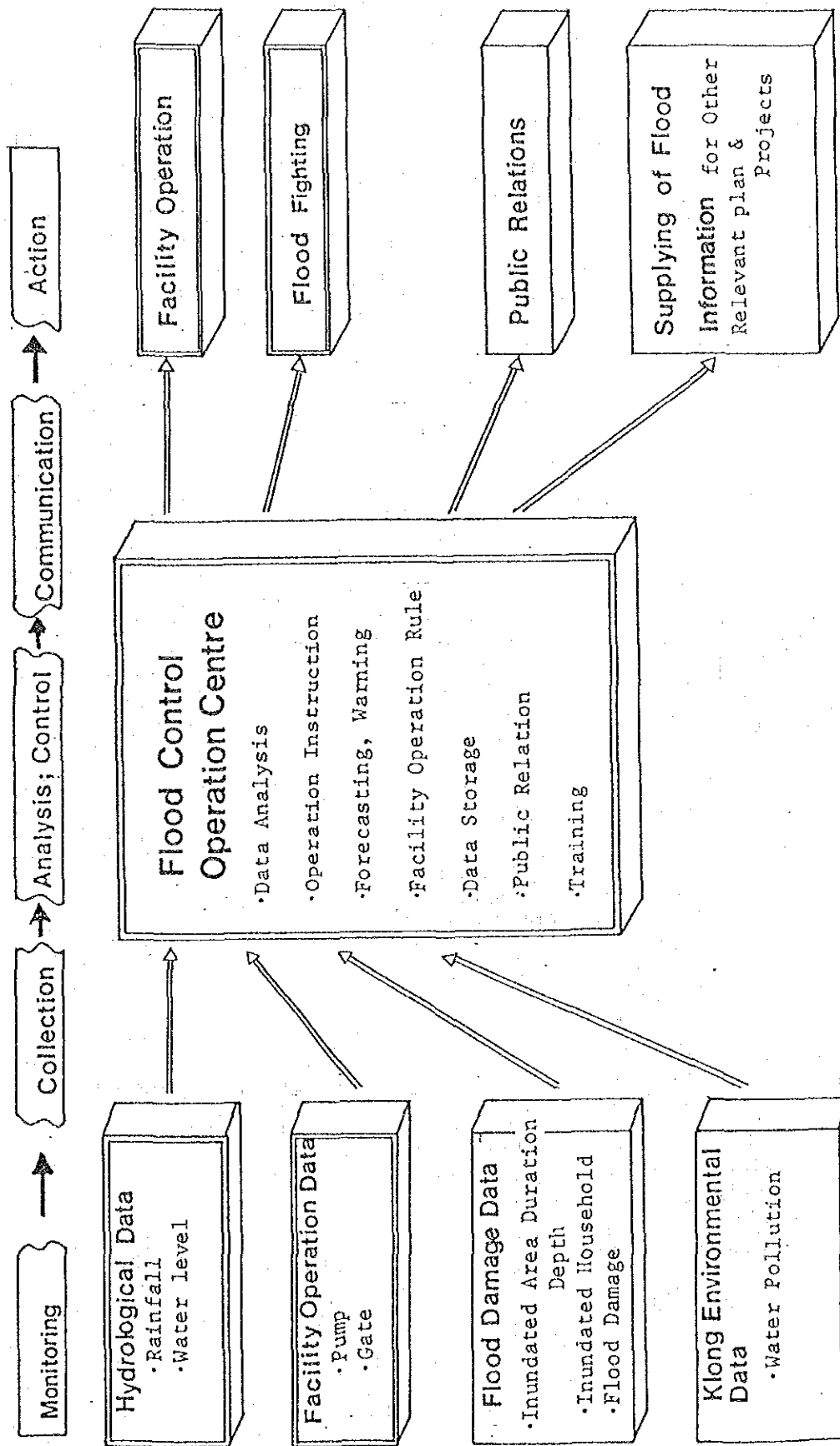


図 7.5 洪水管理システムの概念

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System Diagram of Monitoring System

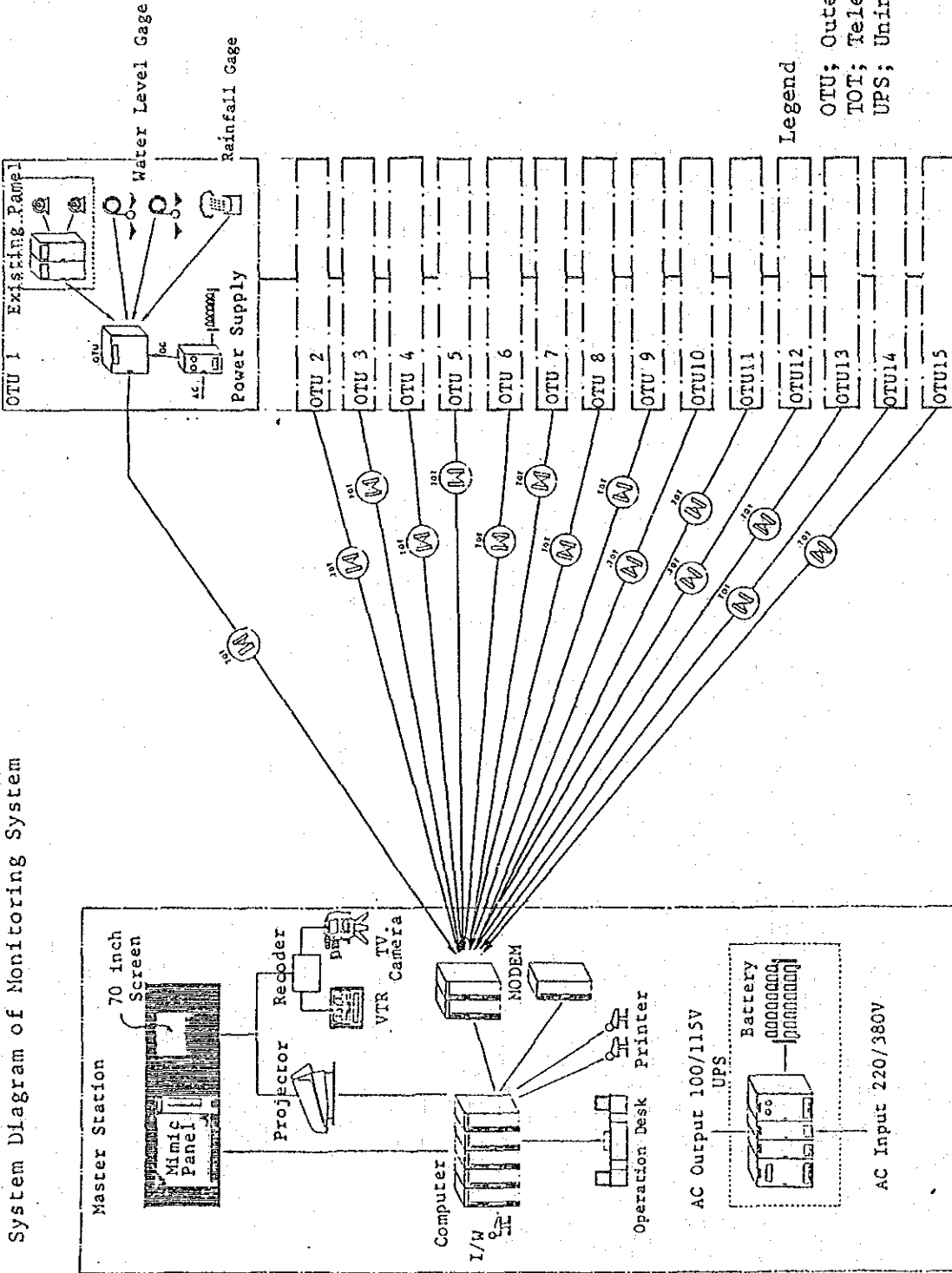


図 7.6

モニタリング箇所の配置

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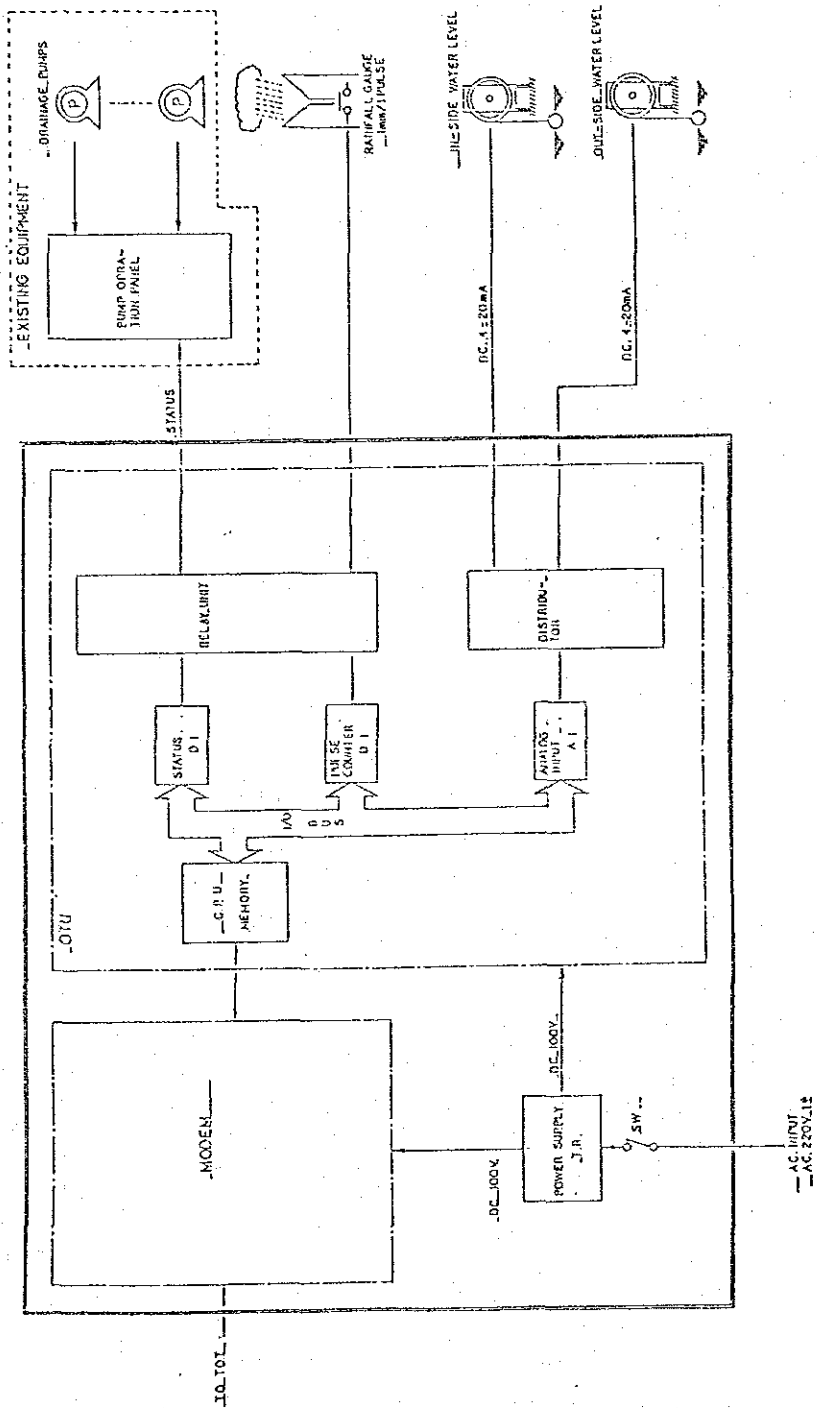
図 7.7 モニタリングシステムのダイアグラム (その1)

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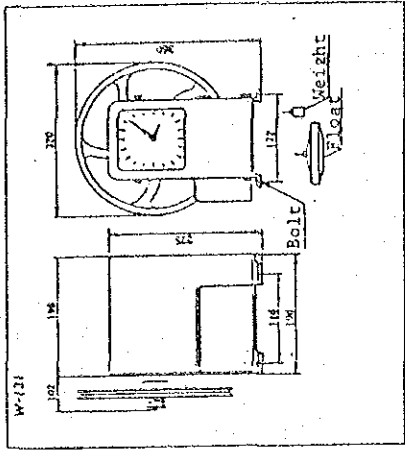
LEGEND
Newly Stations

- Rain gauge and two water level meters
- Rain gauge and water level meters
- ▲ Two water level meters

(1) Block Diagram of Outer Station Terminal Unit (OTU)



(2) Water Level Gage (Sample)



(3) Rainfall Gage (Sample)

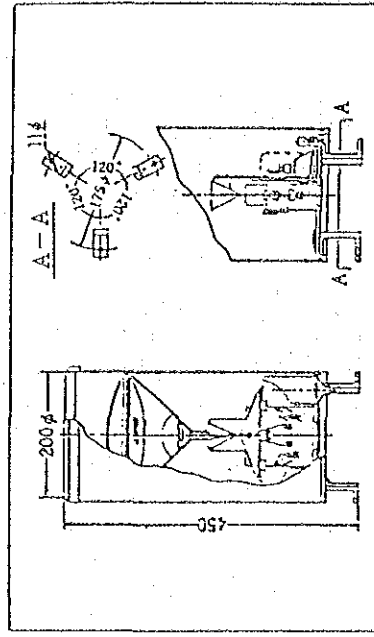


図 7.8

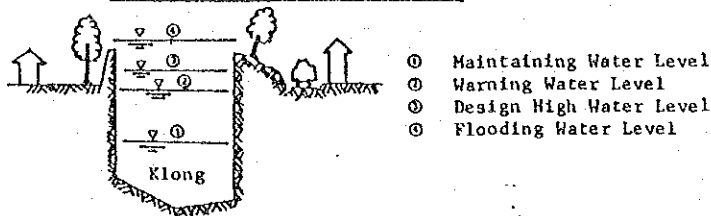
モニタリングシステムのダイアグラム (その2)

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK

(1) Outline of the Flood Control Regulations

	Action of Centre	ESTIMATED WATER LEVEL	FACILITY OPERATION			FLOOD FIGHTING	ANNOUNCEMENT
			Gate of Barrier	Main Pump	Sub-Main Pump		
Standard in not Rainy Time	Carefully control and operation of facilities to avoid extrem conflict due to the water level difference between inside and outside area					---	---
Standard in Rainy Time	Occurrence of Rainfall Rainfall Forecasting by Meteorological Dept. Confirmation of Rainfall & Water Level (Monitoring) Flood Forecasting Analysis (Estimation of Water Level)	Maintaining W.L.	Close in principle	Pre-Discharge	---	---	---
		Excess of Maintaining W.L.	Close	Full-Discharge	Pre-Discharge	Preparation	---
		Excess of Warning W.L.	---	Full-Discharge	Full-Discharge	Calling (Augment Patrolling)	Caution
		Excess of Design High W.L. (Flood Level)	---	---	Full-Discharge	Emergency Action Augment Fighters, Movable Pumps & Sand Bags	Warning
		Flooding (Overbank Spillage)	---	---	---	---	(Evacuation)

Kinds of Water Level in Klong



(2) Concept of Predischarge Operation of Main Pumping Station

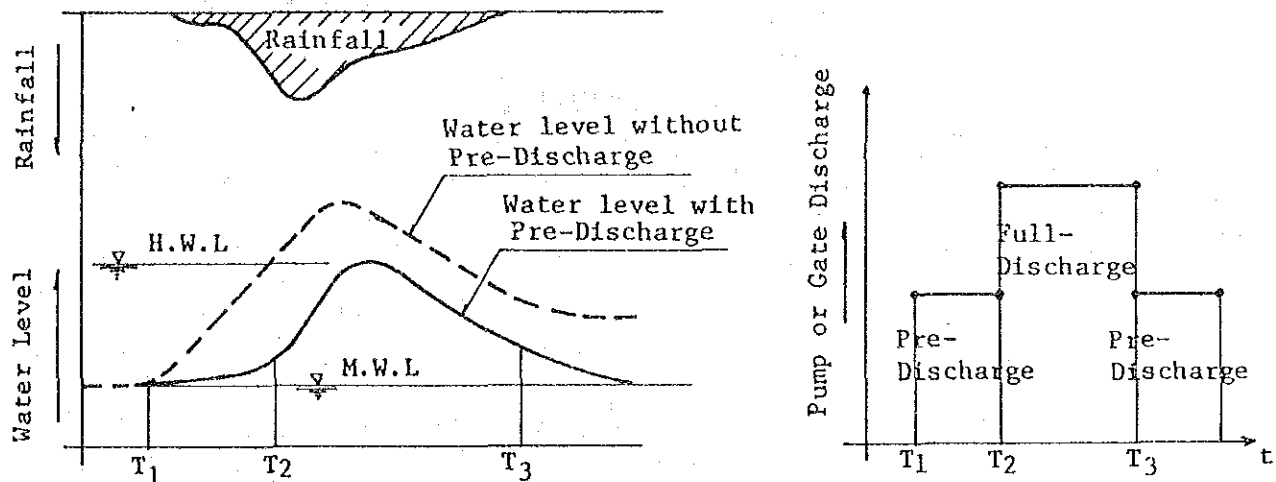
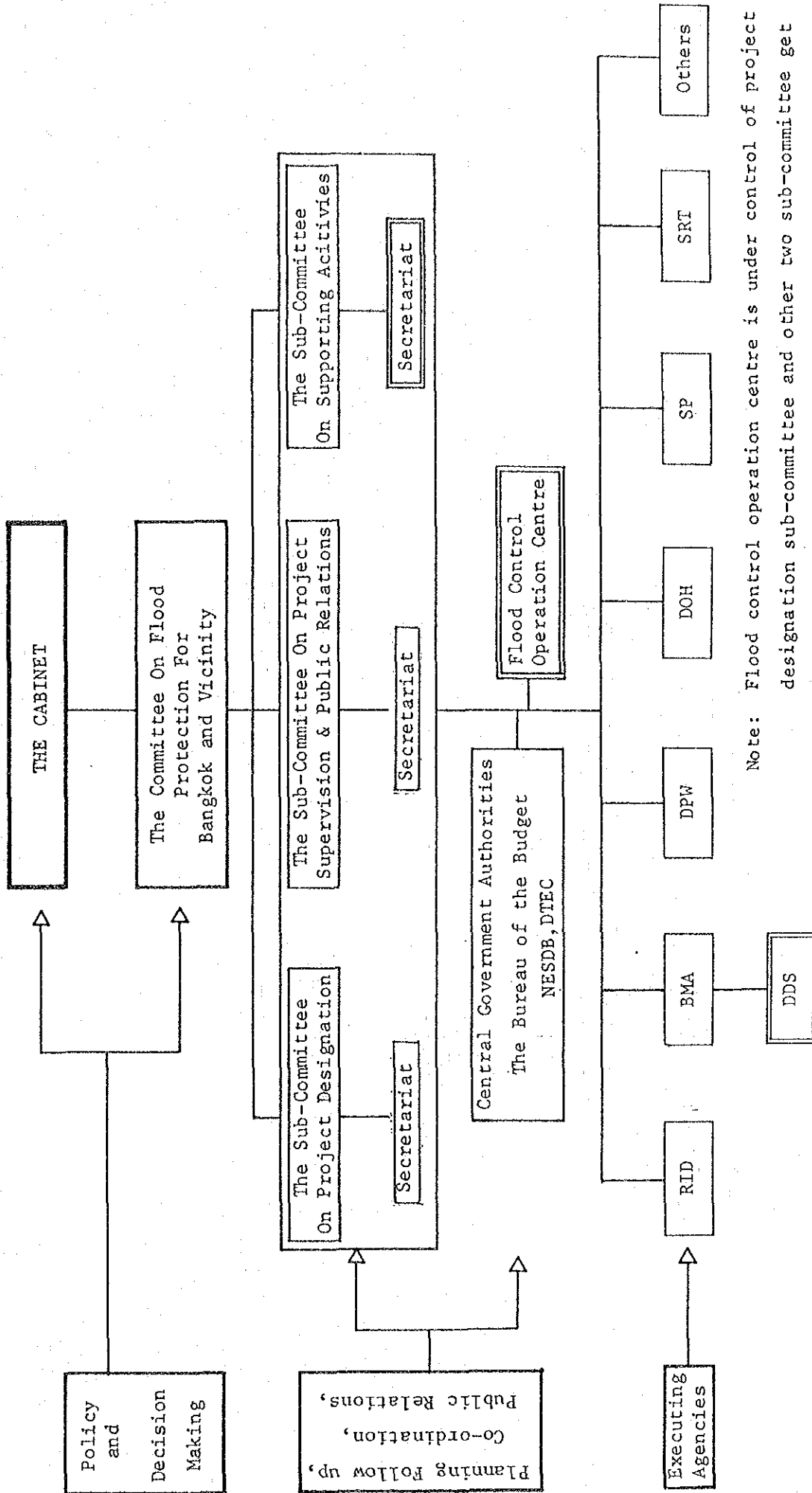


図 7.9

洪水管理基準 (案)

第8章

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Note: Flood control operation centre is under control of project designation sub-committee and other two sub-committee get information from the centre.

事業実施のための提案組織図

図 8. 1

---proposed organizations to be set up/strengthened

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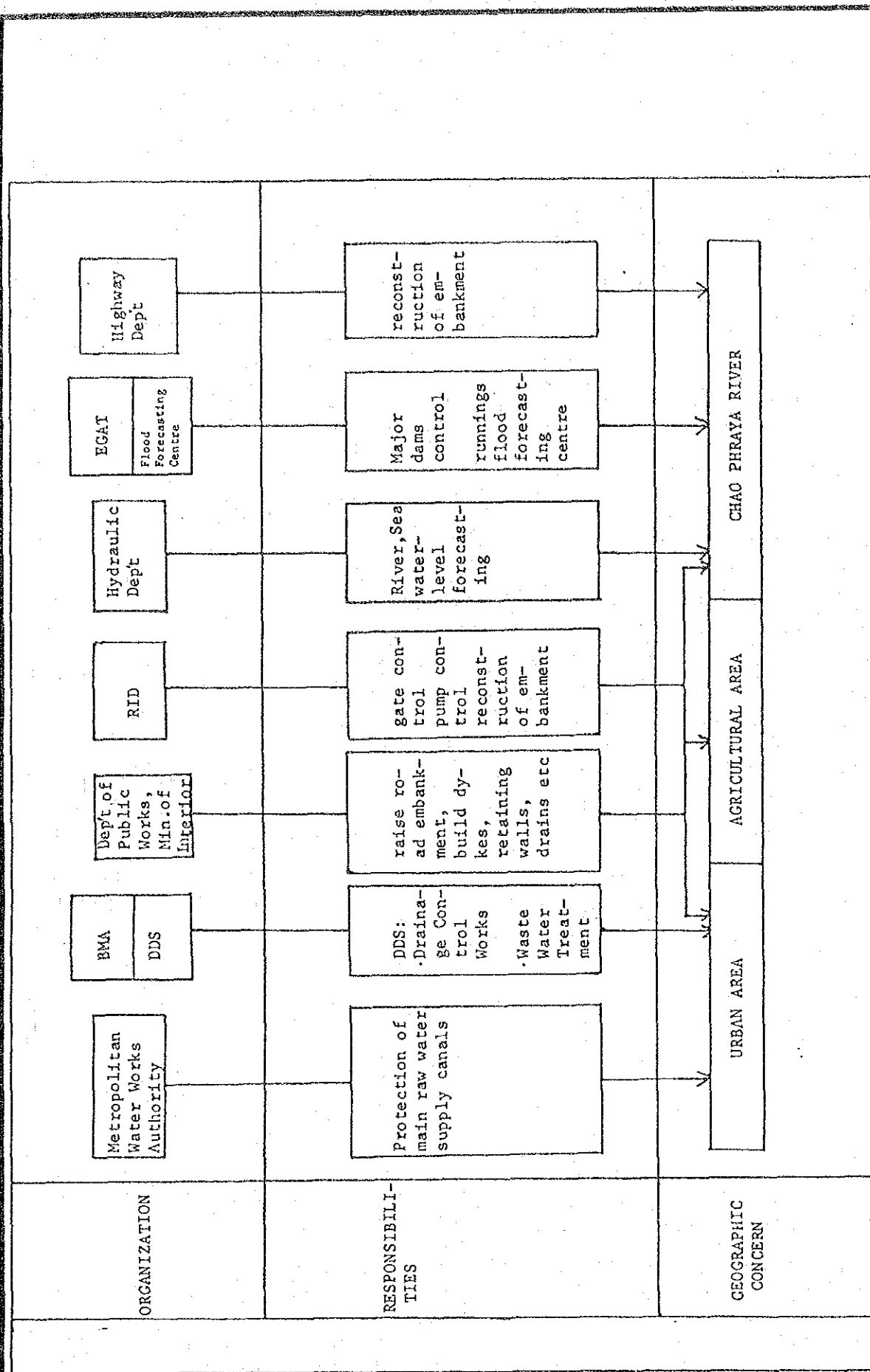


図 8.2 現在における事業実施のための組織とその役割

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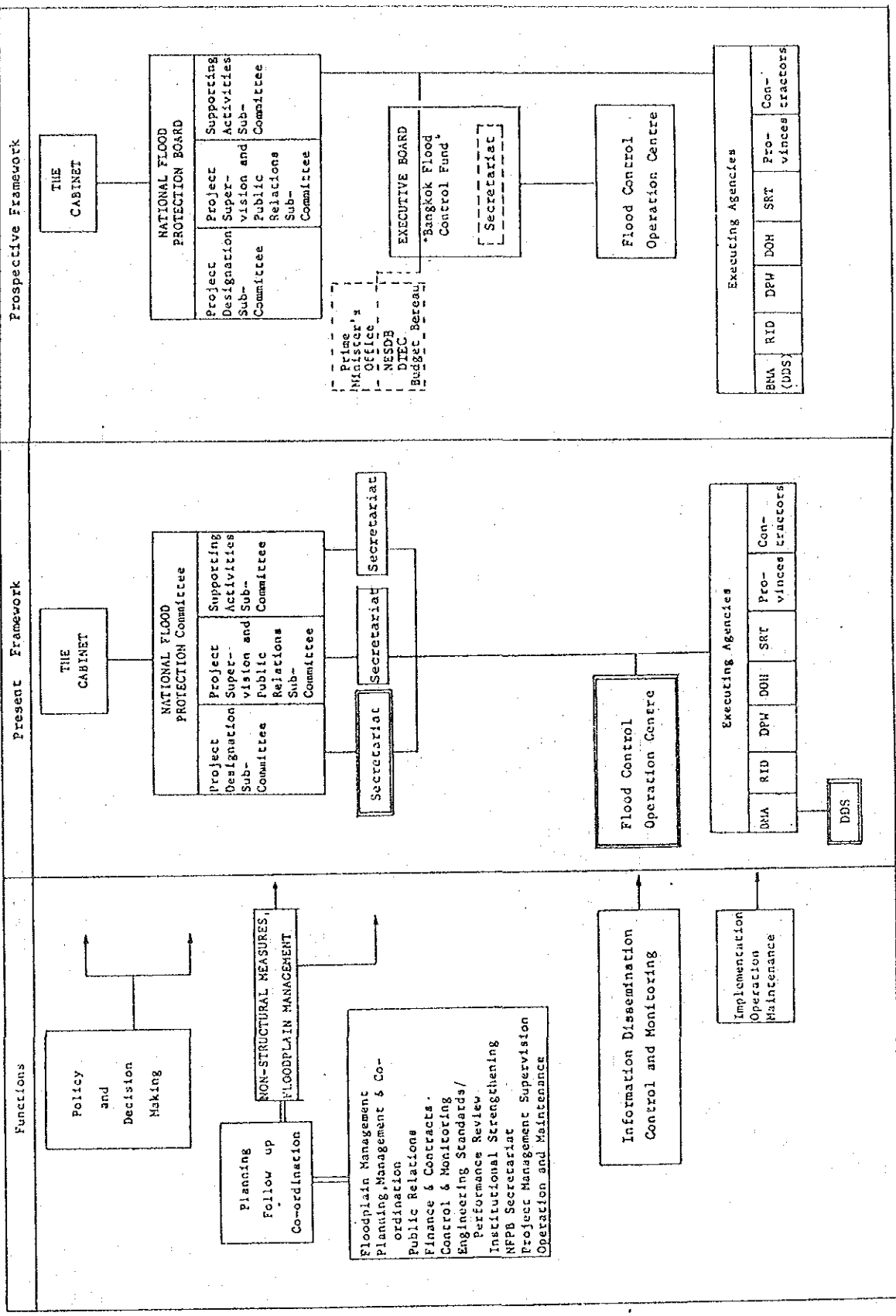
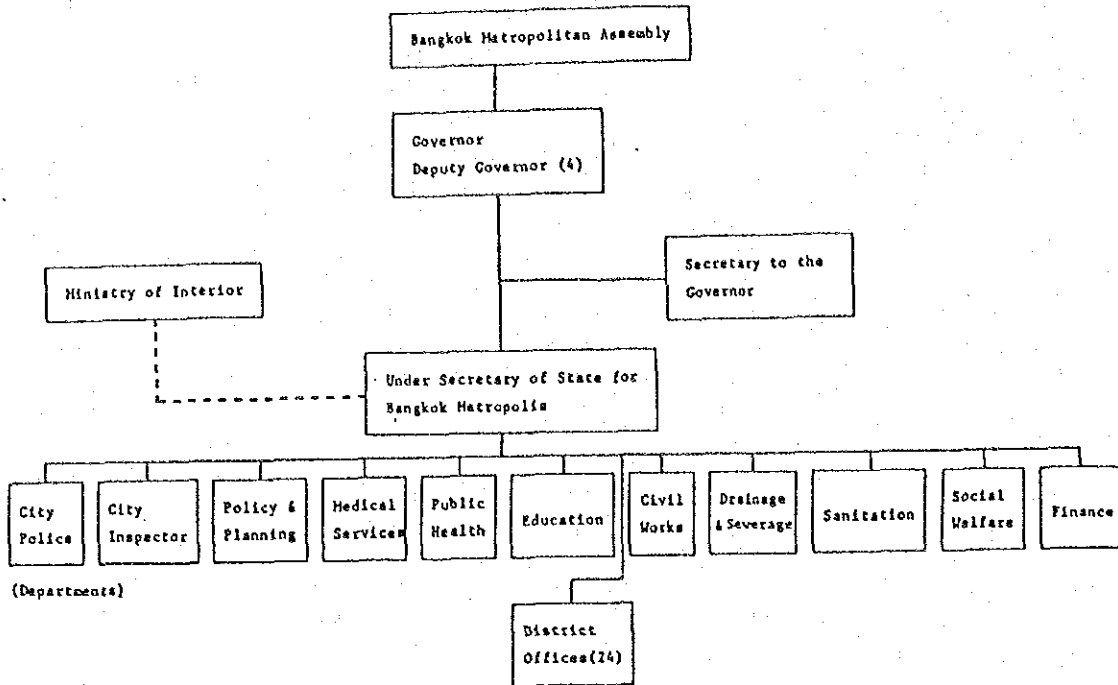


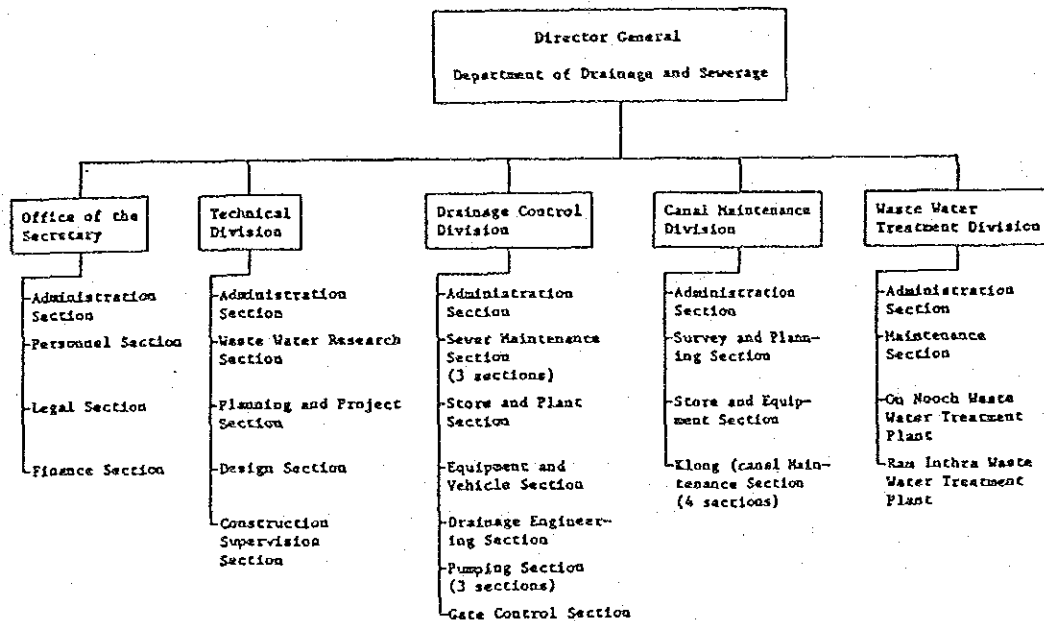
図 8.3

現在及び将来における事業実施のための提案組織とその役割

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BANGKOK METROPOLITAN ADMINISTRATION

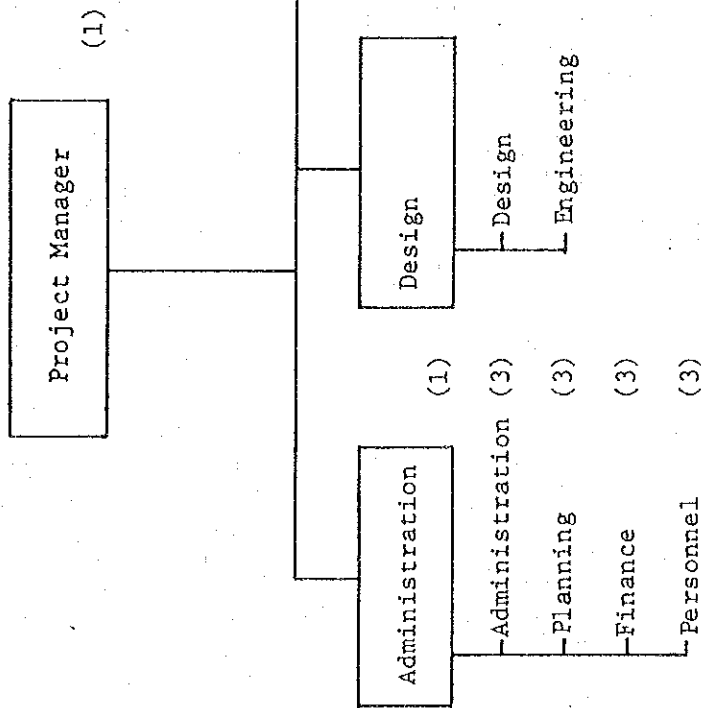


DEPARTMENT OF DRAINAGE AND SEWERAGE

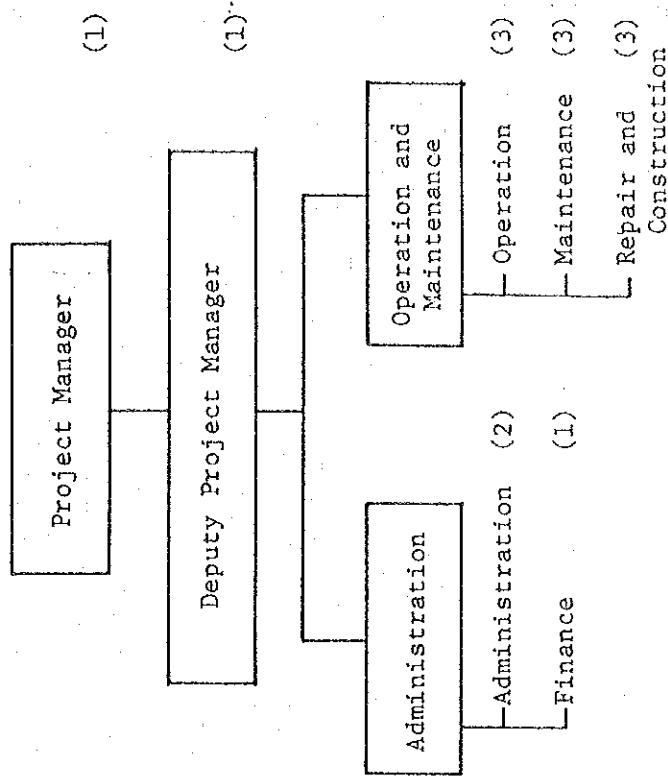
図 8.4

現在のBMA及びDDSの組織図

Construction Stage



Operation Stage



() -- number of personnel employed

図 8.5

建設及び管理運営のための提案組織図

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN BANGKOK

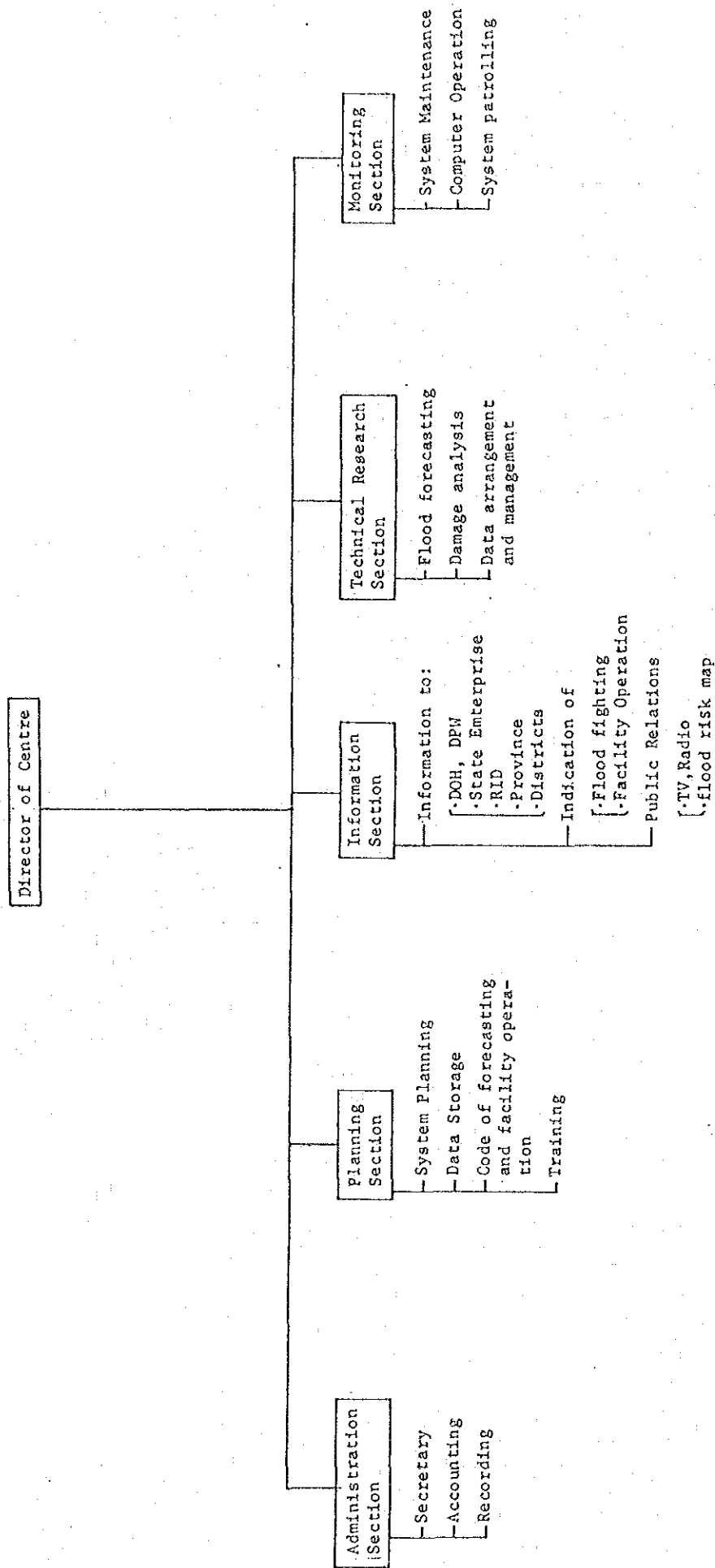


図 8.6

洪水管理センターの提案組織図

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK

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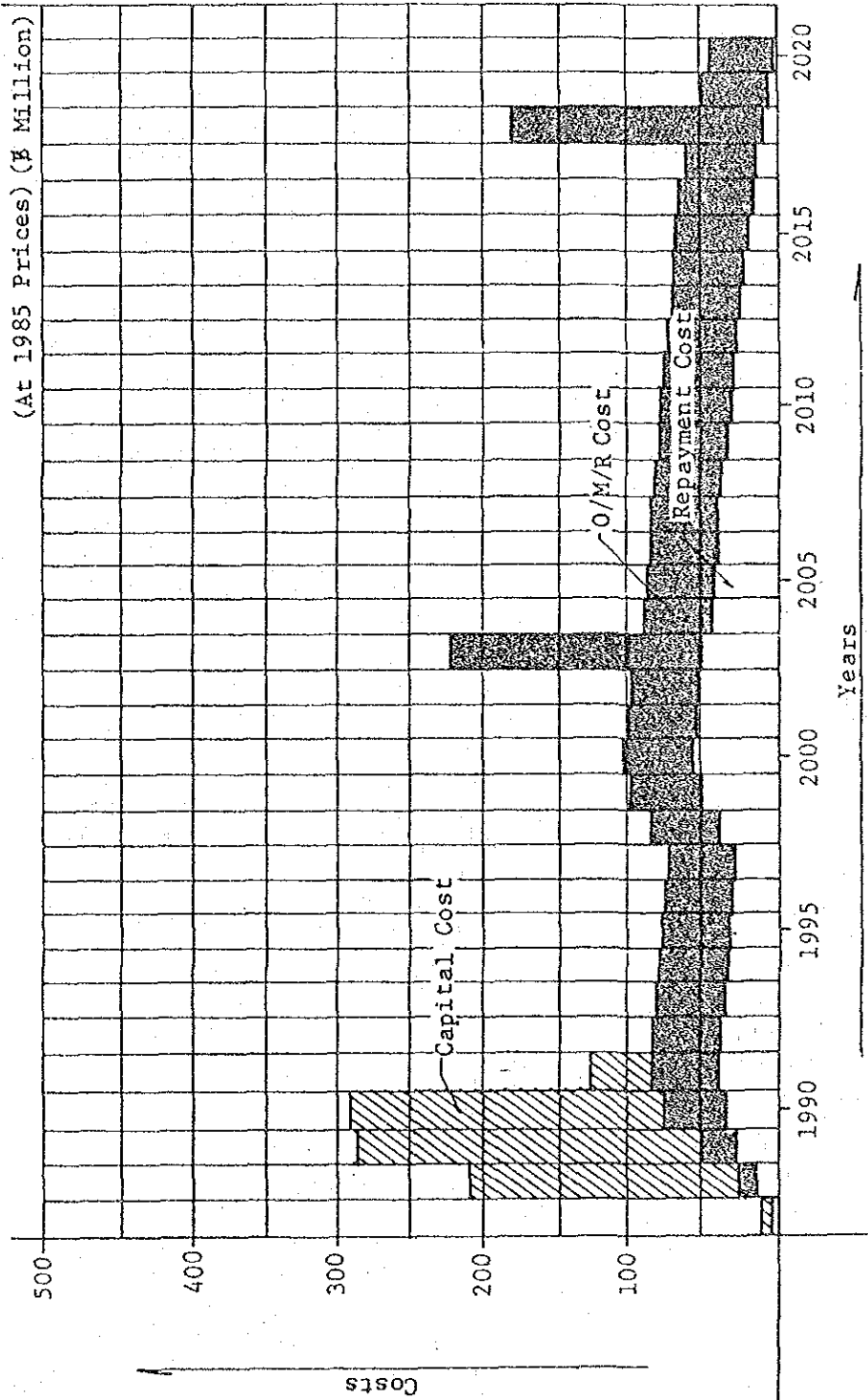


図 9.1 資本、償還及び維持管理更新のための年次費用

FEASIBILITY STUDY ON FLOOD PROTECTION/DRAINAGE PROJECT IN EASTERN SUBURBAN-BANGKOK

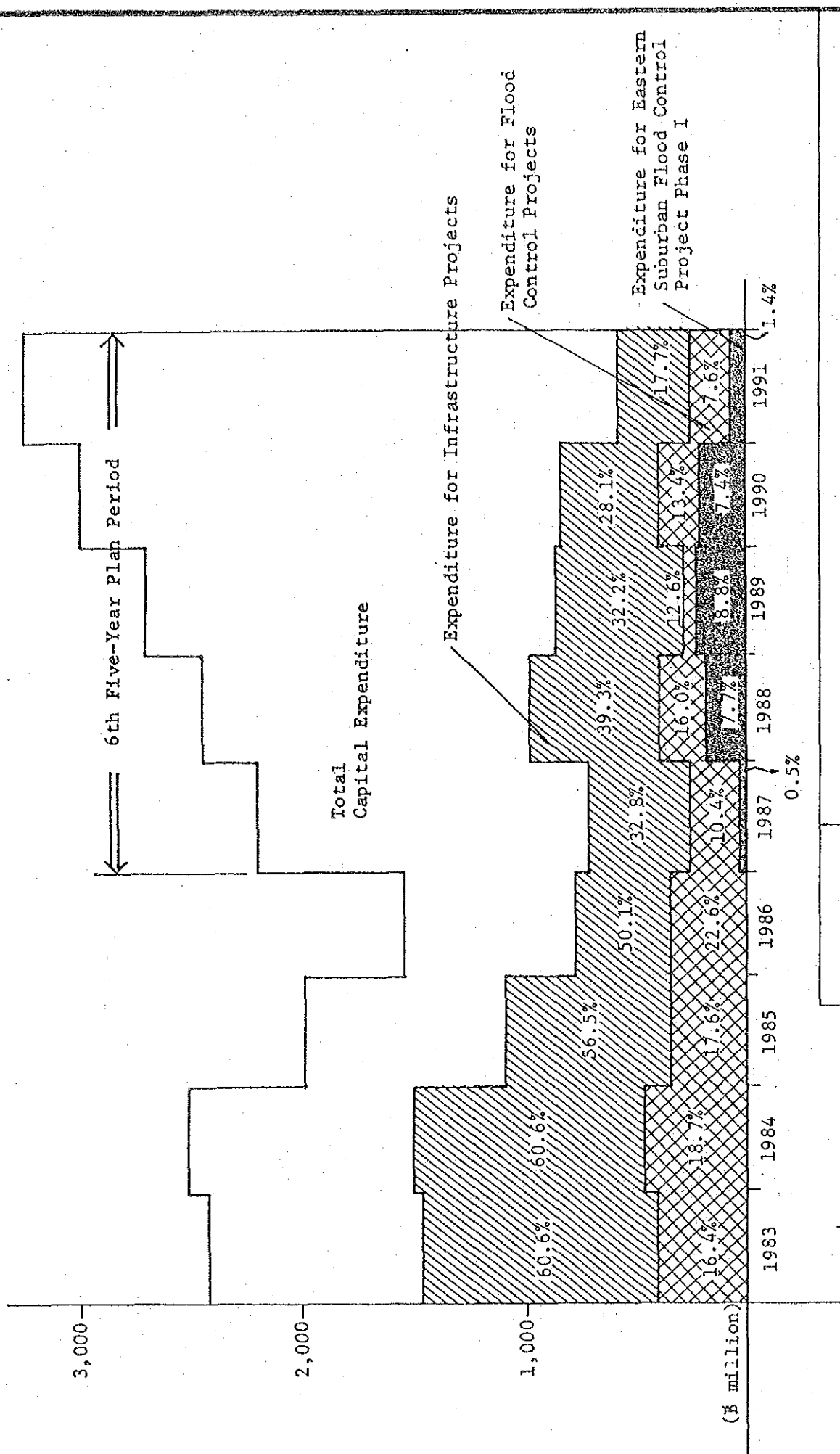


図 9.2 第 6 次 5 年計画における BMA の対基盤整備事業支出

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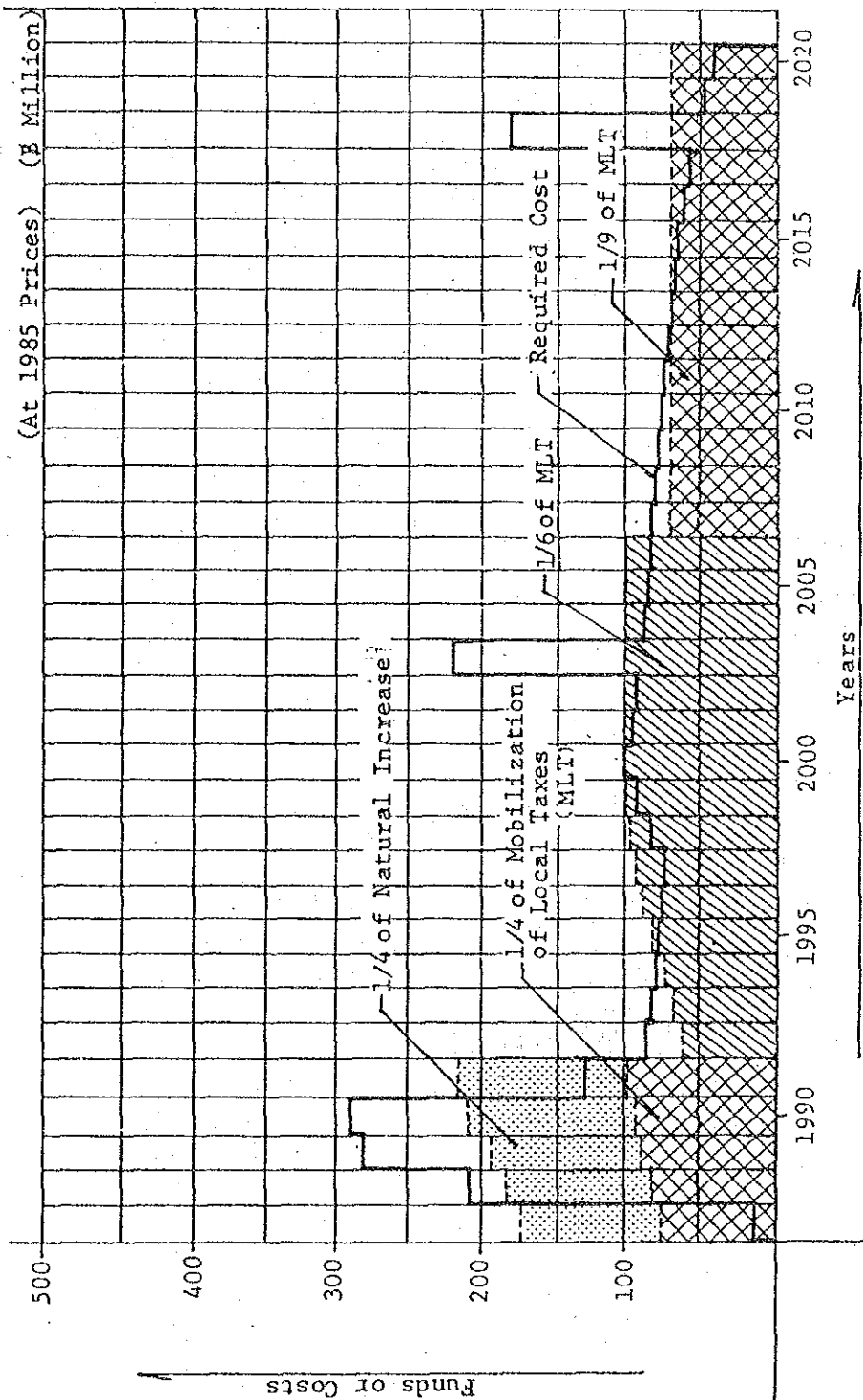


図 9.3 資本調達及び費用回収計画

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JICA