

## 2. 収集資料リスト

### 収集資料リスト

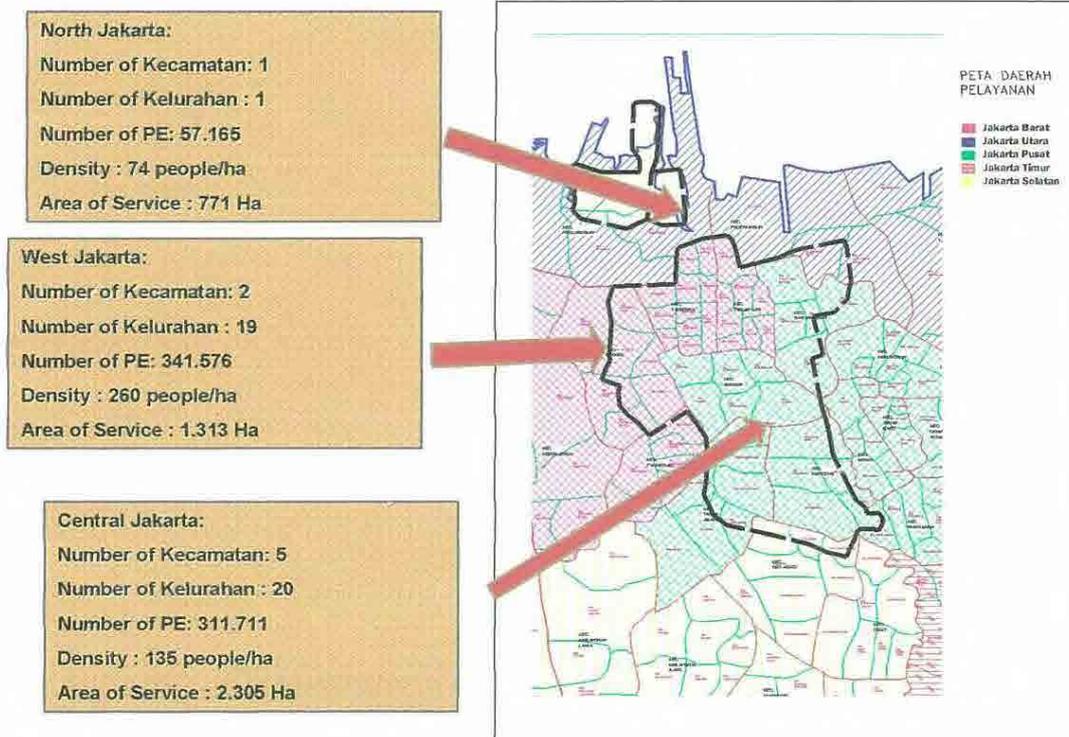
案件名 平成21年度 インドネシア国ジャカルタ首都圏下水道整備計画策定支援プロジェクト 詳細計画策定調査  
2010年1月

番号	資料の名称	形態	発行機関
C1	Executive Summary, Review MP dan DED Air Limbah (マスタープランレビューのサマリー)	オリジナル、小冊子 A4、縦長、カラー写真付き表紙	CIPTA KARYA, PT WASECO TIRTA
C2	REVIEW OF MASTER PLAN AND DED FOR JAKARTA WASTEWATER DEVELOPMENT PROJECT	コピー、カラー A4 (パワーポイント) 電子ファイル	CIPTA KARYA
C3	REVIEW MASTER PLAN AIR LIMBAH DKI JAKARTA, ZONE CENTRAL PHASE 2, KONSEP LAPORAN AKHIR (中央地域における下水道マスタープランレビュー2期)	コピー、カラー A4 (パワーポイント)	CIPTA KARYA, PT WASECO TIRTA KONSULTANT
C4	Pemilihan Teknologi IPAL Dengan Menggunakan Metode Mully Criteria Analysis (下水処理技術検討)	コピー、カラー A4 (パワーポイント)	CIPTA KARYA
C5	INSTALASI PENGOLAHAN AIR LIMBAH (下水処理場)	コピー、カラー A4 (パワーポイント)	CIPTA KARYA
C6	下水関連規定一式	電子ファイル	CIPTA KARYA
BA1	DKI JAKARTA 組織図 (DKI JAKARTA, BAPPEDA, BPLHD, DINAS PU, DINAS KEBERSIHAN ジャカルタ特別州組織図 (ジャカルタ特別州、開発計画局、環境局、清掃局))	コピー A4 横	BAPPEDA 開発計画局
BA2	DKI JAKARTA 組織 知事命令	コピー A4	BAPPEDA 開発計画局
BA3	DKI JAKARTA 幹部役職 指名	コピー A5	BAPPEDA 開発計画局
BA4	PERATURAN DAERAH PROVINSI DAERAH KHUSUS IBUKOTA JAKARTA NOMOR 1 TAHUN 2008 TENTANG RENCANA PEMBANGUNAN JANGKA MENENGAH DAERAH TAHUN 2007-2012 (Regional Development Plan of DKI Jakarta 2007-2012: 中期開発計画2007-2012)	電子ファイル プリント有	BAPPEDA 開発計画局
B1	PERATURAN MENTERI PEKERJAAN UMUM, NO. 16/PRT/M/2008 TENTANG KEBIJAKAN DAN STRATEGI NASIONAL, PENGEMBANGAN SISTEM PENGELOLAAN AIR LIMBAH PERMUKIMAN (Minister of Public Works Regulation, No. 16/PRT/M/2008 on National Strategy and Policy of Domestic Wastewater Treatment System Development)	オリジナル A5 の2/3のサイズ、縦長 白表紙	Department of Public Works, Republic of Indonesia
B2	PERATURAN GUBERNUR PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA NOMOR 122 TAHUN 2005 Tentang PENGELOLAAN AIR LIMBAH DOMESTIK DI PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA, 2009 (Governor Regulation of Jakarta Special Capital Province 122 Year 2005 on Domestic Wastewater Treatment at the Special Province of Capital City of Jakarta, 2009)	オリジナル A5 サイズ 白表紙	KANTOR LINGKUNGAN HIDUP, KOTA ADMINISTRASI JAKARTA SELATAN (Living Environment Office, South Jakarta City Administration)
B3	DASAR HUKUM PENGENDALIAN PENCEMARAN AIR, 2008 (Water Contamination Control Law Foundation, 2008)	オリジナル A5 サイズ 写真モノサ塔	PEMERINTAH PROVINSI DAERAH KHUSUS IBUKOTA JAKARTA (The Government of Special Capital Province of Jakarta) BADAN PENGELOLAAN LINGKUNGAN HIDUP DAERAH
B4	Peraturan PLH (規定集一式)	電子ファイル	資料入手先: BPLHD (環境局)
B5	Pemantauan (監視データ一式)	電子ファイル	資料入手先: BPLHD (環境局)
DPU1	DATA WASTE WATER TREATMENT (小規模下水道一式)	電子ファイル	DINAS PU (公共事業局)
DPU2	GENANGAN FloodCondition (浸水状況一式)	電子ファイル	DINAS PU (公共事業局)
DPU3	DATA POLDER (雨水排水施設一式)	電子ファイル	DINAS PU (公共事業局)
DPU4	DATA DREDGING 2009 (浚渫資料一式)	電子ファイル	DINAS PU (公共事業局)
P1	POKOK-POKOK LANDASAN HUKUM PD PAL JAYA (PD PAL JAYAに係る主な法令)	オリジナル、小冊子 A4 の2/3のサイズ、縦長、白表紙	PD PAL JAYA
P2	Company Profile, 2009	オリジナル、小冊子 A4 の2/3のサイズ、横長、下水処理場の写真表紙	PD PAL JAYA
P3	Menuju Jakarta Bebas Pencemaran Air Limbah (下水道施設の概要)	オリジナル、パンフレット A5 の2/3のサイズ、縦長 写真多数表紙	PD PAL JAYA
P4	PENGELOLAAN AIR LIMBAH SISTEM PERPIPAAN (下水道管理の概要)	オリジナル、パンフレット A5 の2/3のサイズ、縦長 白表紙	PD PAL JAYA
P5	TARIF JASA PELAYANAN PEMBUANGAN AIR LIMBAH DAN BIAYA PENYAMBUNGAN PIPA AIR LIMBAH PD PAL JAYA (下水道料金表、接続料金)	オリジナル、パンフレット A5 の2/3のサイズ、縦長 白表紙	PD PAL JAYA
P6	FORMULIR PERMOHONAN MENJADI PELANGGAN (下水道接続申請用紙)	オリジナル A4 大、3枚 (各3枚複写)	PD PAL JAYA
P7	SOSIALISASI PENGELOLAAN AIR LIMBAH DOMESTIK SYSTEM PERPIPAAN DI KAWASAN SUDIRMAN CENTRAL BUSINESS DISTRICT (SCBD) DAN JL. GATOT SUBROTO, JAKARTA, 10 DESEMBER 2009 (下水道に係る住民説明用の資料)	コピー、A4 横	PD PAL JAYA
P8	GISファイル名、下水道利用人口、水質分析項目	オリジナル+コピー	PD PAL JAYA
J1	KEPUTUSAN MENTERI NEGARA LINGKUNGAN HIDUP NOMOR 112 TAHUN 2003 TENTANG BAKU MUTU AIR LIMBAH DOMESTIK (環境省大臣令 家庭排水基準)	電子ファイル	環境省 入手先: JICA
J2	インドネシア共和国都市環境改善協力プログラム形成調査 報告書	コピー (添付せず、JICA吉田担当官与資料)	独立行政法人国際協力機構 東南アジア第一一大洋州部
J3	インドネシア共和国環境プロフィール 2007年10月	コピー (添付せず、JICA吉田担当官与資料)	国際協力銀行 環境審査室
J4	インドネシア東ジャバタデベック地域における下水道計画等に係る調査 (インドネシア国 ジャバタデベック地域における下水道計画) 報告書 平成21年3月	コピー (添付せず、JICA吉田担当官与資料)	国土交通省
J5	DEVELOPMENT OF BASIC DESIGN OF DRAFT MANAGEMENT CRITERIA FOR SEWERAGE SERVICE PROVIDERS.	コピー	JAPAN INTERNATIONAL COOPERATION AGENCY SHION SUIDO CONSULTANTS CO., LTD.

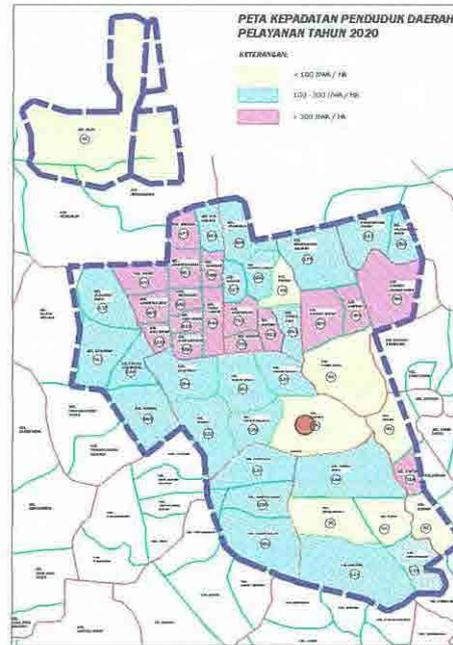
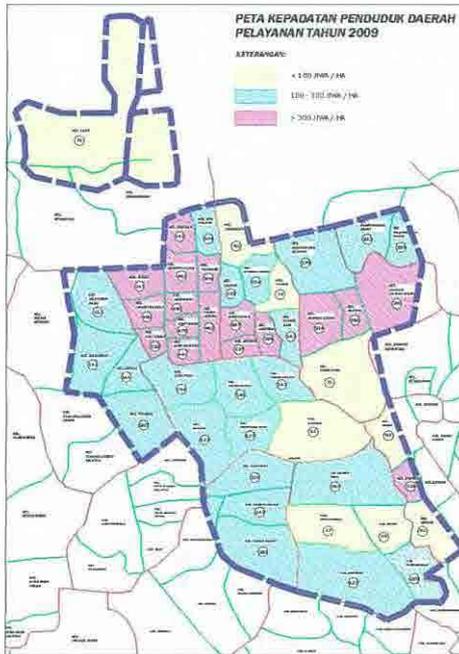
3. 収集資料( 2. 収集資料リストC2 : Review of Master Plan and DED for Jakarta Wastewater Development Project)

# REVIEW OF MASTER PLAN AND DED FOR JAKARTA WASTEWATER DEVELOPMENT PROJECT

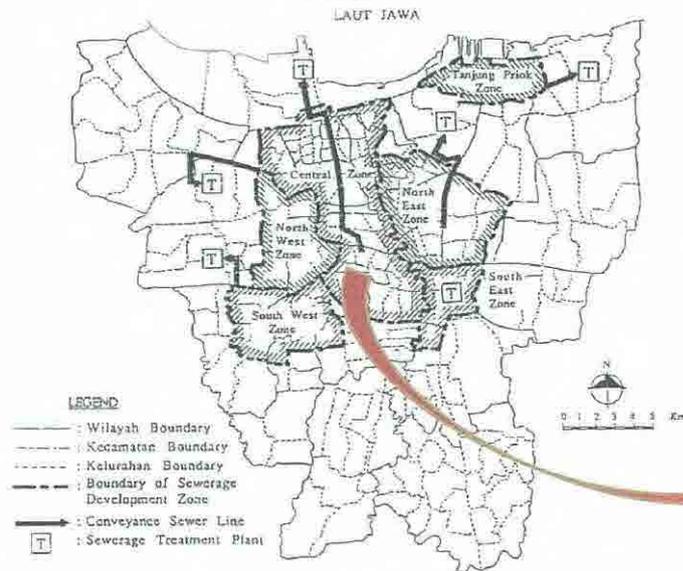
## SCOPE AREA OF STUDY



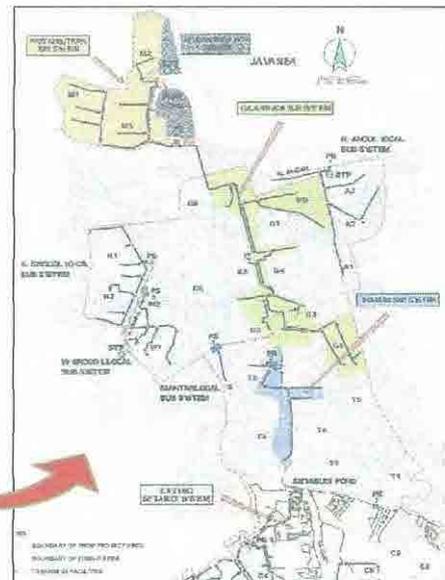
# DENSITY MAP OF SERVICE AREA



## WASTEWATER MASTER PLAN, 1991



## JWDP, 2001 (CENTRAL ZONE)



1. Central Zone - 529,000 m<sup>3</sup>/hr - at Waduk Pemat
2. North West Zone - 129,000 m<sup>3</sup>/hr - at di Rum Sengon
3. South West Zone - 117,000 m<sup>3</sup>/hr - at di Cagale
4. North East Zone - 201,000 m<sup>3</sup>/hr - at di Sumter
5. South East Zone - 101,000 m<sup>3</sup>/hr - at di Cipinang Besar
6. Tanjung Priok Zone - 120,000 m<sup>3</sup>/hr - at di Sempur Timur

1. Lompada system - 43,200 m<sup>3</sup>/hr - at di Muara Baru
2. Pama Muara System - 13,200 m<sup>3</sup>/hr - at di Muara Baru
3. Tambo System - 15,500 m<sup>3</sup>/hr - at Waduk Seutandi
4. Kali Arzol Sub System - 13,790 m<sup>3</sup>/hr - ASP at Arzol
5. Kali Gregal Sub System - 11,240 m<sup>3</sup>/hr - ASP at samping Mall T. Angrek
6. Waduk Cagale Sub System - 10,700 m<sup>3</sup>/hr - ASP at samping Mall T. Angrek
7. Siantar Sub System - 7,788 m<sup>3</sup>/hr - at Muara Baru

# MASTER PLAN REVIEW

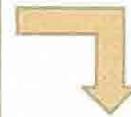
**J**  
**W**  
**D**  
**F**

- WWTP Muara Baru treated Gajah Mada, Pantai Mutiara & Siantar sub system with cap 62.000m<sup>3</sup>/day
- WWTP Waduk Setiabudi treated Thamrin
- WWTP Kali Ancol treated Kali Ancol
- WWTP Grogol treated Kali Grogol & Waduk Grogol
- System to be in use is Aerated Lagoon System
- Biggest diameter for main trunk is 2,4 m



**D**  
**D**  
**T**  
**K**  
**D**  
**S**  
**A**  
**T**  
**I**

- Location Plan for WWTP Muara Baru is relocated around Pluit Pond
- Location for WWTP Kali Ancol cannot be build
- Review for population density
- Waste water volume re-calculated
- Proposed location cannot accommodate Aerated Lagoon System
- Maximum pipe diameter is 1,8 m



**K**  
**S**  
**P**  
**P**  
**E**  
**N**  
**G**  
**E**  
**M**  
**B**  
**A**  
**N**  
**G**

- WWTP Muara Baru treated Gajah Mada, Thamrin, Pantai Mutiara, Siantar & Kali Ancol System with cap 179.699m<sup>3</sup>/day
- WWTP Kali Ancol cannot be build and transferring to main sistem
- WWTP Grogol still treated sub sistem Kali Grogol & Waduk Grogol
- Using Activated Sludge System for treatment in Central Zone
- Biggest Dia. main trunk is 1,8 m with two pipe line: West and East Main Trunk.

## LEVEL OF SERVICE

DESCRIPTION	2020			2030		
	Area (Ha)	Population (jiwa)/(PE)	Wastewater Vol (m <sup>3</sup> /day)	Area (Ha)	Population (jiwa)/(PE)	Wastewater Vol (m <sup>3</sup> /day)
<b>A AREA OF SEERVICE</b>						
a Housing	4,336	789,287	99,746	4,336	789,287	99,746
b High Rise Building	855	285,000	36,017	855	285,000	36,017
c Commercial/Institution	1,043	347,667	43,936	1,043	347,667	43,936
<b>Total</b>	<b>6,234</b>	<b>1,421,954</b>	<b>179,699</b>	<b>6,234</b>	<b>1,421,954</b>	<b>179,699</b>
<b>B WASTEWATER CATCHMEN AREA</b>						
a Housing	1,344	246,258	31,121	4,336	789,287	99,746
b High Rise Building	770	256,500	32,415	855	285,000	36,017
c Commercial/Institution	626	208,600	26,362	1,043	347,667	43,936
<b>Total</b>	<b>2,740</b>	<b>711,358</b>	<b>89,898</b>	<b>6,234</b>	<b>1,421,954</b>	<b>179,699</b>
<b>C LEVEL OF SERVICE</b>						
a Housing	31%	31%	31%	100%	100%	100%
b High Rise Building	90%	90%	90%	100%	100%	100%
c Commercial/Institution	60%	60%	60%	100%	100%	100%
<b>Average Level of service</b>	<b>50%</b>	<b>50%</b>	<b>50%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Level of Service compare to Population</b>	<b>4.22%</b>	<b>7.29%</b>		<b>9.59%</b>	<b>14.34%</b>	

# JWDP SEWERAGE ANALYSIS

## CONDITION UPDATE

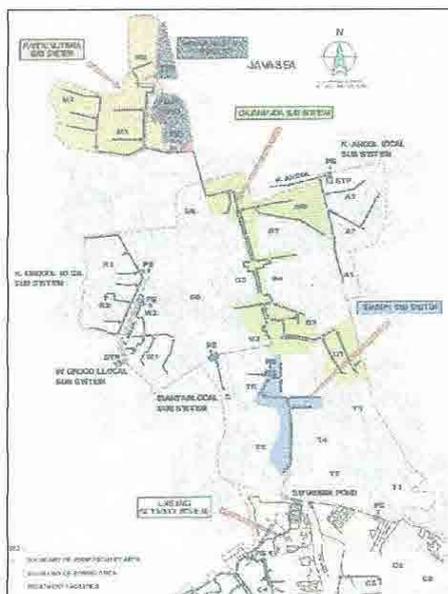
- Wastewater volume is change from 73,000 m<sup>3</sup>/hr to 179,699 m<sup>3</sup>/hr
- Change of Location of WWTP Mutiara Baru to around Pluit Pond
- Location of WWTP Kali Ancol cannot be use
- Change of the biggest pipe diameter to 1,8 m because is not available in local market
- Change of flow of wastewater from Thamrin Sub System to WWTP Seabudi Pond to the WWTP of Pluit



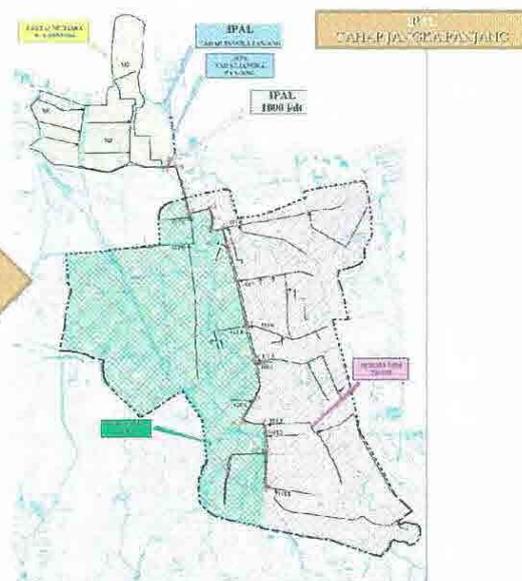
## DESIGN CONCEPT

- Basic calculation for wastewater capacity is 179,699 m<sup>3</sup>/day
- Combining Thamrin sub system and Kali Ancol sub system to the main system
- Kali Grogol sub system dan Waduk Grogol still treated in STP Kali Grogol
- Two Main trunk East and West Line
- East Main trunk treat East area of Jl.Thamrin- Hayam Wuruk and sub system Kali Ancol
- West Main trunk treat West area of Jl.Thamrin-Gajahmada, and Siantar sub system.
- Pantai Mutiara sub system directed flow to lift pump station at WWTP South Pluit
- Functioning main trunk as a connection pipe to high rise building/commercial building by placing the pipe within the free space of building (GSB) / free space of road (GSI) along side of Jl.Thamrin - Jl. Gajahmada - Jl.Hayam Wuruk - Jl.Gedong Panjang
- For others area : wastewater sources - connection pipe - secondary pipe - main trunk

# CONCEPT FOR WASTE WATER MASTER PLAN REVIEW OF CENTRAL ZONE

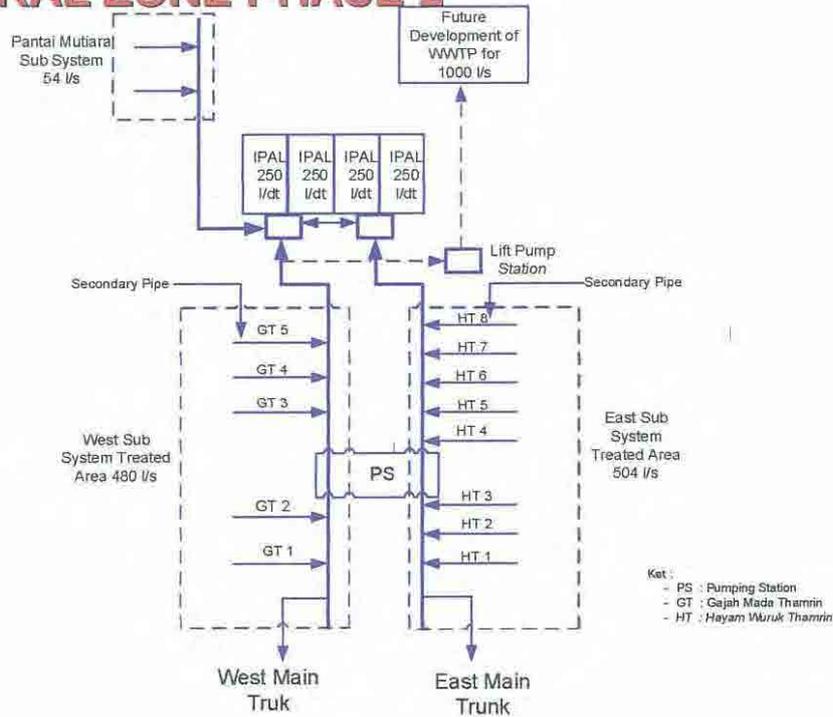


JWDP 2001



REVIEW MIP, 2009

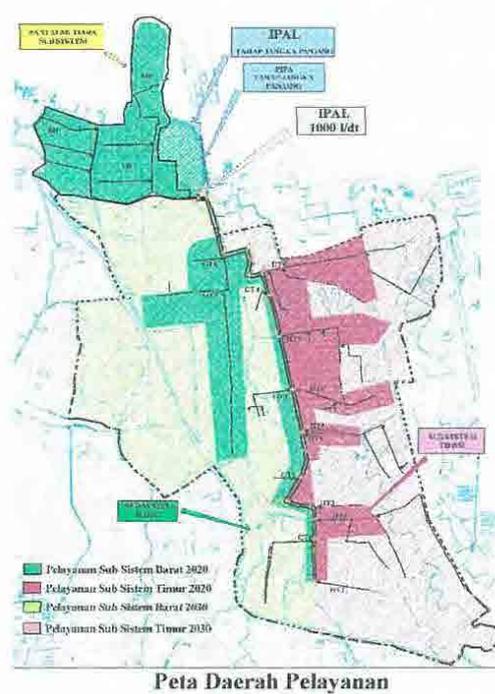
## WASTE WATER SCHEMATIC FLOW OF CENTRAL ZONE PHASE 2



## WASTEWATER PIPE CRITERION DESIGN

Criteria	JWDP	Proposed
Peak Factor	$F=4,02 (0,0864 Q)^{-0,154}$	$F=4,02 (0,0864 Q)^{-0,154}$
Debit	$Q_a \times (F+0,1)$	$Q_a \times (F+0,1)$
Ground Water Infiltration	10%	10%
Speed (m/second)	0.6 – 3	0.6 – 1.5
Slope (0/00)	0.13 – 1.31	0,18 – 1,31
Diameter (mm)	400 – 2400	400 – 1800*)
Depth of Pipe	min 1,5m – max 9 m	min 1,5m – max 9 m
Distance between Manhole	Dia. < 1,1 m – 100 m Dia. > 1,1 m – 200 m For jacking pipe – 150 m	Dia. < 1,1 m – 100 m Dia. > 1,1 m – 200 m For jacking pipe – 150 m

# PLAN MAPPING FOR WASTEWATER PIPE LINE DEVELOPMENT



## SUMMARY OF INVESTMENT COST

No	Description	West Sub System	East Sub System	Total
A.	LAND ACQUISITION	120.000.000.000,00		120.000.000.000,00
B.	WEST WWTP			
	1 West WWTP Construction	297.055.060.000,00		297.055.060.000,00
	2 Supporting Facility	49.656.432.750,00		49.656.432.750,00
	3 Supporting Building	5.278.050.000,00		5.278.050.000,00
	4 Power Supply	16.000.000.000,00		16.000.000.000,00
	5 Public Campaign	2.000.000.000,00		2.000.000.000,00
	6 Others	4.550.000.000,00		4.550.000.000,00
C.	West Sub System Pipe Line			
	1 Main Pipe Line	199.211.804.206,00		199.211.804.206,00
	2 Lateral Pipe	110.847.482.169,00		86.728.390.000,00
	3 House Connection	258.879.760.000,00		258.879.760.000,00
	4 High Rise Building Connection	10.747.129.288,00		10.747.129.288,00
	5 Commercial/Institution Connection	14.727.574.543,00		14.727.574.543,00
	6 Pumping Station	3.067.750.000,00		3.067.750.000,00
D.	EAST WWTP			
	1 East WWTP Construction		73.850.470.000,00	73.850.470.000,00
E.	East Sub System Pipe Line			
	1 Main Pipe Line		210.659.625.244,00	210.659.625.244,00
	2 Lateral Pipe Line		136.812.448.726,00	68.936.870.000,00
	3 House Connection		135.797.360.000,00	135.797.360.000,00
	4 High Rise Building Connection		4.179.439.167,00	4.179.439.167,00
	5 Commercial/Institution Connection		29.853.136.912,00	29.853.136.912,00
	6 Pumping Station		3.067.750.000,00	3.067.750.000,00
	<b>TOTAL PRICE</b>	<b>1.067.901.950.787,00</b>	<b>526.344.651.323,00</b>	<b>1.594.246.602.110,00</b>
	VAT10%	106.790.195.078,70	52.634.465.132,30	159.424.660.211,00
	Contingency 10%	106.790.195.078,70	52.634.465.132,30	159.424.660.211,00
	<b>GRAND TOTAL</b>	<b>1.281.482.340.944,40</b>	<b>631.613.581.587,60</b>	<b>1.913.095.922.532,00</b>

## SOURCE OF INVESTMENT FUNDING

NO.	COMPONENT OF INVESTMENT	FUNDING SOURCES		
		APBN	APBD	PD PAL
1.	Land Acquisition		V	
2.	WWTP Constructions	V		
3.	Supporting Building	V		
4.	Supporting Facility	V		
5.	Wastewater Pipe Construction			
	a. Main Pipe Line	V		
	b. Connection Pipe	V		
	c. Pumping Station	V		
6.	Customer Connection			V
7.	Others		V	
8.	Public Campaign		V	

## SOURCE OF FUNDING FOR O&M COST

NO.	COST COMPONENT	FUNDING SOURCE			
		Connection Fee	Fee of Service	Revenue from Water Recycling	Profit Taking
1.	O&M for WWTP			V	
2.	O&M for Wastewater Pipe		V		
3.	Office Overhead Cost		V	V	
4.	Connection Constr. Cost	V			
8.	Development Cost				V



**RECORD OF DISCUSSIONS  
BETWEEN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
AND  
AUTHORITIES CONCERNED OF  
THE GOVERNMENT OF THE REPUBLIC OF INDONESIA  
ON  
JAPANESE TECHNICAL COOPERATION  
FOR  
PROJECT FOR CAPACITY DEVELOPMENT OF WASTEWATER SECTOR  
THROUGH  
REVIEWING THE WASTEWATER MANAGEMENT MASTER PLAN  
IN DKI JAKARTA**

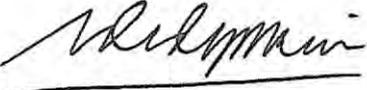
In response to the request of the Government of the Republic of Indonesia, the Government of Japan has decided to conduct the technical cooperation regarding the Project for Capacity Development of Wastewater Sector through reviewing the Wastewater Management Master Plan in DKI Jakarta (hereinafter referred to as "the Project").

Accordingly, Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation scheme of the Government of Japan, will cooperate with the authorities concerned of the Republic of Indonesia for the Project.

JICA and the Indonesian authorities concerned had a series of discussions on the framework of the Project. As a result of the discussions, JICA and the Indonesian authorities concerned agreed on the matters referred to in the document attached hereto.

Jakarta, 17 June, 2010

		
Mr. Takashi Sakamoto Chief Representative, Indonesia Office, Japan International Cooperation Agency Japan	Mr. Budi Yuwono P Director General, Directorate General of Human Settlements, Ministry of Public Works The Republic of Indonesia	Mr. Muhayat Provincial Secretary of DKI Jakarta The Republic of Indonesia



Mr. Dedy Supriadi Priatna  
Deputy for Infrastructure  
BAPPENAS  
The Republic of Indonesia

## THE ATTACHED DOCUMENT

### I. COOPERATION BETWEEN JICA AND THE GOVERNMENT OF INDONESIA

1. The Government of Indonesia will implement the Project for Capacity Development of Wastewater Sector through reviewing the Wastewater Management Master Plan in DKI Jakarta (hereinafter referred to as “the Project”) in cooperation with JICA.
2. The Project will be implemented in accordance with the Project Framework which is given in Annex I.

### II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan, JICA will take, at its own expense, the following measures according to the normal procedures under the Colombo Plan Technical Cooperation Scheme.

#### 1. DISPATCH OF JAPANESE EXPERTS

JICA will provide the services of the Japanese experts as listed in Annex II.

#### 2. PROVISION OF EQUIPMENT

JICA will provide equipment and other materials (hereinafter referred to as “the Equipment”) necessary for the implementation of the Project as listed in Annex III. The Equipment will become the property of the Government of Indonesia upon being delivered C.I.F. (cost, insurance and freight) to the Indonesian authorities concerned at the ports and/or airports of disembarkation.

#### 3. TRAINING OF INDONESIAN PERSONNEL IN JAPAN

JICA will receive the Indonesian personnel connected with the Project for technical training in Japan.

### III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF INDONESIA

1. The Government of Indonesia will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.
2. The Government of Indonesia will ensure that the technologies and knowledge acquired by the Indonesian nationals as a result of Japanese technical cooperation will contribute to the economic and social development of Indonesia.
3. The Government of Indonesia will grant in Indonesia privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families, which are no less favorable than those accorded to experts of third countries working in Indonesia under the Colombo Plan Technical Cooperation Scheme.
4. The Government of Indonesia will ensure that the Equipment referred to in II-2 above will be utilized effectively for the implementation of the Project in consultation with the Japanese experts referred to in Annex II.
5. The Government of Indonesia will take necessary measures to ensure that the knowledge and experience acquired by the Indonesian personnel from technical training in Japan will be utilized effectively in the implementation of the Project.
6. In accordance with the laws and regulations in force in Indonesia, the Government of Indonesia will take necessary measures to provide at its own expense:
  - (1) Services of the Indonesia counterpart personnel and administrative personnel as listed in Annex IV;
  - (2) Office space and facilities as listed in Annex V; and
  - (3) Supply or replacement of equipment, instruments, tools, spare parts and any other materials necessary for the implementation of the Project other than the

Equipment provided by JICA under II-2 above.

7. In accordance with the laws and regulations in force in Indonesia, the Government of Indonesia will take necessary measures to meet:
  - (1) Expenses necessary for transportation within Indonesia of the Equipment referred to in II-2 above as well as for the installation, operation and maintenance thereof;
  - (2) Customs duties, internal taxes and any other charges, imposed in Indonesia on the Equipment referred to in II-2 above; and
  - (3) Running expenses necessary for the implementation of the Project.

#### IV. ADMINISTRATION OF THE PROJECT

1. Director of Directorate of Environmental Sanitation Development, Directorate General of Human Settlements, Ministry of Public Works, as the Project Director, will bear overall responsibility for the administration and implementation of the Project.
2. Head of Sub-directorate of wastewater development, Directorate of Environmental Sanitation Development, Directorate General of Human Settlements, Ministry of Public Works, as the Project Manager, will be responsible for the managerial and technical matters of the Project.
3. Head of Urban infrastructure and environment division of BAPPEDA, DKI Jakarta, as the Co-Project Manager, will be responsible for the managerial and technical matters of the Project.
4. The Japanese Team Leader will provide necessary recommendations and advice to the Project Director and the Project Managers on any matters pertaining to the implementation of the Project.
5. The Japanese experts will give necessary technical guidance and advice to the Indonesian counterpart personnel on technical matters pertaining to the

implementation of the Project.

6. The Japanese experts will give necessary technical guidance and advice to the Indonesian counterpart personnel on technical matters pertaining to the implementation of the Project.
7. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee will be established by DGHS whose functions and composition are described in Annex VI.

#### V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by JICA and the Indonesian authorities concerned, during the last six months of the cooperation term in order to examine the level of achievement.

#### VI. CLAIMS AGAINST JAPANESE EXPERTS

The Government of Indonesia undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in Indonesia except for those arising from the willful misconduct or gross negligence of the Japanese experts.

#### VII. MUTUAL CONSULTATION

There will be mutual consultation between JICA and the Government of Indonesia on any major issues arising from, or in connection with this Attached Document.

#### VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of Indonesia, the Government of Indonesia will take appropriate measures to make the Project widely known to the people of Indonesia.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be two (2) years from the date when the expert(s) arrives.

ANNEX I	PROJECT FRAMEWORK
ANNEX II	LIST OF JAPANESE EXPERTS
ANNEX III	LIST OF EQUIPMENT
ANNEX IV	LIST OF INDONESIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL
ANNEX V	LIST OF OFFICE SPACE AND FACILITIES
ANNEX VI	JOINT COORDINATING COMMITTEE

## ANNEX I PROJECT FRAMEWORK

1. Title of the Project  
Project for Capacity Development of Wastewater Sector through reviewing the Wastewater Management Master Plan in DKI Jakarta
2. Overall goal
  - 1 Proper policy, system and plan in wastewater sector are established.
  - 2 DKI Jakarta has enough capacity to improve wastewater sector conditions.
3. Project purpose  
Capacity of Ministry of Public Works and DKI Jakarta in formulation of wastewater sector policies and wastewater management plans is enhanced.
4. Outputs
  - (1) Domestic Wastewater Law and its regulations are prepared.
  - (2) The wastewater management master plan in DKI Jakarta is revised.
5. Activities
  - (1-1) To collect and analyze basic information related to national wastewater sector, and identify institutional and technical issues based on existing data and previous study
  - (1-2) To select priority laws and regulations comprises norms, standards, guidelines and criteria to be developed or revised
  - (1-3) To develop draft of laws and regulations comprises norms, standards, guidelines and criteria that are selected in activity (1-2)
  - (1-4) To hold a seminar with relevant organizations / stakeholders in the wastewater sector to share and discuss the result of activity (1-3)
  - (1-5) To develop or revise laws and regulations identified in activity (1-2) based on the result of activity (1-4) and (2-2-13)
  
  - (2-1) To conduct survey for reviewing the wastewater management master plan in DKI Jakarta
    - (2-1-1) To review the existing data and information including progress of the master plan, related plans and policies
    - (2-1-2) To assess capacity of wastewater sector in DKI Jakarta and PD PAL JAYA.
    - (2-1-3) To identify flood condition and major drainage facilities
    - (2-1-4) To conduct site survey and data analysis
    - (2-1-5) To analyze socio economic data for establishing the master plan
    - (2-1-6) To identify institutional issues (organizational, financial and human resources related) in the relevant organizations in wastewater in DKI Jakarta

- (2-1-7) To conduct field survey for selection of sewage treatment plant sites
- (2-1-8) To conduct water quality survey
- (2-1-9) To evaluate the present condition and to identify the issues
  
- (2-2) To review the master plan
  - (2-2-1) To develop the basic plan for wastewater management including targets, strategies and actions
  - (2-2-2) To develop the frame work for wastewater management system
  - (2-2-3) To develop the planning data (qualities and quantity of wastewater generation)
  - (2-2-4) To make a zoning of off-site system and on-site system
  - (2-2-5) To conduct topographic and geological survey at sewage treatment plant sites
  - (2-2-6) To develop alternative studies of the master plan (construction cost, OM cost, environment and others)
  - (2-2-7) To select the most appropriate alternative option
  - (2-2-8) To conduct Initial Environmental Evaluation (IEE)
  - (2-2-9) To develop an improvement plan of the organizational functions
  - (2-2-10) To develop an activity plan of environmental education in wastewater sector
  - (2-2-11) To evaluate the selected alternative option by economical, financial, technical, social and environmental aspects
  - (2-2-12) To identify priority actions to be taken for implementation of the master plan and make an action plan including implementation of a feasibility study and capacity development for related stakeholders
  - (2-2-13) To publish the revised wastewater management master plan in DKI Jakarta

## ANNEX II LIST OF JAPANESE EXPERTS

1. Long-term expert
  - Chief Advisor / Sewerage Policy Advisor
2. Short-term expert team
  - 1) Leader/Sewerage planning
  - 2) Sub-leader/On-site system
  - 3) Urban planning
  - 4) Wastewater treatment planning
  - 5) Sewerage facilities planning
  - 6) Urban drainage
  - 7) GIS
  - 8) Institution
  - 9) Economics / finance
  - 10) Environment and social consideration
  - 11) Environmental education
  - 12) Coordinator

Note:

Japanese experts will be added as the need arises for the smooth and effective implementation of the Project.

ANNEX III LIST OF EQUIPMENT

1. Personal computer and software for GIS Two (2) sets
2. Printer Two (2) sets

Note:

1. The above mentioned equipment is limited to the equipment necessary for the transfer of technology by the Japanese experts.
2. The detailed specification of the above items may be subject to change depending on the results of tender and budgetary limitation.

ANNEX IV LIST OF INDONESIAN COUNTERPART AND ADMINISTRATIVE PERSONNEL

No	Project Position	Position	Organization	Related Output
1.	Project Director	Director	DESD/DGHS	Output 1, 2
2.	Deputy Project Director	Head	BAPPEDA, DKI Jakarta	Output 2
3.	Project Manager	Head of Sub-directorate of Sanitation	DESD/DGHS	Output 1, 2
4.	Co-project Manager Head of C/P of Output 2	Head of Urban Infrastructure and Environment Division	BAPPEDA, DKI Jakarta	Output 2
5.	Head of C/P of Output 1	Head of Sub-directorate of Technical Planning and Controlling	DESD/DGHS	Output 1
6.		Head of Sub-directorate for Policy and Strategy	Directorate of Program Development, DGHS	Output 1
7.		Head of Sub-division of Law	DGHS	Output 1
8.		Chief of Regulation Section	DGHS	Output 1
9.		Chief of Wastewater Development Region 1 Section	DGHS	Output 1
10.		Technical and Business Director	PD PAL JAYA	Output 2
11.		Head of Pollution control and Sanitation Division	Environmental Board, DKI Jakarta	Output 2
12.		Head of Planning and Programming Division	Cleansing Department, DKI Jakarta	Output 2
13.		Head of Planning Division	Public Works Department, DKI Jakarta	Output 2
14.		Head of Environmental Division	Spatial Planning and Environmental Bureau, DKI Jakarta	Output 2
15		Head of Urban Infrastructure Planning Division	Spatial Planning Department, DKI Jakarta	Output 2

DESD/DGHS: Directorate of Environmental Sanitation Development, Directorate General of Human Settlements, Ministry of Public Works

Note:

Counterpart personnel will be added as the need arises for the smooth and effective implementation of the Project.

ANNEX V LIST OF OFFICE SPACE AND FACILITIES

1. Furnished and air-conditioned office spaces in MPW and DKI Jakarta, which can accommodate two (2) or three (3) persons in MPW and about ten (10) persons in DKI Jakarta (Japanese experts and support staff such as interpreter and secretary).
2. Facilities such as desks, chairs, book shelves, internet access and telephones, etc necessary for the Project activities.
3. Other facilities mutually agreed upon as necessary

## ANNEX VI JOINT COORDINATING COMMITTEE

### 1. Functions

A Joint Coordinating Committee will be organized. The committee meeting will be held at least twice a year and whenever need arises.

The functions of the Committee are as follows.

- 1) To supervise the annual work plan of the Project in line with the Plan of Operations.
- 2) To review the annual and overall progress of the Project and to evaluate the accomplishment of the annual targets and achievement of the objectives.
- 3) To identify proper ways and means for solution of the major issues arising from or in connection with the Project.

### 2. Composition

#### 1) Chairperson:

Director General of Human Settlements, Ministry of Public Works

#### 2) Members of the Indonesian Side:

Deputy Governor for Spatial Planning and Environment, DKI Jakarta

Head of BAPPEDA, DKI Jakarta

Assistant of development and environment, secretary of province DKI Jakarta

Head of Public Works Department, DKI Jakarta

Head of Environmental Management Board, DKI Jakarta

Head of Cleansing Department, DKI Jakarta

Director of Settlements and Housing, BAPPENAS

Director of Program Development, Directorate General of Human Settlements, Ministry of Public Works

Director of Environmental Sanitation Development, Directorate General of Human Settlements, Ministry of Public Works

President Director of PD PAL JAYA

#### 3) Members of the Japanese Side:

a. Chief Representative of JICA Indonesia Office

b. JICA Experts

c. Other personnel concerned, to be assigned by JICA, if necessary

#### Note:

Official(s) of the Embassy of Japan in the Republic of Indonesia may attend as observer(s).

**ANNEX I Project Design Matrix (PDM1)**

Creation Date : Mar.19, 2010

**Project Name :** Project for Capacity Development of Wastewater Sector through reviewing the Wastewater Management Master Plan in DKI Jakarta

**Implementing agencies :** Directorate General of Human Settlement of Ministry of Public Works (MPW) and DKI Jakarta  
**Cooperating agencies :** PD PAL JAYA

**Target Groups :** (Direct) Staff members of MPW, DKI Jakarta and PD PAL JAYA (Indirect) Residents of DKI Jakarta

**Duration of the project :** 2010-2012 (2 years)

**Project Site :** DKI Jakarta

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<b>[Overall Goal]</b> 1 Proper policy, system and plan in wastewater sector are established. 2 DKI Jakarta has enough capacity to improve wastewater sector conditions.	1-1 Domestic Wastewater Law is enacted. 1-2 Regulations and standards related to Domestic Wastewater Law are enacted. 2-1 Finance is prepared. 2-2 Revised wastewater management master plan is implemented.	1-1 Domestic Wastewater Law 1-2 Regulations and standards related to Domestic Wastewater Law 2-1, 2 Record and information from MPW and DKI Jakarta	
<b>[Project Purpose]</b> Capacity of Ministry of Public Works and DKI Jakarta in formulation of wastewater sector policies and wastewater management plans is enhanced.	1-1 Draft Domestic Wastewater Law is submitted to the parliament. 1-2 Draft Regulations and standards related to Domestic Wastewater Law are submitted to MPW. 2 An action plan of the implementation of the revised Wastewater Management Master Plan in DKI Jakarta is developed (with information on timeframe, target, organization/section in charge, sources of the budget for each work item).	1-1,2 Information from MPW and DKI Jakarta 2 Action plan	1. Improvement of the wastewater management system remains as a priority in the policy of Ministry of Public Works and DKI Jakarta. 2. Financial resources for implementation of the master plan are available 3 Land for sewage treatment plants is secured.
<b>[Outputs]</b> 1. Domestic Wastewater Law and its regulations are prepared.	1-1 Draft Domestic Wastewater Law is developed. 1-2 Regulations and standards related to Domestic Wastewater Law are developed.	1-1 Draft Domestic Wastewater Law 1-2 Related regulations and standards	
2. The wastewater management master plan in DKI Jakarta is revised.	2-1 Revised wastewater management master plan is approved in DKI Jakarta.	2-1 Revised wastewater management master plan	

Narrative Summary		Inputs	Important Assumptions
[Activities]	<p>(1-1) To collect and analyze basic information related to national wastewater sector, and identify institutional and technical issues based on existing data and previous study</p> <p>(1-2) To select priority laws and regulations comprises norms, standards, guidelines and criteria to be developed or revised</p> <p>(1-3) To develop draft of laws and regulations comprises norms, standards, guidelines and criteria that are selected in activity (1-2)</p> <p>(1-4) To hold a seminar with relevant organizations / stakeholders in the wastewater sector to share and discuss the result of activity (1-3)</p> <p>(1-5) To develop or revise laws and regulations identified in activity (1-2) based on the result of activity (1-4) and (2-2-13)</p>	<p>[Inputs]</p> <p><u>Japanese side</u></p> <p>1. Experts</p> <p>(1) Long-term expert Chief Advisor / Sewerage Policy Advisor</p> <p>(2) Short-term expert team</p> <p>1) Leader/Sewerage planning</p> <p>2) Sub-leader/On-site system</p> <p>3) Urban planning</p> <p>4) Wastewater treatment planning</p> <p>5) Sewerage facilities planning</p> <p>6) Urban drainage</p> <p>7) GIS</p> <p>8) Institution</p> <p>9) Economics / finance</p> <p>10) Environment and social consideration</p> <p>11) Environmental education</p> <p>12) Coordinator</p> <p>2. Equipment</p> <p>1) Personal computer and software for GIS Two (2) sets</p> <p>2) Printer Two (2) sets</p> <p>3. Training in Japan</p> <p>4. Local cost</p>	<p><u>Indonesian side</u></p> <p>1. Assignment of Counterpart personnel</p> <p>2. Project office spaces and other necessary facilities</p> <p>3. Necessary data/information</p> <p>4. Allocation of operational cost for the Project</p>

<p>(2-1) To conduct survey for reviewing the wastewater management master plan in DKI Jakarta</p> <ul style="list-style-type: none"> <li>(2-1-1) To review the existing data and information including progress of the master plan, related plans and policies</li> <li>(2-1-2) To assess capacity of wastewater sector in DKI Jakarta and PD PAL JAYA.</li> <li>(2-1-3) To identify flood condition and major drainage facilities</li> <li>(2-1-4) To conduct site survey and data analysis</li> <li>(2-1-5) To analyze socio economic data for establishing the master plan</li> <li>(2-1-6) To identify institutional issues (organizational, financial and human resources related) in the relevant organizations in wastewater in DKI Jakarta</li> <li>(2-1-7) To conduct field survey for selection of sewage treatment plant sites</li> <li>(2-1-8) To conduct water quality survey</li> <li>(2-1-9) To evaluate the present condition and to identify the issues</li> </ul> <p>(2-2) To review the master plan</p> <ul style="list-style-type: none"> <li>(2-2-1) To develop the basic plan for wastewater management including targets, strategies and actions</li> <li>(2-2-2) To develop the frame work for wastewater management system</li> <li>(2-2-3) To develop the planning data (qualities and quantity of wastewater generation)</li> <li>(2-2-4) To make a zoning of off-site system and on-site system</li> <li>(2-2-5) To conduct topographic and geological survey at sewage treatment plant sites</li> <li>(2-2-6) To develop alternative studies of the master plan (construction cost, O&amp;M cost, environment and others)</li> <li>(2-2-7) To select the most appropriate alternative option</li> <li>(2-2-8) To conduct Initial Environmental Evaluation (IEE)</li> <li>(2-2-9) To develop an improvement plan of the organizational functions</li> <li>(2-2-10) To develop an activity plan of environmental education in wastewater sector</li> <li>(2-2-11) To evaluate the selected alternative option by economical, financial, technical, social and environmental aspects</li> <li>(2-2-12) To identify priority actions to be taken for implementation of the master plan and make an action plan including implementation of a feasibility study and capacity development for related stakeholders</li> <li>(2-2-13) To publish the revised wastewater management master plan in DKI Jakarta</li> </ul>		<p><b>[Pre-conditions]</b></p> <p>1. Appropriate human resources are assigned and budget is allocated to the Project.</p>
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**ANNEX II Plan of Operation**

Project Title: Project for Capacity Development of Wastewater Sector through reviewing the Wastewater Management Master Plan in DKI Jakarta  
 Term: June 2010 ~ May 2012 (2years)

			2010					2011					2012														
			6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
			Joint coordinating committee																								
			Terminal Evaluation																								
			Person in-charge																								
<b>1. Domestic Wastewater Law and its regulations are prepared.</b>																											
	<b>Target</b>	<b>Person in-charge</b>																									
1-1	To collect and analyze basic information related to national wastewater sector, and identify institutional and technical issues based on existing data and previous study	Mr. Handy Legowo(DGHS), Mr. Rudy Arifin(DGHS), Chief of Wastewater Development Region 1 Section																									
1-2	To select priority laws and regulations comprises norms, standards, guidelines and criteria to be developed or revised	Mr. Rudy Arifin(DGHS), Chief of Wastewater Development Region 1 Section																									
1-3	To develop draft of laws and regulations comprises norms, standards, guidelines and criteria that are selected in activity (1-2)	Mr. Handy Legowo(DGHS), Mr. Rudy Arifin(DGHS), Mrs. Kuswahyuni(Head of Sub-division of Law)																									
1-4	To hold a seminar with relevant organizations / stakeholders in the wastewater sector to share and discuss the result of activity (1-3)	Mr. Handy Legowo(DGHS), Chief of Regulation Section																									
1-5	To develop or revise laws and regulations identified in activity (1-2) based on the result of activity (1-4) and (2-2-13)	Mr. Rudy Arifin(DGHS), Mrs. Kuswahyuni(Head of Sub-division of Law)																									
1-3	To develop draft of laws and regulations comprises norms, standards, guidelines and criteria that are selected in activity (1-2)	Mr. Handy Legowo(DGHS), Mr. Rudy Arifin(DGHS), Mrs. Kuswahyuni(Head of Sub-division of Law)																									
1-4	To hold a seminar with relevant organizations / stakeholders in the wastewater sector to share and discuss the result of activity (1-3)	Mr. Handy Legowo(DGHS), Chief of Regulation Section																									
1-5	To develop or revise laws and regulations identified in activity (1-2) based on the result of activity (1-4) and (2-2-13)	Mr. Rudy Arifin(DGHS), Mrs. Kuswahyuni(Head of Sub-division of Law)																									
<b>Training in Japan</b>																											
<b>2. The wastewater management master plan in DKI Jakarta is revised.</b>																											
	<b>Target</b>	<b>Person in-charge</b>																									
2-1	To conduct survey for reviewing the wastewater management master plan in DKI Jakarta																										
2-1-1	To review the existing data and information including progress of the master plan, related plans and policies	Head of Urban Infrastructure and Environment Division, DKI Jakarta																									
2-1-2	To assess capacity of wastewater sector in DKI Jakarta and PD PAL JAYA	All C/P related to output 2																									
2-1-3	To identify flood condition and major drainage facilities	Head of Planning and Programming Division																									
2-1-4	To conduct site survey and data analysis	All C/P related to output 2																									
2-1-5	To analyze socio economic data for establishing the master plan	All C/P related to output 2																									
2-1-6	To identify institutional issues (organizational, financial and human resources related) in the relevant organizations in sanitation and sewerage in DKI Jakarta	BAPPEDA																									
2-1-7	To conduct field survey for selection of sewage treatment plant sites	Environmental Board, DKI Jakarta PD PAL JAYA																									
2-1-8	To conduct water quality survey	Environmental Board, DKI Jakarta																									
2-1-9	To evaluate the present condition and to identify the issues	All C/P related to output 2																									
2-2	To review the master plan																										
2-2-1	To develop the basic plan for wastewater management including targets, strategies and actions	BAPPEDA, Environmental Board, DKI Jakarta PD PAL JAYA																									
2-2-2	To develop the frame work for wastewater management system	BAPPEDA, Environmental Board, DKI Jakarta PD PAL JAYA																									
2-2-3	To develop the planning data (qualities and quantity of wastewater generation)	BAPPEDA, Environmental Board, DKI Jakarta PD PAL JAYA																									
2-2-4	To make a zoning of off-site system and on-site system	BAPPEDA, Environmental Board, Cleansing Department DKI Jakarta PD PAL JAYA																									
2-2-5	To conduct topographic and geological survey at sewage treatment plant sites	BAPPEDA																									
2-2-6	To develop alternative studies of the master plan (construction cost, OM cost, environment and others)	BAPPEDA																									
2-2-7	To select the most appropriate alternative option	All C/P related to output 2																									
2-2-8	To conduct Initial Environmental Evaluation (IEE)	Environmental Board, DKI Jakarta																									
2-2-9	To develop an improvement plan of the organizational functions	BAPPEDA																									
2-2-10	To develop an activity plan of environmental education in wastewater sector	BAPPEDA, Environmental Board, DKI Jakarta PD PAL JAYA																									
2-2-11	To evaluate the selected alternative option by economical, financial, technical, social and environmental aspects	BAPPEDA																									
2-2-12	To identify priority actions to be taken for implementation of the master plan and make an action plan including implementation of a feasibility study and capacity development for related stakeholders	BAPPEDA																									
2-2-13	To publish the revised wastewater management master plan in DKI Jakarta	BAPPEDA																									
<b>Training in Japan</b>																											

DES/DGHS: Directorate of Environmental Sanitation Development, Directorate General of Human Settlements, Ministry of Public Works

