"The Third Joint Coordination Committee"

MINUTES OF MEETING
BETWEEN
AUTHORITIES CONCERNED
OF
THE GOVERNMENT OF THE REPUBLIC OF INDONESIA
AND
JICA EXPERT TEAM ON JAPANESE TECHNICAL COOPERATION
FOR
THE PROJECT FOR IMPROVING PLANNING CAPACITY FOR THE SEWERAGE SYSTEM IN DKI JAKARTA

Jakarta, 23 January, 2017

Mrs. Tuty Kusumawati	Mr. Minoru MATSUMOTO
Head of Regional Development Planning Board Jakarta Capital City Government	Chief Advisor The Project for Improving Planning Capacity for The Sewerage System in DKI Jakarta

SUMMARY OF THE 3rd JCC MEETING

Title	The 3rd JCC meeting, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta		
Date and Time	11th January, 2017 09:00am~12:00pm	**Place**	Sabang 5 Meeting Room, Hotel Mercure Sabang, Jakarta
Chair	Mrs. Tuty Kusumawati, Head of Regional Development Planning Board (BAPPEDA), Jakarta Capital City Government		
Attended	See Annex A		

ITEM	POINTS	ACTION
Progress of the 3rd semi-year & PO/Annual Work Plan of the 4th semi-year	● Mr. NABETA Takeshi (Coordinator of the Project) presented the Progress of the 3rd semi-year and PO/Annual Work Plan of the 4th semi-year	Approved
	● Mr. KANAI Shigeo (Chief of Consultant Team) presented the activities for Output 2.	Approved
Topics of Training	● Mr. Dandi (Assistant Deputy for Water Resource Infrastructure, CMEA) suggested to have training for PPP scheme such as VFM and AP for document bidding in small seminar or workshop for end of the project (May 2017).	● Mrs. Tuty (Head of BAPPEDA) agree with the suggestion by CMEA.
Extension of the project	● Mr. Harada (Senior Representative, JICA) asked the request from the committee for the extension of the project. ● Mr. Matsumoto (Chief Advisor of Project) explained the project design for extension period would be considered further by JCC.	● Mrs. Tuty (Head of BAPPEDA) asked for project extension until March 2018.

The Third Joint Coordination Committee,
Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta
11th January 2017

A. Introduction

1) The third meeting of Joint Coordination Committee (hereinafter referred to as "JCC") was held in Jakarta on 11th January 2017 on the Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta (hereinafter referred to as "the Project"), based on the Record of Discussion between the Government of the Republic of Indonesia and Japan International Cooperation Agency on Japanese Technical Cooperation Project for Sewerage Program of DKI Jakarta signed on 10th December 2014 (hereinafter referred to as "R/D").

2) Mrs. Tuty Kusumawati, Head of Regional Development Planning Agency (BAPPEDA), Jakarta Capital City Government (DKI Jakarta) as the Chair, opened by welcoming all participants and expressing her appreciation with the assistance of the Government of Japan. She also delivers her hope with great anticipation that JICA's cooperation for DKI Jakarta would be expand in order to accelerate Jakarta sewerage System.

3) **Annex A** contains the list of participants of both Japanese and Indonesian sides. The meeting agenda and meeting materials are attached as **Annex B**.

4) The results of JCC held in this time (as shown in separate Minutes of Meeting), the authorities concerned of Indonesia and JICA hereby agreed as follows:

B. Presentations / Plan and progress of the Project

1) Mrs. Tuty Kusumawati, Head of BAPPEDA, DKI Jakarta explains about the importance of sewerage development and the necessity to be implemented. Besides, she also explains about aspect which should be built such as planning, budgeting, construction, and competency of human resources

2) Mr. Matsumoto, Chief Advisor of Project presented the Project Overview.

3) Mr. Nabeta, Coordinator of Project presented the Progress of the 3rd Semi-Year/7 months and Work Plan of the 4th Semi-Year/5 months (PO): the activities for Output 1 (Organizational Function). Beside he also mentioned that the project need to be extended based on several reasons.

4) Mr. Kanai, Team leader of Japanese Consultant Team also presented the activities for Output 2: Trainings, Draft of Mid-Term Sewerage Development Plan, Draft of Regional Regulation (provincial level)

C. Exchange of Views

- **Mrs. Tuty (Head of Regional Development Planning Agency, DKI Jakarta Provincial Government)**
  - As for regional regulation, next agenda is drafting academic paper related to the waste water include tariff scheme under process of DSDA (Water Resource Agency).

- It also needs to be referred in academic paper such as comparisons among cities in Indonesia, and best practices from Japan (Kitakyushu and Tokyo) as benchmarking.
- Communal system can be developed particularly in slum area in the early stage of construction for sewerage system. On-site system and off-site system will be interconnected with the progress of sewer pipe installation
- We still work on the 15 zones, but the priority is Zone 1 and Zone 6.
- Have information regarding piping and water standard from communal (E. coli currently 10.000 and the standard is 3,000).

➢ **Mr. Junifer (Director of Technique and Business, PD PAL Jaya)**
- Regarding Zone10, budget have not allocated for WWTP yet, but World Bank already come to offer for a grant. it would be pleased if JICA would like to offer a grant.
- Tariff scheme need to be discussed further whether the communal tariff remained the same even there still main trunk but house connection can be connected from communal.
- Even it is already stated in Governor Regulation the land availability is 11 ha, but in the field only remain 2.5 ha. There are 6 zone D/D (Detail Design) that will be completed by PD PAL Jaya.
- Zone 2 as the smallest area, it is better that DSDA arrange the budget allocation immediately for the construction

➢ **Mrs. Tuty (Head of Regional Development Planning Board, DKI Jakarta Provincial Government)**
- It need job allocation for sewerage and water resources in internal DKI Jakarta provincial government.
- Going forward for cooperation with JICA would be more training for DKI Jakarta government staffs (piping and community level including provide tariff system) and some pilot communal approach.

➢ **Mr. HARADA Tetsuya (Senior Representative, JICA Indonesia Office)**
- JICA is considering the development of a communal system through JICA's SME support scheme in Malakasari.
- Pilot project in Malakasari shows to be more relevant to impose tariff system. It is necessary to start collecting user charge at Malakasari regardless of enough legal background.

➢ **Mrs. Tuty (Head of Regional Development Planning Board, DKI Jakarta Provincial Government)**
- We need the regional regulation regarding sewerage tariff.

➢ **Mr. Andono (Head of Environmental Impact Management Division, Environmental Agency, DKI Jakarta Provincial Government)**

- In 2011, Environmental Agency get involved in masterplan on Jakarta sewerage system and there will be 20% remaining that would not be covered. And how to covered that area?
- How to develop the communal system?
- Desludging program by PD PAL Jaya shall be included in the regional regulation.

➢ **Mr. Dandi (Division of Water Resource Conservation and Water Damage Control, Assistant Deputy for Water Resource Infrastructure, Coordinating Ministry of Economic Affairs)**
- Related to the capacity building, what's the agenda for the next training in August or September 2017 in Japan?
- We need material of training about calculating VFM (value for money) regarding AP (Availability Payment) for document bidding.

➢ **Mr. Matsumoto Minoru (Chief Advisor of Project)**
- We can arrange the course for PPP or AP scheme in the next training if the project will be extended.

➢ **Mr. Dandi (Division of Water Resource Conservation and Water Damage Control, Assistant Deputy for Water Resource Infrastructure, Coordinating Ministry of Economic Affairs)**
- If the project can't be extended, the alternative to give material of AP can be inserted during small seminar or workshop, the local & central government needs this material.

➢ **Mrs. Tuty (Head of Regional Development Planning Board, DKI Jakarta Provincial Government)**
- Whether the AP material will be inserted in small seminar, workshop, or the next training, it is clearly that DKI Jakarta government need this material.

➢ **Mr. Harada (Senior Representative, JICA Indonesia Office)**
- As for the extension of the project, JICA needs the request from the committee and JICA HQ will decide if it can be extended or not.

➢ **Mrs. Tuty (Head of Regional Development Planning Board, DKI Jakarta Provincial Government)**
- We would be pleased if the project can be extended until March 2018. We agree with the suggestion from Coordination Ministry of Economic Affairs that the material of AP will be accommodated in upcoming small seminar or workshop for end of the project (May 2017). It will be in line with DKI plan to form specific team regarding the PPP and bidding preparation team.

➢ **Mrs. Erly Silalahi (Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Work and Housing)**
- Minutes of kick off meeting of supplemental study for Zone 6 has not been signed yet and it need to be done immediately for further step.

- The progress of KSB (joint agreement) and PKS (cooperation agreement) cannot be traced currently of divided region between central and local government that will become the main reason of loan offering.
- Regarding the project extension based on the reason that it need to transfer knowledge from JICA Consultant's output to local consultant since they will take in charge in May 2017. If there will be no project extension, the local consultant should be involved in before May 2017
- As mentioned by Vice Governor of DKI Jakarta that 1000 SANIMAS (community based sanitation) will be built until 2019, whereas zone acceleration is one of them and it to service uncovering area beside 14 zones.
- 13 land locations in the Ciliwung River Basin belong to Regional Office of Ciliwung-Cisadane River Basin (Balai Besar Wilayah Sungai Ciliwung Cisadane) that can be used for WWTP construction.
- There are differences between RPJMD and NCICD, Zone 1 and 6 as priority and Zone 4, 5, 8 and 10 as mid-term. But after reviewing Master Plan of NCICD the priority is Zone 1, 6 and 11, and the mid-term is Zone 0, 3 and 7.
- We have some studies about zone mapping with fast revenue and D/D for WWTP Review that can be used as references.
- There is no regional regulation about the management of underground utilities, so it will be a constrain for acceleration project.
- For Zone 6, there will be repositioning of existing STP. Which agency will implement it and who will allocate budget for it?
- D/D for 6 zones should be finished already and submitted to PPLP (Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Works and Housings).

➢ **Mrs. Tuty (Head of Regional Development Planning Board, DKI Jakarta Provincial Government)**
- Draft KSB and PKS need to be followed-up.
- Bidding for local consultant for regulation will be do immediately
- Because the development of SANIMAS will hard to do, the possible way for slum or dense area is by using communal based system since there will be difficulties on access and WWTP construction.
- There is no national law of land utility for underground and upper ground under Ministry of Spatial and Land Planning, but there is governor regulation about land utility for underground like for MRT and ducting system.

➢ **Mrs. Yosi (Bureau of City Planning and Environment, DKI Jakarta Provincial Government)**
- Communal sanitation system will be developed by DSDA.
- Zone 2 in Muara Angke can be built under Ministry of Public Works and Housings or by local government budget.
- PD PAL Jaya will arrange governor regulation for sludge treatment include the tariff scheme
- The mechanism of tariff needs the input from JICA expert team.

- **Mrs. Tuty (Head of Regional Development Planning Board, DKI Jakarta Provincial Government)**
  - Start of the construction for the priority zones need to be wait for the result of discussions about NCICD and reclamation of 17 islands that will be discussed on June 2017 in the Presidential Office.

- **Mrs. Erly (Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Work and Housing)**
  - Will the outputs from JICA Consultants be draft of regional regulation? Because the project purpose is improving planning capacity.

- **Mr. Yakuro Inoue (JICA Consultant Team)**
  - DSDA is as a main actor of arranging regional regulation completely but JICA consultant will support it.
  - Regarding the Record of Discussion (R/D) that signed in 2014, JICA expert will give necessary guidance. It also mentioned in the plan of operation that DKI draft mid-term sewerage plan in consultation with JICA Expert team.

D. Conclusions for the Project

1) The Committee confirmed the progress in the 3rd semi-year of the Project.

2) The Committee endorsed the annual work plan of the 4th semi-year of the Project which has been presented by each representative in presentation.

3) Establishment of tariff system for securing sewerage management is one of an important activity. Tariff system considering affordability of users in accordance roles of sewerage system for public and private shall be formulated.

4) Human resources in DKI Jakarta shall be acquired in terms of number and quality. Well-designed program of training and technical development will be established to contribute to enhance know-how on sewerage development and operation as well as appropriate technology.

5) JCC requests the extension of the project's period until March 2018. Project design will be deemed further by JCC.

E. Other matters

The Committee agreed that the next meeting of JCC will be held in May 2017 to check the progress of the Project's implementation and discuss the next Plan of Operation in the extension term.

Done and signed in Jakarta, Indonesia, on 23 January 2017, by the representative of both parties.

Annex A.

The 3rd Joint Coordination Committee
Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta (SWPJT)

Jakarta, 11 January 2017

List of Participants

I. Chairpersons

Mrs. Tuty Kusumawati *(Chair)*,
Head of Regional Development Planning Board (BAPPEDA), DKI Jakarta Provincial Government
Mr. Eko Gumelar Susanto *(Co-chair)*,
Head of Raw Water, Water Supply and Waste Water Division, Water Resources Agency, (Dinas Sumber Daya Air), DKI Jakarta Provincial Government

II. Participants from Japanese Side

Mr. Harada Tetsuya,
Senior Representative of JICA Indonesia Office
Ms. Kitamura Keiko,
Project Formulation Advisor / JICA Indonesia Office
Ms. Juni Melani,
Project Officer / JICA Indonesia Office
Mr. Matsumoto Minoru,
Chief Advisor, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta (SWPJT-JICA)
Mr. Nabeta Takeshi,
Coordinator / Enhance organization structure, SWPJT-JICA
Ms. Lailatus Siami
Local Consultant of JICA Project, SWPJT-JICA
Mrs. Indah,
Secretary of JICA Project, SWPJT-JICA
Mr. Kanai Shigeo,
Team Leader of Japanese Consultants Team, SWPJT-JICA
Ms. Takamizawa Kiyoko,
Deputy Team leader, Japanese Consultants Team, SWPJT-JICA
Mr. Inoue Yakuro,
Expert for Provincial Regulations, Japanese Consultants Team, SWPJT-JICA
Mr. Gandhy,
Local Consultant of JICA Project, SWPJT-JICA
Mr. Jana,
Local Consultant of JICA project, SWPJT-JICA

III. Participants from Indonesian Side

DGHS / Direktorat Jenderal Cipta Karya

Ms. Erly Silalahi,
Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Works and Housing

Mr. Rinaldy Pradana,
Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Works and Housing

Ms. Olsa R.,
Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Works and Housing

BAPPEDA

Mr. Tri Rachmat,
Head of Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government

Ms. Tezza Nur Ghina R.,
Head of Sub Division of Water Management, Hygiene and Environment, Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government

Mrs. Anni Maryam,
Head of Sub-Division of Spatial Planning, Human Settlement and Forestry, Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government

Mr. Cipta Aditya,
Head of Sub Division of Highways, Housing & Human Settlement, Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government

Mr. Fadly Haley,
Sub Division of Water Management, Hygiene and Environment, Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government

Mr. Evan Agustin,
Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government

Mr. Hari,
Secretariat, BAPPEDA, DKI Jakarta Provincial Government

Water Resources Agency (Dinas Sumber Daya Air)

Mr. Akhmad Sodikin,
Division of Raw Water, Water Supply and Waste Water, Water Resources Agency (Dinas Sumber Daya Air), DKI Jakarta Provincial Government

PD PAL Jaya

Mr. Junifer Panjaitan,
Director of Technique & Business, Waste Water Management Enterprise of DKI Jakarta (PD PAL Jaya)

Mr. Erwin Marphy Ali,
Technical Manager, Waste Water Management Enterprise of DKI Jakarta (PD PAL Jaya)
Mr. Johan,
Assistant Manager of Business Development, Waste Water Management Enterprise of DKI Jakarta (PD PAL Jaya)

BPKLH
Mrs. Yosi Lusia,
Bureau of City Planning and Environment (BPKLH), DKI Jakarta Provincial Government
Mrs. Retno,
Bureau of City Planning and Environment (BPKLH), DKI Jakarta Provincial Government

Environmental Agency
Mr. Andono,
Head of Division of Environmental Impact Management, DKI Jakarta Provincial Government

Bureau of Law
Mr. Heru,
Bureau of Law, Regional Secretariat, DKI Jakarta Provincial Government

Highways Agency
Mr. Josua Lumban Gaol,
Highways Agency, DKI Jakarta Provincial Government

BPAD
Mr. M. Reza,
Regional Asset Management Agency (BPAD), DKI Jakarta Provincial Government

BAPPENAS
Ms. Kania Mayang,
Directorate of Urban, Housings and Settlements, State Ministry for National Development Planning/BAPPENAS

Coordinating Ministry of Economic Affairs
Mr. Dandi W.
Division for Water Resource Conservation and Water Damage Control, Assistant Deputy for Water Resource Infrastructure, Coordinating Ministry of Economic Affairs
Ms. Eva Caliyaning
Division for Water Resource Conservation and Water Damage Control, Assistant Deputy for Water Resource Infrastructure, Coordinating Ministry of Economic Affairs

Annex B.

The 3rd Joint Coordination Committee
Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta (SWPJT)

Jakarta, 11 January 2017

Meeting agenda and Meeting materials

PEMERINTAH PROVINSI DAERAH KHUSUS IBUKOTA JAKARTA
BADAN PERENCANAAN PEMBANGUNAN DAERAH
Jl. Medan Merdeka Selatan No. 8 -9 Telepon : 3842061 – 3842062 – 3842871, Fax : 3860521
Website bappedajakarta.go.id E-mail sekretariat@bapedadki.net
J A K A R T A
Kode pos : 10110

Nomor : 161-1-713 /0 Januari 2017
Sifat: : Segera
Lampiran : 2 (dua) lembar
Hal : Undangan rapat

Kepada
Yth. Daftar Undangan Terlampir

di
Jakarta

Sehubungan dengan pelaksanaan The Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta, dengan ini saya mengharapkan kehadiran Saudara dalam pertemuan yang akan diselenggarakan pada

hari : Rabu
tanggal : 11 Januari 2017
pukul : 08.30
tempat : Ruang Rapat Sabang 5, Hotel Mercure Sabang, Jl. H. Agus Salim No. 11, Jakarta Pusat
acara : 3rd Joint Coordinating Commitee (JCC) "The Project for Improving Planning Capacity for The Sewerage System in DKI Jakarta"
pimpinan rapat : Kepala Bappeda Provinsi DKI Jakarta

Atas perhatian dan kehadiran Saudara, diucapkan terima kasih.

Kepala Badan Perencanaan Pembangunan Daerah
Provinsi Daerah Khusus Ibukota Jakarta,

Tuty Kusumawati
NIP 196304291986032003

Tembusan :
1. Wakil Kepala Bappeda Provinsi DKI Jakarta
2. Sekretaris Bappeda Provinsi DKI Jakarta

Lampiran I Undangan Kepala Bappeda
Nomor : 16/-1.713
Tanggal : 10 Januari 2017

1. Construction and Disaster Management Attache, Embassy of Japan
2. Kementerian Koordinator Bidang Perekonomian
   up. Asisten Deputi Menko. Perekonomian Bidang Infrastruktur Sumber Daya Air
3. Kementerian Perencanaan Pembangunan Nasional/BAPPENAS
   up. Direktur Perkotaan, Permukiman dan Perumahan
4. Kementerian Pekerjaan Umum dan Perumahan Rakyat
   up. a. Direktur Keterpaduan Infrastruktur Permukiman (KIP), Ditjen. Cipta Karya
   b. Kepala Subdit. Air Limbah, Direktorat Pengembangan Penyehatan Lingkungan Permukiman (PLP), Ditjen. Cipta Karya
   c. Kepala Subdit. Standardisasi dan Kelembagaan, Direktorat Pengembangan PLP, Ditjen. Cipta Karya
5. Kepala Badan Pengelola Aset Daerah Provinsi DKI Jakarta
6. Kepala Dinas Lingkungan Hidup Provinsi DKI Jakarta
   up. Kepala Bidang Pengendalian Dampak Lingkungan
7. Kepala Dinas Sumber Daya Air Provinsi DKI Jakata
   up. a. Kepala Bidang Air Baku, Air Bersih dan Air Limbah
   b. Kepala Seksi Perencanaan Air Baku, Air Bersih dan Air Limbah
   c. Kepala Seksi Pembangunan dan Peningkatan Air Limbah
8. Kepala Dinas Bina Marga Provinsi DKI Jakarta
   up. a. Kepala Bidang Kelengkapan Prasarana Jalan dan Jaringan Utilitas (KPJU)
   b. Kepala Seksi Perencanaan Bidang KPJU
9. Kepala Biro Penataan Kota dan Lingkungan Hidup Setda Provinsi DKI Jakarta
   up. a. Kepala Bagian Lingkungan Hidup
   b. Kepala Subbagian Sanitasi dan Pencemaran
10. Direktur Utama PD PAL Jaya
    up. a. Direktur Pengembangan Bisnis
    b. Manager Teknik
11. Kepala Biro Hukum Setda Provinsi DKI Jakarta
12. Chief Representative of JICA Indonesia Office
13. JICA Experts Team

Kepala Badan Perencanaan Pembangunan Daerah
Provinsi Daerah Khusus Ibukota Jakarta,

Tuty Kusumawati
NIP 196304291986032003

Lampiran II Undangan Kepala Bappeda
Nomor : 16/-1-713
Tanggal : 10 Januari 2017

JADUAL ACARA

3rd Joint Coordinating Commitee (JCC)
"The Project for Improving Planning Capacity For The Sewerage System in DKI Jakarta"

Waktu	Kegiatan	Penanggung Jawab
08:30 - 09:00	Registrasi Peserta	Panitia
09:00 - 09:10	Pembukaan dan Keynote Speech	Ms. Tuty Kusumawati Kepala BAPPEDA Provinsi DKI Jakarta selaku Project Director
09:10 - 09:20	Perkenalan	Mr. Minoru Matsumoto, Chief Advisor of the Project "Project Overview"
09:20 - 09:50	Presentasi oleh Tim Konsultan JICA	"Progress Report"
09:50 - 10:20		"Network Plan"
10:20 - 11:55	Diskusi	Ms. Tuty Kusumawati Kepala BAPPEDA Provinsi DKI Jakarta selaku Project Director
11:55 - 12:00	Penutup	
12:00 -13:00	Makan Siang	

Kepala Badan Perencanaan Pembangunan Daerah
Provinsi Daerah Khusus Ibukota Jakarta,

Tuty Kusumawati
NIP 196304291986032003

OPENING SPEECH

ON EVENT

3rd Joint Coordinating Committee

"The Project for Improving Planning Capacity for The Sewerage System in DKI Jakarta"

by:

Ms. Tuty Kusumawati

Head of Regional Planning Development Board

PROVINCIAL GOVERNMENT OF DKI JAKARTA

ASSALAMUALAIKUM WR. WB
GOOD MORNING LADIES AND GENTLEMENTS
OHAYOU - GOZAIMAS

His/Her Excellency,

- Mr. Harada Tetsuya, JICA Representative for Indonesia
- Mr. Minoru Matsumoto, Chief Advisor of The Project for Improving Planning Capacity for The Sewerage System in DKI Jakarta
- Mr. Shigeo Kanai, Team Leader of JICA Consultant Experts Team
- Representative participants from Central Government of Republic Indonesia
- My fellow Provincial Government of DKI Jakarta Officials,
- Ladies and Gentlemen

- I would like to thank all of you for attending this 3rd Joint Coordinating Committee of "The Project for Improving Planning Capacity for The Sewerage System in DKI Jakarta". This is a continuation of previous JCC Meeting which held on last June 2016.

Ladies and Gentlements and Distinguished Guests

- Sewerage development system is one of Jakarta priorities in infrastructure development in Jakarta that need to be implemented soon. This direction was stated

by Governor since late 2014. He mentioned that all of waste water development, including off-site and on-site system, which was previously planned to be completed by 2030 could be accelerated to 2022.

- It is also in line with National Mid-Term Development Plan (RPJMN) 2015-2019 which fulfill national sanitation target 100-0-100 (100% clean water connection, 0% slums area, and 100% waste water connection)
- Jakarta needs a lot of efforts to achieve the target. Many aspects should be prepared paralelly; as example planning, budgeting and financing, constructing, operating and maintenance (O/M), and also improving the competencies of human resources.
- I hope the JICA experts team could also transfer knowledge and information needed as much as possible to increase the capability of DKI Jakarta human resources.

Ladies and Gentlements and Distinguished Guests

This project outputs will help improving planning capacity of DKI Jakarta's staff regarding waste water management. At this opportunity, I am delivering a gratitude to JICA for the 2 batches training in Japan on waste water which

successfully conduct on February 2016 and August-September 2016. I am sure it had opened a better understanding for DKI Jakarta's staff in waste water management.

- One of the main output is to give suggestions to Bappeda regarding the Regional Mid-Term Development Plan (RPJMD) 2018-2022 on waste water. It is in line with current focus in Bappeda to evaluate the previous Regional Mid-Term Development Plan 2013-2017 and drafting the new RPJMD 2018-2022.
- The JICA Expert Team will also give suggestions to the drafting of Local Act of Waste Water in the Water Resources Agency which will give a different perspective to DKI Jakarta.
- I hope JICA Expert Team and Central Government could also support us to achieve this project outputs.
- Thank you for your attention.

WABILLAHII TAUFIK WAL HIDAYAH,
WASSALLAMU ALAIKUM WARAHMATULLAHI WABARAKATUH.

Project Overview

3rd Joint Coordinating Committee
Project for Improving The Planning Capacity
for Sewerage System in DKI Jakarta

11 January, 2017

Minoru Matsumoto, JICA Expert, Chief Advisor of the Project

JICA's assistance for Jakarta Sewerage System (JSS)

Facility Construction

2010-2012 Master Plan for JSS
< 2 Priority Zones for short-term development>

Zone 1	Zone 6
2012-2013 Feasibility Study	2012 -2013 Feasibility Study
2014-2015 Supplemental Study for E/S	2016- ongoing Supplemental Study for E/S
2014- ongoing E/S for Zone 1 (Loan)	under discussion Development Project Zone 6 (Loan)

2012- Other Pilot Projects using Japanese Technology
(Pipe Jacking, On-site system, Communal WWTP etc.)

Capacity Development

2010- JICA Expert for Sewerage Management in DGHS

2015- Technical Assistance Project for Capacity Development in DKI
(Demarcation of Organization, Training of Staffs, RPJMD, PERDA)

Why we need the Project for Improving Planning Capacity ?

Sewerage system management requires technical and financial skills of the administrator

P2

Purpose and Output of the Project

Overall Goal

- Administrative capacity of sewerage management is improved

Project Purpose

- Implementation structure of sewerage works in DKI Jakarta is strengthened

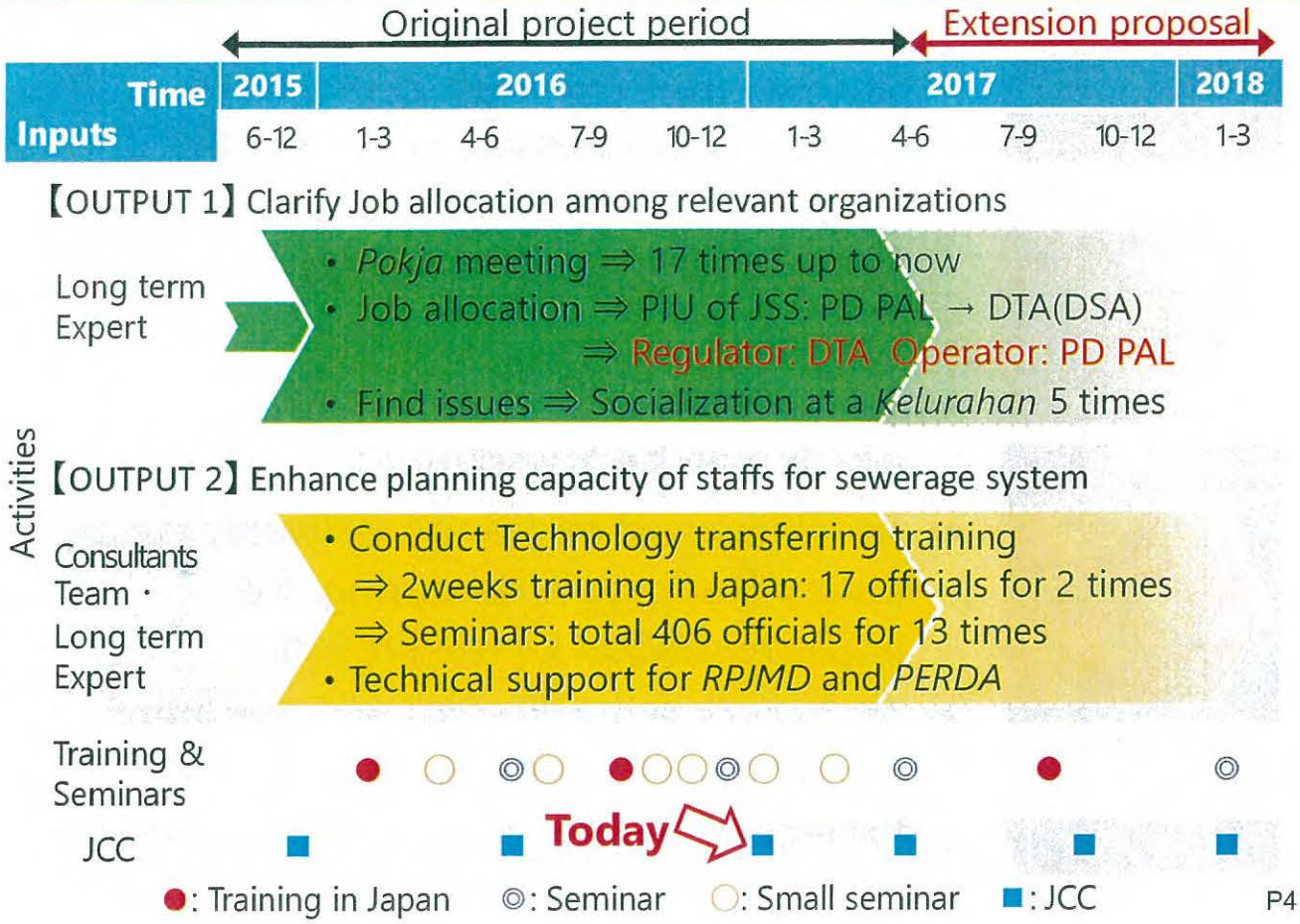
Outputs

- Output 1: Job allocation among relevant organizations in DKI Jakarta is clarified
- Output 2: Planning capacity of staffs for sewerage system is enhanced

1. Conduct training and seminars for sewerage works
2. Drafts mid-term sewerage development plan (*RPJMD*)
3. Drafts regional regulation (*PERDA*) for sewerage works

P3

Timeline and Activities of the Project



P4

Forthcoming Challenges for JSS Management

Tariff System

- User charge << O&M Cost
- How to compensate the shortfall in O&M expenses for sustainable management?

Mandatory Sewer adoption

- Accelerate house connection
- Need to avoid double investment by on-site system

Socializ ation

- Call citizen's attention for water environment and sanitation system
- Changing the behavior of throwing garbage in the river will take time ...

Capacity Development for DKI

- Expansion of PIU and effective training for staffs are needed continuously to develop and operate with fine technology

P5

3rd Joint Coordinating Committee

Purpose of 3rd JCC

- To formulate the work plan and to monitor the progress of the Project
- To review the result of the work plan and to evaluate the progress of the Project
- To show solutions against challenges which may be found in JCC
- To review and exchange views on major issues that may arise during the implementation of the Project
- To discuss any other issue(s) pertinent to the smooth implementation of the Project.

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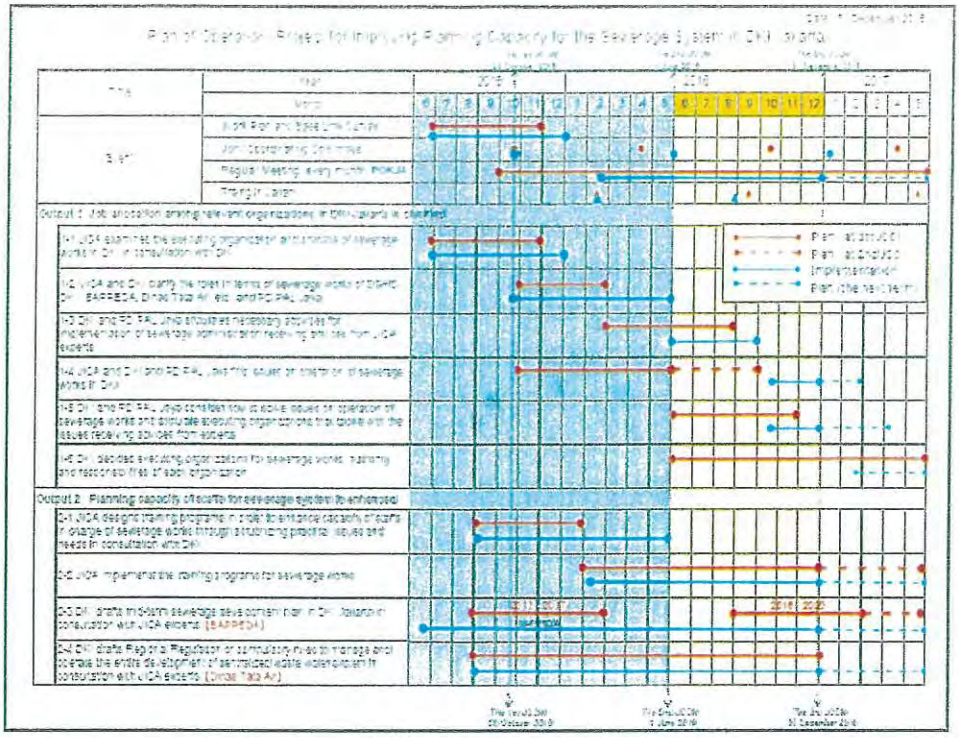
Kemajuan tujuh bulan
dan
Rencana Kerja lima bulan (PO)

Pertemuan JCC ke-3

11 Januari 2017

1

Pertemuan JCC ke-2
1 Juni 2016



Output 1. **Penjelasan kegiatan masing-masing badan/organizasi terkait.** */ Job allocation among relevant organizations in DKI Jakarta is clarified.*

1. **Fungsi organisasi** */ Organizational function:*
   (Activity 1-1 ~ 1-6)

Output 2. **Meningkatkan kapasitas staf untuk perencanaan sistem air limbah.** */ Planning capacity of staffs for sewerage system is enhanced.*

2. **Pelatihan** */ Trainings:* *(Activity 2-1, 2-2)*
3. **Draft Rencana 5 Tahun** */ Draft of Mid-term Sewerage Development Plan:* *(Activity 2-3)*
4. **Draft Peraturan Daerah** */ Draft of Regional Regulation (provincial level):* *(Activity 2-4)*

1. Fungsi organisasi / *Organizational function (Demarcation)* *(Activity 1-1 ~ 1-6)*

Fungsi organisasi	Jun '15 – Mai '16	Jun '16 – Des '16
Step ①: (Activity 1-1) (Activity 1-2)	**Koleksi** dan **analisis** data pada sekarang  	
Step ②: (Activity 1-3)	**Penyusunan draft Alokasi Pekerjaan** (dengan grafik) pada sistem sewerage di DKI Jakarta   	
Step ③: (Activity 1-4) (Activity 1-5)	**Merevisi draft Alokasi Pekerjaan** melalui uji coba lapangan. (Masalah temuan dan solusi)	
Step ④: (Activity 1-6)	**Penyelesaian draft Alokasi Pekerjaan** dengan komentar melalui laporan	

5

Step ③:
Merevisi draft Alokasi Pekerjaan melalui uji coba lapangan. (Masalah temuan dan solusi)

(Masalah temuan dan solusi ➢ Merevisi Alokasi Pekerjaan)

③-1. Uji coba lapangan di daerah perumahan
(Kelurahan Malakasari)

③-2. Koleksi data di daerah perumahan
(Program sosialisasi dan Kuesioner)

③-3. Pembahasan untuk merevisi
(Pertemuan POJKA)

* Target tempat pada data koleksi adalah daerah Perumahan:
Pengumpulan tarif di daerah perumahan merupakan salah satu tujuan dasar untuk manajemen kelancaran pada sistem sewerage.

6

③- 1. Uji coba lapangan di daerah perumahan

- Uji coba lapangan untuk koleksi data pada sistem sewerage di daerah perumahan telah dilaksanakan oleh DTA dan PD PAL Jaya.

Uji coba lapangan di Malakasari, Jakarta Timur

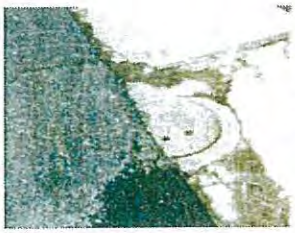
Pemeriksaan kondisi sekarang pada sistem sewerage di daerah perumahan.

- Hardware : **Fasilitasi**
- Software : **Operasi dan Pemeliharaan** (*OM*)

7

Hardware : **Fasilitasi**

Pasir



Tertutup penutup

Pipa lain dalam Manhole

Software : **Operasi dan Pemeliharaan** (*OM*)

Kerja pemeliharaan

Rusak penutup bak kontrol

Penyedotan

5

③- 2. Koleksi data di daerah perumahan
(Program sosialisasi dan Kuesioner)

5 kali sosialisasi di lapangan

Peserta dibagi dua Grup (A dan B)

Facilitator dari POKJA

Penjelasan hasil lokakarya oleh perwakilan grup

Sesi tanya-jawab dalam Aktivitas Sosialisasi

9

Koleksi data/suara di Lokakarya
(Program sosialisasi)

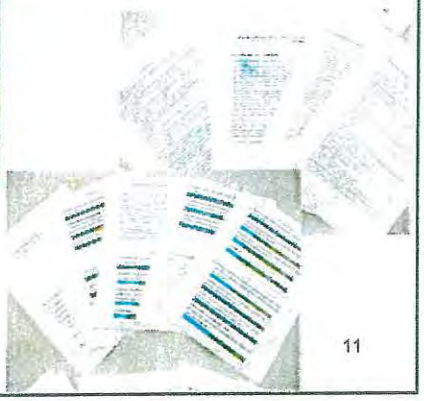
10

Kuesioner

Kuesioner telah dilakukan untuk mengukur persepsi warga tentang sistem sewerage.

- Pada Program sosialisasi (Malakasari)
- Berkunjung ke daerah perumahan di Zona 0. (Sudirman)

194 org (Malakasari)



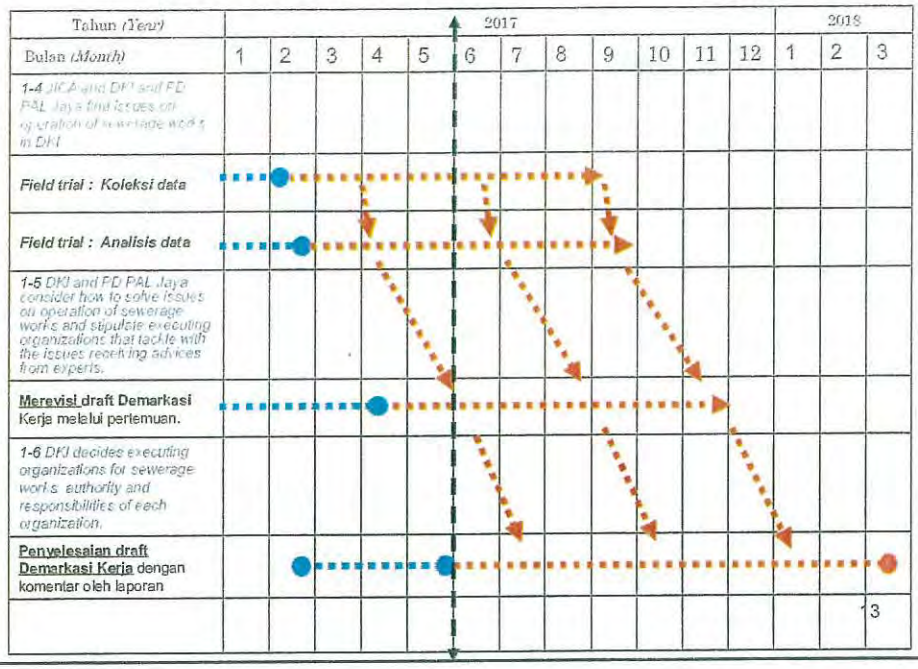
*** org (Sudirman)

11

③- 3. Pembahasan untuk merevisi

- Diskusi untuk merevisi draft Alokasi Pekerjaan yang telah dilakukan melalui beberapa pertemuan POKJA.

Rencana aktivitas 5 bulan kedepan



2. Pelatihan / *Trainings*

(Activity 2-1, 2-2)

① Preparation of training program of sewerage development

② Implementation of training in lime with the training Program

Training program — Jun '15 – May '16 — Jun '16 – Dec '16

Course	No.	Date	Pers.	
Small Seminar in Jakarta (SS)	1st SS	4-7 Apr 2016	97	
	2nd SS	3 Aug 2016	10	* Total (2nd – 5th): 157 pers.
	3rd SS	5 Aug 2016	21	
	4th SS	3-6 Oct 2016	90	
	5th SS	29 Nov 2016	36	
Big Seminar in Jakart (BS)	1st BS	31 May 2016	67	
	2nd BS	1 Dec 2016	85	
Training in Japan (TJ)	1st TJ	14 Feb – 27 Feb '16	8	
	2nd TJ	21 Aug – 3 Sep '16	9	

14

Seminar

①Small Seminar

The 3rd Small Seminar
(BAPPEDA) / 5 Okt 2016

The 3rd Small Seminar
(Dinas Tata Air) / 6 Okt 2016

②Big Seminar

The 2nd Big Seminar
(Hotel Mandarin Oriental)
1 Des 2016

15

Pelatihan di Jepang / *Training in Japan*

The 2nd C/P Training in Japan
Title: Improving Planning Capacity for the Sewerage System in DKI Jakarta / Period: 21 Agu 2016 – 3 Sep 2016

JICA HQ
(Tokyo)

TOTO museum
(Kitakyushu)

Shibaura
WWTP
(Tokyo)

pipe construction
(Kitakyushu)

Sewerage
Science
Museum
(Osaka)

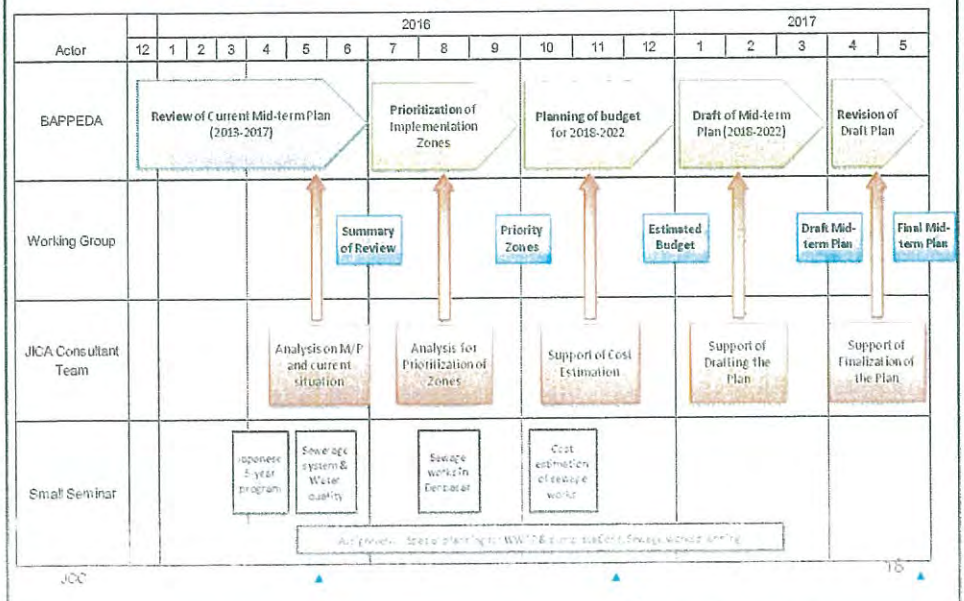
pipe
construction
(Kitakyushu)

Rencana aktivitas 5 bulan kedepan
The plan for the next 5 months

Tahun (Year)	2017												2018		
Bulan (Month)	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
2-2 **JICA melaksanakan program pelatihan untuk pekerjaan saluran air limbah.** *JICA implements the training programs for sewerage works.*															
1) Seminar Kecil Small Seminar	●····		●												
2) Seminar Besar Big Seminar	●····				●									●	
3) Pelatihan di Jepang Training in Japan								▲							

17

3. Draft rencana 5 tahun / *Draft of Mid-term Sewerage Development Plan* (Activity 2-3)



3-1. Target RPJMD 2013-2017

Target of Current RPJMD (2013-2017)

PROGRAM	PROGRAM PI (OUTCOME)	INITIAL CONDITION 2012	PERFORMANCE TARGET PROGRAM					PERFORMANCE CONDITIONS END OF YEAR 2017
			2013	2014	2015	2016	2017	
			Target	Target	Target	Target	Target	
Performance Improvement Program Wastewater Management	Percentage of centralized wastewater systems	Only Zone 0 (4% of DKI)	Preparation of DKE UPL ground breaking Zone 1 and the land acquisition WWTP zone 1	Land acquisition WWTP operations continued Zone 1 and Zone 1 EIA preparation	Land acquisition WWTP continued Zone 1 and EIA preparation Zone 6	Commencement of construction of piping Zone 1	Construction Zone 1 advanced piping and piping construction commencement Zone 6	Facilities of centralized wastewater systems by 8% of the DKI (Zone 0, Zone 1 and Zone 6)
	Percentage of local systems with ITP	0	1	71	21	3,5	5,5	100 %
	Number of WWTP for communal system	2	0	3	3	2	1	11
	Volume of desludging of septic tanks and sludge treatment	400m3/d	500 m3/d	700 m3/d	900 m3/d	1,200 m3/d	1,500 m3/d	1,500 m3/d
								19

N.B. Implementation progress and current conditions to be confirmed

3-2. Prioritas untuk RPJMD mengenai Sewerage

Prioritization for Mid-term Plan

Suggested criteria

1. Consistency with NCICD (location of zone)
2. Capital and operational costs (pipe &WWTP)
3. Service revenue (population & commercial area)
4. Implementation period (technical difficulty)
5. Social impacts (land requirement)
6. Environmental impacts (water quality)
7. Funding agency assistance

Priority	Zone
Short-term	1, 6
Mid-term Priority 1	2, 8
[illegible]	[illegible]
Mid-term Priority 3	7, 4+10
Mid-term Priority 4	[illegible]
Long-term	9, 11, 12, 13, 1-

N.B. Result of evaluation will be revised after update of info

3-3. Jadwal Tahunan & estimasi biaya
Annual schedule & cost estimation

Activities to be budgeted for next 5 years

- Preparation and procedures (AMDAL, land acquisition and survey, socialization etc.)
- E/S and Construction of sewerage systems
- O&M of WWTP and sewer
- On-site management

	2018	2019	2020	2021	2022
Preparation	Zone-2,3,5,7,8, 4+10				
E/S (Design & tendering)	3 Zones		2 Zones		
Construction	Zone-1 & 6		3 Zones		
O&M				Zone-1 & 6	
Onsite	All zones				

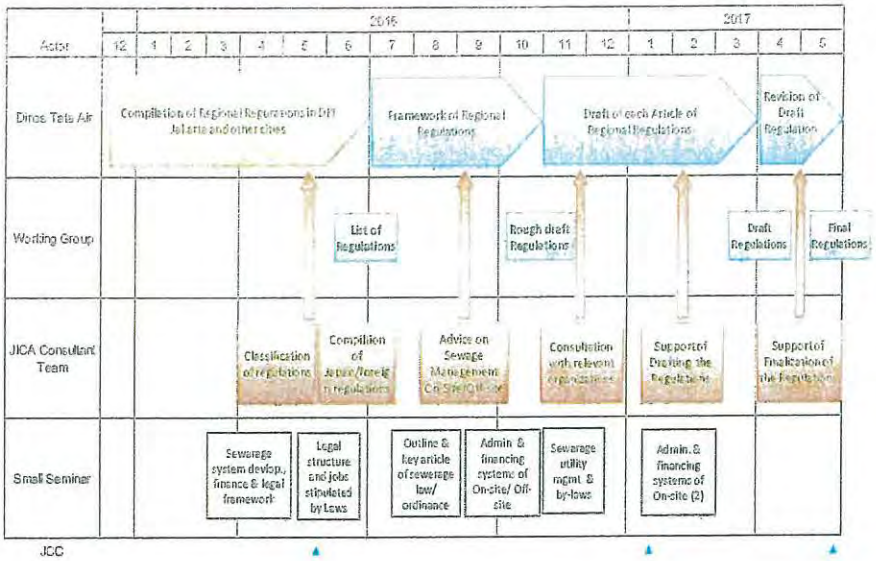
3-4. Langkah ke depan (Jan-Mei 2017)
The Way Forward (Jan – May 2017)

- Cost estimation of E/S and construction of sewerage systems.
  - A) Finalization of criteria and prioritization
  - B) Compare of implementation schedules and project costs for different scenario
  - C) Determination of appropriate scenario
- Cost estimation of preparation (AMDAL, Land acquisition, Socialization etc.) and O&M
- Draft RPJMD (2018-2022) sewerage section
- Final Draft RPJMD (2018-2022) sewerage section

N.B. the above activities are carried out in accordance with the results of PD PAL Jaya's DED and discussion with BAPPEDA.

22

4. Draft Peraturan Daerah / *Draft of Regional Regulation (provincial level)* (Activity 2-4)



4-1. Perlu dukungan hukum

Required Legal Background

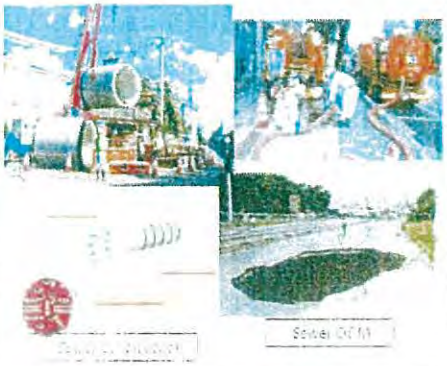
Sewerage works is public infrastructure as well as private entity.
Accordingly;

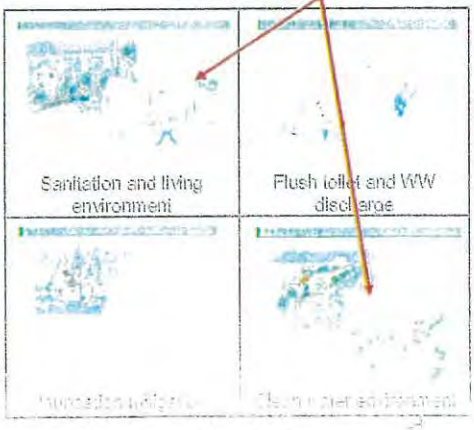
- Huge amount of tax will be invested.
- Sustainability of O&M shall be secured.

Legal requirement:

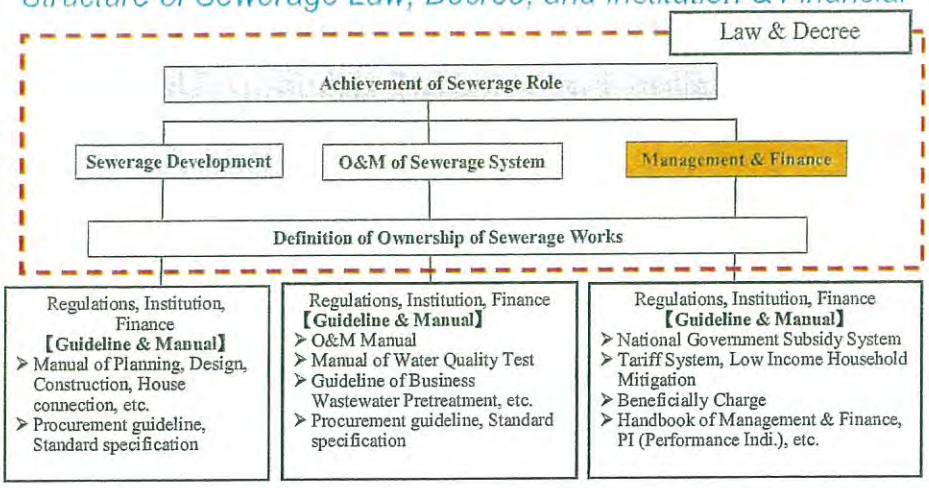
1 Project implementation in whole Jakarta
2 Sustainable operation

Priority role in Jakarta
- Sanitation
- Water environment & Aesthetic urban





4-2. Struktur keseluruhan mengenai Sewerage Hukum, Keputusan, Institusi & Keuangan terkait Sewerage/ *Overall Structure of Sewerage Law, Decree, and Institution & Financial*



Legal and financial system of sewerage works described in accordance with project flow and Individual role of (1) Sewerage Development, (2) O&M of Sewerage System and (3) Management & Finance.

4-3. Struktur tentang Sewerage Ordonansi *Structure of Sewerage Ordinance (Draft)*

Concept of Sewerage Ordinance

Jobs and right & obligation are grouped into following;
1.Ownership of Administrator
2.Obligation on WW discharge & house connection approval
3.Notification of public sewer use
4.WW discharge standard
5.Plumber registration system
6.Sewerage information database
7.Sewerage tariff
8.Responsibility of owner of houses/building not connected to sewers
9.Regular desludging
10.Qualification & training of operators
11.On-site sludge treatment

Referred regulation;
1.Standard Sewerage Ordinance
2.Sewerage Law in Japan
3.Jokasou Law

Request to DKI
To scrutinize jobs of 1. through 11. which will be required.

Article	Objects
Article-1	Purpose of Ordinance
Article 2	Definition of Terms
Sewerage Law	*Stipulation on Planning (if necessary)*
Sewerage Law	*Stipulation on Construction (if necessary)*
Sewerage Law	*Stipulation on Finance (if necessary)*
Sewerage Law	*Qualification of engineers & operator(if necessary)*
Article 3 – 5	Installation of house connection and private (building) sewer
Article 6	Registration and order on plumber
Article 7	Inspection of private sewer installation
Article 8 - 12	Pretreatment of wastewater from business and industry
Article 13	Suspension or restriction of wastewater discharge
Article 14	Notification of public sewer use
Article 15 – 17	Sewerage tariff
Sewerage Law	*Sewerage Information Database*
Article 18	Order for improvement of pretreatment facility
Article 19 - 26	Approval of activity and sewer occupation
Jokasou Law	Responsibility of households and building owners who are not connected to separate sewer system
Jokasou Law	Responsibility for regular desludging of household septic tanks
Jokasou Law	Qualification and training of desludging operators
Jokasou Law	Operation and Maintenance of Independent Treatment Plant (ITP) of commercial buildings and office buildings
Jokasou Law	Qualification and training of supervisors/operators of ITP
Jokasou Law	Inspection of ITP performance
Jokasou Law	On-site Sludge treatment
Article 27	Penalty

(White cell) Standard Sewerage Ordinance of Municipality Government in Japan
Sewerage Law in Japan (National)
Jhokasou Law in Japan

4-4. Langkah ke depan (Jan-Mei 2017)
The Way Forward (Jan - May 2017)

- Scrutinizing the required article in DKI Jakarta
  - A) Confirming off-site & on-site service
  - B) Selecting articles appropriate to DKI Jakarta
- Text book of individual article
- Recommendation of institutional design

N.B. the above activities are carried out in accordance with the results of discussion with DSDA.

27

Proyek Landing (**Draft** dari Pertemuan POKJA)
Project's Landing

1. Periode proyek perlu diperpanjang sampai dengan Maret 2018.

Tujuan perpanjangan periode

1) Struktur organisasi akan perlu perluaskan sesuai dengan program saluran air limbah di DKI Jakarta. Terutama adalah struktur DSDA. (Output 1)
2) Masih perlu pelatihan untuk pengembangan sumber daya manusia sebelum memulai konstruksi. (Output 2)
3) Hasil aktivitas tentang draft peraturan pembuangan sewage yang akan dihasilkan oleh konsultan Jepang perlu mentransfer dan menyesuaikan dengan program DSDA sampai, siap draft peraturan 2018. (Output 2)

Kegiatan rinci dan jadwal akan disusun melalui POKJA. Jadwal tetap mengenai hal tersebut akan disampaikan dalam pertemuan JCC ke-4.

28

Survey
Lapangan

Terima Kasih atas Kerjasama

Menghadiri
Pertemuan

29

Saran / *Suggestion*

The 3rd meeting of JCC

11 January 2016

1

1. **Mengamankan sumber daya keuangan** untuk proyek-proyek sewerage / *on Securing financial resources for sewerage projects*

1. Standarisasi sistem tarif Sewerage di DKI Jakarta adalah salah satu persiapan penting untuk mengamankan sumber daya keuangan pada sistem sewerage di pemerintah daerah.

   DKI Jakarta harus mengadakan pertemuan diskusi mengenai sistem tarif sewerage sesegera mungkin.

   * DKI akan menggunakan Sistem Tarif PD PAL Jaya untuk sementara

   Standardize Sewerage tariff system in Jakarta is one of the important preparations for securing financial resources on the sewerage system in local government.

   DKI Jakarta should hold discussion meeting on sewerage tariff system as soon as possible.

   ** DKI will use the Tariff System of PD PAL Jaya in temporary*

2

2. Koordinasi dengan instansi lain / *on Coordination with other agencies*

1. Pekerjaan konstruksi pada pembangunan sewerage tidak hanya instarasi pengolahan (IPAL), tapi sebagianbesar adalah perpipaan. Oleh karena itu, perlu mendiskusikan dengan lembaga lain (Dinas Bina Marga dan organisasi infrastruktur lainnya), untuk penggunaan ruang bawah tanah jalan di Jakarta lancar.
   * Juga, perlu mengkoordinasi dengan seksi lain (aliran sungai) untuk perencanaan sistem Interceptor.

Construction works on sewerage development are not only treatment plants, but a lot of parts are piping works. Thereupon it is important to discuss with other institutions (Road department and other infrastructure organizations) for using the underground space of roads in Jakarta smoothly.

** Also, in order to implement the interceptor system, consultation with the river department is required*

3

3. Pembangunan kelembagaan / *organizational system and human resource*

1. Perlu memperluas organisasi berdasarkan rencana jangka menengah.
   * Pertama adalah memperluas kegiatan Dinas Sumberdaya Air sesuai dengan sistem sewerage DKI Jakarta.

It is necessary to expand the organization based on the medium-term plan.

** The first is to expand the activities of the Water Resources Department in accordance with the sewerage system in Jakarta.*

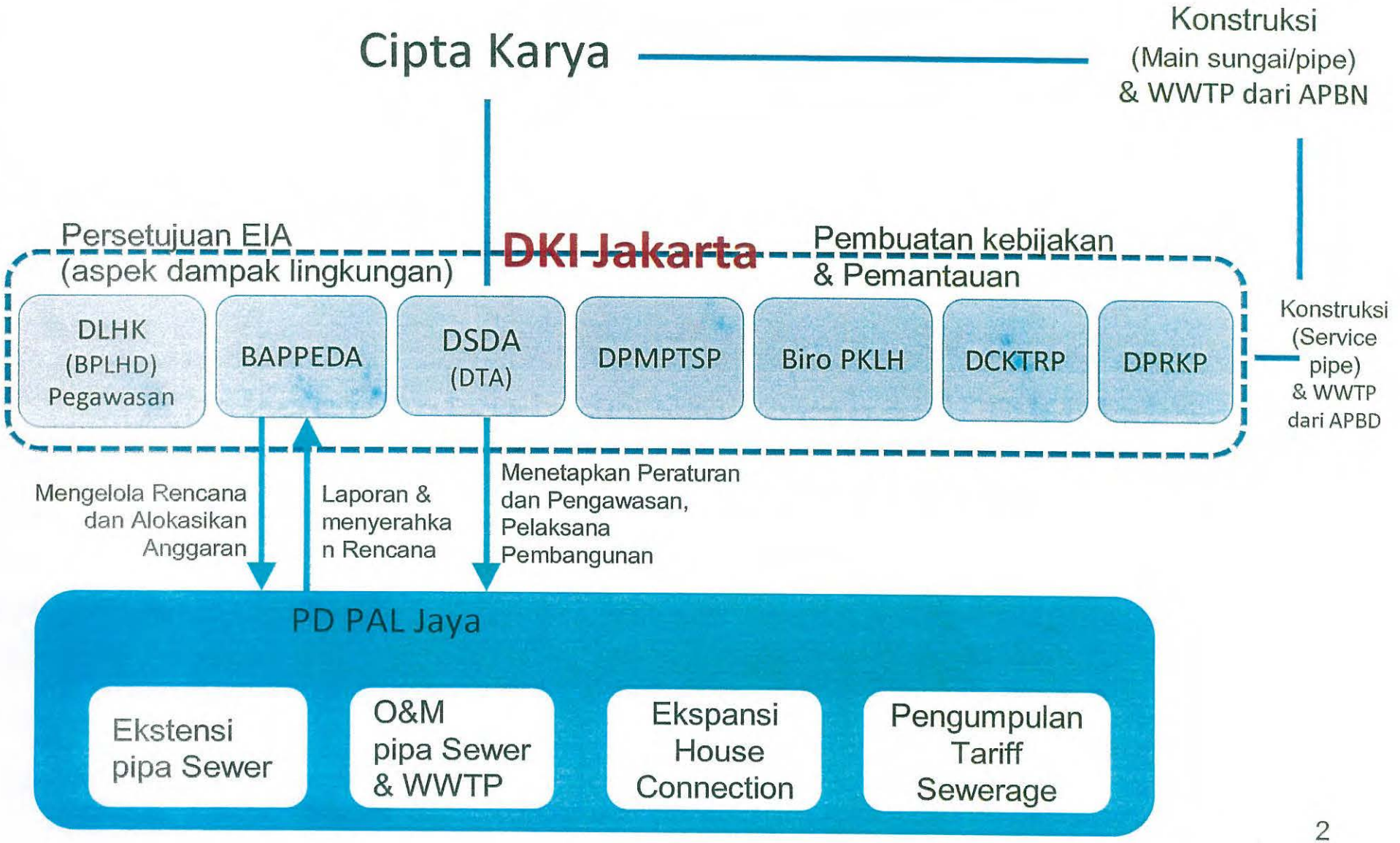
4. Periode proyek perlu diperpanjang sampai dengan Maret 2018 untuk persiapan draft peraturan dan pengembangan sumber daya manusia. / *The project period should be extended until March 2018 for supporting the preparation of draft regulation and human resource development.*

1. Periode proyek setidaknya perlu diperpanjang sampai tahun depan sesuai dengan kemajuan program DKI Jakarta. Khususnya kegiatan dalam persiapan draft peraturan sampai 2018 dan pengembangan sumber daya manusia terkait sewerage di DKI Jakarta.

   The project period should be extended until at least next year in accordance with the progress of construction program. Especially for activities of preparation of regulation in 2018 and Human resource development.

5

Alokasi Pekerjaan Sewerage di DKI Jakarta



Peran dan Tanggung Jawab pada Pengelolaan Air Limbah Domestik di DKI Jakarta

3 Jan 2017

Administrasi publik					
		Kebijakan	Peraturan atau Standar	Izin konstruksi	Pemantauan / Inspeksi
Pengendalian Lingkungan Air		DLH			
Offsite	Pengguna sewerage	Biro PKLH	DSDA	DSDA via BPTSP	DSDA
Onsite	Dimodifikasi Septic Tank / Jokaso	Biro PKLH	DSDA	DSDA via DPMPTSP	DSDA
	Konvensional Septic Tank				
	Penyedotan dan Pengolahan Sludge	Biro PKLH	DSDA	DSDA via DPMPTSP	

DLHK: Dinas Lingkungan Hidup dan Kebersihan, DSDA: Dinas Sumber Daya Air, BPKD: Finance, BKPMD: Regional Audit Office

Peran dan Tanggung Jawab pada Pengelolaan Air Limbah Domestik di DKI Jakarta

3 Jan 2017

Prosedur Pelaksanaan untuk Sistem Offsite / Sewerage : **Sistem Perpipaan Air Limbah**									
	Master Plan / Studi Kelayakan	Desain yang rinci. Dokumen tender	Analisis Mengenai Dampak Lingkungan ⇒ EIA	Akuisisi tanah	Perencanaan anggaran, Konstruksi dan O&M(Operasi & Pemeliharaan).	Konstruksi	Asets	Operasi & Pemeliharaan	Audit
Anggaran Pemerintah Daerah / APBD	[Pengelola] BAPPEDA	[Pemeriksa] BPKD	[Persetujuan] DLHK	DSDA	**[Pelaksana] BPKD**	DSDA	DSDA	[Regulator/ Pengatur] DSDA	**[Auditor] BKPMD**
	[Merumuskan] DSDA	[Mempersiapkan] DSDA	[Menerapkan] DSDA		[Permintaan] DSDA			[Operator] PD PAL Jaya	[Auditee] DSDA
Anggaran Pemerintah Pusat / APBN		[Mempersiapkan] PUPR	[Persetujuan] DLHK	DSDA	[Permintaan] PUPR	PUPR	[Transfer ke DKI]		[Auditee] PUPR
			[Menerapkan] DSDA						

DLHK: Dinas Lingkungan Hidup dan Kebersihan, DSDA: Dinas Sumber Daya Air, BPKD: Finance, BKPMD: Regional Audit Office

"The Fourth Meeting of Joint Coordination Committee"

MINUTES OF MEETING
BETWEEN
AUTHORITIES CONCERNED
OF
THE GOVERNMENT OF THE REPUBLIC OF INDONESIA
AND
JICA EXPERT TEAM ON JAPANESE TECHNICAL COOPERATION
FOR
THE PROJECT FOR IMPROVING PLANNING CAPACITY FOR THE SEWERAGE SYSTEM IN DKI JAKARTA

Jakarta, 12 Juni, 2017

Mrs. Tuty Kusumawati	Mr. Minoru MATSUMOTO
Head of Regional Development Planning Board Jakarta Capital City Government	Chief Advisor The Project for Improving Planning Capacity for The Sewerage System in DKI Jakarta

SUMMARY OF THE 4th JCC MEETING

Title	The 4th JCC meeting, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta		
Date and Time	31st May, 2017 13:00pm~16:00pm	**Place**	Tempo Doeloe Meeting Room, 2nd fl, Balaikota Building, Jl. Medan Merdeka Selatan No. 8-9, Jakarta
Chair	Mrs. Tuty Kusumawati, Head of Regional Development Planning Board (BAPPEDA), Jakarta Capital City Government		
Attended	See Annex A		

ITEM	POINTS	ACTION
Progress of the 4th semi-year & PO/Annual Work Plan of extension period	● Mr. NABETA Takeshi (Coordinator of the Project) presented the Progress of the 4th semi-year and PO/Annual Work Plan of extension period.	Approved
	● Mr. KANAI Shigeo (Chief of Consultant Team) presented the activities for Output 2 (Planning capacity of staffs for sewerage system is enhanced) with small seminar, special seminar, workshop and training in Japan.	Approved
	● Mr. INOUE Yakuro (Japanese Consultant Team) presented the activities for Output 2, with the result of local regulation comprises of overall structure of regulation, basic model of regulation for recommendation to Jakarta in the textbook	Approved
Topics of Training	● Mr. Wahanudin (Bappenas) suggested to have training for advocating to raise public awareness in overcome non-technical aspect. ● Mr. Oswar Muadzin Mungkasa (Deputy Governor for Spatial Planning & Environment) asked JICA to train DKI Jakarta officer how to do socialization and prepare the module.	
Others	● Mr. Oswar Muadzin Mungkasa (Deputy Governor for Spatial Planning & Environment) asked JICA to help in location for additional priority area along the river.	

The Fourth Meeting of Joint Coordination Committee,
Project for Improving Planning Capacity for
the Sewerage System in DKI Jakarta
31 May 2017

A. Introduction

1) The fourth meeting of Joint Coordination Committee (hereinafter referred to as "JCC") was held in Jakarta on 31st May 2017 on the Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta (hereinafter referred to as "the Project"), based on the Record of Discussion between the Government of the Republic of Indonesia and Japan International Cooperation Agency on Japanese Technical Cooperation Project for Sewerage Program of DKI Jakarta signed on 10th December 2014 (hereinafter referred to as "RoD").

2) Mrs. Tuty Kusumawati, Head of Regional Development Planning Agency (BAPPEDA), Jakarta Capital City Government (DKI Jakarta) as the Chair, opened by welcoming all participants and introducing each participant. In the speech, Mrs. Tuty delivers what is the best way to solve problem in sewerage especially to match between services and funding in sewerage development. Besides, she also emphasizes that sewerage is one of the priority project that need to accelerate by approaching of combination on-site and off-site system as intermediate plan.

3) Mr. Oswar Muadzin Mungkasa, Deputy Governor of Spatial Planning and Environment, DKI Jakarta as the Moderator emphasizes that Jakarta has target 1,000 sanimas. As the national target 100-0-100 must overcome water and sanitation problem by 2019. Meanwhile, there is a problem that around 500,000–800,000 people in Jakarta still practicing open defecation especially along the river according the data from World Bank. Since the target of off-site system by 2022 seems that it does not meet with the real problem in Jakarta, we should consider the area (dense and along the river) as priority area.

4) **Annex A** contains the list of participants of both Japanese and Indonesian sides. The meeting agenda and meeting materials are attached as **Annex B.**

5) The results of fourth meeting of Joint Coordination Committee (JCC) held in this time (as shown in separate Minutes of Meeting), the authorities concerned of Indonesia and JICA hereby agreed as follows:

B. Presentations / Plan and progress of the Project

1) Mr. Matsumoto, Chief Advisor of the Project explained that this JCC is the meeting to monitor and evaluate the output of activity and confirm the work plan for next period. He also delivered that capacity development is important for sewerage management and this project is carried out parallel with coming zone 1 and 6 construction.

2) Mr. Nabeta, Coordinator of the Project presented the plan and progress of the Project, especially the activities for the Output 1 (Job allocation among relevant organizations in DKI Jakarta is clarified) with the results of activity.

3) Mr. Kanai, Team leader of Japanese Consultant Team also presented the activities on Output 2 (Planning capacity of staffs for sewerage system is enhanced) with small seminar, special seminar, workshop, and training in Japan. In addition, he also

presented the result of mid-term plan (RPJMD) for priority zone and the target (program input) of RPJMD in 2018–2022.

4) Mr. Inoue, Member of the Consultant Team presented the activities and those achievements on Output 2 (Planning capacity of staffs for sewerage system is enhanced) with the result of local regulation comprises of overall structure of regulation, basic model of regulation for recommendation to Jakarta in the textbook.

5) The Committee endorsed a work plan for the extension period (June 2017 – March 2018) which was presented by the Project/POKJA. The Committee agreed that additional suggestions arose from the meeting; those would be adopted and developed in the implementation of the Plan for the extension period.

C. Exchange of Views

- Mr. Eko Gumelar Susanto (Water Resources Agency (DSDA), DKI Jakarta)
  Mr. Eko refers the need of both quantity and quality for DSDA DKI Jakarta staff.

- Mr. Wahanudin (BAPPENAS)
  Several things to be confirmed;
  1) Clarification to Cipta Karya
     Jakarta Sewerage becomes our priority in Greenbook and in the JICA funding for other/Denpasar project proposed by Direktorat Jenderal Cipta Karya (DGHS) will be postponed and shift to this project. It is hoped to be used in bidding 2018.
  2) National target of 100-0-100
     According to 100% sanitation coverage service, maybe it will take 10-15 years. So that, decentralized system will be the interim solution and it apply for 1,000 sanimas and 90% on-site by 2019.
  3) Human resources development for sewerage system should be divided into regulator and operator. So that training needs to be carried out in technical and management aspect separately.
  4) Training for advocating to raise public awareness to promote sewerage works to the citizens. It is like we sell the product or give reward and law enforcement in enhancing the sewerage project.

- Mr. Suharsono (Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Works and Housing)
  In regard of the progress of Zone 1 and 6, we will have meeting with consultant for Zone 1 on Friday. The administration process will progress in a week in Directorate General of Construction Development (DJ Bina Konstruksi). We do hope there will be acceleration in designing and cost estimation of WWTP by adding WWTP expert in order to finish the detail design by 2017 for to bidding. We prepared the MoU.
  Regarding Zone 6 supplemental study by JICA, one alternative among three need to be decided immediately, there are option proposed by JICA and options proposed by DKI Jakarta. As for Cooperation Agreement, now it is still in Governance Bureau.

- Mrs. Yosi (Bureau of City Planning and Environment, DKI Jakarta)
  We have already sent an official letter for two alternatives that need to be decided by Ministry of Public Work and Housing. The maximum land availability is 6 ha while in M/P 2012 the land is 8.2 ha.

- Mr. Suharsono (Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Work and Hosing)
  KPPIP (Committee for Acceleration of Priority Infrastructure Delivery) should help for abolition asset by regulation to accelerate the process.

- Mrs. Yosi (Bureau of City Planning and Environment, DKI Jakarta)
  Land space for desludging plant in Duri Kosambi is rent by PD PAL Jaya from DKI Jakarta. I don't know the exact process of the abolition, but if they already invest in maintenance, it will be difficult to be abolished.

- Mr. Yus Yuni (Coordinating Ministry of Economic Affairs)
  We together with KPPIP do the acceleration by overcome non-technical aspect (asset abolition) that become obstacle of construction.

- Mr. Dandi (Coordinating Ministry of Economic Affairs)
  Regarding with the presentation of consultant (slide 7 material "Midterm Sewerage Development Plan"), do Plan A refer to NCICD and do plan B still refer NCICD also? There are sharing scheme to reach 100% water supply by the percentage of piping and non-piping which is 65%: 35%. Is there any similar sharing scheme on wastewater to divide central and local government or it just delivered directly into local government?

- Mr. Suharsono (Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Work and Housing)
  There are several schemes on accelerate the sewerage development. The proposed of 44 sanimas location IDB project is from Ministry of Public Work and Housing. Now, we are preparing DED for 4 from 10 sanimas location. We are waiting for 1,000 sanimas location from DKI Jakarta.

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of Spatial Planning and Environment, DKI Jakarta)
  The consultant is more focusing on centralized system in DKI Jakarta. Do we have target for decentralized system? How to connect centralized and decentralized system that sporadic in DKI Jakarta and put it in RPJMD?

- Mr. Minoru Matsumoto (Chief Advisor, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta)
  Based on the Jakarta Sewerage M/P 2012, the target is 80% off-site and 20% on-site by 2050. Micro approach by on-site is also necessary parallel with off-site system because house connection takes time. If we already have house connection,

the pipe can switch to the off-site system. Roughly, on-site area would start with interceptor system then developing communal and finally connect off-site system.

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of Spatial Planning and Environment Planning, DKI Jakarta)

  From now on, we will have two area that covered by decentralized system. In 5 years we will have Zone 1 and Zone 6, then what happen with the rest? Which part of the city that need to be covered by decentralized system? Especially for the dense and along the river area need to be developed by sanimas or similar system. JICA need to propose us the answer.

- Mr. Minoru Matsumoto (Chief Advisor, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta)

  We focused on off-site system in the beginning of the project. But on-site system also needed in Jakarta, so it will be put in RPJMD together with off-site system. Now, KPPIP-SF (Committee for Acceleration of Priority Infrastructure Delivery-Support Facility) is also collecting on-site system development plan from relevant organizations with us.

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of Spatial Planning and Environment Planning, DKI Jakarta)

  When we are talking about output 2.3 DKI draft mid-term sewerage development in DKI Jakarta in consultation with JICA Expert.

  My question is what about the on-site because our problem is 500,000 people still doing open defecation. We cannot wait until 20 years. So, we need additional priority area along the river and dense area like in Kelurahan Tambora which have no septic tank. If not, this is nothing for DKI Jakarta, this is only helping PD PAL Jaya.

- Mr. Shigeo Kanai (JICA Consultant Team)

  The construction of centralized system will start more than 5 years later and it maybe takes 20–30 years. Because most of the building or houses have septic tank or communal already, one of the improvement of system is desludging of septic tank.

  Open defecation is not the scope of sewerage system but sanitation system. So, another program will be needed.

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of Spatial Planning and Environment, DKI Jakarta)

  I mean why we need to build sewerage system in Jakarta? We are talking about sanitation problem in Jakarta. Why we need to have connection all over Jakarta? This is all about sanitation not about putting pipe in the street. Because if our sanitation is bad, we are going to have two big problem, one is our health and second children with stunting. It's ok with priority zone, but we have output 2.3 of RPJMD that related with 3 systems (on-site, off-site, and septic tank). So, what do you think about these?

- Mr. Harada Tetsuya (Senior Representative of JICA Indonesia Office)
  As Mr. Matsumoto said we have focused on off-site system and how we can complete each zone. But then communal system issue came up, so we also start to help together with KPPIP-SF support that element. It will be helpful if each organization come together and discuss in the same table. What they are doing is identification of off-site area and on-site area based on GIS mapping for selected zone where factories or buildings or houses area situated. We will have those map for location off-site or on-site system in few weeks. Those will be very good information to be discussed which area is better for communal or centralized system in 5 years. JICA can't support all the thing, but we'll do our best effort in cooperate in your suggestion about communal system.

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of Spatial Planning and Environment, DKI Jakarta)
  The project with IUWASH (Indonesia Urban Water, Sanitation, and Hygiene) for mapping communal system in grand design has started a month ago. So, we can combine these two maps for sewerage and on-site system. And this is the answer the question about what can we do until 2050. Thank you for helping us.

- Mr. Harada Tetsuya (Senior Representative, JICA Indonesia Office)
  Besides IUWASH Project, are there any other platform to discuss?

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of Spatial Planning and Environment, DKI Jakarta)
  So, can you help us? I need the guarantee. Just come to the meeting to discuss.

- Mr. Nabeta Takeshi (Project Coordinator, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta)
  I have one request based on page 35 (laporan pelaksanaan dalam informasi tambahan). Many people still throwing black water to drainage backside of houses even the connection already provide in front of houses. I hope we have socialization program for educate the people.

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of Spatial Planning and Environment, DKI Jakarta)
  That is important thing but can you train us how to do socialization and prepare the module because we do not have the capability in persuading people. I agree but the capacity need to be improved.

- Mr. Nabeta Takeshi (Project Coordinator, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta)
  We already cooperate with DSDA DKI Jakarta in socialization program in Kelurahan Malakasari but they are still not familiar with sewerage system. If there is any budget for socialization program, it will be improved. Maybe we also need to

cooperate with PD PAL Jaya or other institution that have training capability in socialization.

- Mr. Tri Rachmat (BAPPEDA, DKI Jakarta City Government)
  As for Plan A (around 30 trillion) and Plan B (around 15 trillion), we also need Plan C that improve on-site system (communal system) and reduce off-site system to accelerate the sewerage development.

- Mr. Shigeo Kanai (JICA Consultant Team)
  We are more concentrated on centralized system. Now, we do not have idea how decentralized system would be developed. Therefore it will be difficult to prepare Plan C.

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of DKI Jakarta City Government)
  I think this is BAPPEDA job, I always invite BAPPEDA to compose grand design how to combine sewerage system and communal system, we concentrate along the river and dense area. We are assisted by IUWASH. But when they come up to data collection from BAPPEDA, it is difficult to get the data. So, please help us to prepare Plan C.

- Mr. Suharsono (Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Work and Housing
  We are waiting for Cooperation Agreement (PKS) for Zone 1 from DSDA.

- Mr. Minoru Matsumoto (Chief Advisor, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta)
  Is there any request related to the training program such as training in Japan during the extension period?

- Mr. Oswar Muadzin Mungkasa (Deputy Governor of DKI Jakarta Provincial Government)
  DKI Jakarta need to have training regarding policy and regulation, also advocating training. BAPPEDA will help us on this training agenda. They will discuss first about it in internally.

D. Conclusions for the Project

1) The Committee confirmed the progress in the 4th semi-year of the Project and endorsed the work plan of the extension period of the project which has been presented by the Project/POKJA.

2) Well-designed program of training should be considered according to the job allocation of the organization. Future training activities in the extension period will be discussed in detail.

3) Socialization program of sewerage project of DKI Jakarta is needed for smooth sewerage implementation.

4) JICA agreed to participate in discussions on communal/on-site system development plan for input of RPJMD 2018–2022.

E. Other matters

The Committee agreed that the next meeting of JCC will be held in Nov 2017 to check progress of the Project activities in line with the Plan of the extension period.

Done and signed in Jakarta, Indonesia, on 12th June 2017, by the representative of both parties.

Annex A.

The 4th Joint Coordination Committee
Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta (SWPJT)

Jakarta, 31 May 2017

List of Participants

I. Chairpersons

Mrs. Tuty Kusumawati *(Chair)*,
Head of Regional Development Planning Board (BAPPEDA), DKI Jakarta Provincial Government.
Mr. Oswar Muadzin Mungkasa *(Co-chair)*,
Deputy Governor of DKI Jakarta for Spatial Planning and Environment, DKI Jakarta Provincial Government.

II. Participants from Japanese Side

Mr. Harada Tetsuya,
Senior Representative of JICA Indonesia Office.
Ms. Kitamura Keiko,
Project Formulation Advisor / JICA Indonesia Office.
Ms. Juni Melani,
Project Officer / JICA Indonesia Office.
Mr. Jun Tsumori,
JICA Expert to the Ministry of Public Work and Housing.
Mr. Matsumoto Minoru,
Chief Advisor, Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta (SWPJT-JICA).
Mr. Nabeta Takeshi,
Coordinator / Enhance organization structure, SWPJT-JICA.
Ms. Lailatus Siami,
Local Consultant of JICA Project, SWPJT-JICA.
Mrs. Indah,
Secretary of JICA Project, SWPJT-JICA.
Mr. Kanai Shigeo,
Team Leader of Japanese Consultants Team, SWPJT-JICA.
Mr. Inoue Yakuro,
Expert for Provincial Regulations, Japanese Consultants Team, SWPJT-JICA.
Mr. Ohashi Takafumi
Japanese Consultant Team, SWPJT-JICA.
Mr. Gandhy,
Local Consultant of JICA Project, SWPJT-JICA.

III. Participants from Indonesian Side

DGHS / Direktorat Jenderal Cipta Karya

Mr. Suharsono,
Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Works and Housing.

Ms. Olsa R.,
Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Works and Housing.

Ms. Gita Prima,
Directorate of Environmental Sanitation Development, DGHS, Ministry of Public Works and Housing.

Ms. Irika,
Directorate of Integration of Settlement Infrastructure, DGHS, Ministry of Public Works and Housing.

Deputy Governor of DKI Jakarta for Spatial Planning and Environment, DKI Jakarta Provincial Government

Mrs. Riana,
Assistant Deputy Governor of DKI Jakarta for Spatial Planning, Deputy Governor of DKI Jakarta for Spatial Planning and Environment, DKI Jakarta Provincial Government.

Mr. Junaedi,
Assistant Deputy Governor of DKI Jakarta for Environment, Deputy Governor of DKI Jakarta for Spatial Planning and Environment, DKI Jakarta Provincial Government.

Ms. Susanti,
Staff of Deputy Governor of DKI Jakarta for Spatial Planning and Environment, DKI Jakarta Provincial Government.

Mr. Rendy P,
Staff of Deputy Governor of DKI Jakarta for Spatial Planning and Environment, DKI Jakarta Provincial Government.

Mr. Udin W.,
Staff of Deputy Governor of DKI Jakarta for Spatial Planning and Environment, DKI Jakarta Provincial Government.

BAPPEDA

Mr. Tri Rachmat,
Head of Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government.

Ms. Tezza Nur Ghina R.,
Head of Sub Division of Water Management and Environment, Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government.

Mr. Fadly Haley,
Sub Division of Water Management and Environment, Division of City Infrastructure and Environment, BAPPEDA, DKI Jakarta Provincial Government.

Mr. Hari,
Secretariat, BAPPEDA, DKI Jakarta Provincial Government.

Water Resources Agency (Dinas Sumber Daya Air)

Mr. Eko Gumelar Susanto,
Head of Division of Raw Water, Water Supply and Waste Water, Water Resources Agency (DSDA), DKI Jakarta Provincial Government.

Mr. M. Fajri,
Division of Raw Water, Water Supply and Waste Water, Water Resources Agency (Dinas Sumber Daya Air), DKI Jakarta Provincial Government.

Mr. Dicky,
Division of Raw Water, Water Supply and Waste Water, Water Resources Agency (Dinas Sumber Daya Air), DKI Jakarta Provincial Government.

Ms. Dista,
Division of Raw Water, Water Supply and Waste Water, Water Resources Agency (Dinas Sumber Daya Air), DKI Jakarta Provincial Government.

PD PAL Jaya

Mr. Erwin Marphy Ali,
Technical Manager, Waste Water Management Enterprise of DKI Jakarta (PD PAL Jaya).

Mr. Suko,
Waste Water Management Enterprise of DKI Jakarta (PD PAL Jaya).

BPKLH

Mrs. Yosi Lusia,
Bureau of City Planning and Environment (BPKLH), DKI Jakarta Provincial Government.

Environmental Agency

Mr. Dermawan Sembiring,
Functional of Environmental Impact Management, Environmental Agency, DKI Jakarta Provincial Government.

Highways Agency

Ms. Riri Asnita,
Highways Agency, DKI Jakarta Provincial Government.

BPAD

Mr. Sigit,
Regional Asset Management Agency (BPAD), DKI Jakarta Provincial Government.

Mr. Pandu,
Regional Asset Management Agency (BPAD), DKI Jakarta Provincial Government.

BAPPENAS

Mr. Wahanudin,
Directorate of Urban, Housings and Settlements, State Ministry for National Development Planning/BAPPENAS.

Coordinating Ministry of Economic Affairs

Mr. Yus Yuni,
Head of Division for Water Resource Conservation and Water Damage Control, Assistant Deputy for Water Resource Infrastructure, Coordinating Ministry of Economic Affairs.

Mr. Dandi W.,
Division for Water Resource Conservation and Water Damage Control, Assistant Deputy for Water Resource Infrastructure, Coordinating Ministry of Economic Affairs.

Mr. Putera Utama,
Committee for Acceleration of Priority Infrastructure Delivery, Coordinating Ministry of Economic Affairs.

Annex B.

The 4th Joint Coordination Committee
Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta (SWPJT)

Jakarta, 31 May 2017

Meeting agenda and Meeting materials

PEMERINTAH PROVINSI DAERAH KHUSUS IBUKOTA JAKARTA
BADAN PERENCANAAN PEMBANGUNAN DAERAH
Jl. Medan Merdeka Selatan No. 8 -9 Telepon : 3842061 – 3842062 – 3842871, Fax : 3860521
Website bappedajakarta.go.id E-mail sekretariat@bapedadki.net
J A K A R T A
Kode pos : 10110

Nomor : 452/-1733-3
Sifat : Segera
Lampiran : 2 (dua) lembar
Hal : Undangan rapat

29 Mei 2017

Kepada
Yth. Daftar Undangan Terlampir

di
Jakarta

Sehubungan dengan pelaksanaan The Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta, dengan ini saya mengharapkan kehadiran Saudara dalam pertemuan yang akan diselenggarakan pada

hari : Rabu
tanggal : 31 Mei 2017
pukul : 12:30 – 15:00
tempat : Ruang Rapat Seribu Wajah, Lt. 22, Gd. Balaikota Blok G, Jl. Medan Merdeka Selatan No. 8-9, Jakarta
acara : 4th Joint Coordinating Commitee (JCC) "The Project for Improving Planning Capacity for The Sewerage System in DKI Jakarta"
pimpinan rapat : Kepala Bappeda Provinsi DKI Jakarta

Atas perhatian dan kehadiran Saudara, diucapkan terima kasih.

Kepala Badan Perencanaan Pembangunan Daerah
Provinsi Daerah Khusus Ibukota Jakarta,

Tuty Kusumawati
NIP 196304291986032003

Tembusan :
1. Wakil Kepala Bappeda Provinsi DKI Jakarta
2. Sekretaris Bappeda Provinsi DKI Jakarta

Lampiran I Undangan Kepala Bappeda
Nomor : 452/-1.793.3
Tanggal : 29 Mei 2017

1. Construction and Disaster Management Attache, Embassy of Japan
2. Kementerian Koordinator Bidang Perekonomian
   u.p. a. Asisten Deputi Menko. Perekonomian Bidang Infrastruktur Sumber Daya Air
   b. Direktur Program Komite Percepatan Penyediaan Infrastruktur Prioritas (KPPIP)
3. Kementerian Perencanaan Pembangunan Nasional/BAPPENAS
   up. Direktur Perkotaan, Permukiman dan Perumahan
4. Kementerian Pekerjaan Umum dan Perumahan Rakyat
   u.p. a. Direktur Keterpaduan Infrastruktur Permukiman (KIP), Ditjen. Cipta Karya
   b. Kepala Subdit. Air Limbah, Direktorat Pengembangan Penyehatan Lingkungan Permukiman (PLP), Ditjen. Cipta Karya
   c. Kepala Subdit. Standardisasi dan Kelembagaan, Direktorat Pengembangan PLP, Ditjen. Cipta Karya
5. Deputi Gubernur Provinsi DKI Jakarta Bidang Tata Ruang dan Lingkungan Hidup
6. Kepala Badan Pengelola Aset Daerah Provinsi DKI Jakarta
   u.p. Kepala Bidang Perencanaan, Penerimaan, Penetapan Penggunaan dan Patokan Harga
7. Kepala Dinas Lingkungan Hidup Provinsi DKI Jakarta
   u.p. Kepala Bidang Pengendalian Dampak Lingkungan
8. Kepala Dinas Sumber Daya Air Provinsi DKI Jakata
   u.p. a. Kepala Bidang Air Baku, Air Bersih dan Air Limbah
   b. Kepala Seksi Perencanaan Air Baku, Air Bersih dan Air Limbah
   c. Kepala Seksi Pembangunan dan Peningkatan Air Limbah
9. Kepala Dinas Bina Marga Provinsi DKI Jakarta
   u.p. a. Kepala Bidang Kelengkapan Prasarana Jalan dan Jaringan Utilitas (KPJU)
   b. Kepala Seksi Perencanaan Bidang KPJU
10. Kepala Biro Penataan Kota dan Lingkungan Hidup Setda Provinsi DKI Jakarta
    u.p. a. Kepala Bagian Lingkungan Hidup
    b. Kepala Subbagian Sanitasi dan Pencemaran
11. Direktur Utama PD PAL Jaya
    u.p. a. Direktur Pengembangan Bisnis
    b. Manager Teknik
12. Chief Representative of JICA Indonesia Office
13. JICA Experts Team

Kepala Badan Perencanaan Pembangunan Daerah
Provinsi Daerah Khusus Ibukota Jakarta,

Tuty Kusumawati
NIP 196304291986032003

Lampiran II Undangan Kepala Bappeda
Nomor : 452/-1793-3
Tanggal : 29 Mei 2017

JADUAL ACARA

4th Joint Coordinating Commitee (JCC)
"The Project for Improving Planning Capacity For The Sewerage System in DKI Jakarta"

Waktu	Kegiatan	Penanggung Jawab
12:30 - 13:00	Registrasi	Panitia
13:00 - 13:15	Pembukaan dan Kata Sambutan	Kepala Bappeda Provinsi DKI Jakarta selaku Project Director
13:15 - 13:30	Perkenalan peserta rapat	Team Leader JICA Project
13:30 - 14:00	- Progress Report - Next work plan	Tim Konsultan JICA
14:00 - 15:00	Discussion - Verification of Results	Chairman (Project Director)
15:00	Closing Remark	Project Director

Kepala Badan Perencanaan Pembangunan Daerah
Provinsi Daerah Khusus Ibukota Jakarta,

Tuty Kusumawati
NIP 196304291986032003

Kemajuan semi-tahun ke-4 / 5 bulan dan Rencana Kerja masa depan / 10 bulan (PO)

The 4th meeting of JCC

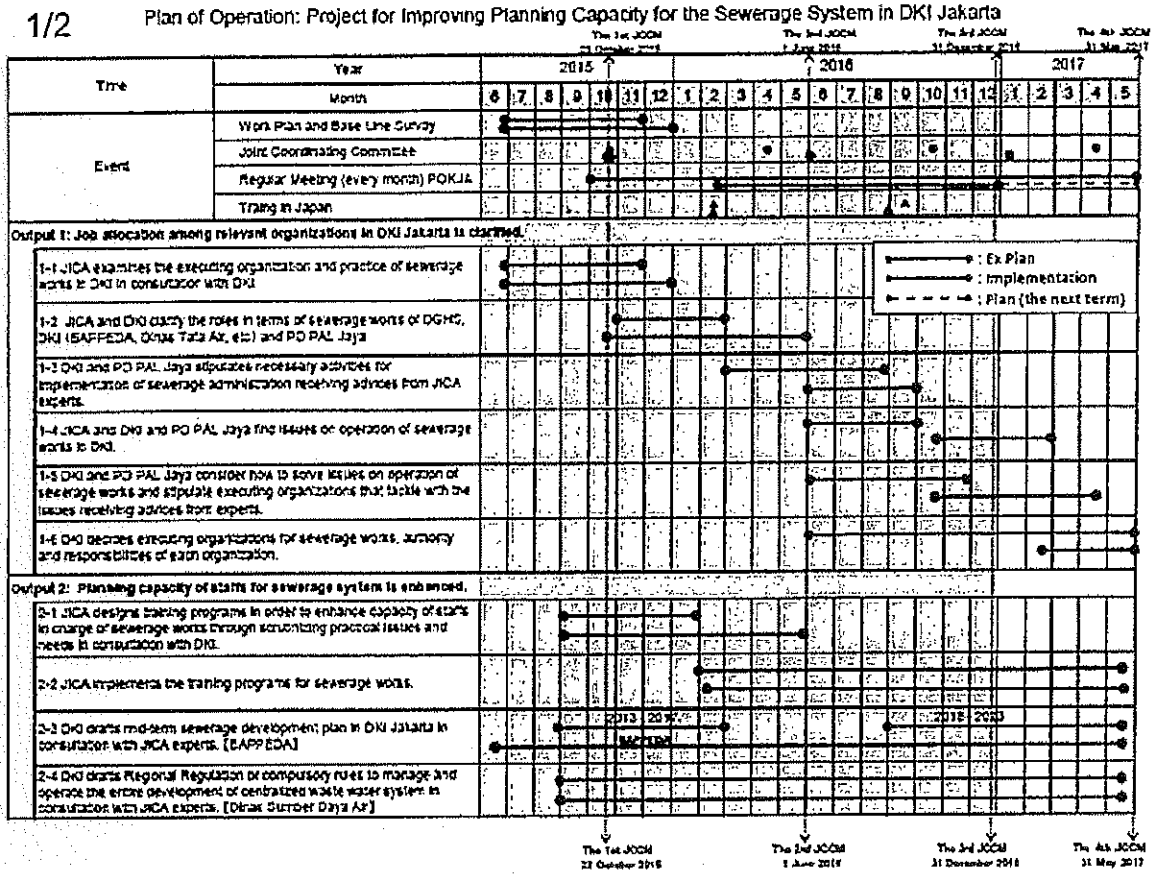
31 May 2017

1

Pertemuan JCC ke-3
11 Jan 2017

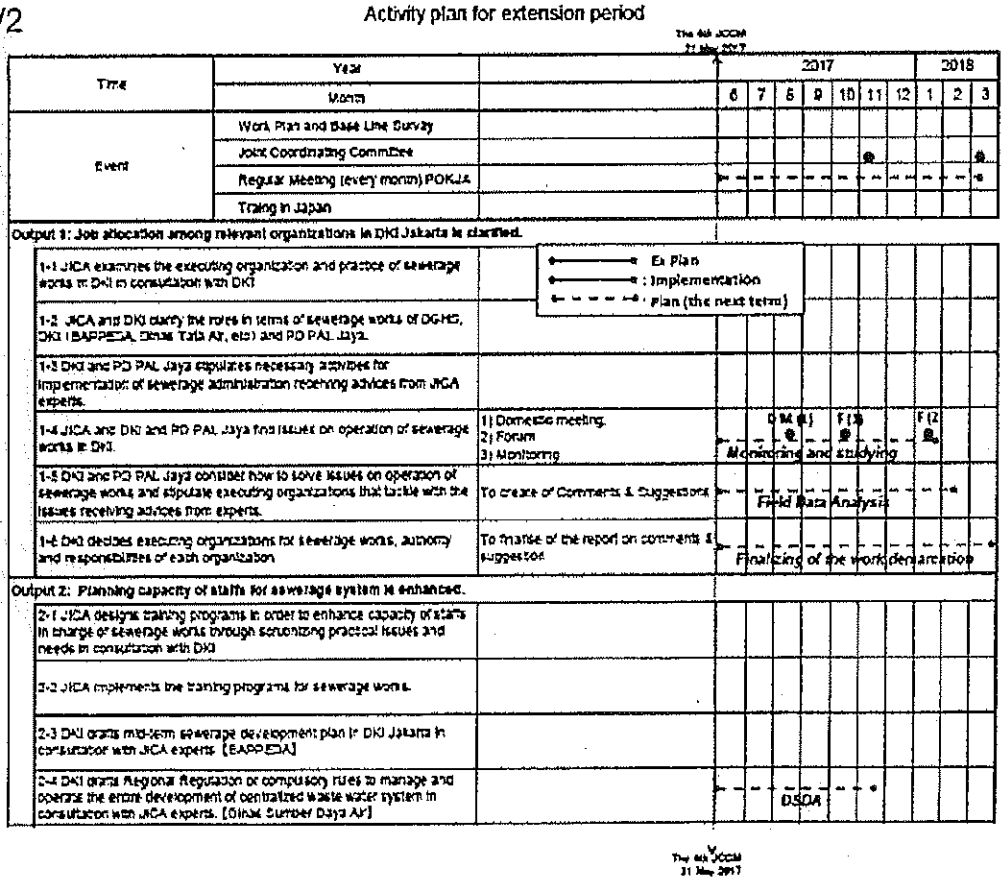
Date 31 May 2017

1/2 Plan of Operation: Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta



Date 31 May 2017

2/2 Activity plan for extension period



4

Output 1. **Penjelasan kegiatan masing-masing badan/organizasi terkait.** */ Job allocation among relevant organisations in DKI Jakarta is clarified.*

1. **Fungsi organisasi** */ **Organizational function:***
   (Activity 1-1 ~ 1-6)

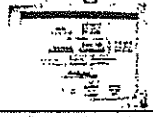
Output 2. **Meningkatkan kapasitas staf untuk perencanaan system air limbah.** */ **Planning capacity of staffs for sewerage system is enhanced.***

2. **Pelatihan** */ **Trainings:*** *(Activity 2-1, 2-2)*
3. **Draft Rencana 5 Tahun** */ **Draft of Mid-term Sewerage Development Plan:*** *(Activity 2-3)*
4. **Draft Peraturan Daerah** */ **Draft of Regional Regulation (provincial level):*** *(Activity 2-4)*

5

1. Fungsi organisasi / *Organizational function*

(Activity 1-1 ~ 1-6)

Organizational function	Jun '15 – May '16 / Jun '16 – Apr '17
Step ①: (Activity 1-1) (Activity 1-2)	**Koleksi** dan **analisis** data pada sekarang  
Step ②: (Activity 1-3)	**Penyusunan draft Alokasi Pekerjaan** (dengan grafik) pada sistem sewerage di DKI Jakarta   
Step ③: (Activity 1-4) (Activity 1-5)	**Merevisi draft Alokasi Pekerjaan** melalui uji coba lapangan. (Temuan masalah dan solusi)
Step ④: (Activity 1-6)	**Penyelesaian draft Alokasi Pekerjaan** dengan komentar melalui laporan

Output 1, 1-4 & 1-5
Temuan masalah dan solusi

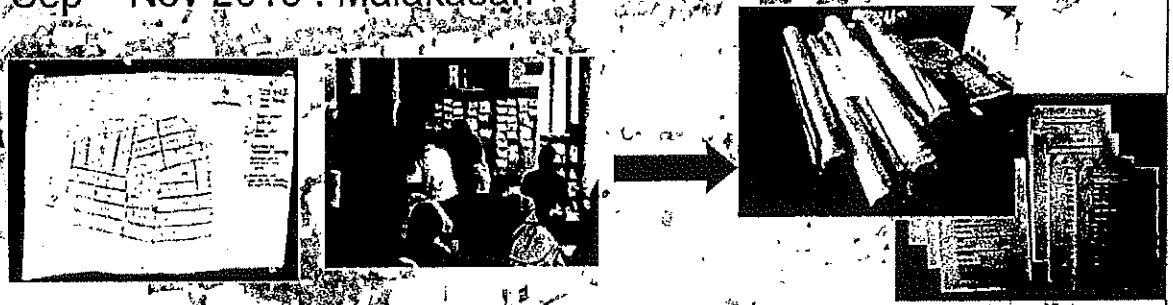
"Kondisi dan Situasi Sistem Sewerage di DKI Jakarta sekarang"

7

Koleksi Data Lapangan

Survei

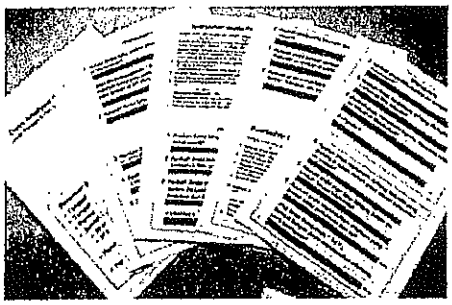
Sep – Nov 2016 : Malakasari *(sosialisasi +Koleksi Data)*

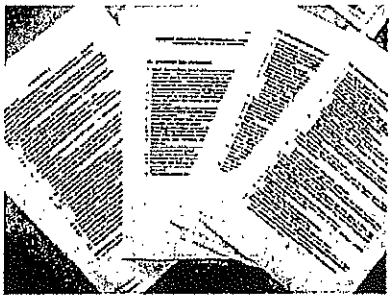


Jan – Apr 2017 : Zone 0 *(Koleksi Data di 5 kelurahan)*

Analisis data

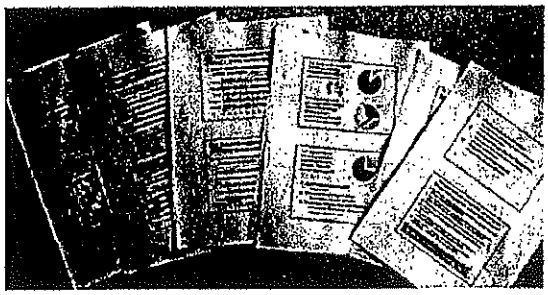
Sep – Nov 2016 : Malakasari

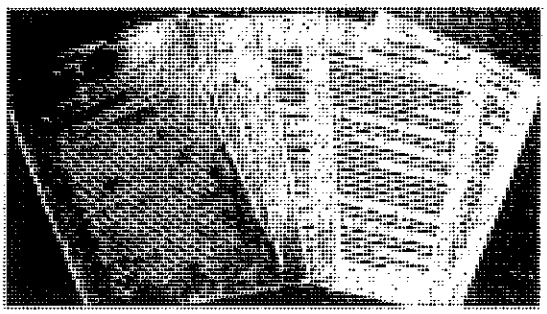




Jan – Apr 2017 : Zone 0

(Guntur, Setiabudi, Karet, Karet Kuningan, Manggarai)





Masalah yg ditemukan (dari hasil analisa koleksi data)

1. House-connection

   Peraturan pembuangan limbah masa depan pemerintah daerah tentang House-Connection, perlu mempertimbangkan kondisi rumah masa sekarang.

(1) Kawasan rumah besar

a. Kebanyakan rumah-rumah besar sudah ada Septik-tank ukuran besar.

b. Kebanyakan pemilik rumah besar di daerah penelitian tidak tertarik dengan House-connection, yang membutuhkan biaya pribadi konstruksi.

(2) Kawasan rumah kecil

a. Kebanyakan rumah-rumah kecil sudah menggunakan sistem sewerage (house-connection), karena tidak ada space untuk Septic-tank. Namun, pemilik rumah yang sudah memiliki Septic-tank tidak mau House-connection yang membutuhkan biaya pribadi konstruksi.

10

2. Sistem Tarif

Sistem tarif tidak seragam dalam pelaksanaan lapangan sebagai berikut.

a. Tidak pernah kumpulkan tarif sewerage di daerah. (Malakasari)

b. Sistem tarif tidak dikontrol secara seragam oleh institusi. ⇔ Kebanyakan penduduk di kawasan rumah kecil membayar tarif sewerage. Tetapi ada juga orang yang tidak pernah bayar karena tidak pernah terima permintaan pembayaran. (Zone 0)

* Add info: Hasil analisis data, kebanyakan pelanggan puas dengan harga sekarang dari Tarif.

3. Operation and Maintenance

(1) Sampah masuk ke pipa/sewerage

Masalah penyumbatan pipa dan melimpah air kotor disebabkan oleh masuknya sampah.

(2) Asphalt tutup manhole

Banyak manholes ditutupi oleh aspal.

Situasi seperti itu, perbaikan keadaan darurat tidak bisa dilakukan pada saat dibutuhkan, dan pemeriksaan rutin juga tidak bisa dilakukan.

Masalah yg ditemukan

4. Desain dan konstruksi

(1) Pasir masuk ke pipa

Pasir masuk/flow ke sewerage disebabkan oleh posisi tutupan manhole yang lebih rendah dari permukaan jalan.

(2) Banyak pipa / tabung telah ditempati di dalam beberapa Manhole, dan juga pipa / tabung itu telah dibungkus oleh badan manhole.

➢Ruangan dalam manhole diduduki oleh pipa tersebut, sehingga pembersihan dan pemeliharaan lubang tidak bisa dilakukan dengan mudah.

➢Pipa / tabung yang telah dibungkus oleh badan manhole akan bisa rusak akibat gempa bumi atau tekanan dari luar. (sangat bahaya)

13

Masalah yg ditemukan

5. Kesadaran pada Sewerage

(1) Rendahnya kesadaran pada sewerage dan lingkungan

Banyak masyarakat tidak pernah membahas kondisi air limbah pada waktu pertemuan di daerah mereka.

(2) Kurangnya kegiatan sosialisasi

Banyak penduduk harap menerima informasi akurat tentang sewerage melalui Program sosialisasi.

14

Masalah temuan dan solusi				
Aktivitas / Masalah	Pertemuan & Forum (Pelatihan)	Regulasi Daerah	SOP (masing-masing Insutansi)	Aktivities Lain-lain
1. House-connection				
(1) Masih pakai Septic-tank	Pertemuan Domestic	Diwajibkan house-connection *1)		
(2) Biaya konstruksi	PD			
2. Sistem Tarif				
(1) tidal seragam	PD	Tarif sekarang *2)		
3. O & M				
(1) Sampah masuk ke pipa/sewerage	Forum			Public relations + Related Institutions
(2) Asphalt tutup manhole	Forum		Standard konstruksi	
4. Desain dan konstruksi				
(1) Pasir masuk ke Manhole	Forum		Posisi manholes	Desain
(2) pipa / tabung di dalam Manhole	Forum	Regulasi pemakaian ruang bawah tanah	Standard konstruksi	+ Related institutions
5. Kesadaran pada Sewerage				
(1) lingkungan kesadaran				Sosialisasi
(2) Kurangnya sosialisasi	ToT/Facilitator			Sosialisasi *3)

15

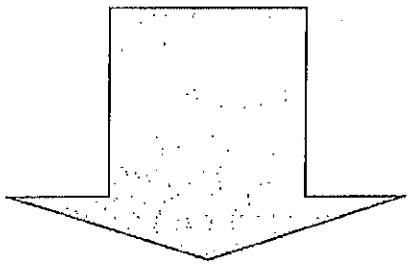
*1) Diwajibkan house-connection : Diwajibkan house-connection kepada pemilik rumah oleh peraturan daerah.
⇔ Namun pemerintah perlu mempertimbangkan kondisi warga saat ini. (hal itu bukan hanya persiapan sistem subsidi di on-site. Dan juga perlu peningkatan kualitas on-site.)

*2) Tarif sekarang : Dari tahap pertama, pemerintah harus mencoba koleksi tarif di bawah sistem kontrol pemerintah. Jadi sistem tarif sekarang perlu digunakan sampai pada mulai pengaturan metode perhitungan tarif baru di Jakarta untuk implementasi awal bahkan sementara. (・・・・・dan Sistem tarif baru perlu sesuai dengan rencana BUMD masa depan.)

*3) Sosialisasi : Sosialisasi pada sewerage harus dilaksanakan untuk melancarkan program DKI Jakarta.
(・・・・・Metode sosialisasi harus disesuaikan dengan tujuan dan target yang sesuai tahap program sewerage DKI Jakarta.)

16

- Beberapa masalah yang ditemukan, akan dilibatkan ke dalam target berikutnya dari periode perpanjangan Proyek.



17

Masalah temuan dan solusi

Item Aktivitas / Masalah	Pertemuan & Forum (Pelatihan)	Regulasi Daerah	SOP (masing-masing Insutansi)	Aktivities Lain-lain
1. House-connection				
(1) Masih pakai Septic-tank	Pertemuan Domestic	Diwajibkan house-connection *1)		
(2) Biaya konstruksi	PD			
2. Sistem Tarif				
(1) tidal seragam	PD	Tarif sekarang *2)		
3. O & M				
(1) Sampah masuk ke pipa/sewerage	Forum			Public relations + Related institutions
(2) Asphalt tutup manhole	Forum		Standard konstruksi	
4. Desain dan konstruksi				
(1) Pasir masuk ke Manhole	Forum		Posisi manholes	Desain
(2) pipa / tabung di dalam Manhole	Forum	Regulasi pemakaian ruang bawah tanah	Standard konstruksi	+ Related institutions
5. Kesadaran pada Sewerage				
(1) Kurangnya kesadaran				Sosialisasi
(2) Kurangnya sosialisasi	ToT/Facilitator			Sosialisasi *3)

18

Extension period of the Project

Output 1. **Penjelasan kegiatan masing-masing badan/organizasi terkait.** */ Job allocation among relevant organizations in DKI Jakarta is clarified.*

Activitas (* Required activities)

1-4 (1) **Roundtable Meeting**

Pembahasan masa depan DKI Jakarta dengan peneliti/pelaksana sewerage di Indonesia.

(2) **Forum**

Meningkatkan koordinasi dan kerjasama dengan instansi terkait lainnya. (Bina Marga, PAM Jaya, PLN, Gas, Telkom, dan Lain-lain)

(3) **Monitoring and studying**

Memantau dan mempelajari Struktur Kerja Sewerage terutama peraturan baru yang akan dipublikasikan dimasa depan.

+ add. **Sosialisasi** (seperti Brosur PR)

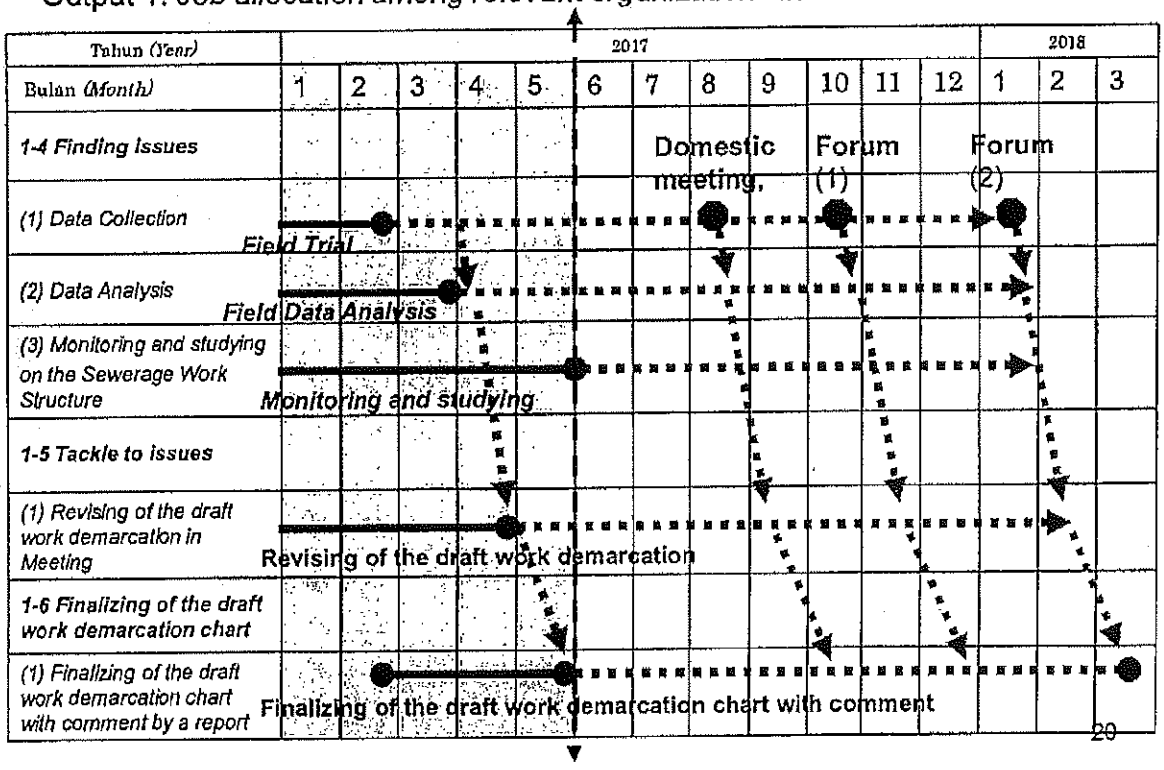
1-5 Analisis data yang dikumpulkan dari 1-4.

1-6 Laporan akhir tentang komentar dan saran pada Sistem Sewerage DKI Jakarta di masa depan melalui hasil 1-5.

19

The plan for the extension period

Output 1. *Job allocation among relevant organizations in DKI Jakarta is clarified*



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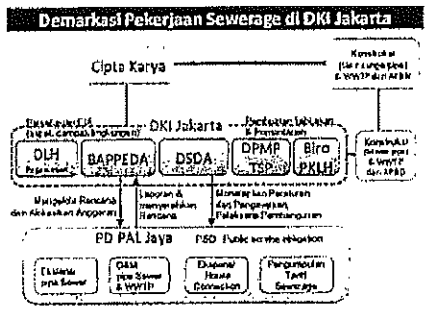
Pembagian kerja saat ini



Peran dan Tanggung Jawab pada Pengelolaan Air Limbah Domestik di DKI Jakarta

		Administrasi publik			
		Kebijakan	Peraturan atau Standar	Izin konstruksi	Pemantauan / Inspeksi
Pengendalian Lingkungan Air		DLH			
Offsite	Pengguna sewerage	Biro PKLH	DSDA	DSDA via DPMPTST	DSDA
Onsite	Dimodifikasi Septic Tank / Jokasa	Biro PKLH	DSDA	DSDA via DPMPTST	DSDA
	Konvensional Septic Tank				
	Penyedotan dan Pengolahan Sludge	Biro PKLH	DSDA	DSDA via DPMPTST	

Peran dan Tanggung Jawab pada Pengelolaan Air Limbah Domestik di DKI Jakarta

Prosedur Pelaksanaan untuk Sistem Offsite / Sewerage : Sistem Perpipaan Air Limbah									
	Master Plan / Studi Kelayakan	Desain yang rinci, Dokumen tender	Analisis Mengenai Dampak Lingkungan → ETA	Akuisisi tanah	Perencanaan anggaran, Konstruksi dan O&M(Operasi & Pemeliharaan).	Konstruksi	Aset	Operasi & Pemeliharaan	Audit
Anggaran Pemerintah Daerah / APBD	[Pengelola] BAPPEDA	[Pemeriksa] BPKD	[Persetujuan] DLH	DSDA	[Pelaksana] BPKD	DSDA	DSDA	[Regulator/ Pengatur] DSDA	[Auditor] BKPMD
	[Merumuskan] DSDA	[Mempersiapkan] DSDA	[Menerapkan] DSDA		[Permintaan] DSDA			[Operator] PD PAL Jaya	[Auditee] DSDA
Anggaran Pemerintah Pusat / APBN		[Mempersiapkan] PUPR	[Persetujuan] DLH	DSDA	[Pemeriksa] PUPR	PUPR	[Transfer ke DKI]		[Auditee] PUPR
			[Menerapkan] DSDA						

2. Pelatihan / *Trainings*

(Aktivitas 2-1, 2-2)

① Penyusunan program pelatihan pengembangan sewerage
/ Preparation of training program of sewerage development

② Pelaksanaan pelatihan sesuai dengan program pelatihan /
Implementation of training in line with the training Program

Program Pelatihan / Training program ☐ Jun '15 – Dec '16 ☐ Jan '17– Apr '17

Kursus /Course	No.	Tanggal	Pers.	
Seminar Kecil di Jakarta (SS)	1st – 5th	Apr 2015 - Nov 2016	254	Seminar Kecil (Small Seminar)
	5th – 6th	1-6 Feb 2017	177	Jumlah: 431 pers.
Seminar Besar di Jakarta (BS)	1st	31 Mei 2016	57	Seminar Besar (Big Seminar)
	2nd	1 Des 2016	79	Jumlah: 136 pers.
Lokakarya	1st	23 – 24 Mar 2017	22	2 hari lokakarya/workshop di Bogor
C/P Training in Japan (TJ)	1st	14 Feb – 27 Feb 2016	8	C/P Training in Japan
	2nd	21 Agust – 3 Sep 2016	9	Jumlah: 17 pers.

Seminar

①Seminar Kecil / *Small Seminar*

PUPR-PPLP / 1 Feb 2017

BAPPEDA / 1 Feb 2017

DSDA / 2 Feb 2017

PD PAL Jaya / 3 Feb 2017

BAPPEDA / 6 Feb 2017

23

Lokakarya / *Workshop*

"Lokakarya selama 2 hari di Bogor / *The 2 days workshop in Bogor*"
Judul: Management and Sewerage Development
Periode pelaksanaan: 23 Mar 2017 – 24 Mar 2017
Tempat: Hotel Rancamaya, Ciawi, Bogor

Tujuan:

- Meningkatan kapasitas staf yang terlibat didalam proses Penyusunan Rencana Pembangunan Sewerage Jangka Menengah dan Peraturan Daerah.
- Menemukan konsep pengelolaan Sewerage yang berkelanjutan dan sesuai di DKI dengan cara staf brainstorming.

24

3. Rancangan rencana Pembangunan sewerage Jangka Menengah 5 tahun / *Draft of Mid-term Sewerage Development Plan* *(Activity 2-3)*

Tujuan Kegiatan

Mendamping DKI untuk mempersiapkan Rancangan Rencana Pembangunan Sewerage Jangka-Menengah

Alur Kegiatan

(1) Konfirmasi Rencana Saat ini
(2) Konfirmasi terhadap Permasalahan Dasar untuk Perencanaan yang Baru
(3) Pertimbangan pada Zona Prioritas
(4) Pertimbangan pada Jadwal Konstruksi dan Pembiayaan di Setiap Tahunnya
(5) Penyusunan Rancangan pada Standar Prosedur Operasional

25

4. Rancangan Peraturan Daerah / *Draft of Regional Regulation (provincial level)* *(Activity 2-4)*

Tujuan Kegiatan

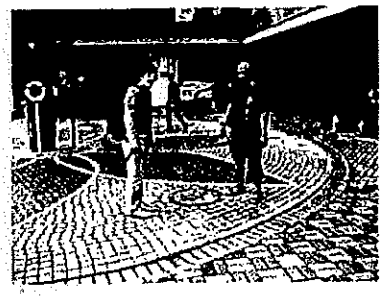
Mendampingi DKI untuk mempersiapkan Rancangan Peraturan mengenai Sewerage

Alur Kegiatan

(1) Memperkenalkan Contoh di Negara Jepang dan Asia Tenggara
(2) Perihal Utama yaitu: Pemberitahuan Pelayanan Sewerage, Kewajiban Menyambungkan ke Sewerage, Biaya Pengguna, etc.
(3) Penyusunan Rancangan Artikel dimana Maksud dan Isinya Telah Dijelaskan

26

Survei Lapangan



"Kunjungan lapangan untuk studi banding tentang pengelolaan sistem sewerage di Yogyakarta dan Jakarta"

Terima Kasih atas Kerjasama

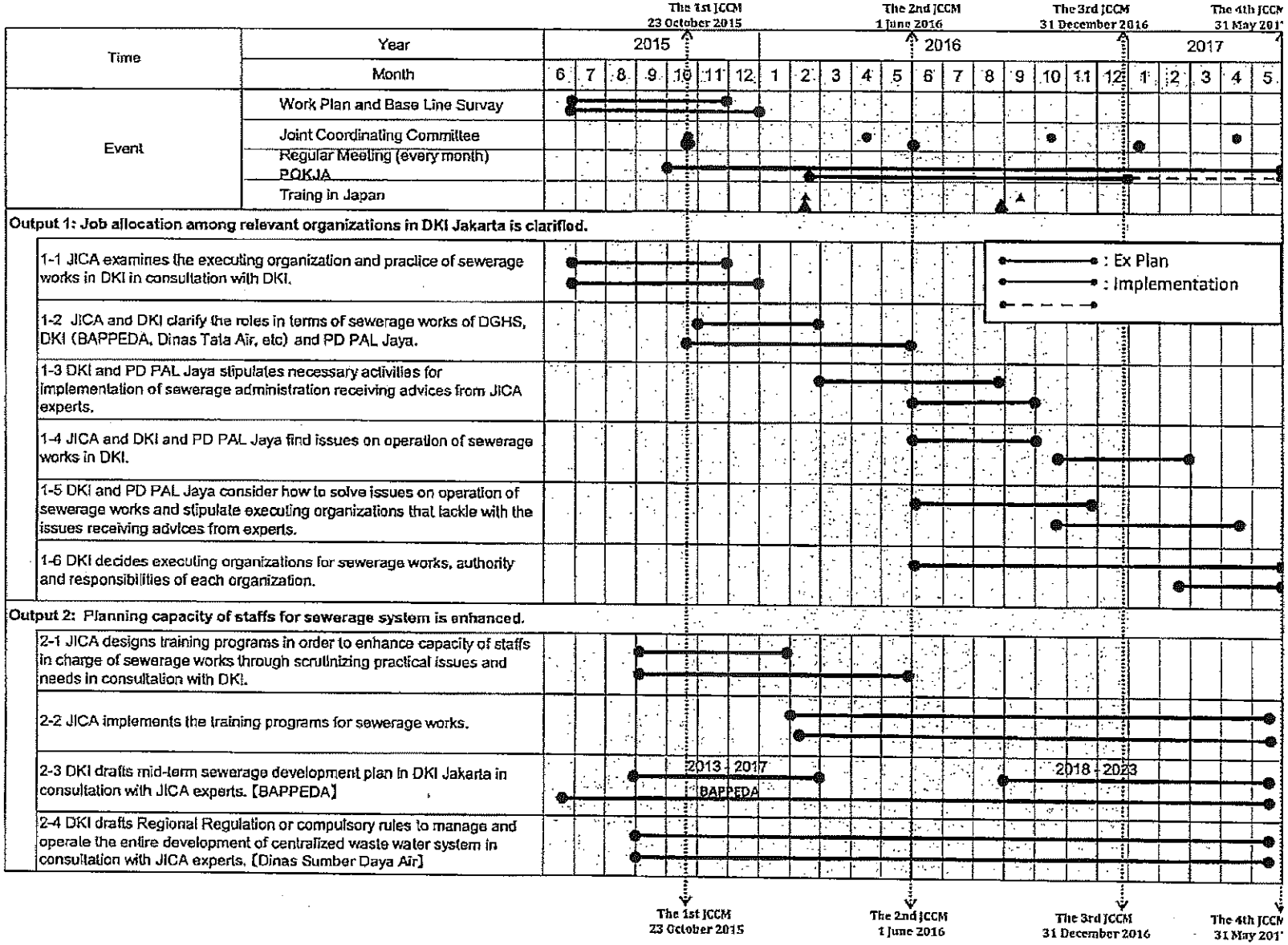
Menghadiri Pertemuan

"Pertemuan DSDA dan KPPIP (Komite Percepatan Penyediaan Infrastruktur Prioritas) "
Menginformasikan dan menjelaskan skema pendukungan olel KPPIP

27

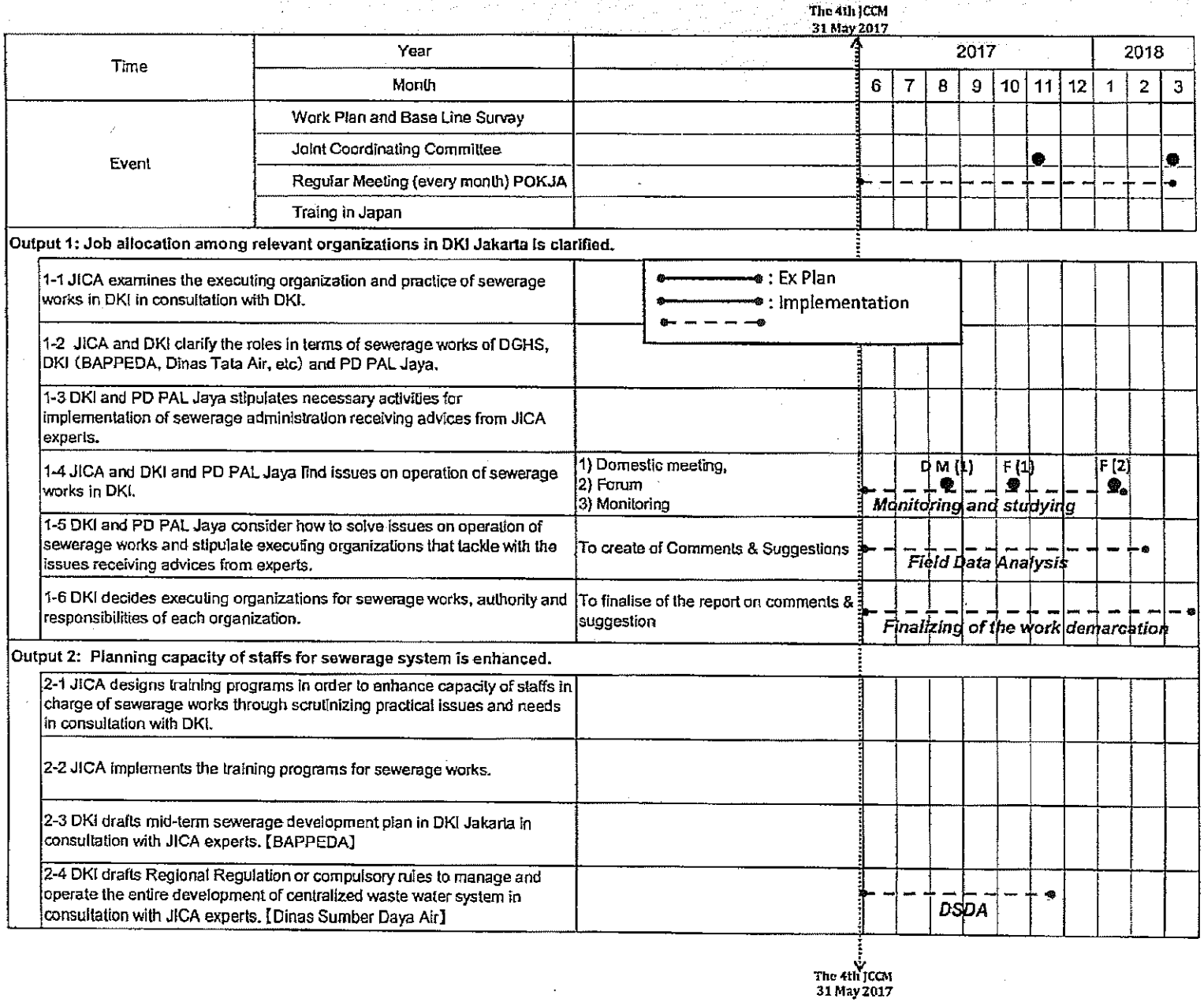
Date: 31 May 2017

Plan of Operation: Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta



Date: 31 May 2017

Activity plan for extension period



Result of Consultant Activities

JICA Consultant Team

2

1 . Project Activities

- JICA designs training programs in order to enhance capacity of staffs in charge of sewerage works through scrutinizing practical issues and needs in consultation with DKI.
- JICA implements the training programs for sewerage works.
- DKI drafts mid-term sewerage development plan in DKI Jakarta in consultation with JICA experts.
- DKI drafts Regional Regulation or compulsory rules to manage and operate the entire development of centralized waste water system in consultation with JICA experts.

3

2 Actual Activities

➢Consultant prepared four means of capacity building.

(1)small seminar

(2)special seminar

(3)Workshop

(4)Training in Japan

➢Consultant collected information and discussion material concerning mid-term plan and regional regulation. DKI drafts them in consultation with consultant.

4

2. Result of Activities

2-1 Small Seminar

- The purpose of the small seminar was to provide information about mid-term sewerage development plan and regional regulations to participants and general information sewerage.
- Consultant visited BAPPEDA, Dinas Tata Air, PD PAL JAYA offices and made presentation and discussion.
- Small seminar was held totally 14 times.
- Total number of participants was 318.

5

(1) Theme of Small Seminar

Category	Theme
Mid-term sewerage development plan	Mid-term Sewerage Development Plan Required WWTP Area Step-wised construction plan Several points of sewerage Early stage mid-term sewerage development plan in Yokohama City
Regional Regulation for sewerage	Organization and Legislation for sewerage Organization and Legislation for sewerage in foreign countries
Advanced Treatment	Advanced treatment technology Advanced treatment technology and cost
Sludge Treatment	Sludge Treatment and disposal Financing to Sludge treatment
Operation and Maintenance	Operation and Maintenance of sewerage facility Efficient operation and maintenance of sewerage facility Operation and maintenance of WWTP
On-site Treatment	Improvement of O&M at on-site treatment facilities at commercial area Operation and maintenance in on-site treatment in Japan
Financing for Sewerage	User charge system in urbanized area in Japan Financial system and its improvement
Public Relations	Public relations in Kitakyusyu City
Others	Experience of sewerage works management in Kitakyusyu City Environmental issues in sewerage in Jakarta Asset management in sewerage entities Sewerage facilities in Japan

6

(2) Small Seminar (2016.8.5)

BAPPEDA

7

(3) Small Seminar (2016.10.6)

Dinas Tata Air

8

(4) Small Seminar (2016.11.29)

PD PAL JAYA

9

2-2 Special Seminar

- The purpose of Special Seminar is to learn wider knowledge and experience concerning sewerage from foreign and domestic cities and sewerage entities.
- Three Special Seminar have been held in total.

10

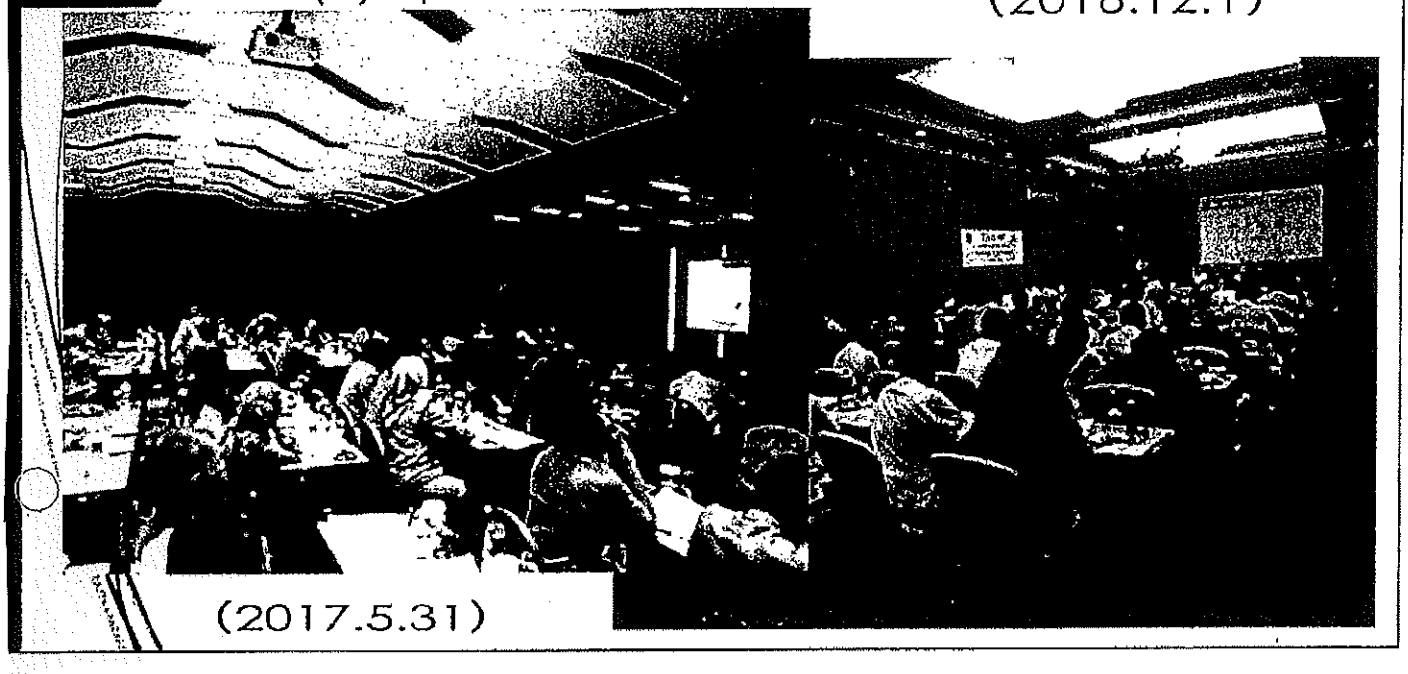
(1)Theme of Special Seminars

Number	Date	Participants	Topic
1	31st May	67 persons	Improvement of O&M in on-site treatment facility Japan's sewerage law Governer Degree41/2016 Inplementation of sewerage and water polution improvement. Financing of sewerage and user charge in Japan
2	1st Dec.	85 persons	Sewerage works in Denpasar Grey water management in Baudon Waste water management by on-site system in Surakarta Sewerage development in forein countries and suggestion to Jakarta Factors which affect to waste water management
3	23rd May		Sewerage in Jakarta, Kuala Lumpur, Bangkok and Ho Chi Minh

11

(3) Special Seminar

(2016.12.1)



(2017.5.31)

12

2-3 Workshop

- Relevant personnel to Jakarta sewerage implementation exchange their view and have same notion for the implementation of sewerage system in Jakarta.
- Workshop was held from May 23rd to 24th.
- The number of participants was 36.

13

(1) Workshop (2017.3.23~24)

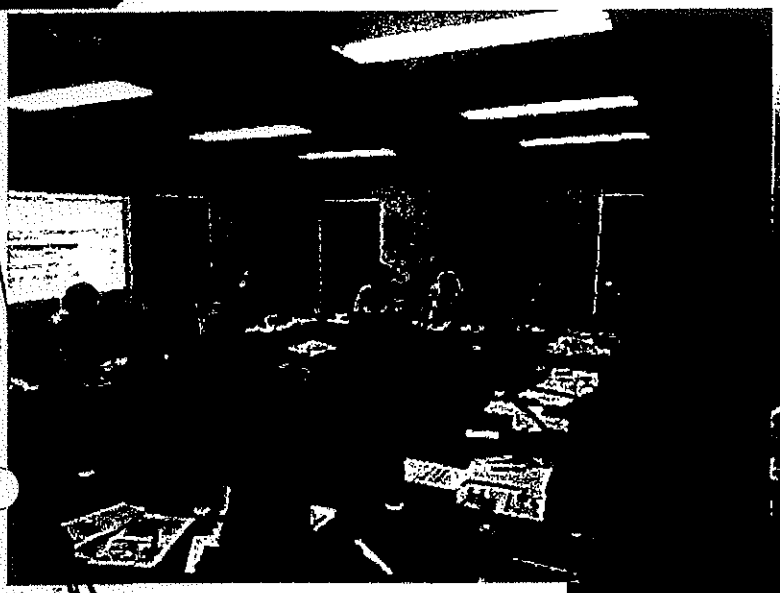
14

3. Training in Japan

- Through listening the lecture and site visit, trainees are expected to understand how sewerage works are executed in Japan.
- Training was held twice in February and August 2016.
- Target trainees for the first training were high rank officials, and second training were practical level.
- It is necessary to use on-site system for long time, lecture and site visit to treatment plant where the plant treat not only sewage but also septage.

15

(1) Training in Japan



(2016.8.23)

(2016.8.24)

16

4. Mid-term Sewerage Implementation Plan

Objectives of the Activity

Assist DKI to prepare the Draft of Mid-term Sewerage Development Plan

Flow of Activity

(1)Confirmation of Current Plan

(2)Confirmation of Basic Issues for New Plan

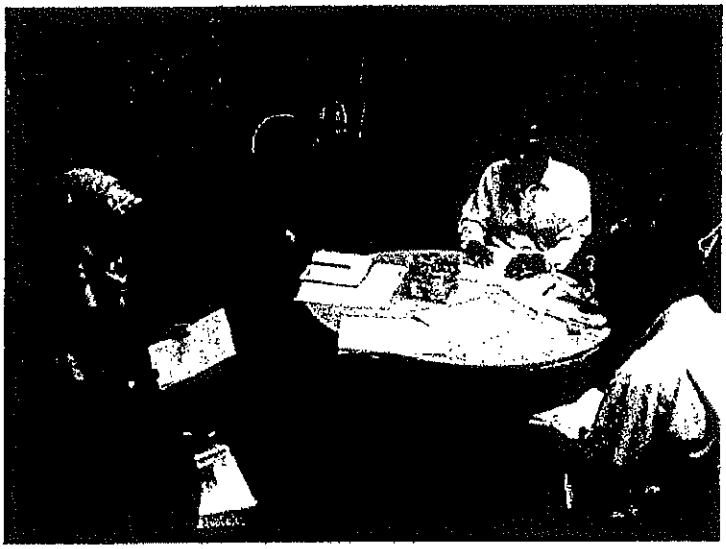
(3)Consideration on Priority Zone

(4)Consideration on Construction Schedule and Cost in Each Year

(5) Preparation of Draft RPJMD sewerage section

17

(1) Meeting on Mid-term Sewerage Development Plan (2016.11.28) BAPPEDA



18

5. Regional Regulation

Objective of the Activity

Assist DKI to prepare the Draft of Regulation on Sewerage

Flow of Activity

(1)Introduction of Example in Japan and Southeast Asia

(2)Major Items are: Notification of Sewerage Service, Obligation of Connection to Sewerage, User Charge, etc.

(3)Preparation of Draft Article in which the Purpose and Contents are explained


19
Thank you
for your listening

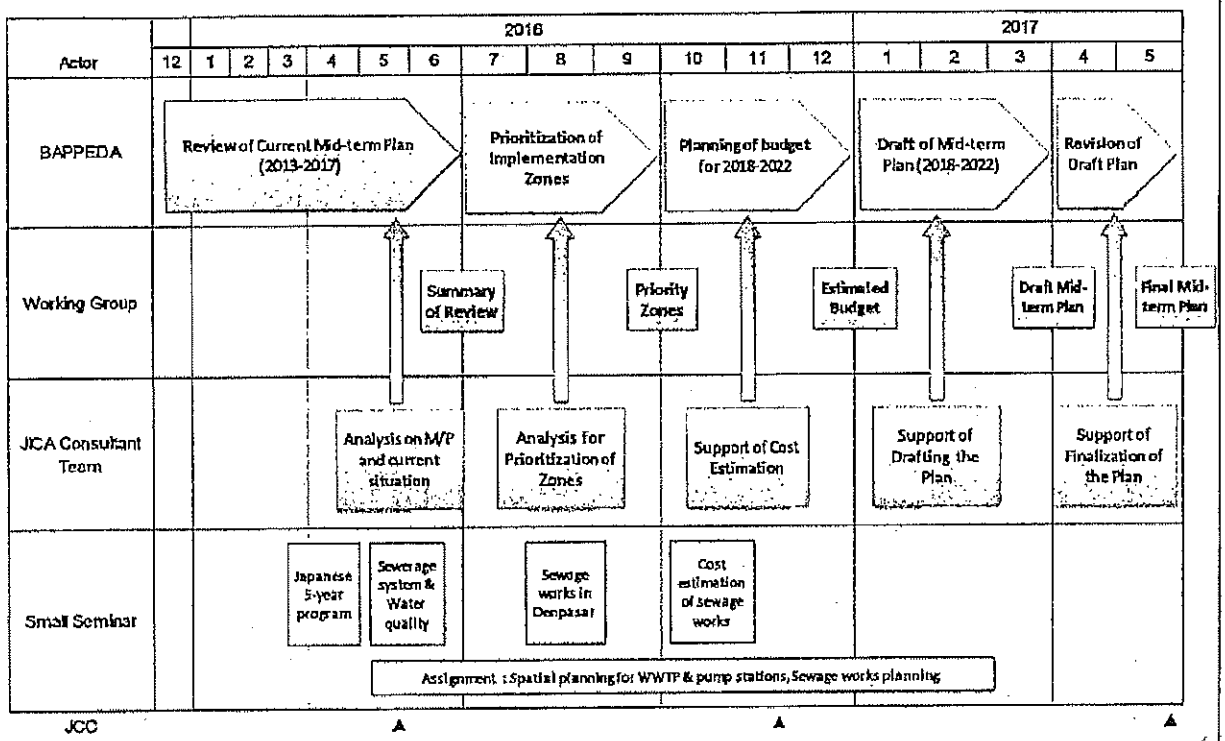
JCC Meeting
Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta

– Midterm Sewerage Development Plan –

May 31, 2017

JICA Consultant Team

1. Activity on Midterm Sewerage Development Plan

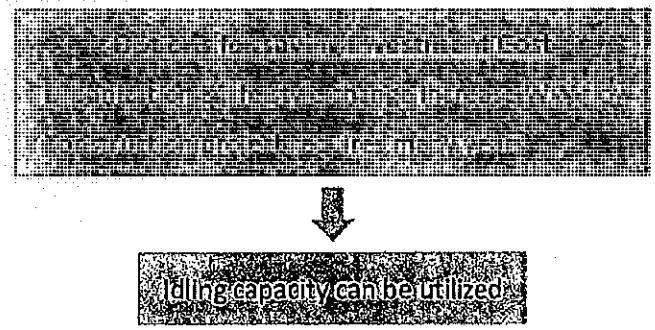


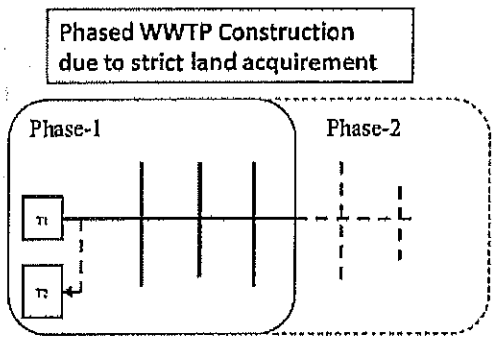
2. Reviewing M/P, NCICD, Acceleration Plan

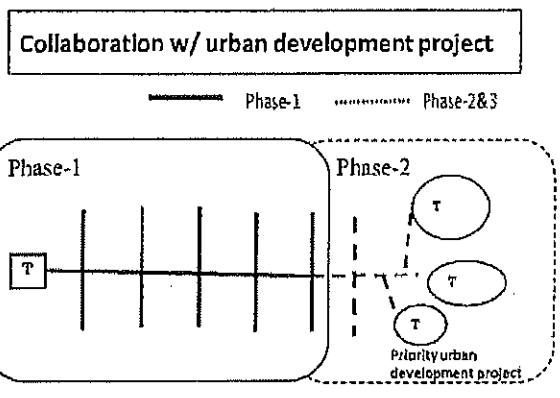
- BAPPEDA has been reviewing the current RPJMD (2013-2017), JICA M/P, NCICD and Acceleration Plan of PD PAL Jaya since beginning of 2016.
- The current RPJMD (2013-2017) was formulated based on the JICA M/P 2012.
- NCICD and Acceleration Plan, prepared in 2014, define the different priority zones of implementation and target years from JICA M/P in order to improve the water quality and environment.
- The next Mid-term Plan (2018-2022) needs to be adjusted with those development plans.

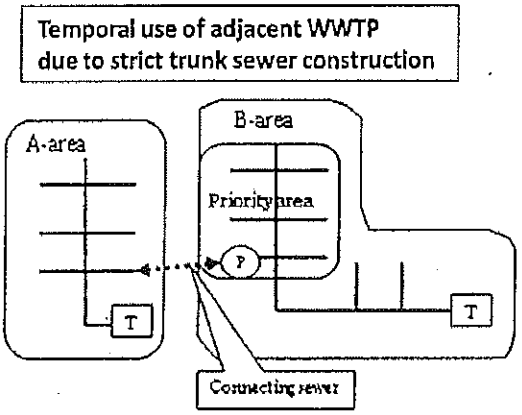
3

3. Features of Step-wised Sewerage Development









4

4.1 Criteria for Prioritization

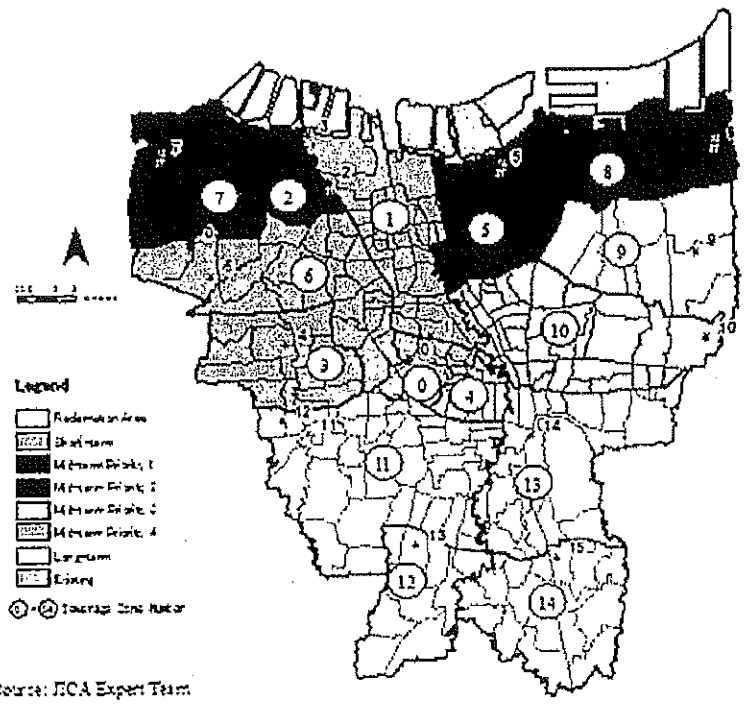
Suggested criteria

1. Consistency with NCICD (location of zone)
2. Capital and operational costs (pipe &WWTP)
3. Service revenue (ratio of revenue-gross floor area (GFA))
4. Investment efficiency (sewer construction cost per wastewater volume)
5. Land availability for WWTP
6. Environmental impacts (water quality)
7. Difficulty of underground penetration (land subsidence and groundwater level)

5

4.2 Priority for Midterm Plan (suggested by JICA consultant)

Priority	Zone
Short-term	1, 6
[redacted]	[redacted]
[redacted]	[redacted]
Mid-term Priority 3	4+10
Mid-term Priority 4	3
Long-term	9, 11, 12, 13, 14



Source: JICA Expert Team

6

5.1 Implementation schedule

PLAN-A (Acceleration)

- In line with the Acceleration Plan and the Governor Regulation 41/2016
- Completion of construction of WWTP, main sewer (interceptor) and P/S of Zone-1 & 6, and Zone-2, 3, 5, 7, 8, 4+10 before 2022
- WWTPs in all the zones will start operation before 2022
- 2ndary & 3rtiary sewers and HC will be all installed in the next 5 years

PLAN-B (Step-wised)

- Completion and commencement of service of and Zone-2, 3, 5, 7, 8, 4+10 is 2030 (closure of the outer seawall of NCICD)
- Construction of main sewer in 5 years or more from priority sub-zones
- 2ndary & 3rtiary sewers implemented after the main sewer in 10 years
- Construction of WWTP is also step-wised, the first phase construction will require 70% of total construction cost
- after 5 years from completion, the 2nd phase starts to increase the capacity of WWTP

7

Plan A : Acceleration plan

Plan-A

Is it practicable budgetary and technically such as traffic congestion?

Sewerage Zone	[PH-1 of Mid-Term Plan]						[PH-2 of Mid-Term Plan]								[Long Term Plan]				
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
WWTP																			
1																			
6																			
2																			
3																			
7																			
10(Including 4)																			
5																			
8																			
Sewerage Zone	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Sewer & PS																			
1																			
6																			
2																			
3																			
7																			
4																			
10																			
5																			
8																			

: Detailed Design of WWTP
: Construction of WWTP
: Detailed Design of Sewer and Pumping Stations
: Construction of Sewer (First Step: Interceptor Pipe)
: Construction of Sewer (Second Step: Secondary & Tertiary pipe and house connection)

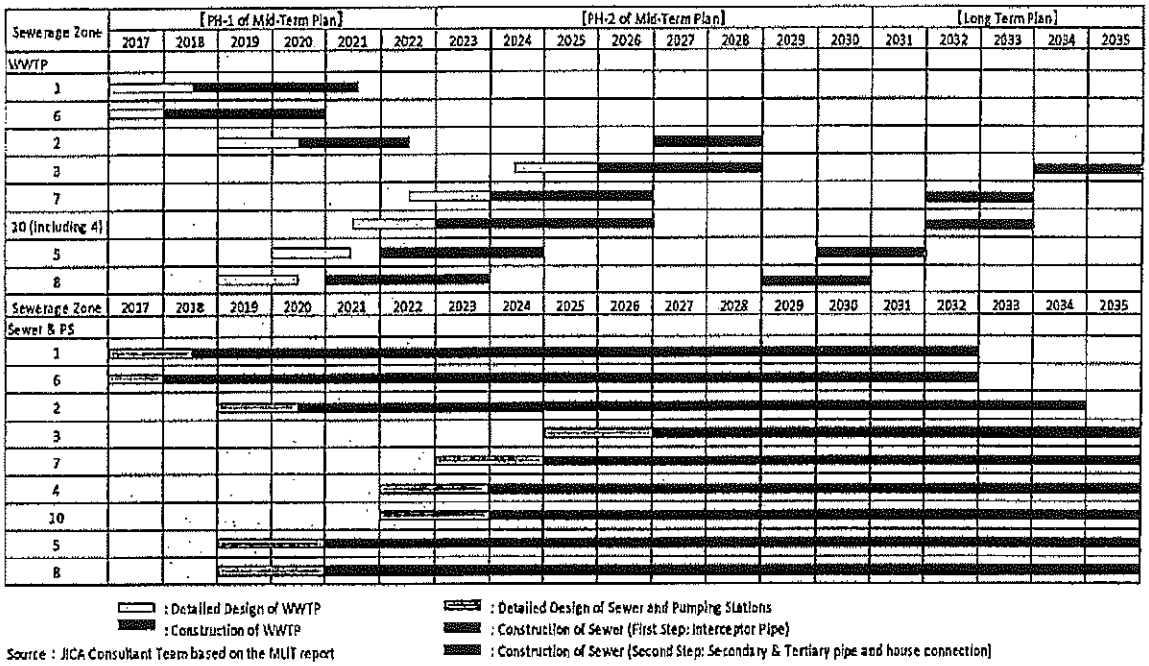
Source: JICA Consultant Team based on the MLIT report

8

Plan-B : Step-Wised Plan

Plan-B

Plan-B is still changeable and careful provision is required.

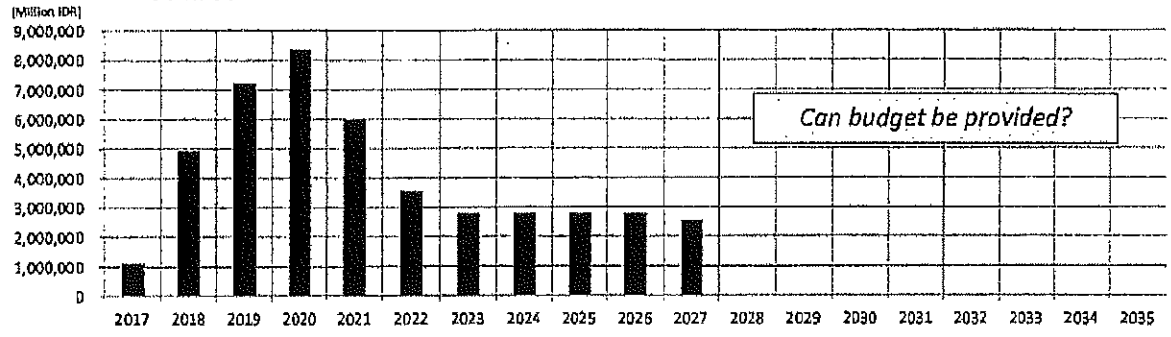


Source : JICA Consultant Team based on the MUIT report

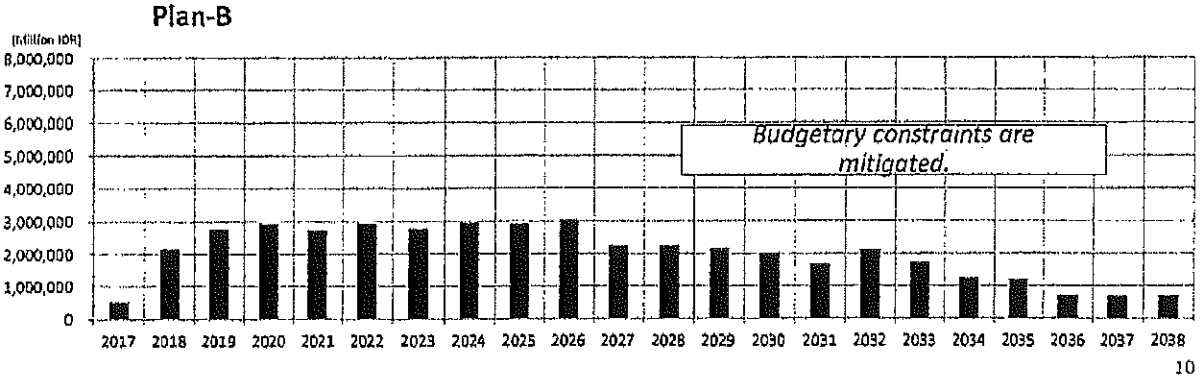
9

5.2 Required budget for two scenarios

Plan-A



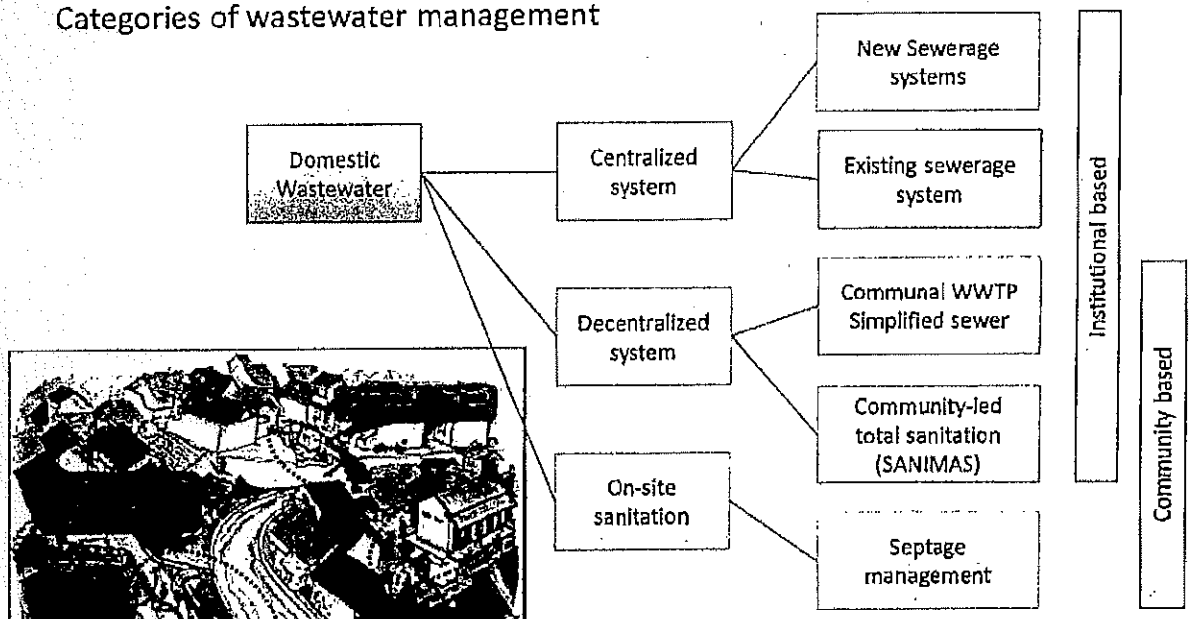
Plan-B

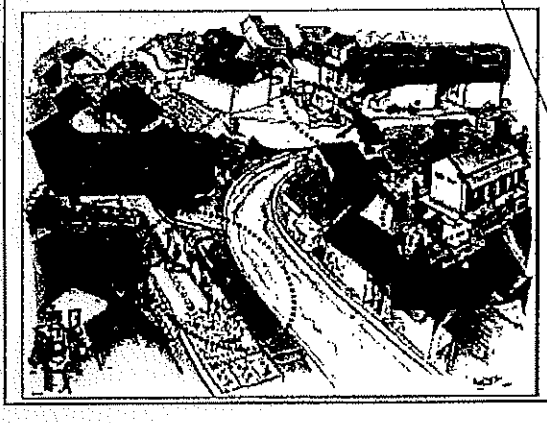


10

6.1 Decentralized and on-site wastewater management

Categories of wastewater management





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6.2 SANIMAS in Jakarta

IDB project: total 44 Locations. 25 locations are already decided, 19 has been installed (8 started in 2015, 11 in 2016).

Budget for one location= 425 million IDR

Material: 65%
Wage: 35%
Operational: 5%

- One SANIMAS covers 50HH or 500pe.
- Construction of one SANIMAS takes 3 months generally.
- Design & Supervision are by 3 **TFL** (PR, Management, Technical) employed by PUPR.
- O&M will be done by KPP (user association). User fee also collected by KPP.

Vice governor's plan: total 1,000 Locations until 2019

→ SANIMAS is one of effective solutions to treat wastewater where the Sewerage systems will not immediately installed.

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7. Performance Indicators and Annual targets

What kind of activities needs to be counted for the next 5 years?

Off-site

- ☐ Construction of sewerage systems
- ☐ Engineering service and tender process
- ☐ Preparation and procedures before the implementation (AMDAL, land acquisition and survey, socialization etc.)
- ☐ O&M of WWTPs and sewers in service

On-site

- ☐ Implementation of Communal WWTP/SANIMAS systems
- ☐ Regular desludging of septic tanks
- ☐ Construction of sludge treatment plants

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7.1 Target of Next RPJMD (2018-2022)

PROGRAM	PROGRAM PI (Output)	INITIAL CONDITION 2017	PERFORMANCE TARGET PROGRAM					PERFORMANCE CONDITIONS END OF YEAR 2022
			2018	2019	2020	2021	2022	
			Target	Target	Target	Target	Target	
Wastewater Management Performance Improvement Program	Percentage of centralized systems	8% (Zone-0, part of Zone-1,6)	33 (Zone-0,1,6, 2,8)	40 (Zone-0,1,6, 2,8,5)	54 (Zone-0,1,6, 2,8,5,4+10)	60 (Zone-0,1,6, 2,8,5, 4+10, 7)	65 (Zone-0,1,6, 2,8,5,4+10, 7,3)	65%
	Number of Zones EIA procedures	2 (Zone-1,6)	2 (Zone-2,8)	1 (Zone-5)	1 (Zone-4+10)	1 (Zone-7)	1 (Zone-3)	8
	Number of Zones E/S & tender process	2 (Zone-1,6)	2 (Zone-2,8)	3 (Zone-2,8,5)	2 (Zone-5,4+10)	2 (Zone-4+10, 7)	2 (Zone-3,7)	8
	Number of Zones construction	1 (Zone-0)	2 (Zone-1,6)	2 (Zone-1,6)	5 (Zone-1,6, 2,8,5)	5 (Zone-1,6, 2,8,5	6 (Zone-1,6, 2,8,5,4+10)	6
	Number of Communal WWTP @200HH		4	4	4	4	4	20
	Number of SANIMAS	19	81	200	200	250	250	1000
	Number of Truck for Regular desludging	31	69	100	100	100	100	500

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7.2 Suggested Schedule and Calculation for Percentage

The percentage was calculated in accordance with intervention and implementation of Sewerage Project, not completion of construction.

Zone-0	1.5%						
Zone-1	9.8%						
Zone-2	1.7%						
Zone-3	5.7%						6%
Zone-4+10	14.5%				15%	15%	15%
Zone-5	6.3%			6%	6%	6%	6%
Zone-6	11.6%	12%	12%	12%	12%	12%	12%
Zone-7	5.5%					5%	5%
Zone-8	8.7%		9%	9%	9%	9%	9%
Total	**65%**	**23.2%**	**33.0%**	**39.3%**	**53.8%**	**59.3%**	**65.0%**

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8. Way Forward for RPJMD (2018-2022)

- ❑ Draft RPJMD (2018-2022) sewerage section
  → *May 2017*
- ❑ Inauguration of new governour
  → *October 2017*
- ❑ Compilation & Finalization of RPJMD (2018-2022) and Submitted to Regional Assembly (DPRD)
  → *April 2018*
- ❑ Approval from (DPRD)
  → *June 2018*
- ❑ Publishing of RPJMD (2018-2022)
  → *August 2018*

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JCC Meeting

Wastewater Management & Sewerage Development

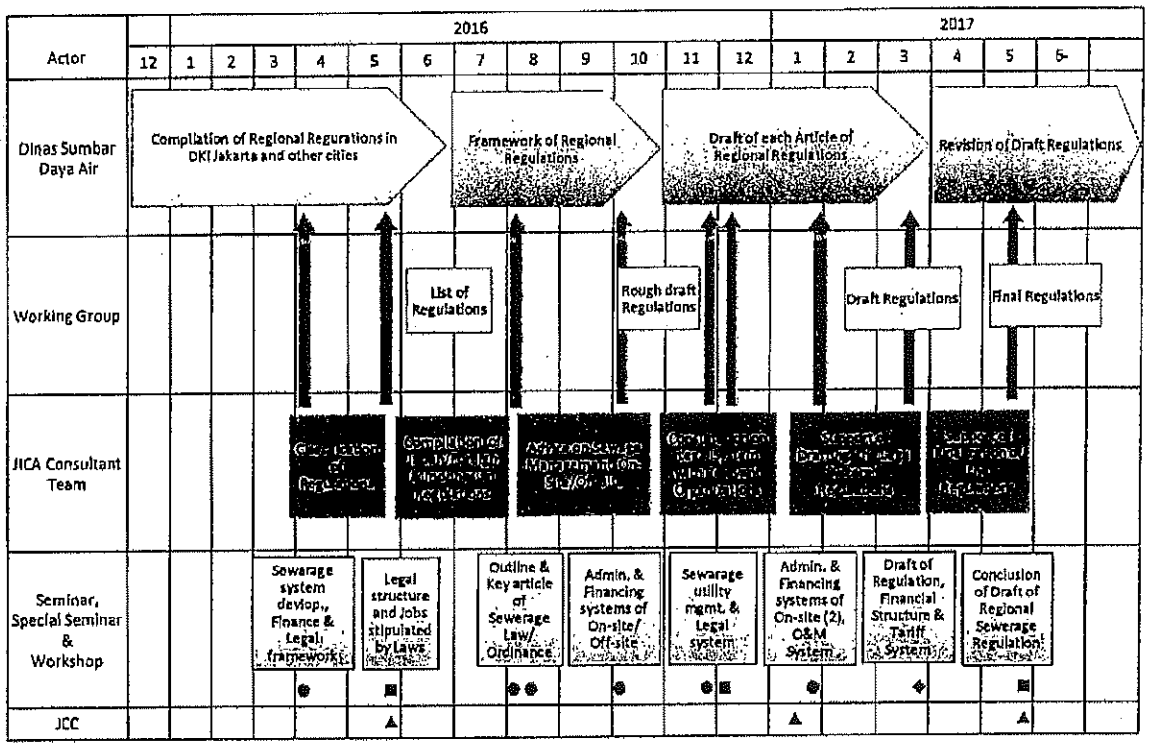
– Regional Sewerage Regulation –

May 31, 2017

Consultant Team

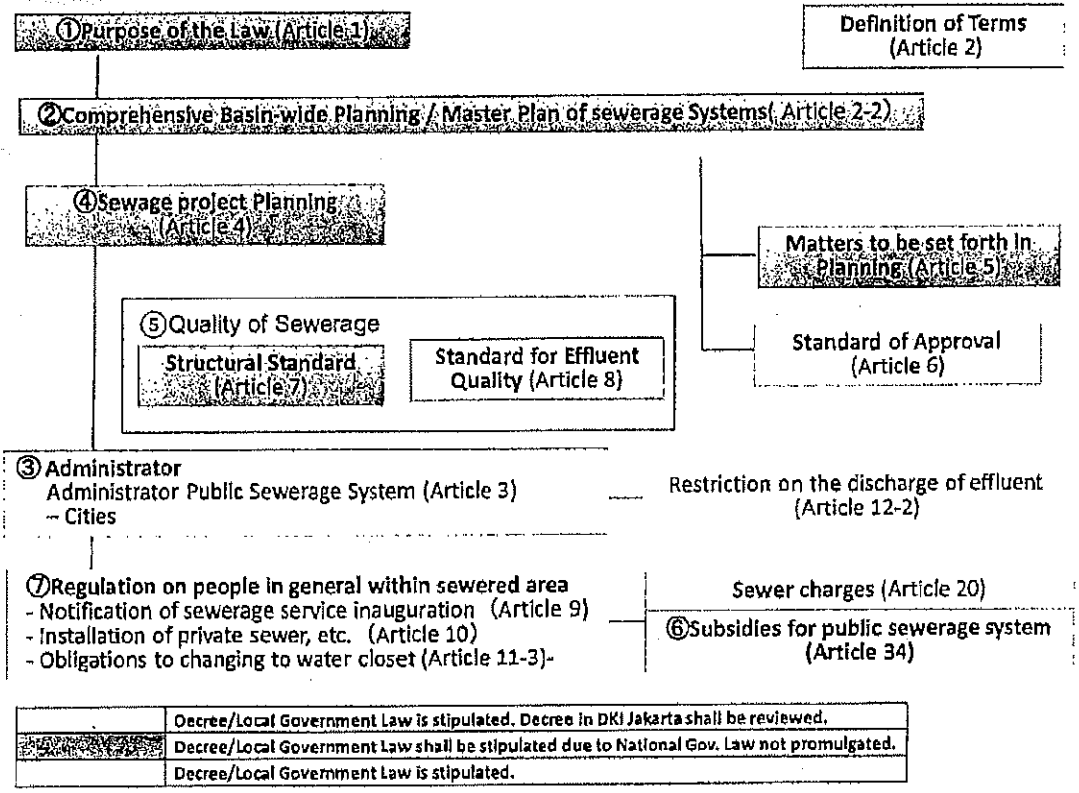
Contents

1. Activity on Regional Sewerage Regulation



3

2. Overall Structure of Regulation



	Decree/Local Government Law is stipulated. Decree in DKI Jakarta shall be reviewed.
	Decree/Local Government Law shall be stipulated due to National Gov. Law not promulgated.
	Decree/Local Government Law is stipulated.

4

3: Basic Model of Regulation (Recommendation) (1/2)

Integrated by Standard Sewerage Ordinance of Municipal Gov., Sewerage Law and Jhokasou Law in Japan

Article	Right / Obligation
Article-1 Purpose of Ordinance	Administrative power 【Reference-1】 Standard Sewage Ordinance Sewerage Law Jhokasou Law
Article 2 Definition of Terms	Defining terms
Stipulation on Planning (if necessary)	*Responsibility of Planning of Domestic (Municipal) Wastewater Management*
Stipulation on Construction (if necessary)	*Responsibility of PIM establishment*
Stipulation on Finance (if necessary)	*Responsibility of Financing*
Article 3 – 5 Installation of house connection and private (building) sewer	Obligation of public sewer connection (discharge to public sewer) 【Reference-2】
Article 6 Registration and order on plumber	Plumber registration, Qualification / certification of professional engineer 【Reference-3】
Article 7 Inspection of private sewer installation	Inspection of installation work 【Reference-4】
Article 8 - 12 Pretreatment of wastewater from business and industry	Installation of pretreatment facility, Restriction on wastewater discharge of specified factory Assignment of water quality management professional Notification of installation, suspension or removal of pretreatment facility 【Reference-2】 & 【Reference-5】
Article 13 Suspension or restriction of wastewater discharge	Right on suspension or restriction of wastewater discharge
Article 14 Notification of public sewer use	Application / notification of public sewer use, suspension, resume or abandonment

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3: Basic Model of Regulation (Recommendation) (2/2)

Integrated by Standard Sewerage Ordinance of Municipal Gov., Sewerage Law and Jhokasou Law in Japan

Article	Right / Obligation
Article 15 – 17 Sewerage tariff	Right of tariff levy and collection, request on data submission 【Reference-2】 & 【Reference-6】
Sewerage Law Article 23 ***Sewerage Information Database***	To create sewerage (asset) information data base To open data base if requested 【Reference-7】
Article 18 Order for improvement of pretreatment facility	Right / Order on facility improvement and operation practice of pretreatment facility
Article 19 - 26 Approval of activity and sewer occupation	Right on sewer facility occupation and user charge 【Reference-8】 Standard Sewage Ordinance Sewerage Law Jhokasou Law
Article 28 Responsibility of households and building owners who are not connected to separate sewer system	Responsibility for proper installation of on-site facilities, and proper operation and maintenance of them
Article 29 Responsibility for regular desludging of household septic tanks	Who is responsible for regular desludging of household despotic tanks? (residents?, PD PAL JAYA?, both of them?)
Article 30 Qualification and training of desludging operators	Who will approve them? What are the conditions for approval? Who will train them?
Article 31 Operation and Maintenance of Individual Treatment Plant (ITP) of commercial buildings and office buildings	Obligation of building owners to appoint ITP Technical Supervisor or ITP operator
Article 32 Qualification and training of ITP technical supervisors and ITP operators	Who will qualify the ITP Technical Supervisor or ITP operator? Who will train and examine the capacity of the Technical Supervisor or ITP operator?
Article 33 Inspection of ITP performance	BPLHD designate the inspection job to the designated inspection agency
Article 34 On-site Sludge treatment	Who is responsible for providing sludge treatment capacity? Who will pay the sludge treatment cost?

6

4. Introduction of Textbook (1/2)
"Establishment of Legal Framework for the Sewerage System"

1. Aim of Textbook

(1) Understanding sewerage development methodology and sewerage works management is essential in order to establish sewerage regulatory system.
(2) Textbook tries to commentate briefly the relationship between legal background and sewerage development methodology as well as institutional design.
(3) Institutional design appropriate to DKI Jakarta is elaborated through scrutinizing experiences of sewerage development methodology and sewerage works management. Best management practices in oversea and Indonesia are introduced for regional sewerage regulation which is appropriate to DKI Jakarta.
(4) Institutional design is deemed in order to establish sewerage development methodology and sewerage works management appropriate to DKI Jakarta.
(5) Individual Article as well as description in oversea are introduced.
(6) Individual Article and description are difficult to be understood, accordingly References-1 through Reference-8 are provided as concept of Operation Procedure.

2. Content of Textbook

Part-1: Issue and Circumstances of Sewerage in DKI Jakarta
Part-2: Experience of Oversea
Part-3: Outline of Legal System / Sewerage Law in Japan
Part-4: Basic Model of Sewerage Ordinance / Local Government Law (Recommendation to Regional Sewerage Regulation of DKI Jakarta)
Part-5: Appendixes

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4. Introduction of Textbook (2/2)
"Establishment of Legal Framework for the Sewerage System"

3. Jobs versus Stipulation of Articles

(1) Jobs of sewerage works are defined.
(2) Institutional system is designed as legal background for executing individual job of sewerage works.
(3) Reference-1 through Reference-8 help understanding individual institutional system.

4. Procedure of Drafting Regional Sewerage Regulation of DKI Jakarta

(1) Jobs of sewerage works necessary to DKI Jakarta are carefully reviewed along with Basic Model of Regional Regulation.
(2) Institutional system is designed as legal background for individual job.
(3) Individual Article is selected for realizing individual institutional system.
(4) Key words of individual Article is deemed for realizing individual institutional system as Legal Background.
(5) Stipulation and/or description of individual Article are refined through referring relevant Articles of Appendixes of Textbook in order to realize individual institutional system as legal background.

5. Appendixes

1. Standard Sewerage Ordinance of Municipality Government in Japan
2. Sewerage Law in Japan
3. Structure of Sewerage Related Law in Oversea in 10 Countries and Regions
4. PI (Performance Indicator)
5. Governor Decree No. 41 of 2016 Master Plan
6. Governor Regulation on PIU No. 1658 Year 2016
7. Wastewater Discharge Standard--No.68/2016
8. The Greater Jakarta Governor Decree No. 1040/1997
9. Tariff of PD PAL Jaya 2016
10. Local Regulation of Sewerage Works, Denpasar-Bali

8

5. Roadmap of Enactment of Governor Decree (1/2)

For prioritized Decree

Step-wised approach

- Institutional design: What type of institutional system is appropriate to DKI ?
- Selecting prioritized Article
  - Amendment of present Decree on Tariff
  - Notification of sewerage service
  - Obligation to sewerage connection
  - Certification and Registration on plumber and private business operator

	• Institutional design strategy on legal system development • Selecting prioritized Article and drafting, Tariff legislation progresses separately	• Detail Design • ES for ODA LA Agreement
	• Public hearing, Academic paper, Explanation to Diet / Committee Member on sewerage works institution	• Construction start of Trunk sewer and WWTP
	• Promulgation of prioritized Article • Drafting 2nd prioritized Article and/or Integrating to comprehensive legal system on sewerage management	• Detail design of service pipe • Consultation on house connection

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5. Roadmap of Enactment of Governor Decree (2/2)

For Decree which takes time

	• Budget provision for 2018 • Research on Institutional / Financial system	• Detail Design • ES for ODA LA Agreement
	• Alternative study on Tariff System • Financial simulation on O&M cost and tariff revenue • Drafting Amendment of Decree on Tariff	• Construction start of Trunk sewer and WWTP
	• Public hearing, Academic paper, Explanation to Diet / Committee Member on Financial and Tariff System	• Detail design of service pipe • Consultation on house connection
	• Authorization by Diet of Decree Amendment	• Construction of service pipe
	• Promulgation of Amended Decree	• Construction of house connection
	• Levy of Tariff	• Inauguration of Sewerage service

Assumptions:
- [illegible] construction takes 3 years

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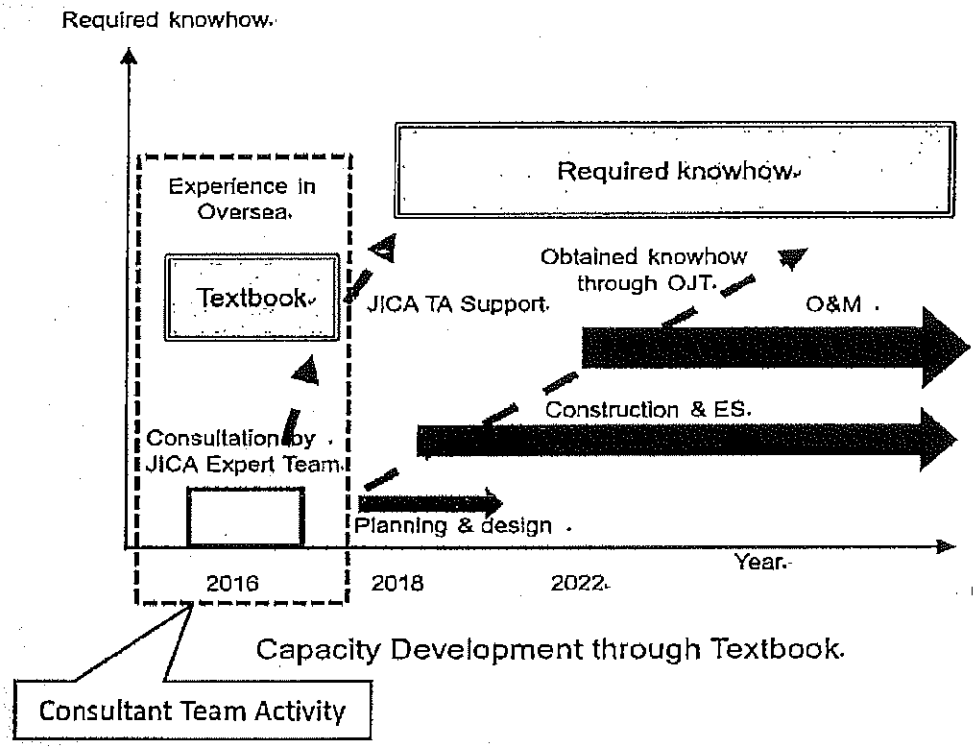
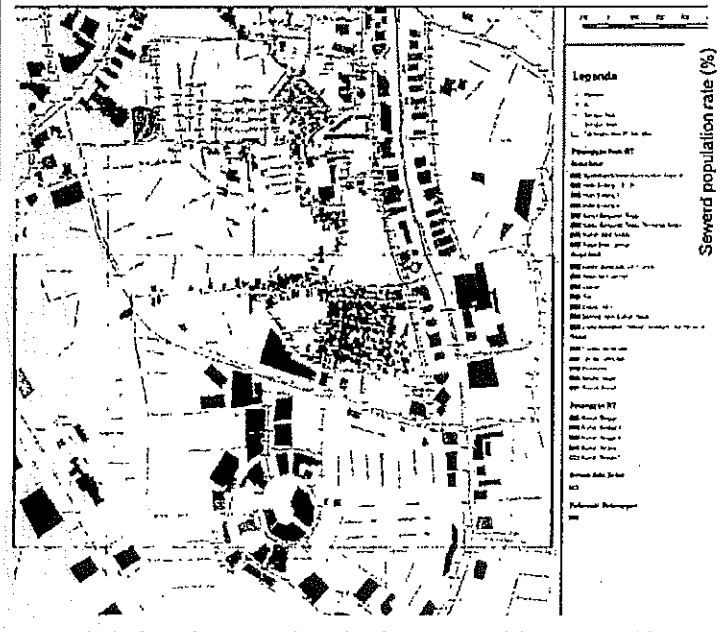
Capacity Building Upward through OJT



11

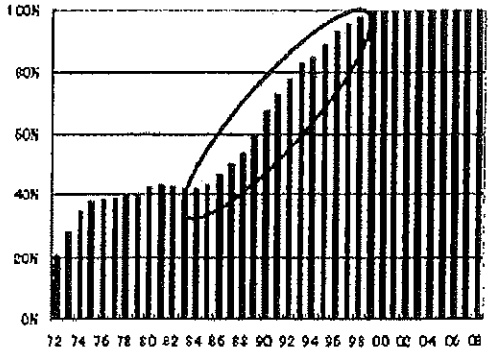
Feature of Article【Reference-1 in Textbook】
(1) Notification of Sewerage Service Area (1/2)

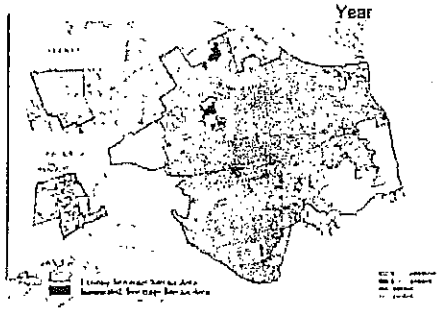
Why notify is required? Obligation of House connection / wastewater discharge



Blue color is planned, and the other colored are connected during 1991 – 2015.

Change of sewerage service rate (N City)





12

Feature of Article【Reference-1 in Textbook】
(1) Notification of Sewerage Service Area (2/2)

The Greater Jakarta Governor Decree
No. 1040 of 1997

Regarding
Standard Quality of Sewerage Wastewater in the Greater Jakarta

The Greater Jakarta Governor

"Article 5" does not work well.
Solution is practical institutional design.

CHAPTER III CONTROL

Article 5
Each owners/inhabitants/responsibility bearers of the buildings as located within the service area of installed public wastewater pipeline canals shall dispose their wastewater into such public wastewater pipeline canals.

Article 6
Each owners/inhabitants/responsibility bearers of the buildings as stipulated under Article 5 above shall construct parcel wastewater channeling structure and connect properly to the public wastewater pipeline canals under supervision of PD PAL Jaya and related Government Services.

Article 7
Each owners/inhabitants/responsibility bearers of the buildings as stipulated under Articles 5 and 6 above and have been using the public wastewater pipeline canals shall observe the disposed wastewater quality to comply with the pipeline system wastewater quality standard in order to prevent from disturbances to the wastewater canals and other structures.

Practical institutional design is carefully

CHAPTER IV SUPERVISION AND MONITORING

Article 8
(1) Supervision and Monitoring against the Quality Standard of the Public Pipeline System Wastewater shall be executed by PD PAL Jaya.
(2) In execution of the supervision as stipulated under point (1) above of this Article, PD PAL Jaya shall coordinate with the related government services and report its supervision results to the Greater Jakarta Governor.
(3) The supervision task as stipulated under point (1) above of this Article include, inter alia:
   a. monitoring and evaluation of quality standard of wastewater that enter into the pipeline system;
   b. collection and evaluation of data that relate to activities as stipulated under point a. above shall be executed by PD PAL Jaya.
(4) The supervision shall be conducted periodically and any time as required.
(5) If the results of the supervision and monitoring indicate quality standard deviation, the Government service in charge of guidance provision shall, on behalf of the Greater Jakarta Governor, request the owners/inhabitants/responsibility bearers of the buildings concerned to take needed measures and, if required, enforce penalties based on the pertaining provisions.
(6) Provisions on implementation procedure of the supervision and monitoring shall be established separately that include its implementation guidance and technical guidance.

Good Practice of Overseas Law stipulates: "shall install house sewer", "shall discharge wastewater to public sewer", etc.

Japan Sewerage Law
Article 9 Public Notice of Commencement of Sewerage Service
Municipal sewerage operator has to issue a public notice on the dates of commencement of new sewerage service, drainage/treatment area, and the others stipulated in the ordinance of sewerage while ensuring public access to the plans & sections in the offices of municipal governments.
Article 10 Mandatory Connection
10.1 Once sewerage service becomes available, land owners, tenants, or occupants shall install house or lateral sewers without delay by the following classification.
10.1.1 Where a land has a building, the building owner has the duty.
10.1.2 Where a land does not have a building, the land owner has the duty.
10.1.3 Where a land is public roads or used by other public authorities, the concerned authorities have the duty.
10.2 The repair & rehab of house or lateral sewers shall be made by those who shall install them. The cleaning and other maintenance work shall be conducted by the occupants of the land.
10.3 The installation work & structure of house or lateral sewers shall comply with Building Law & the Order of Sewerage Law.

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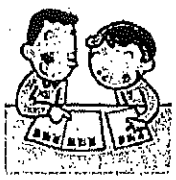
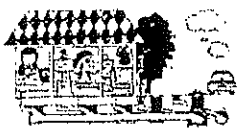
Feature of Article【Reference-3 in Textbook】
(2) Certification & Registration on Plumber / Private Business Operator

Aims of Certification & Registration

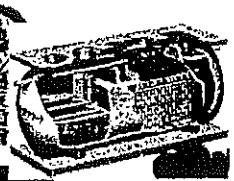
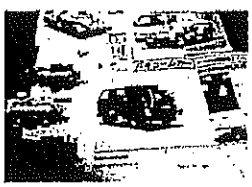
- To secure the good quality with acceptable price for house connection, building sewer construction, and installation and operation of on-site treatment plant.
- To promote wastewater treatment through installation of house connection and/or on-site treatment plant
- To secure the qualification of professional engineers
- To secure the capacity of business entity
- To enhance management capacity through examination and training
- Technical claim raised by sewerage user and first-aid can be out-sourced.

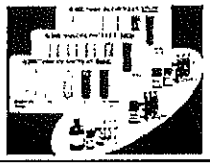





Sewer connection application - Cost estimation - Construction contract - Commissioning - Sewer use






On-site Treatment Plant Installation – O&M - Desludging

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【Tariff and Finance in Textbook】
(1) Tariff Level

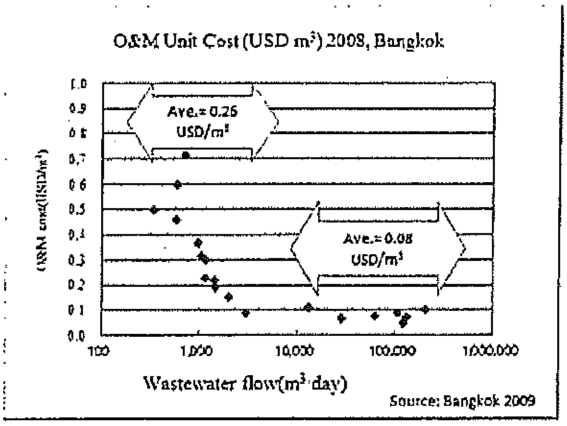
Tariff of PD PAL Jay, 2016

Tarif Jasa Pelayanan Pembuangan Air Limbah

The Rate of Wastewater Disposal Service

GOL	KATEGORI PELANGGAN	TARIF (Rp.)
I	RUMAH TANGGA / Household	
1	Rumah Tangga Type A (Daya Listrik / Electric 450 Watt)	131
2	Rumah Tangga Type B (Daya Listrik / Electric 900 Watt)	184
3	Rumah Tangga Type C (Daya Listrik / Electric 1,300 Watt)	236
4	Rumah Tangga Type D (Daya Listrik / Electric ≥2,200 Watt)	289
II	NIAGA KECIL / Small Scale Commercial	
1	Toko / Shop	525
2	Kantor (Bangunan ≤ 3 lantai) / Office up to 3 floors	525
3	Gedung Pertemuan / Assembly hall	525
4	Salon	525
5	Restoran Kecil Rumah Makan / Small restaurant	525
6	Losmen / Inn	525
7	Usaha Pendidikan (Sekolah Swasta/Kursus/Perguruan Tinggi) / School	525
8	Niaga Kecil Lainnya (Termasuk Rusunawa Rumah Sewa) / Others	525
III	NIAGA BESAR / Large Scale Commercial	
1	Kantor Bangunan Tinggi / High rise building	578
2	Kantor Bangunan Tinggi (Termasuk Restoran Tinggi) / High rise office with restaurant	604
3	Pusat Perbelanjaan/Mall/Super Market/Show Room / Shopping mall	604
4	Hotel Bintang (Star) I, II, III	604
5	Rumah Susun Milik (Rusunami) / Apartment	604
6	Hotel Bintang IV / IV star hotel	714
7	Apartemen Kondominium	714
8	Tempat Hiburan/Restoran Besar / Large Restaurant	840
9	Rumah Sakit Swasta / Private hospital	840
10	Hotel Bintang V / V star hotel	840
11	Niaga Besar Lainnya / Others	840
IV	SOSIAL / Social	
1	Tempat Ibadah / Religious	53
2	Sekolah Negeri / Public School	263
3	Puskesmas / Community health centre	263
4	Instansi Pemerintah / Government institution	315
5	Lembaga Lembaga/Instansi / Other institution	315
6	Rumah Sakit Pemerintah / Government hospital	315
7	Klinik Balai Pengobatan / Clinic	315
8	Bangunan Sosial Lainnya / Others	315
V	INDUSTRI / Industry	
1	Kecil / Small	548
2	Menengah / Medium	630
3	Besar / Large	735

O&M cost level, Bangkok-Thailand



O&M cost vs. Tariff Level

O&M cost: 0.1-0.3 USD/m³ × 15m³/month/HH

=1.5 – 4.5 USD/month/HH

Tariff: 131 IDR/m² × 70 -100 m² = 10,000 – 13,000 IDR

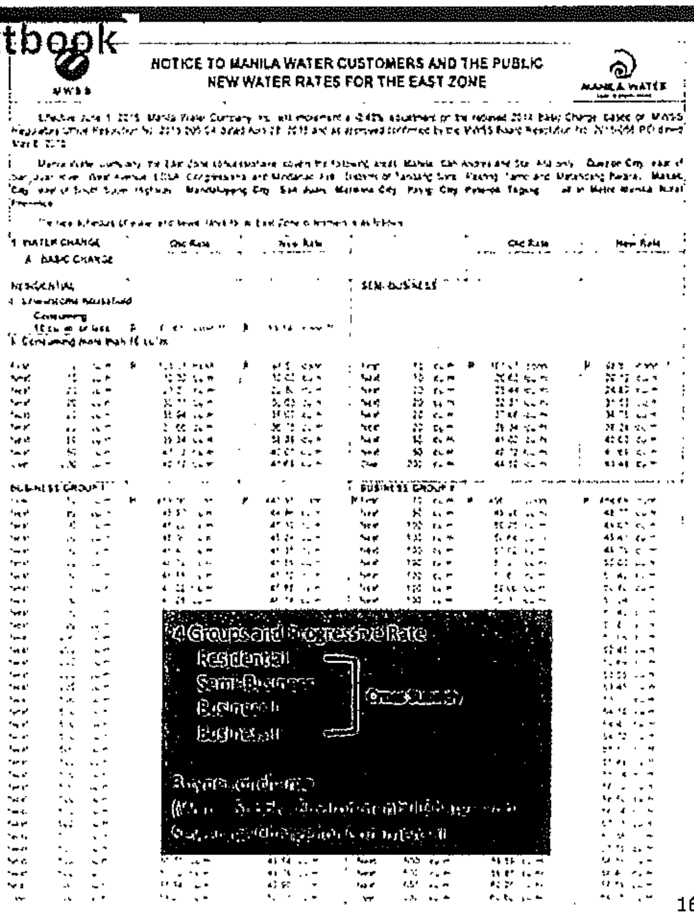
= 1 USD/month/HH

Tariff revenue = "20 – 60%" of O&M cost

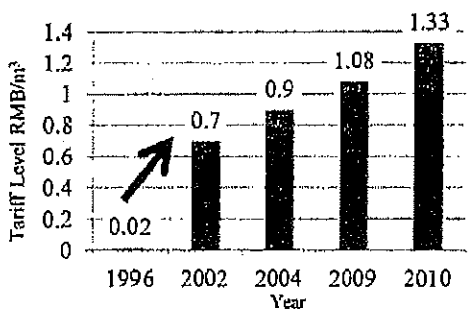
【Tariff and Finance in Textbook】
(2) Principles of Tariff

Principles of Tariff

- Cross subsidy
- Combined tariff "Manila Water introduced even when low rate of metered water"
- Affordability & Poverty alleviation
- Step-wised tariff raising



Domestic Wastewater Tariff Level, Shanghai

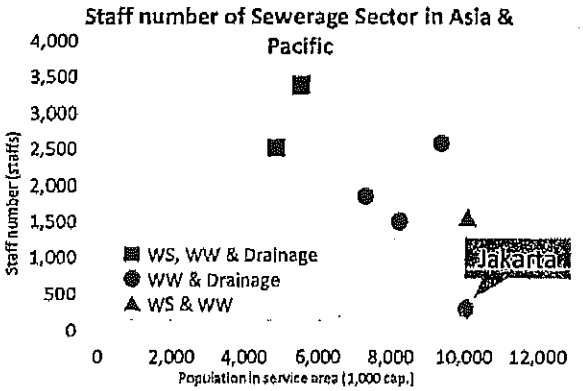


Source: Sustainable Low-Carbon City Development in China, World Bank & Second Shanghai Sewerage Project, World Bank

【Staff Number, Part-2 in Textbook】

Staffing & Job description

- What is end-point & intermittent target ?
- What jobs are provided?
- Competitive professional can be recruited?
- How many no. of professional field?
- How to enhance personnel capacity?



Staffing and Service of Sewerage Sector in Asian & Australian Cities

City	Service Type	Population in Service Area (1,000 Cap.)	House Connection (1,000 HC)	Staff Number (Staffs)	Staff / 1,000 HC
Manila Water	WS & WW ▲	10,000	1,092	1,555	1.4
Singapore PUB	WS, WW, Drainage & WWR ■	5,399	1,424	3,382	2.4
Malaysia IWK	WW ●	21,000PE		3,236	n.a.
Ho Chi Minh UDC	WW & Drainage ●	8,146		1,500	
Hong Kong DSD	WW & Drainage ●	7,188	2,468	1,856	0.8
Sydney Water	WS, WW, Drainage & WWR ■	4,755	1,848	2,509	1.4
Tokyo Sewerage Bureau	WW, Drainage & WWR ●	9,257	5,384	2,579	0.5

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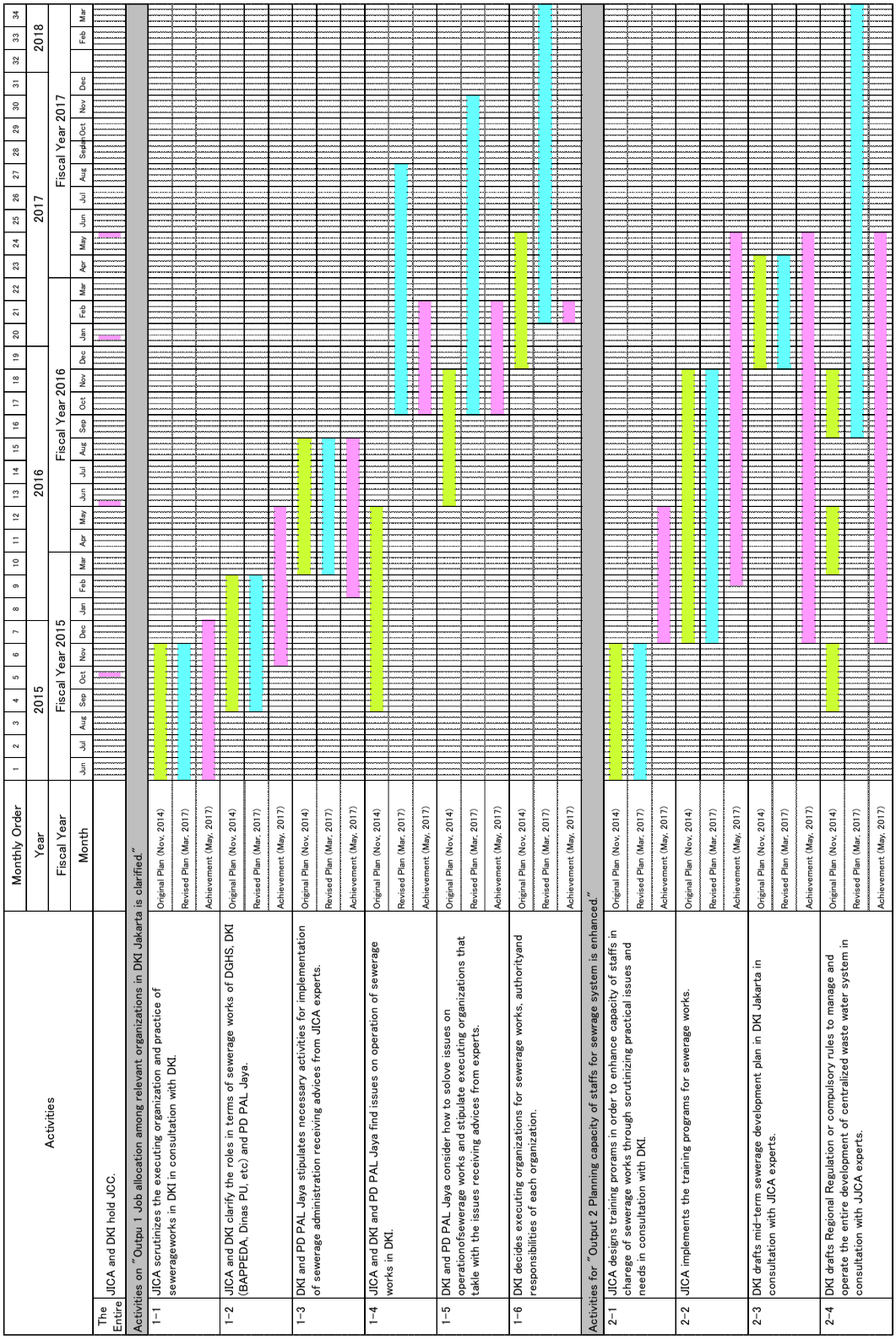
Thank You/Terima Kasih

ANNEX 5
PO

Annex 5　PO (Plan of Operation)



ANNEX 6
DOCUMENTS FOR TRAINING PLAN IN INDONESIA

Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta in the Republic of Indonesia

Document for Training Plan in Indonesia

Contents

1. Outline of Training in Indonesia

The outline of the training in Indonesia is show below:

Table Outline of Training in Indonesia

Items	Training Concept / Methods of Practice
Training Goal	In order to establish an implementation structure of sewerage works, staffs of DKI Jakarta and PD PAL Jaya etc. are able to acquire a wide range of basic knowledge concerning planning, design and construction management etc. on sewerage development from not only technical aspects but also financial ones.
Target Trainee	Executive Staffs and Engineers in BAPPEDA, Dinas Sumber Daya Air (Previous Dinas Tata Air), PD PAL Jaya and DGHS
Training Subject	1) Sewerage Overview 2) Institutional Organizations for Sewerage Works in Japan 3) Case Study from Local Government 4) Methodology for Sewerage System Development (Case Study) 5) Sewerage System Operation (Case Studies from Japan and other countries) 6) Strategies for Improvement of O&M Planning Capacity and Promotion of Privatization 7) Management of Sewerage System 8) Public Relations 9) Improvement of Decentralized Wastewater Management System
No. of Times for Training	Each lecture is conducted several times. (The details are referred to “Table 2-16 Detailed Achievement of Training / Seminar” and “Annex 6 Document for Training Plan in Indonesia.”)
Training Place	Conference room of BAPPEDA, Dinas Sumber Daya Air, PD PAL Jaya, DGHS etc.
Lecturer	Consultant Team (JICA Expert Team)

2. Purpose of Training in Indonesia

Through the training in Indonesia for staffs in each organization (DGHS, BAPPEDA, Dinas Sumber Daya

Air and PD PAL Jaya), which is the Counterpart in the Project, their capacities of planning sewerage projects are enhanced.

3. Achievement Goal for the entire Training Plan

In order to establish an implementation structure of sewerage works, staffs of DKI Jakarta and PD PAL Jaya etc. are able to acquire a wide range of basic knowledge concerning planning, design and construction management etc. on sewerage development from not only technical aspects but also financial ones.

4. Training Contents

4-1. Conceptual Diagram of the entire Training

Conceptual Diagram of the entire Training is described in the next page.

4-2. Target Trainee

Executive Staffs and Engineers in BAPPEDA, Dinas Sumber Daya Air (Previous Dinas Tata Air), PD PAL Jaya and DGHS

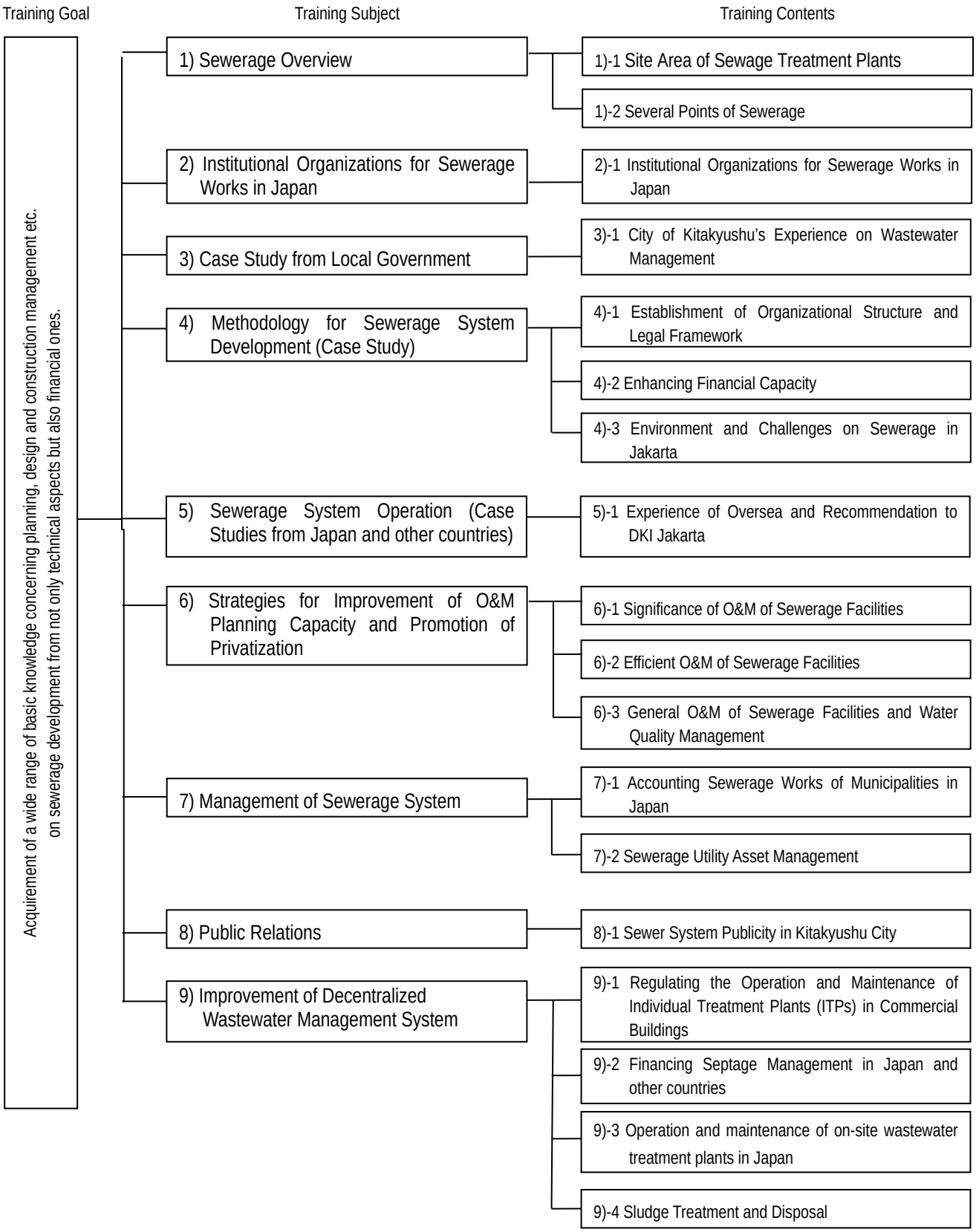


Figure Conceptual Diagram of the entire Training

4-3. Achievement Goal for each Lecture

In order to the above-mentioned achievement goal for the entire training plan, an achievement goals for each 8 lectures to be implemented this time, are indicated below:

Table Lectures and Achievement Goals

Lecture Title	Achievement Goal
Lecture 1 : Sewerage Overview	Staffs in DKI Jakarta are able to understand the purpose of sewerage, its mechanism, financing, operation and issues which the DKI Jakarta specifically needs to take into account in implementing sewerage works.
Lecture 2 : Institutional Organizations for Sewerage Works in Japan	Staffs in DKI Jakarta are able to establish the institutions for sewerage works implementation in DKI Jakarta, referring to Japanese experiences in sewerage works.
Lecture 3 : Case Study from Local Government	Staffs in DKI Jakarta are able to understand sewerage management by the local government, referring to experiences of Kitakyushu city
Lecture 4 : Methodology for Sewerage System Development (Case Study)	Staffs in DKI Jakarta are able to develop the policy of sewerage system development.
Lecture 5 : Sewerage System Operation (Case Studies from Japan and other countries)	Staffs in DKI Jakarta are able to propose the institutional structure of sewerage system operation.
Lecture 6 : Strategies for Improvement of O&M Planning Capacity and Promotion of Privatization	Staffs in DKI Jakarta are able to understand the significance of O&M aiming: 1) Budgetary Section: To be able to secure necessary and appropriate budget; 2) Design and Construction Section: To be able to manage design and construction considering O&M; and 3) Operation and Maintenance Section: To be able to implement efficient O&M.
Lecture 7 : Management of Sewerage System	Staffs in DKI Jakarta are able to understand the basic principles for the management of sewerage system and reflect these principles in the Municipal By-Law on Sewerage System for which they will prepare.
Lecture 8 : Public Relations	Staffs in DKI Jakarta are able to understand that sharing with the citizens and the government concerning social and economic benefits to the citizens in DKI Jakarta, which are brought by improvement of living conditions caused by sewerage development, make them understand deeply and is able to promote sewerage development effectively.
Lecture 9 : Improvement of Decentralized Wastewater Management System	Staffs in DKI Jakarta are able to establish the institutional framework, including the articles in the Municipal Sewerage Ordinance, for the improvement of the decentralized wastewater management system (DWMS).

4-4. Plan of Lectures (Syllabus)

Plan of lectures (Syllabus) is shown in the next table.

Table　Plan of Lectures (Syllabus)

Lecture 1 : Sewerage Overview

Achievement Goal	Staffs in DKI Jakarta are able to understand the purpose of sewerage, its mechanism, financing, operation and issues which the DKI Jakarta specifically needs to take into account in implementing sewerage works, through lectures and discussions, and have their own philosophy on sewerage which will be constructed in the near future. Also, they are able to explain about the area required as the treatment plant site.			
Outline	There will be 2 lectures; 1) Sewerage overview and 2) Treatment site requirement. 1) Sewerage overview deepens not only the overall understanding on sewerage but also specific characteristics in implementing the DKI Jakarta sewerage system. 2) Treatment site requirement explains the points to be considered in selecting treatment plant site and area requirement.			
Times	Period	Contents		Lecture
1st	Aug, 2016	Title	1)-1 Site Area of Sewage Treatment Plants	Kanai
		Summary	Selection of treatment plant site and its area required	
		Details	1. Planned flowrate 2. Area required 3. Selection of treatment plant site	
2nd	Jan, 2017	Title	1)-2 Several Points of Sewerage	Kanai
		Summary	Explanation of sewerage system and discussion on specifics in DKI Jakarta	
		Details	1. History and purpose of the sewerage 2. Sewer planning 3. Treatment plant Planning 4. O&M 5. Financing 6. Management	

Lecture 2 : Institutional Organizations for Sewerage Works in Japan

Achievement Goal	Staffs in DKI Jakarta are able to establish the institutions for sewerage works implementation in DKI Jakarta, referring to Japanese experiences in sewerage works.			
Outline	The purpose of the lecture is to introduce the experiences and examples of sewerage works in Japan for Indonesian staffs to establish their institution and to enact legal system like a sewerage ordinance in DKI Jakarta, and through discussions the staff trained here should establish their own institution and management system in DKI Jakarta. For this purpose, contents of the lecture include related organization for sewerage works in Japan.			
Times	Period	Contents		Lecture
1st	May, 2017	Title	2)-1 Institutional Organizations for Sewerage Works in Japan	Kawai
		Summary	To introduce sewerage works implementation methods in each project steps (planning, design and construction supervise, operation and maintenance)	
		Details	To introduce implementation institution, related organization and necessary manuals/standards in each project steps (planning, design and construction supervise, operation and maintenance), and also to introduce legal systems and budget source in Japan. We will discuss necessary organization in DKI Jakarta.	

Lecture 3 : Case Study from Local Government

Achievement Goal	Staffs in DKI Jakarta are able to understand sewerage management by the local government, referring to experiences of Kitakyushu city			
Outline	In Japan, local governments are responsible for implementing sewerage projects, and handle independently, policy decisions, business management and formulation of municipal ordinances (sewerage law, water pollution control law, etc.) according to the national law. Furthermore, in order to smoothly operate the sewerage business, the municipalities' works are diverse from planning for sewerage facility development (all sewer facilities including culverts, pumping stations and treatment plants etc.) Therefore, this training aims to transfer the know-how owned by local governments, such as the division of roles between the national government and the local governments, the division of roles between the local governments and the residents, the organizational structure of the local governments, the way of thinking of management and the creation of various ordinances and standards. As the specific lecture subjects, the lectures such as 1) municipal works and organizational structure, 2) establishment of municipalities regulations / standards, 3) financial management of sewerage projects, and 4) effect of sewerage development and initiatives of administrative improvement etc.			
Times	Period	Contents		Lecture
1st	Oct, 2017	Title	3)-1 City of Kitakyushu's Experience on Wastewater Management	Nakamura
		Summary	Acquirement of the know-how owned by local governments, such as the division of roles between the national government and the local governments, the division of roles between the local governments and the residents, the organizational structure of the local governments, the way of thinking of management and the creation of various ordinances and standards.	
		Details	To introduce implementation institution, related organization and necessary manuals/standards in each project steps (planning, design and construction supervise, operation and maintenance), and also to introduce legal systems and budget source in Japan. We will discuss necessary organization in DKI Jakarta. 1. Summary of Sewerage 2. Progress of Sewerage 3. Water Quality Improvement in Murasaki river and Urban Development 4. Citizen enlightenment event 5. Sewerage Business Structure 6. History of Sewerage in Kitakyushu city (video)	

Lecture 4 : Methodology for Sewerage System Development (Case Study)

Achievement Goal	Staffs in DKI Jakarta are able to develop the policy of sewerage system development.
Outline	To achieve mid to long-term objective, sewerage system development shall be combined with establishment of the administrative and financial structure. The topic shall cover pros and cons of different development methodologies considered from mid to long-term perspective. The topic shall consider feasibility of the plan and findings shall be reflected to the mid to long-term objective.

Table Pros and Cons of different development methodologies

	Separate sewer system	Interceptor system
Service standard	High	Specialized in improvement of aquatic and hygiene environment
Speed of development	Slow	Standard can be raised gradually
Impact on traffic	Severe	Relatively low
Distribution of funding	Requires comprehensive investment from main pipe (public funding) to house connection (private funding)	Investment focused on the main facilities
Realization of the benefit	Slow	Fast
Management of tariffs	Easily done with contract signed at the time of connection	Requires legal justification on mandatory connection, information on coverage area, etc.

The development can also take forms of coordinating with other entities, for instance, with other private urban development projects to share the cost of public works, etc. In Japan, there is a project where the private entity takes the responsibility within the area under the particular urban development project, while the public works with areas outside of it. This is an applicable and important method in Jakarta as well, where the affluent area under the redevelopment project can take responsibilities of the sewerage system development within its area.

The long period until the house connection is established can be covered by septic tank sludge treatment system.

This is a strategy employed in various cities in Japan, in Manila, in Bandung, and in Malaysia. The Project shall suggest the most pertinent solution by introducing the most appropriate method based on the social and economic situation in Jakarta.

Times	Period		Contents	Lecture
1st	Apr, 2016	Title	4)-1 Establishment of Organizational Structure and Legal Framework	Inoue
		Summary	Sewerage system development schemes and framework of sewerage laws	
		Details	In the view of sewerage system management, the examples of Japan and other countries are explained. By studying the framework of sewerage laws, the entire picture of sewerage services is recognized.	
2nd	Oct, 2016	Title	4)-2 Enhancing Financial Capacity	Inoue
		Summary	Organization of sewerage system operation in overseas	
		Details	Functions, institutional structures, size of the sewerage service providers in overseas including Japan are studied.	
3rd	Jan, 2017	Title	4)-3 Environment and Challenges on Sewerage in Jakarta	Inoue
		Summary	Structure of sewerage system operation in DKI	
		Details	Based on the sewerage development plan of DKI, the phased construction of the sewerage system operation structure is developed.	

Lecture 5 : Sewerage System Operation (Case Studies from Japan and other countries)

Achievement Goal	Staffs in DKI Jakarta are able to propose the institutional structure of sewerage system operation.			
Outline	This topic introduces case studies on topic 4 and on financial and administrative structure of sewerage systems. Sewerage system regulations are composed of following elements: a) demarcation of the stakeholders, b) reporting of sewerage facility design, qualification of the engineers, land use, and construction of drainage facility, c) General development instruction plan, d) monitoring of business drainage facilities, e) obligation for connection to sewerage systems, f) information of the service area, and g) tariff structure. The topic explains the standard regulation and its use, and explores how to establish framework for Jakarta with its own conditions. To promote better understanding on the topic and necessity of each regulation, case studies shall include historic development background of the cases.			
Times	Period	Contents		Lecture
1st	Nov, 2016	Title	5)-1 Experience of Oversea and Recommendation to DKI Jakarta	Inoue
		Summary	Through introducing case studies from each country, methods of sewerage development and sewerage ordinance and outlines from the viewpoint of administrative and budgetary system.	
		Details	To understand: 1. Examples and advantages of interceptor sewerage systems are studied, which are the separate sewage works consistent with the city development projects. 2. Good practices of septage treatment from the septic tanks are learned. 3. Administrative work on the promotion of sewerage connections and the instructions to sewerage users on the legal basis of sewerage regulations. 4. The measure of improving the sewerage management by using the statistics on the sewerage and Performance Indicators (PI).	

Lecture 6 : Strategies for Improvement of O&M Planning Capacity and Promotion of Privatization

Achievement Goal	Staffs in DKI Jakarta are able to understand the significance of O&M aiming: 1) Budgetary Section: To be able to secure necessary and appropriate budget; 2) Design and Construction Section: To be able to manage design and construction considering O&M; and 3) Operation and Maintenance Section: To be able to implement efficient O&M.			
Outline	Theme of the seminar is general matters of O&M such as: 1) Significance of O&M, 2)Efficient O&M, 3) Water Quality Management and Facility maintenance, and 4) Efficient O&M. To begin with each seminar, the instructor is to give a lecture on general concept and outline of sewerage facility O&M. Then, all participants in the seminar are to discuss on matters related to O&M of existing and future sewerage facilities considering current condition of sewerage works in DKI in order to improve their own capacity: 1) To secure efficient O&M techniques; 2) To secure skilled and capable O&M personnel; and 3) To make efficient O&M strategy. During seminars in DKI, it is aimed to deepen participants' understanding for problems in DKI and learn how to find the solution through discussion among the instructor and all participants.			
Times	Period	Contents		Lecture
1st	Apr, 2016	Title	6)-1 Significance of O&M of Sewerage Facilities	Kim
		Summary	By providing examples of O&M cost of WWTPs etc. in Japan, show the significance of O&M.	
		Details	Lecture and discussion on significance of O&M from viewpoints of 1. O&M Cost, 2. Financial Resource, and 3. Importance of design and construction of energy saving facilities.	
2nd	Nov, 2016	Title	6)-2 Efficient O&M of Sewerage Facilities	Kim
		Summary	By providing examples of Japan, show the necessity of efficient O&M.	
		Details	Lecture and discussion on necessity of efficient O&M from viewpoints of 1. Design, 2. Construction, and 3. O&M.	
3rd	Jan-Feb, 2017	Title	Same as above.	Kim
		Summary	Same as above.	
		Details	Same as above. (Follow-up for 2nd)	
4th	Feb, 2017	Title	6)-3 General O&M of Sewerage Facilities and Water Quality Management	Kim
		Summary	By providing examples of Japan, explain general facility O&M and water quality management	
		Details	Lecture and discussion on general methods on facility O&M and water quality management.	

Lecture 7 : Management of Sewerage System

Achievement Goal	Staffs in DKI Jakarta are able to understand the basic principles for the management of sewerage system and reflect these principles in the Municipal By-Law on Sewerage System for which they will prepare.			
Outline	The implementation system of the sewage works in DKI Jakarta is different from the one in Japan. In Japan, the sewerage administration and the implementation of sewage works are conducted by the same organization ('Sewerage Bureau' or 'Sewerage Corporation' of the municipal government). In DKI Jakarta, the administration, planning and facility construction are conducted by Dinas Tata Air of DKI Government, and the operation and maintenance, including tariff collection, are conducted by PD Pal Jaya. Considering these situations, in this lecture on the management of sewerage system, (1) Management of sewerage system using performance indicators, (2) Budget and account of sewerage works conducted by the municipalities in Japan, particularly, budgetary transfer from the Municipal's General Account to the Sewerage Works Account, (3) Sewerage User Charge in Japan, (4) Asset Management, (5) Sewerage Tariffs in other developing countries, will be explained so that Dinas Tata Air and PD PAL Jaya can acquire the knowledge with which they can manage the sewerage system jointly in coordinated manner.			
Times	Period	Contents		Lecture
1st	Oct, 2016	Title	7)-1 Accounting Sewerage Works of Municipalities in Japan	Hashimoto
		Summary	Sewerage Financing and Sewerage Tariff in Japan. Sewerage Tariff in other developing countries.	
		Details	In this lecture, the essence of Japan's sewerage finance system which provides a basis for the municipalities' management of sewerage system, including the principle for cost sharing of capital cost and OM cost, subsidy system for sewerage development, sewerage tariff system, will be explained. The sewerage tariff in other developing countries will also be explained.	
2nd	Jan, 2017	Title	7)-2 Sewerage Utility Asset Management	Hashimoto
		Summary	Sewerage account of municipalities in Japan, management of sewerage works based on performance indicators, and asset management will be explained.	
		Details	1. Sewerage Account of municipalities in Japan 2. Management of Sewerage Works based on performance indicators 3. Asset Management	

Lecture 8 : Public Relations

Achievement Goal	Staffs in DKI Jakarta are able to understand that sharing with the citizens and the government concerning social and economic benefits to the citizens in DKI Jakarta, which are brought by improvement of living conditions caused by sewerage development, make them understand deeply and is able to promote sewerage development effectively.			
Outline	In order to develop and sustain sewerage projects, it is necessary to deepen the understanding of necessity of sewerage and its project for residents who are users of sewers. On the other hand, regional municipalities that provide services also need to understand residents' opinions and needs. There, it is essential for business promotion to create close communication to build good relationships between residents and the local governments, so public relations are important measures. Kitakyushu City is implementing activities to promote bidirectional communication between residents and the administration. The specific activities of Public Relations are shown as follows: to provide cases of water environment improvement through sewerage improvement hold civil briefing sessions at the stage prior to the facility planning and commencement of construction work encourage the residents on improvement of usage manner after starting service of the facilities and promote the residents' understanding of fee collection focus on the environmental education from early childhood, create a brochure that clearly explains the mechanism of water supply and sewerage, establish citizen monitoring system and hold site visits or residents' participation events in order to let the residents ensure proper understanding of sewers and establishment of knowledge Based on the experiences on public relations activities that have been carried out over the years, effective technology transfer including proposal of activities that are consistent with the actual situation of DKI.			
Times	Period	Contents		Lecture
1st	Feb, 2017	Title	8)-1 Sewer System Publicity in Kitakyushu City	Nakamura
		Summary	Public relations activities of sewerage project in Kitakyushu city	
		Details	1. Publication of Sewerage 2. Transformation of Sewerage Publication 3. Public Relations for “Dissemination of Sewerage” 4. Public Relations for “Understanding of Sewerage” 5. Others	

Lecture 9 : Improvement of Decentralized Wastewater Management System

Achievement Goal	Staffs in DKI Jakarta are able to establish the institutional framework, including the articles in the Municipal Sewerage Ordinance, for the improvement of the decentralized wastewater management system (DWMS).			
Outline	Master Plan for Wastewater Management in DKI Jakarta (2012) proposes that, while the wastewater management in DKI Jakarta shall be implemented primarily through the development of sewerage system, since the sewerage system development requires long time, in the meantime prior to the completion of sewerage system development, the operation and maintenance of the decentralized wastewater management system (DWMS) (septic tanks of residential houses and Individual Treatment Plants (ITPs) of commercial buildings) shall be improved so that the wastewater management will be implemented in comprehensive manner. Considering the current situation that the lack of proper sludge management of septic tanks and ITPs are causing the pollution of surface water and ground water, Master Plan proposes the improvement of sludge management by the introduction of regular desludging system and strengthening of the sludge treatment capacity. Further, since the majority of domestic septic tanks are Conventional Septic Tank (CST) which treats only black water and does not treat grey water which is discharged to the rivers without treatment and is causing the aquatic pollution, Master Plan also proposes the conversion of CST to Modified Septic Tank (MST) which treats both black water and grey water. In the lecture, advices are provided to realize the Master Plan's proposals for the improvement of DWMS. Improvement of DWMS requires involvement of various organizations such as BAPPEDA, Dinas Tata Air, BPLHD, PD PAL JAYA, etc. in DKI Jakarta, but not limited to them. Involvement of the central government organization such as Cipta Karya would also be required depending on the item for the improvement. Therefore, in the lecture, first, the necessary items for the improvement of DWMS and the actual measures taken in Japan for each item (who do what) will be explained in details. Next, based on these explanations, we will discuss what actions are required for the improvement of DWMS in DKI Jakarta, and conduct an on the job training how to establish the articles in the Municipal Sewerage Ordinance for the improvement of DWMS.			
Times	Period	Contents		Lecture
1st	Oct, 2016	Title	9)-1 Regulating the Operation and Maintenance of Individual Treatment Plants (ITPs) in Commercial Buildings	Hashimoto
		Summary	Introduction of Japanese regulatory system concerning operation and management of medium- and large-scale septic tanks similar to individual wastewater treatment facilities in commercial facilities.	
		Details	1. Review measures for improvement of operation and maintenance for individual wastewater treatment facilities in commercial facilities in Jakarta, in JICA M/P etc. 2. Explain regulations on operation and maintenance of medium- and large-scale septic tanks in Japan's septic tank law and the relevant ministerial ordinance	
2nd	Jan, 2017	Title	9)-2 Financing Septage Management in Japan and other countries	Hashimoto
		Summary	As an example of the financial system of on-site sludge management, provision of explanations of the systems of Japan, Manila City, Hai Phong City and Malaysia.	
		Details	1. Introduce the case studies on environmental improvement effect by	

			periodic sludge extraction 2. Explain the financial system on Japanese on-site sludge management 3. Compare with and explain the financial system on on-site sludge management in Manila City, Hai Phong City and Malaysia	
3rd	Nov, 2016	Title	9)-3 Operation and maintenance of on-site wastewater treatment plants in Japan	Kumokawa
		Summary	Outline of the specific method of operation and maintenance of on-site wastewater treatment facility	
		Details	1. Explain specific maintenance items for domestic septic tank in Japan 2. Point out that the individual wastewater treatment facility in the commercial facility in Jakarta is similar to the medium- and large-scale septic tanks in Japan, and explain the specific operation and maintenance items of them	
4th	Feb, 2017	Title	Same as above.	Hashimoto
		Summary	Same as above.	
		Details	Same as above.	
5th	Nov, 2016	Title	9)-4 Sludge Treatment and Disposal	Morita
		Summary	Overview of the point of sludge management, which is the key to operation and maintenance of on-site wastewater treatment facility	
		Details	1. Explain the prediction method of on-site sludge generation amount 2. Explain points on sludge management at each stage of sludge extraction / transportation / sludge treatment / disposal and reuse 3. Explain on-site sludge treatment technology	
6th	Feb, 2017	Title	Same as above.	Hashimoto
		Summary	Same as above.	
		Details	Same as above.	

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ANNEX 7
SUMMARY OF EVALUAITON MEETING

Annex 7-1 Summary of Evaluation Meeting (1st Training in Japan)

Course Name	Sewerage Administration for Indonesia
Date & Time	26 February, 2016 (14：00～15:00)
Place	JICA Kyushu International Center (KIC)
Participants ■Chairperson	☐ Migifumi JINNO / Director, International Project Division, International and Regional Project Department, Water and Sewer Bureau, City of Kitakyushu
	☐ Makoto KURODA / Manager, International Project Division, International and Regional Project Department, Water and Sewer Bureau, City of Kitakyushu
	☐ Minoru MATSUMOTO / Chief Advisor of the Project
	☐ Takafumi OHASHI (Public Relations and Project Coordination)
	☐ Takehiko KAWAI (Training Lecturer (Operation structure of sewerage systems))
	☐ Nobuaki YOKOUCHI / Assistant Director, Environmental Management Group, Global Environmental Department, JICA (participated in TV conference)
	■ Sayaka TAKUWA, Training Program Division, JICA Kyushu
	☐ 6 Trainees and 1 Training supervisor

[Titles omitted]

At the beginning, the chairperson conveyed the purpose of the evaluation meeting. Then, all participants confirmed the project purpose and the trainees was asked to make remarks on the following items. Each trainee expressed thanks to the Japanese side on remarks.

☐ The degree of achievement of the project target

Agus : Sewerage is the first area to be in charge for me. Training lectures and visits were also beneficial. I think that we will face various problem on sewerage development in Jakarta (hereinafter referred to as "DKI"), but I would like to settle it with the Japanese team.

Arie : I acquired new knowledge. A major issue of DKI's sewerage development is securing the site and organizational structure. Regarding understanding that structure, this training was helpful so much. I hope that times of visit shall be increased as much as possible.

Yudi : I gained a lot of knowledge. In order to promptly advance sewerage development in our country, it is necessary to develop laws and ordinances including regulations, and secure budget. Also, it is necessary to obtain understanding of Congress and citizens for issue of public bonds. I would like to study about those 2 topics.

Erwin : As for DKI's wastewater treatment zones 1 and 6 which Japan involves, it is necessary to decide the method of treatment to be adopted soon. I learnt various methods of the treatment in the training. Collaboration of the related organizations is necessary for sewerage development. I will make use of the knowledge gained through the training.

☐ Training contents that were beneficial

Arie : Site visits, especially visit on wastewater treatment plant.

Cipta : Planning, finance management, asset management and human resource development. I think that good results can be obtained if the plan is good.

Erwin : Due to poor undulation terrain, gravity flow can not be expected. On-site treatment is also necessary.

Agus : Sewerage is a "business" that can yield benefits, and management perspective is necessary.

Rizky : For dissemination of sewerage projects, it is necessary for cooperation with the administration, the citizen and the private sector.

Yudi : Visit in the public relations facilities for citizens and children. Through exhibits and experiences, it is possible to raise awareness of environmental protection and the role of sewerage. I would like to also hold a simple exhibition at DKI and enlighten people. Also, sewerage development, finance on operation and maintenance were also very beneficial.

☐ Request for the tanning in Japan

Arie & Cipta : We would like to conduct exercises, including case studies in the second half of the training.

Agus : I would like to increase the content of the training by setting the period to one month. Also, I hope that all of the related organization can participate in the training.

Arie : In order to raise the understanding of the Congress and citizens, I would like people who take leadership positions to participate in the training.

☐ Expectation from the Japanese side in connection with the Project

Arie : I would like to share the experience of Japan to gain understanding of stakeholders (especially, the Congress) on sewerage projects.

Erwin : I hope DKI and Kitakyushu city can build a special cooperative structure in sewerage field.

☐ Comment from the Japanese Side

Jinno : Kitakyushu city has been cooperating with DKI Sewage Public Corporation so far regarding acceptance of trainees and dispatch of long-term experts. Cooperation between the administration, citizen and the private sector is necessary, and the administration should be the center among them. It is essential to think out to communicate to citizens in an easy-to-understand manner. Kitakyushu city will continue cooperating with DKI through JICA. And it must be thought that it take a long span of 20 to 30 years for dissemination of sewerage. As for this challenge, Kitakyushu city would like to promote it, exchanging opinions with the Indonesian side.

Yokouchi : I think that it became the meaningful training for the success of the Project. I request you to extend the knowledge gained through the training to a lot of stakeholders. For dissemination of sewerage development, continuity is necessary, in addition of a good plan. It is also necessary to autonomously consider the ideal one as always regarding the organizational structure. For helping that, training of human resource is necessary. As for the exercises through case study, Japanese consultant team shall consider together when they visit.

I believe that Japan and Indonesia will cooperate together and lead to the success of the Project.

Finally, chairperson expressed thanks to the trainees for their cooperation and ended the evaluation meeting.

-end-

Annex 7-2 Summary of Evaluation Meeting (2nd Training in Japan)

Course Name	Sewerage Administration for Indonesia
Date & Time	2 September, 2016 (14：00～15:00)
Place	JICA Tokyo International Center (TIC)
Participants ■Chairperson	☐ Takafumi OHASHI (Public Relations and Project Coordination)
	☐ Takehiko KAWAI (Training Lecturer (Operation structure of sewerage systems))
	■ Masanobu KASHIMURA / Deputy Director, Environmental Management Division 1, Environmental Management Group, Global Environmental Department, JICA (participated in TV conference)
	☐ Satoko TSUNODA, Training Program Division, JICA Kyushu
	☐ 9 Trainees and 1 Training supervisor

[Titles omitted]

At the beginning, the chairperson conveyed the purpose of the evaluation meeting. Then, all participants confirmed the project purpose and the trainees was asked to make remarks on the following items. Each trainee expressed thanks to the Japanese side on remarks.

☐ Comments for the training

Erly : Regarding the content of the training, the theory and practice were balanced and it was very wonderful. I am satisfied with all trainings, including sewage treatment plant, reused water and sludge treatment and so on.

Also, it was also nice that the organization of trainees were different, because everyone related to sewerage had the same vision and was able to share in common. I would like to become a promoter of the sewerage project on this occasion.

Rudy : I learnt really many things this time. Although I also learned the latest technology, I think that actually using it is ahead since we are learning. Kitakyushu has developed sewerage over 40 years. I learned such matured plan and continuity are important.

Arimbi : From the visit of the Ministry of Land, Infrastructure and Transport until the last environmental museum tour, I learned about sewerage treatment widely.

I studied about the sewerage project comprehensively in the training through not only lecture, but also site visit, and whose training consisted of budgeting, planning / developing etc. in the contents.

Eko : This time, I learnt the role of national and local governments and the necessity of development of law. As the situation of sewerage in Indonesian is still not enough, we have to be able to talk about further technical issues. Regarding the beneficiary liabilities, I would like to adopt an approach to communicate with each household through socialization in Japan.

Dwi : It is a good practice that sewerage development is implemented under the same regulations with the same understanding between the country, the provincial and the private sector in Japan and in Indonesia, the 3 parties have the laws and the regulations respectively. Even if the government intends to proceed, the private sector may go into the different way. Therefore, I prefer that Japanese style.

Fajri : I gained knowledge about sewerage treatment. Although there are sites where wastewater is treated, in Jakarta, the level of those treatment is not high like Japan. Therefore, I would like to make efforts

to incorporate what I saw in Tokyo and Kitakyushu when I return to Indonesia. Personally, I am interested in culvert and I have to learn. So, if I have a chance to learn about development of culvert, I would like to learn it.

Harry : I learnt many knowledge through this training. The high level of commitment by Japanese municipalities, the private sectors and users cannot be seen in Jakarta.
I got particularly interested in on-site treatment, which is Septic tank. In Jakarta, off-site treatment has been adopted for 20 years and pollution has spread out. Therefore, I think we have to be interested more in on-site treatment.

Rachmadi : I learnt various treatment technologies, for example, sewerage development, treatment technology, flood control measures. Also, we went to lots of visits to the museums in Japan, and I learned a lot.
Even in Indonesia, I think that building museums like those in Japan will lead to better understanding of people.

□ Comment from the Japanese Side

Kashimura : There was a comment on Japan's high technology. Regarding sewage, however, some advanced technologies were developed in Japan, but it is basically the same as that of other countries except it is developed clearly.
After development, operation and maintenance are carried out based on the manual, including sludge disposal etc. that is a strong point in Japan. It is necessary to build facilities, but it is important to operate the facilities properly, do operation and management for and use continuously. Japanese emphasize this.
JICA's cooperation will continue in the future, including this training. I, however, would like you to emphasize operation / operation and maintenance for facilities after building them, although the building is important.
As one of the objectives of the training, there is a thing that trainees like Japan. I hope that you will like Japan through this training.

Kawai : As the principle of cleaning water, activated sludge method has been used since 100 years ago. I would like you to understand that the predecessor has designed and failed a lot and led to now.
Also, I would like you to think about the methods that does not cost money for operation and maintenance.

Finally, chairperson expressed thanks to the trainees for their cooperation and ended the evaluation meeting.

-end-

ANNEX 8
TEXT FOR SUPPORTING FORMULATION OF MID-TERM SEWERAGE DEVELOPMENT PLAN

Annex 8 Text for Supporting Formulation of
Mid-Term Sewerage Development Plan

BAPPEDA DKI JAKARTA

Reference of RPJMD (2018-2022)

Sewerage Development and Wastewater Management

Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta

May 2017

Table of Contents

Chapter-1 Introduction

1.1 Background

The DKI Jakarta formulates a Medium Term Development Plan (RPJMD) every five years in each sector and implements the programmes and projects with the allocation of human and financial resources. RPJMD covers 14 sectors of education, health, public infrastructure, housing, spatial plan, transportation, environment, welfare, labor, support for SME, investment, administration, communication information, and trade. Sewerage development and wastewater management are one section of public infrastructure sector.
Public infrastructure includes roads, bridges, airports, ports, special economic zones, flood control and drainage, drinking water and water resource, wastewater management, groundwater development, settlements and energy.

The sewerage and wastewater management plan in the current RPJMD (2013-2017) has been formulated in line with the Revised M/P in 2012 supported by Japan International Cooperation Agency (JICA). Major projects in RPJMD (2013-2017) were limited to the implementation of sewerage systems of Zone-1 and 6, implementation of individual treatment plants (ITPs) at commercial and public facilities, construction of community wastewater system or SANIMAS, and septic sludge removal and sludge treatment.

Meanwhile, the National Capital Integrated Coastal Development (NCICD) for improvement of water environment in Jakarta was formulated in 2014 and approved by the related ministries and agencies. NCICD plans to close the Jakarta Bay with Giant Wall to prevent ground subsidence and flooding, construct a rainwater adjustment reservoir, and improve transportation network, urban area, and water resources development. Under NCICD, the accelerated sewerage development and appropriate wastewater management is indicated one of most important issues.

DKI Jakarta integrated the updated JICA Master Plan (2012) and the National Capital Integrated Coastal Development (NCICD) and formulated the Acceleration Plan (2014) with PD PAL Jaya. The Acceleration Plan targets the coverage of wastewater treatment at 75% by 2022 the year of closure of the western Jakarta Bay. The wastewater treatment includes the centralized sewerage system, communal system and onsite sanitation. Reflecting the Acceleration Plan, the Governor Regulation No. 42/2016 were enforced in 2016, which targets the coverage of “off-site” (centralized sewerage and communal system) at 65% and that of “on-site” sanitation at 35%.

Based on such a change in the national and regional plan, the midterm sewerage development plan for the next five years (2018-2022) is under formulation by mainly the Urban Infrastructure Facilities and Environment Division, Regional Development Agency (BAPPEDA) and the Raw Water and Wastewater Division, Water Resource Agency (DSDA, former Dinas Tata Air) in DKI Jakarta.

1.2 Purpose of Reference of RPJMD (2018-2022) Sewerage Section

Medium Term Development Plan (RPJMD) of Jakarta DKI Year 2018-2022 is a regional development planning documents for a period of five years, which is a translation of the vision, mission and programmes of the governor, which would serve as guidelines and directives together for all stakeholders in governance and development areas in Jakarta period 2018-2022 synergistic, integrated and in line with national development over the next five years.
This document is prepared as a reference for the wastewater sector of DKI Jakarta including the sewerage development and wastewater management. Also this document provides guidance for formulation of the Midterm Sewerage Development Plan (MSDP) prepared by the wastewater sector of DKI Jakarta.

1.3 Planning process

The preparation of the RPJMD sewerage section or Midterm Sewerage Development Plan (MSDP) involved a number of steps which are summarized below:

Step1: Review of Current RPJMD (2013-2017) and Master Plans

The current PRJMD (2013-2017) and the related master plans (JICA M/P 2012, NCICD, Acceleration Plan) have been reviewed by BAPPEDA in order to analyze the sector development strategy and priority, current situations and issues related wastewater management, and planning requirements for the next five years.

Step 2: Prioritization of Sewerage Zones

Based on the contents master plans and current status, firstly criteria for the prioritization were considered such as project scale, cost efficiency, land availability, and other technical elements. Then, comparative evaluation on the characteristics of sewerage zones was conducted. After evaluation, and the priority of project implementation was examined.

Step 3: Planning of Implementation Schedule and Cost Estimation

In estimating the project costs, two different scenarios were proposed; "Plan A" based on the Acceleration Plan to achieve the coverage of sewerage system at 65% by 2022 and "Plan B" to implement in steps the WWTPs and the trunk sewers in the Phase-1 sewerage zones, which were defined by the Governor Regulation No.41/2016, by 2030. Based on these scenarios, the implementation schedule for each sewerage zone was developed. Then the engineering services (ES) and construction costs for each zone were estimated to calculate the annual budget requirement for each scenario.

Step 4: Drawing of Performance Indicator Matrix

Using the standard template of PRJMD of DKI Jakarta, the matrix of performance indicators and annual targets of each programme for the sewerage and wastewater management was developed. The matrix is indicated the intervention schedule of planned programmes specifying annual target outputs in the next five years and the final target in the end of the year 2022.

Step 5: Drafting of Midterm Sewerage Development Plan

In the end, the draft midterm sewerage development plan was formulated in the same chapter configuration as the RPJMD DKI Jakarta. The draft shall be shared and discussed at the Working Group meeting and finalized reflecting comments and modifications.

1.4 Institutional framework

For preparing the Midterm Sewerage Development Plan, a Task Force was organized of the officials of BAPPEDA and DSDA under *the Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta* supported by JICA.

BAPPEDA is responsible for formulating the Medium Term Development Plan (RPJMD) spanning 14 areas of DKI projects. The sewerage and wastewater management part of the RPJMD is under responsibility of the Water and Environment Sanitation Sub-Division, Urban Infrastructure Facilities and Environment Division of BAPPEDA.

Meanwhile, the Midterm Sewerage Development Plan will be formulated based on the data of the five year Strategic Programme created by the planning section of Raw Water and Wastewater Division,

DSDA. The Strategic Programme is formulated by the DSDA with a local consultant and includes a breakdown of project costs.

PD PAL Jaya also formulates its own long-term five-year plan. This content is reflected in DSDA's Strategic Programme and BAPPEDA's Midterm Sewerage Development Plan. In addition, PD PAL Jaya has conducted the detailed engineering design (DED) of the Phase-1 sewerage zones except Zone-1 and 6 in order to accelerate the implementation of the sewerage systems. Since it is urgent, the DED was conducted without the Feasibility Study (F/S) for estimating the project costs and seeking the financial partners for each zone. The DED has been reviewed by in-house consultants to adjust the project costs by revision of the construction methods and unit costs of pipe works.

Regarding the arrangement and location of the sewer pipes, pumping stations and wastewater treatment plants (WWTP), it is necessary to ensure consistency with the Detailed Spatial Plan (RDTR) of the Urban Planning Environment Bureau (BiroPKLH).

In order to discuss and solve the issues related to wastewater management, a Working Group (WG) was formed from the relevant institutions, under *the Project for Improving Planning Capacity for the Sewerage System in DKI Jakarta*. The members of the WG are listed below:

- BAPPEDA
- DSDA
- PD PAL Jaya
- Biro PKLH (City Planning and Environmental Bureau)
- BPLHD (Regional Environment Management Board of DKI)
- BPTSP (One-Stop Integrated Service Agency)

Also the officers from the Directorate General of Human Settlements (DGHS), Ministry of Public Works and Housing were invited to the WG meetings not as the member but as the observer.

1.5 Actual plan Formulation

The following chapters comprise the RPJMD:

Ch-1 Introduction
Ch-2 General description of current conditions
Ch-3 Financial and funding frameworks
Ch-4 Analysis of strategic issues
Ch-5 Vision, mission and objectives
Ch-6 Strategy and policy direction
Ch-7 Priority development programme
Ch-8 Indication of implementation plan
Ch-9 Performance indicators
Ch-10 Transition guidelines and implementation rules

Since this document has been prepared as a draft of RPJMD sewerage section, this chapter will describe the medium-term sewerage development plan according to the table of contents of RPJMD.

Chapter-2 General Description of Current Conditions

In the RPJMD, the Chapter-II consists of three sections as follows.

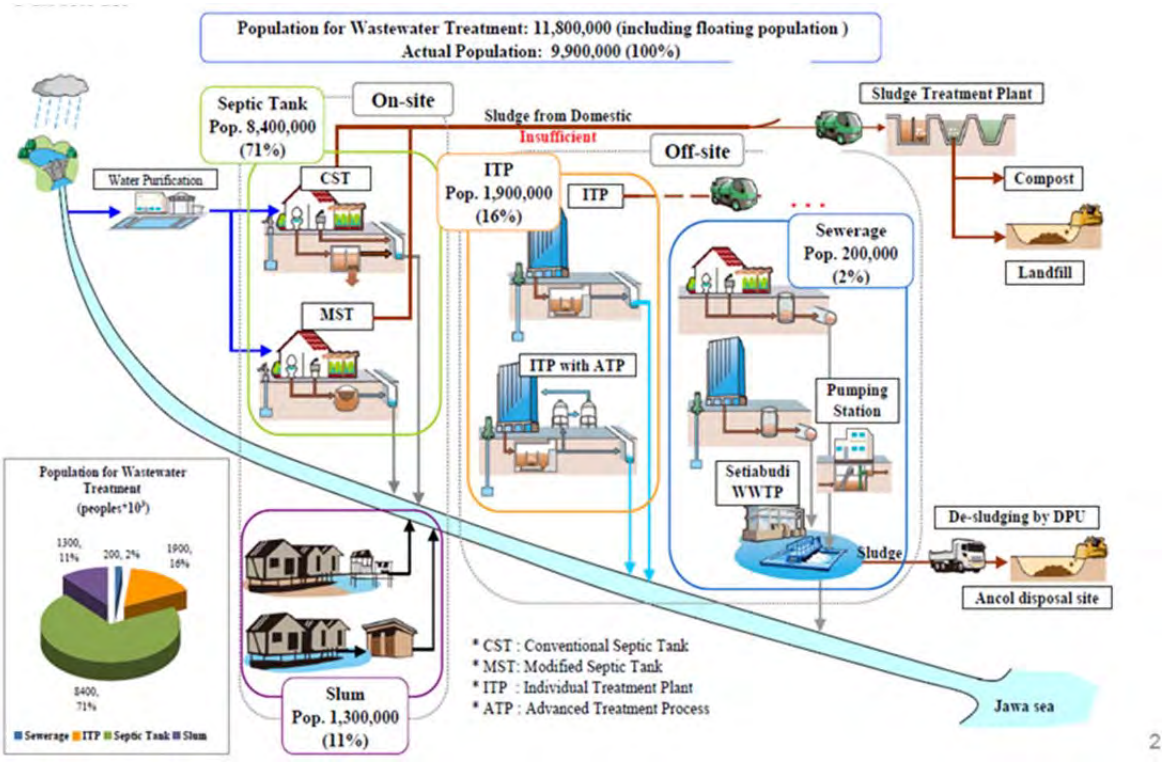
CHAPTER-II GENERAL DESCRIPTION OF CURRENT CONDITIONS
- 2.1 Aspects of Geography and Demography
- 2.2 Aspects of Community Welfare
- 2.3 Aspects of Public Services

Among them, the first and second sections are not specific or relevant to the wastewater management. Only third section requires the description of current situations of different sectors, therefore it will be described only section "2.3 Aspects of Public Services".

2.1 Aspects of Public Services: Wastewater management

2.1.1 Current Sewerage Conditions

Currently only 4% of population in DKI is served by a centralized sewerage system, around 20% is using the communal system or the Individual Treatment Plant (ITP). Approximately 70% of the population is using the septic tank, and the rest of the population is discharging the wastewater directly into the canals and revers. The Existing centralized sewerage system covers only Zone-0 with a WWTP at Setiabudi, but its utilization rate is less than 50%. The current conditions of wastewater management are illustrated in Figure 2.1.



(Source: PD PAL Jaya presentation 2012)

Figure 2.1 Current situations for wastewater discharge in DKI Jakarta

Majority of the area in DKI where there is not served by the sewerage system or communal system is using septic tanks either Conventional Septic Tank (CST) or Modified Septic Tank (MST). Regular desludging service is carried out by PD PAL Jaya and private enterprises and the collected sludge is treated at the existing Sludge Treatment Plant (STP) in Duri Kosambi of 300 m3/d and Pulo Gebang of 300 m3/d.

Regarding the sewerage development, DKI Jakarta territorial area is divided to 14 sewerage service zones. The Zone-1 and Zone-6 of the service zones has been financed by the State Budget (APBN), and started implementations such as feasibility study (F/S), site preparation and survey for Wastewater Treatment Plant (WWTP). Among the other zones, the Detailed Engineering Design (DED) of the priority 6 zones (Zone-2, 3, 5, 7, 8, 4+10) were carried out by PD PAL Jaya with the Regional Budget (APBD) in 2016. The DED was started without the F/S under the pressure of urgent implementation to meet the target of 65% of off-site coverage; therefore the DED is presently (Nov. 2016) reviewed by the consultants of PD PAL Jaya.

2.1.2 Review of Master Plans

(1) Master Plan (M/P) 2012
The basis of the sewerage development of DKI Jakarta is the New Master Plan for Wastewater Management in DKI Jakarta (March 2012) formulated with the support from JICA. The target year of the M/P was 2012-2050. The M/P proposed the development plans for improvement of wastewater management in DKI dividing 15 sewerage zones (including Zone-0) and 3 development terms.

In the master plan, after evaluation of sewerage zones based on the proposed criteria, Zone-1 and 6 were selected as the first priority zones, and Zone-4, 5, 8 and 10 were categorized as the mid-term targets. The development terms were divided that short-term of 2012-2020, mid-term of 2021-2030, and long-term of 2030-2050.

Target Year	Zone
Off-site	
Short-term 2012-2020	1, 6 (20%)
Mid-term 2021-2030	4, 5, 8, 10 (40%)
Long-term 2030-2050	2, 3, 7, 9, 11, 12, 13, 14 (80%)

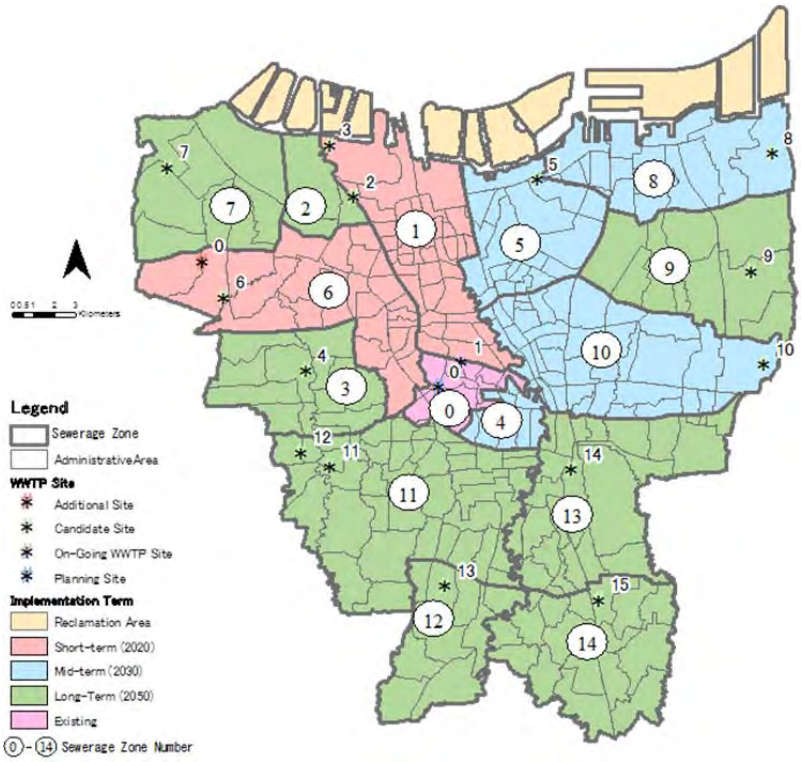


Figure 2.2 Implementation Plan for Sewerage Zones (M/P)

(2) National Capital Integrated Coastal Development (NCICD)

The NCICD M/P has been developed to provide the sustainable and long-term flood protection from the sea and associated river and canal systems in North Jakarta.

Figure 2.3 Closure of Jakarta Bay (NCICD)

The M/P is composed of three phases.

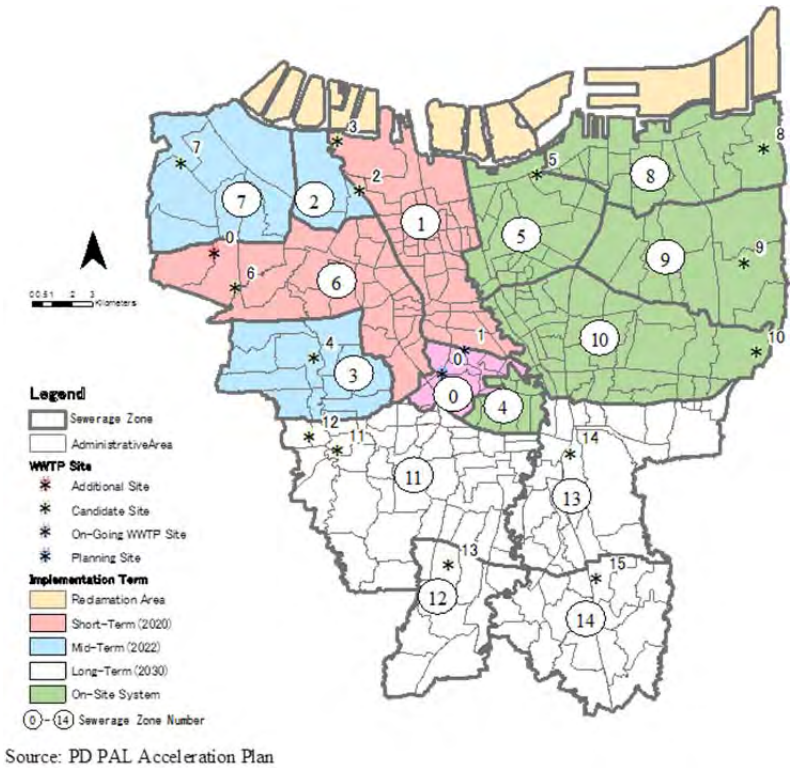
- Phase A: onshore sea dykes construction (2014-2022);
- Phase B: construction of the outer seawall in the western part of Jakarta Bay (2018-2025);
- Phase C: constructing the outer seawall in the eastern part of Jakarta Bay (after 2025).

It targets the onshore dykes will be completed until 2022, and the western part shall be closed between 2022 and 2028.

NCICD emphasizes the wastewater management is one of the most important components and pre-conditions. According to the NCICD Executive Summary (version June 2015), NCICD will facilitate the implementation arrangements and will support acceleration of water quality improvement.

Since the closure of western part of Jakarta Bay was initially planned by 2022, the western sewerage zones of coastal area became higher priority compared to the other zones. At the same time, the improvement of On-site system such as regular desludging and change of conventional septic tanks (CST) to modified septic tanks (MST) in the eastern coastal areas is planned as mid-term intervention to reach the target of 70% facility coverage rate.

Target Year	Zone
Off-site	
Short-term 2014-2020	0, 1, 6 (23%)
Mid-term 2018-2022	2, 3, 7 (12%)
On-site	
Mid-term 2014-2030	4, 5, 8, 9, 10 + (35%)



Source: PD PAL Acceleration Plan

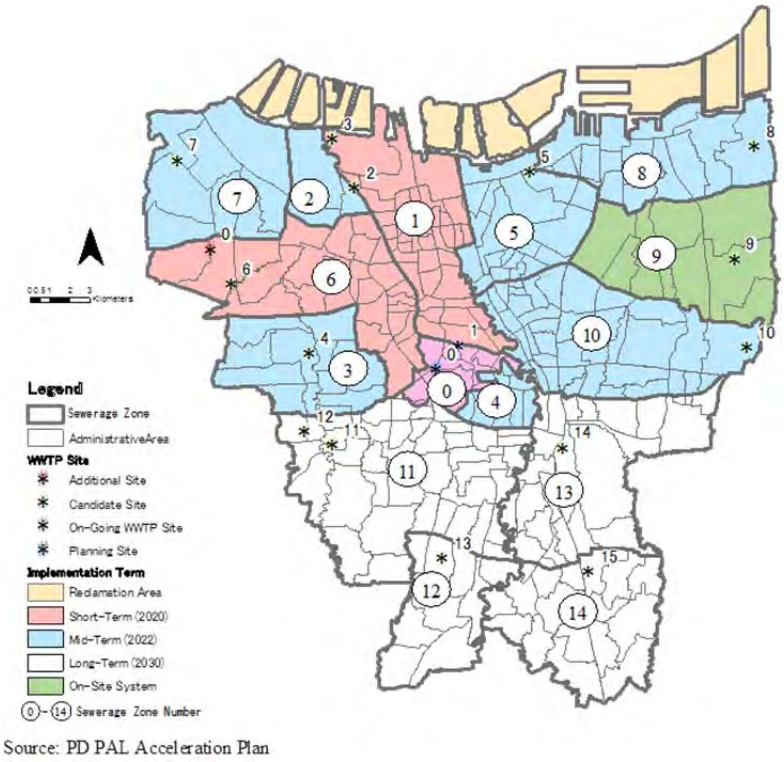
Figure 2.4 Implementation Plan for Sewerage Zones (NCICD)

(3) Acceleration Plan (PD PAL Jaya 2014)

The latest sewerage development plan so called “Acceleration Plan” was formulated by PD PAL Jaya combined of the updated JICA M/P and the NCICD. Based on this Acceleration Plan, the Governor of DKI Jakarta has published a regulation (No.41/ 2016) regarding the development of infrastructure and facilities of domestic wastewater management.

The first priority of sewerage development is Zone-1 and 6 in which the service coverage of wastewater service in DKI Jakarta is 23%. And the second priority Zones 2, 3, 4, 5, 7, 8 and 10 will increase the service coverage by 42%. In total, the target ratio of wastewater management services through the off-site centralized system is 65% by 2022. Also the target ratio of wastewater management services through the on-site system is 35% in 2022.

Target Year	Zone
Off-site	
Short-term 2014-2020	0, 1, 6 (23%)
Mid-term 2018-2022	2, 3, 7, 4, 5, 8, 10 (42%)
On-site	
Mid-term 2014-2030	All zones (35%)



Source: PD PAL Acceleration Plan

Figure 2.5 Implementation Plan for Sewerage Zones (Acceleration Plan)

2.1.3 Water Quality Issues

The poor sanitation facilities and inadequate wastewater management in Jakarta has caused the environmental contamination. The surface and groundwater in Jakarta are seriously contaminated to be indicated “unacceptable pollution level”.

According to the BPLHD report in 2013, the ground contamination by E-coli bacteria was found in 90% of Jakarta. Regarding the surface water, among ASEAN capital cities, the level of BOD of major rivers were worst. Not only BOD but nitrogen (N) and phosphorous (P) are determined high level in Jakarta water environment. The installation of WWTPs and septic tanks with proper treatment technologies for removal of those items are vital and urgent issue.

Chapter-3 Financial and Funding Framework

The third chapter of RPJMD comprises of the following three sections.

CHAPTER-III FINANCIAL AND FUNDING FRAMEWORK
- 3.1 Regional Financial Performance
- 3.2 Financial Management Policy
- 3.3 Funding Framework

The RPJMD will have an elaborated resource mobilization and financing strategy. In this regards DKI Jakarta therefore need to define and specify the strategies through which development resources to finance all the RPJMD activities identified will be mobilized and managed.
In RPJMD, this chapter does not focus on the sewer sector as it describes the finances covering all sectors of DKI Jakarta. Here in this document D therefore it will be summarized the key issues of finance and funding scheme to implement the sewerage development projects, with the different sections from the table of contents of RPJM.

3.1 Regional Finance

The budget at the regional or local government level is called APBD while the national budget is called APBN. The APBDs are prepared by the local governments and approved by elected local consultative assemblies known as DPRDs in each region. APBDs also require approval of the central government, specifically Ministry of Home Affairs, before implementation.

For determining the future funding frameworks, it is necessary to analyze the implementation of APBD for five years, which consists of Regional Revenue, Regional Expenditure, and Regional Financing. The analysis of Regional Revenue and Regional Expenditure for the year 2013-2017 is currently carried out by the financial department of BAPPEDA. The results of the analysis will be summarized in the RPJMD (2018-2022).

As a reference, the outline of APBD of DKI Jakarta for the year 2013-2017 projected in the previous RPJMD (2013-2017) is summarized below. For details, refer to RPJMD 2013 - 2017.

(1) Revenue
Revenue is composed of Local Own Revenue, Funding Balance and Other Regional Income. It was predicted that the total revenue would increase about 2.5 times from 2013 to 2017. This is due to the increase in incomes from adjustment of local taxes and tariff of certain regional taxes, increase in the number of taxpayers due to online taxation of automobile taxes, the result of cigarette tax revenue localization, and increase in the private income tax collection.

(2) Expenditure
Expenditure is allocated based on the priority needs, which are divided into the Binding (Indirect) Expenditures and Priority Procurement. Priority procurement is classified of priority I, priority II and priority III, where priority I gets first priority, in consideration of urgency. Priority III get budget allocation after priority I and II fulfilled its funding requirement. The main policy on the regional expenditure was to meet the implementation of the priority programmes which were determined higher priority of regional development for 5 years, and the implementation of other priority regional programmes in accordance with government affairs that must be implemented.

(3) Finance
Regional Financing means all revenues that need to be repaid and/or expenditures to be reimbursed both in the relevant fiscal year and in subsequent fiscal years. In terms of Receipts, it was estimated the receipt of More Budget Calculation (SiLPA) of previous Year and receipt of Regional Loan, i.e.

for Mass Rapid Transit (MRT) and Jakarta Emergency Dredging Initiative (JEDI) financing. The More Budget Calculation (SiLPA) includes the exceeding of locally-generated revenue (PAD), exceeding of admission of funds and other legitimate local revenue. For the spending, it focused on Government Capital Investment (PMP) and principal debt repayment.

(4) Funding framework APBD 2013-2017
Summarizing the above items, the five-year funding framework was presented in the following table. The expenditure of priority II and III were calculated from the total revenue and other expenditures such as priority I by determination of the percentage considering the requirement and priority of fulfillment of the funding needs.

Table 3.1 Projection of APBD of DKI Jakarta 2013-2017

(in Billion IDR)

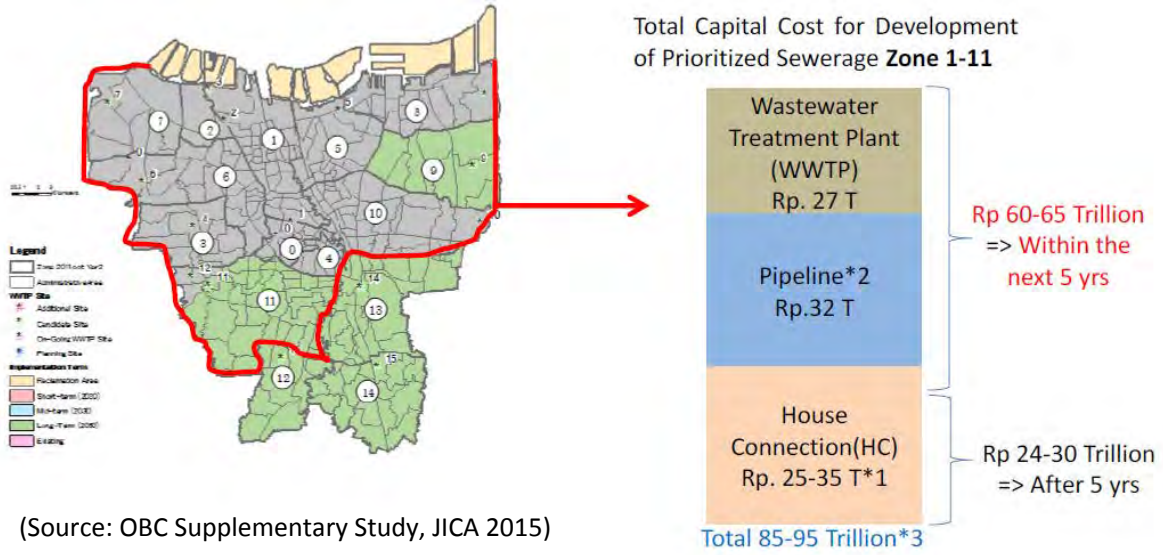
No.	Description	2013	2014	2015	2016	2017
1. REVENUE		**41,525**	**53,197**	**63,955**	**83,707**	**103,982**
a	Local Own Revenue	26,670	34,258	40,100	47,902	57,376
	Local tax	21,918	28,457	33,883	41,228	50,200
	Local levis	1,500	2,207	2,369	2,547	2,743
	Results of local finance separated	415	615	719	841	948
	Other revenue	2,837	2,979	3,128	3,284	3,448
b	Funding Balance	9,248	15,130	21,783	33,590	44,244
	Tax-sharing fund	8,692	14,492	21,094	32,793	43,336
	Non-tax revenue share	255	281	295	324	340
	General allocation funds	301	357	393	472	566
c	Other Regional Income	5,605	3,807	2,071	2,215	2,360
2. EXPENDITURE		**45,576**	**57,829**	**72,490**	**94,431**	**119,462**
a	Indirect Expenditure	14,582	17,137	20,143	23,679	27,840
	Tied procurement	10,853	12,848	15,210	18,006	21,317
	Priority III	3,729	4,289	4,932	5,672	6,523
b	Direct Procurement	30,993	40,691	52,347	70,752	91,622
	Priority I	24,662	36,209	35,211	22,851	25,580
	Priority II	6,371	4,482	17,135	36,897	66,042
SURPLUS (DEFICIT)		(4,050)	(4,632)	(8,534)	(10,723)	(15,480)
3. FINANCE		**4,050**	**4,632**	**8,534**	**10,723)**	**15,480**
a	Receipt	8,454	9,738	12,435	14,025	16,403
	Use of SiLPA	8,344	6,836	8,674	10,873	15,642
	JEDI loan forwarding	110	159	160	150	138
	MRT loan forwarding	-	2,472	3,6003	3,001	622
b	Spending	4,403	5,105	3,900	3,301	922
	Government capital investment	4,345	5,105	3,900	3,301	922
	Main debt payment	58	-	-	-	-
TOTAL APBD (1+3a)		**49,979**	**62,935**	**76,391**	**97,730**	**120,385**

(Source: RPJMD 2013-2017)

The table illustrates the total annual budget of DKI Jakarta in 2013 was calculated around 50 Trillion IDR and expected to increase up to 120 Trillion IDR in 2017.
Actual performance and results of regional finance during the 2013-2017 will be reported in the next RPJMD (2018-2022).

3.2 Financial Requirement for Jakarta Sewerage Development

After the enactment of the Governor Regulation No.41/2016 based on the Acceleration Plan of Jakarta Sewerage Development prepared by the PD PAL Jaya, the targets of the sewerage implementation for the next midterm period by 2022 become very challenging. According to the *Outline Business Case (OBC) Supplementary Study for Jakarta Sewerage System in Zone 1(2015)* conducted by JICA, the total capital costs for the priority zones (Zone-1 to 11) are around 85-95 Trillion IDR, based on the cost estimation of the JICA M/P. Figure3.1 shows the requirement of the total capital expenditure for the priority sewerage zones.



(Source: OBC Supplementary Study, JICA 2015)

Figure3.1 Total Capital Expenditure for Sewerage Development of Priority Zones

Approximately 27 Trillion IDR for the construction of WWTPs, 32 Trillion IDR for sewer pipelines, and more or less 35 Trillion IDR for house connections are required to implement the sewerage development in Jakarta priority zones.

The cost for the house connection includes the on-site treatment in Zone-9 and 11. Also the cost for the pipeline includes the trunk sewer, secondary & tertiary sewer, interceptor chambers and pumping stations. However the cost estimations of the sewer pipe and WWTPs require review and adjustment due to the price escalation and change of technology from the M/P 2012. The cost estimation of house connection, since it was very rough calculation, needs the adjustment as well.

In order to achieve the certain level of coverage and services of both off-site and on-site wastewater management by 2022, increased mobilization of financial resources is inevitable. Currently the main financial resources for sewerage development and wastewater management are the national and local budget (APBN/APBD) and foreign assistance such as ODA grants and loans. Other opportunities for raising fund are Public Private Partnership (PPP) and Business to Business (BtoB) investment.

The net section examines the available financial resources to fund the financial needs for initializing the sewerage development and wastewater management. Also, the three basic sources of revenue for the sustainable operation of sewage works, tariffs, taxes and transfer (3Ts) will be briefly explained.

Rather than planning the financial strategies, a technical approach to minimize the requirement of initial cost by the step-wised development planning, which starts from implementation of trunk sewer (interceptor pipe) and smaller capacity of WWTP with minimum expenditure. Concept of the step-wised development and its suggested scenario will be explained the Chapter-7.

3.3 Funding Framework

Feasible and sustainable financial arrangement is required for sewerage implementation in DKI Jakarta to achieve the development targets. For example of Zone-1 and 6, the construction of WWTP and sewers are financed by the ODA loans from the Government of Japan, meanwhile the construction of house connection will be funded by DKI Jakarta with APPD and payment by the beneficiaries.

Among various financing options which are explained in this section, combination of (1) Grant finance (APBN/APBD), (2) Loan, and (3) Public-Private Partnership (PPP) is most applicable for accelerating the implementation of sewerage development.

(1) Grant finance (APBN/APBD)

In many countries, most existing wastewater infrastructure has been financed through allocations from national or local government budgets (APBN/APBD). The sewerage projects can be most promptly implemented by grant finance as long as there are no budgetary constraints.

This finance also helps overcome lack of household or community willingness to pay for reduction of water pollution. The sewerage systems can cover operation costs at lower tariff rates, though the lower tariffs reduce incentive for households or industries to reduce water pollution. Since local governments only support facility construction, it reduces pressure to identify most efficient solution.

(2) Loan finance

Government or Multilateral Institutions, and International Financial Institutions (IFI) loans can be another option to mitigate the budgetary constraints for the projects. The most initial costs of sewer and WWTP construction would be covered by bilateral/multilateral loans. IFI loans provide low-cost project financing. The loan scheme typically contains a subsidy component such as below-market interest rates, credit risk guarantees etc.

Loan conditions include the planned maximize incentives for efficient service (tariff structures, financial performance measures). Grace and repayment periods are longer compared to commercial loans, and the loan period matches expected lifecycle of facilities.

(3) Public-Private Partnership (PPP) finance

The PPP is the third financial option to fund the sewerage projects to mitigate the budgetary and debt ceiling constraints. Implementation of PPP is however complex and requires strong will and capacity of the government.

Facility related risks shall be managed by private which may bring better quality of services. Tender procedure of PPP may take longer time compared to grant and loan finance, because additional supports from government are required for project approval, interacting RFP and lender Due Diligence. Expert resources for preparation including the capacity development on PPP procedures are also required, and the relevant regulations such as availability payment for PPP need to be formulated.

As there is no long-term Rupiah fund (more than 10 years) in financial market in Indonesia, the private is willing to access to international financial market in which the investors are exposed to the foreign exchange risk.

Chapter-4 Analysis of Strategic Issues

In Chapter-IV of RPJMD, strategic issues are described in three sections.

CHAPTER-IV ANALYSIS OF STRATEGIC ISSUES
- 4.1. Regional Development Issues
- 4.2. Strategic issues
- 4.3. Other issues that should be considered

The problems of environmental pollution are the most crucial issues in DKI Jakarta with negative impact on the sustainable development of the city that needs to be resolved in a comprehensive manner. There are three groups of problems of environmental pollution in DKI Jakarta, namely waste management, wastewater management and handling of air pollution. Among them, the issues on the wastewater management are summarized below.

4.1 Regional Development Issues: Wastewater Management

Improvement of river and groundwater quality is a major prerequisite in achieving sustainable urban development. River water is polluted by disposal of domestic wastewater to canal/river without proper treatment, and groundwater is contaminated mainly by the penetration of black water to the ground. The pollution loads to the water environment in Jakarta is getting serious due to the increase of population and activities. The fundamental issues in improvement of water qualities include: 1) limited service coverage of sewerage systems and urban sanitation, 2) limited use of standardized septic tanks and regular desludging services, 3) lack of national and regional regulation on wastewater management, and 4) lack of social awareness and willingness to improve the water quality.

(1) Limited coverage of sewerage systems and urban sanitation

Coverage of centralized sewerage systems is very limited only 4% at Zone-0 in 2015. Decentralized treatment system such as local system with ITP and communal system has not been widely installed. Access to the improved sanitation in urban was totally 73% according to the WHO/UNICEF *Joint Monitoring Programme (JMP) for Water Supply and Sanitation* (2010),that means in Jakarta around 20% population (700,000 people) defecates in fields, rivers and beaches. Therefore not only the development of sewerage systems but also improvement of urban sanitation to stop the open defecation is significant and urgent issues handled by the DKI Jakarta.

(2) Limited use of standardized septic tanks and regular desludging services

The most commonly installed wastewater treatment system in Jakarta today is domestic septic tanks. Inappropriately designed or constructed conventional septic tanks however allow the black water penetrate into groundwater which causes the serious pollution. Also regulate desludging system of septic tank is not strategically established. Without regular desludging, the treatment efficiency of septic tank is considerably decreased from 75% BOD removal to nearly zero. Therefore replacement or change of the conventional septic tank (CST) to the modified septic tank (MST), as well as implementation of regular desludging are crucial to improve the environmental water quality.

(3) Lack of regulations on wastewater management

The concerns and awareness of the residents on the necessity of proper wastewater management is generally low, therefore laws and regulations are indispensable to improve the access to the services such as connection to sewers, regular desludging, and payment of tariff. At present, there are only Sanitation Law at the national level and PD PAL Jaya's regulations at the regional level. Promulgation of the regional legislative framework is urgent and important task.

(4) Lack of awareness and willingness to improve water quality

As Indonesian culture, people throw waste into the water to wash out the stain of their past misfortune. For this custom, people have a consciousness that discharge of wastewater directly to the river is quite natural, which is one of the factors impeding the development of proper wastewater treatment. Therefore social awareness and willingness to treat wastewater for water quality improvement need to be raised through socialization and public relations activities.

4.2 Strategic Issues

As described above, improvement of water quality is the one of urgent and important issues in Jakarta. Apart from the financial constraints, technical conditions for the immediate construction of sewerage systems in DKI Jakarta are very difficult.

(1) Construction of sewer pipes

The M/P 2012 calculated the total length of the main sewers in the phase-1 zones (from Zone-1 to 10 except Zone-9) around 1,100 km. If the projects are implemented under the acceleration plan, 200km or more length of sewer pipes need to be installed. The installation of sewer pipes along roads may deteriorate the serious traffic congestion in the central Jakarta. Sewer construction is not easy due to high groundwater level especially in north Jakarta. For installing the sewer pipes and inspection cambers, soil improvement is necessary, which adds time and costs to the projects.

(2) Construction of WWTPs

Prerequisites for construction of WWTPs are land acquisition, environmental permission, and public consultation to the neighboring residents, which may require one year or more. The construction period for one WWTP is toughly estimated 3 years, one year of foundation works, one year of civil works and one year of mechanical/electrical installations. Adding 1.5 to 2 years of the engineering services such as detailed design and tendering procedures, the total schedule for the WWTP construction requires minimum 5 years. Intensive rush works to accelerate completion of construction may cause the rise in construction costs and deterioration of quality.

(3) Construction of House Connections

Construction of house connections takes long time. It is impossible to be done immediately after completion of construction of sewer and WWTP construction and starting the service operations. As the implementation of house connection requires the payment by the beneficiary, the local government shall guide and enforce the implementation. Under the present situation, the necessity of connection to sewers and payment of sewerage tariff is not understood by the residents in Jakarta. Effective and continuous public relations activities by DKI Jakarta are required.

(4) Treatment Efficiency (BOD and P removal)

NCICD master plan requires improvement of water quality by 2030 before closure of Jakarta Bay with the Giant Seawall by means of acceleration of implementation of sewerage systems and wastewater management. The requirements of water quality improvement were reduction of 75% of current BOD load to avoid oxygen depletion and mass fish starvation, and reduction of 90% of the present phosphorous (P) load to avoid the toxic blue-green algae proliferation and excessive water hyacinth growth. Since the BOD removal by existing septic tanks without regular desludging is considerably low, establishment of regular desludging system to improve the BOD removal rate is vital important. Also treatment processes of septic tank and conventional WWTP such as Activated Sludge (AS) are very low P removal rate, thus advanced water treatment process is to be considered.

Chapter-5 Vision, Mission and Objectives

Chapter-V describes the broad and sector-specific development vision, mission and objectives which are guided by the major development issues identified in the previous chapters.

CHAPTER-V VISION, MISSION AND OBJECTIVES
- 5.1 Vision
- 5.2 Mission
- 5.3 Goal and Target

The Vision and Mission of the next RPJMD will be developed by the higher level of DKI Jakarta. This chapter hence describes only Goal and Target of sector-specific which may be linked to the one of mission statements. Those objectives will be closely guided by the major development issues and strategic directions which were discussed in the previous chapters.

5.1 Vision

The Vision and mission of RPJMD should be harmonized to that of the long-term vision described in the Regional Long Term Development Plan (RPJPD) of Jakarta 2005-2025.

The vision of RPJPD of Jakarta 2005-2025 is: *"Jakarta: Safe, Confortable, Prosperous, Productive, Sustainable and Global Competitive capital of NKRI"*.
Mission of RPJPD is:

1. Increasing capacity and quality of regional infrastructure;
2. Increasing strong economy and quality;
3. Building the resilience of social and cultural rights;
4. Increasing carrying capacity and efficient utilization of environment and natural resources;
5. Increasing capacity and quality of government; and
6. Strengthening regional innovation and creativity.

Relevant vision and mission of the next medium term development in 2018-2022 will be formulated in consideration of the long-term development stages, potential, problem, challenges and strategic issues.

Medium Term Development Vision Jakarta of Year 2018-2022 is:
"_____".

It can be explained that the Jakarta city is:

-
-
-
-
-

5.2 Mission

To realize the Vision of Medium Term Development of DKI Jakarta 2013-2017, the following five missions are formulated:

1.
2.
3.
4.
5.

5.3 Goal and Target per Mission

Goals and targets will be set for implementation of sector development activities to realise the vision of regional development for five years. To achieve a better quality of living environment, the appropriate goal and target of specifically wastewater management will be described as follows:

Mission:
Making Jakarta as a city that is free from the chronic environmental problems such as water pollution, floods, slums, garbage and others

Goal:

- ☐ Enact wastewater management in DKI Jakarta

Target:

- ☐ Increase of wastewater treatment in DKI Jakarta
- ☐ Reduce environmental water pollution in DKI Jakarta

The relationship between goal, target, programme indicators and initial and final conditions for each implementation is described in Table 5.1.

Table 5.1 Linkage of Vision, Mission, Goals and Objectives

Goal	Target	Indicator (Impact)	Initial Conditions	Final Conditions
To enact wastewater management in DKI Jakarta	Increase of wastewater treatment in DKI Jakarta	Percentage of coverage area services by wastewater treatment system	8%	65%
	Reduce environmental water pollution in DKI Jakarta	Number of SANIMAS implemented	19	1,000
		Number of Truck for Regular desludging	31	500

Chapter-6 Strategy and Policy Direction

Chapter-VI describes the broad and sector-specific development vision, mission and objectives which are guided by the major development issues identified in the previous chapters.

CHAPTER-VI STRATEGY AND POLICY DIRECTION
- 6.1 Strategy
- 6.2 Direction

The strategy is a step to solve problems that are important and urgent to be implemented within a period of five years having a great impact to achieve the vision, mission, goals, and targets.
The policy direction is a guideline for the selected strategy to be more focused in achieving the goals and targets during the period of RPJMD 2018-2022. The policy direction will guide the strategy to be consistent with the direction and not contrary to applicable legislation.

6.1 Strategy

Strategy in the sewerage sector for the achievement of the relevant **Mission** is summarized as follows:

Development of the infrastructure of wastewater management
This strategy is to improve the treatment efficiency of domestic wastewater by implementing the infrastructure of wastewater management in efforts to achieve clean water environment in Jakarta. Operational strategies include: i) Development of centralized sewerage systems, ii) development of decentralized wastewater management with communal sanitation systems, iii) Improvement of treatment performance of septic tanks, and iv) implementation of socialization and public relations activities for awareness raising and sanitation behavior change.

Integration of centralized and decentralized wastewater management
This strategy aims to accelerate the implementation of wastewater management infrastructure and to maintain the consistency and compatibility of centralized and decentralized system which will be connected in future. The implementation of centralized sewerage system and improvement of decentralized wastewater management will be in parallel starting from the priority areas and extending the capacity gradually.

6.2 Direction

The relationship between target, strategy and policy directions is described in the following table:

Table 6.1 Target, Strategies and Policy Directions of Jakarta DKI

No	Target	Strategies	Policy directions
	The availability of Improved wastewater management	Development of centralized sewerage system	Increasing the scope of centralized sewerage system services through the construction of pipelines and WWTP centralized systems
		Development of optimum decentralized wastewater treatment system	Encouraging domestic wastewater treatment of settlements, among others through the Development of Communal WWTP/SANIMAS, Socialization of the use of septic tanks and environmental protection, and Local IPAL System Development / Improvement

Chapter-7 Development Programme and Priority Projects

Chapter-VII in RPJMD deals more broad intervention for the regional development as follows.

CHAPTER-VII GENERAL POLICY AND REGIONAL DEVELOPMENT PROGRAMME
- 7.1 General Policy Development
- 7.2 Priority Programme of Regional Development
- 7.3 Leading Programme

If following the contents of RPJMD as above, the description will be too broad rather than sector-specific. Therefore this chapter, not following the TOC of RPJMD, describes the selection of priority zones for the next midterm development, and other planned interventions which can be implemented for the next five years.

7.1 Selection of Priority Sewerage Zones

7.1.1 Criteria for Prioritization

(A) Review of M/P 2012

Before developing the selection criteria, the criteria and evaluation process in the M/P 2012 were examined. As listed in the table below, the M/P developed 8 criteria which were based for the evaluation of 14 sewerage zones in Jakarta excluding Zone-0.

Table 7.1 Criteria for Selection of Priority Zones in JICA M/P 2012

	Factor	Remark
1	Population density is high.	Pollutant load is high.
2	WWTP site shall be secured inside the sewerage zone.	Construction and O&M cost are low.
3	Sewer trunk lines are shorter and river crossings should be avoided as much as possible.	Construction and O&M cost are low.
4	There are many commercial establishments who can afford to pay wastewater charge after the proposed project is implemented.	Easier to collect wastewater charge in the future.
5	There are the existing sewerage systems.	Easier to collect wastewater charge in the future.
6	Socio-economic conditions are not good.	Water borne disease ratio and pollutant load are high
7	River water quality is not good (BOD is high).	Pollutant load is high.
8	Groundwater quality is not good (E-coli is high).	Possibility of contamination by domestic wastewater is high.

Table 7.2 Evaluation Summary of Prioritization in JICA M/P 2012

Zone No.	Indicator								Total	Rank
	1	2	3	4	5	6	7	8		
1	**13**	**14**	**13**	**14**	**1**	**3**	**11**	**10**	**79**	**1**
2	2	3	13	1	1	1	11	11	43	14
3	8	14	13	4	1	2	11	2	55	11
4	14	14	13	11	1	4	2	6	66	6
5	10	14	13	13	1	5	6	13	75	4
6	**12**	**14**	**13**	**12**	**1**	**8**	**11**	**7**	**78**	**2**
7	4	14	13	12	1	12	4	12	62	8
8	9	14	13	5	1	9	3	14	68	5
9	1	14	13	3	1	3	14	9	66	6
10	11	14	13	8	1	14	14	8	76	3
11	7	3	13	10	1	14	11	4	62	8
12	6	14	13	6	1	10	2	1	53	13
13	5	3	13	9	1	6	14	3	54	12
14	3	14	13	7	1	14	5	5	62	8

Evaluation is done by ranking the relevancy of each factor above, and the score has been given based on the rank of relevancy to the factor. As the result, the zones of the highest priority, Zone-1 and 6, have been selected as the short-term project areas.

(B) Criteria for Midterm Sewerage Plan

Referring the criteria of M/P 2012 and considering the latest situations in DKI Jakarta, the following criteria have been suggested by the JICA consultant team:

Table 7.3 Suggested Criteria for the Midterm Sewerage Development Plan 2018-2022

	Indicators	Remark
1	Consistency with NCICD (location of zone)	Located in coastal and western side.
2	Capital and operational costs (pipe &WWTP)	Capital & operational costs are low.
3	Service revenue (ratio of Revenue-Gross Floor Area)	Revenue-GFA ratio is high (= higher revenue expected)
4	Investment efficiency (sewer construction cost per wastewater volume)	Sewer cost/WW volume is low (= higher efficiency)
5	Land availability	Land for WWTP has been secured.
6	Environmental impacts (water quality)	Pollution load is high (= effectiveness is high)
7	Difficulty of underground penetration (land subsidence & groundwater level)	Land subsidence is large, groundwater level is high (= low penetration i.e. likely more polluted by septage)

7.1.2 Evaluation of Each Sewerage Zone

In order to prioritize the 6 sewerage zones (Zone-2, 3, 4+10, 5, 7, 8) which indicated in the Governor Regulation No.41/2016, the evaluation is conducted using the criteria in the following way:

(a) Quantitative or qualitative evaluation is conducted in 6 sewerage zones for each criterion.
(b) For each criterion, the priority rank is given.
(c) For the rank of each zone, score is put according to the rank and the weight as follows:

- Basic score
  - 1st Rank: 10 points
  - 2nd Rank: 8 points
  - 3rd Rank: 6 points
  - 4th Rank: 4 points
  - 5th Rank: 2 points
  - 6th Rank: 0 points.
- Weight
  - W=1: weight is 1, i.e. the score is basic score multiplied by 1.
  - W=2: weight is 2, i.e. the score is basic score multiplied by 2.

For example of the criterion no.1 consistency with NCICD, zones in north-west of Jakarta is highest priority so ranked as 1, basic score is 10. The total score is multiplied by the weight 2, therefore the zones in north-west is scored 20 points.

Table 7.4 (1) Consistency with NCICD (location of zone)

Zone No.	Location of the zone	Rank	Score-1 (w=2)
2	North-west	1	20
3	West	3	12
4+10	East	6	0
5	North-east	4	8
7	North-west	1	20
8	North-east	4	8

Table 7.5 (2) Capital and Operational Costs (pipe &WWTP)

Zone No.	Construction cost (million IDR)	Rank	Score-2 (W=1)
2	1,158,206	1	10
3	3,725,914	2	8
4+10	9,598,989	6	0
5	4,157,230	4	4
7	3,991,345	3	6
8	5,651,647	5	2

Source: JICA M/P (2012)

Table 7.6 (3) Service Revenue (Ratio of Revenue-Gross Floor Area)

Zone No.	Gross Floor Area (m2)	Potential Revenue (Billion IDR/yr)	Ratio of Revenue-GFA (1.000 IDR/yr/m2)	Rank	Score-3 (w=2)
2	15,643,000	80	5.2	3	12
3	39,731,000	165	4.2	6	0
4+10	104,702,000	64 + 472	5.0 + 5.2	4	8
5	57,653,000	347	6.0	2	16
7	48,634,000	228	4.7	5	4
8	53,516,000	332	6.2	1	20

Source: Jakarta Sewerage- Implementation Plan, INDII (2017)

Table 7.7 (4) Investment Efficiency (Sewer Construction Cost per Wastewater Volume)

Zone No.	Construction Cost (million IDR)	WW volume (m3)	Unit Cost (IDR/m3)	Rank	Score-4 (W=1)
2	663,456	23,847	27,821	6	0
3	1,799,383	115,440	15,587	4	4
4+10	3,812,725	294,407	12,951	2	8
5	1,655,209	127,217	13,011	3	6
7	2,071,008	110,824	18,687	5	2
8	2,215,982	176,022	12,589	1	10

Source: JICA M/P (2012)

Table 7.8 (5) Land Availability

Zone No.	Site	Area (ha)	Availability	Rank	Score-5 (w=1)
2	Muara Angke	0.8	Under discussion	2	5
3	Hutan Kota Srengseng	4	Under discussion	2	5
4+10	Pulo Gebang	8.7	Available	1	10
5	Hutan Kota Waduk Sunter Utara	4.6	Available	1	10
7	Kamal-Pegadungan	3.9	Available	1	10
8	Rencana Waduk Marunda	6.0	Available	1	10

Table 7.9 (6) Environmental Impacts (Water Quality)

Zone No.	River water BOD (mg/l)	Rank	Groundwater E-coli ($x10^6$)	Rank	Score-6 (w=1)
2	60	2	1175.4	4	12
3	60	2	217.2	6	8
4+10	86	1	673.7	5	12
5	50	3	1433.0	2	14
7	32	4	1177.9	3	10
8	30	5	1670.4	1	12

Source: JICA M/P (2012)

Table 7.10 (7) Difficulty of Underground Penetration (Land Subsidence, Groundwater Level)

Zone No.	Inundation level (m)	Rank	Groundwater depletion (m)	Rank	Score-6 (w=1)
2	0 ~ 1.50	2	-0.2 ~ 0.4	1	18
3	0	6	1.2 ~ 1.4	6	0
4+10	0 ~ 1.50	4	0.2 ~ 1.0	5	6
5	0 ~ 0.70	5	0 ~ 0.4	4	6
7	0.10 ~ 1.50	1	-0.2 ~ 1.2	3	16
8	0.10 ~ 0.70	3	-0.2 ~ 0.4	2	14

Source: *Inundation Area Map* (BPBD 2015), *Jakarta flood* (UNOCHA 2014), *Map of groundwater level decline* (DPE 2015)

Summary of Evaluation

The summary of each score for the criteria is shown in table below. Zones with the higher total score are considered as higher priority.

Table 7.11 Summary of Evaluation for Priority Zones

Zone No.	S-1	S-2	S-3	S-4	S-5	S-6	S-7	Total	Priority
2	20	10	12	0	5	12	18	77	**1**
3	12	8	0	4	5	8	0	37	**6**
4+10	0	0	8	8	10	12	6	42	**5**
5	8	4	16	6	10	14	6	66	**4**
7	20	6	4	2	10	10	16	68	**3**
8	8	2	20	10	10	12	14	76	**2**

7.1.3 Result of Prioritization (Suggested Priority)

As the result of the evaluation, Zone-2 and 8 is the1st priority, Zone-7 and 5 is 2nd, then Zone-4+10 is 3rd, and Zone-3 is 4th priority as shown below.

Priority	Zone
Short-term	0, 1, 6
Mid-term Priority 1	2, 8
Mid-term Priority 2	7, 5
Mid-term Priority 3	4+10
Mid-term Priority 4	3
Long-term	9, 11, 12, 13, 14

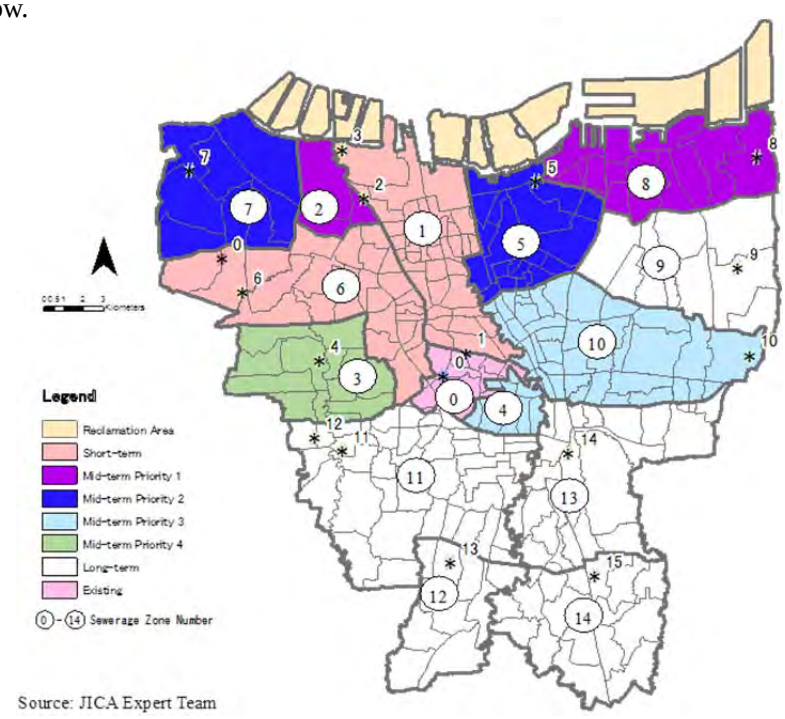


Figure 7.1 Priorities for Midterm Sewerage Development Plan

N.B. This evaluation and priority are based on consultation between the JICA consultant team and the Task

Force. The final priority will be determined by BAPPEDA and other DKI institutions.

7.2 Selection of Priority Areas of Decentralized WW Management

The priority of the sewage zone above is not related to the object of the decentralized wastewater management. Priority areas for decentralized wastewater management are suggested but not limited: i) areas where the population density is high but urban sanitation facilities are not adequately developed, ii) areas where contamination of the river or groundwater is remarkable due to the open defecation, and iii) areas where existing facilities are remarkably deteriorated.

In the zones for urban development projects financed by the private developers, installation of proper decentralized wastewater treatment facilities shall be obligatory included to the design and installation which in future will be connected to the centralized sewerage system of DKI Jakarta.

The zones for improvement of treatment efficiency of septic tanks by updating the septic tank and/or establishing the regular desludging system will be determined by PD PAL Jaya in consultation with DKI Jakarta.

7.3 Midterm Programmes for Wastewater Management

Programmes grouped by mission-based strategic issues for the next midterm period are as follows:

Centralized Wastewater Management (Off-site)

- Construction of sewerage systems
- Engineering service and tender process
- Preparation and procedures before the implementation (AMDAL, land acquisition and survey, socialization etc.)
- O&M of WWTPs and sewers in service

Decentralized Wastewater Management (On-site)

- Implementation of Communal WWTP/SANIMAS systems
- Regular desludging of septic tanks
- Construction of sludge treatment plants
- Socialization and public relations activities

Chapter-8 Indication of Implementation Plan

In Chapter-VIII, it is delivered the detailed programmes to be implemented over the five years from 2018 to 2022.

CHAPTER-VIII INDICATION OF IMPLEMENTATION PLAN
8.1 Issues Public Works

In addition to the above, the section 8.2 will discuss the implementation schedule and the rough estimation of annual budget required for the sewerage development which were proposed by the JICA consultant team.

8.1 Public Works: Wastewater Management

Programmes to be implemented related to wastewater management are as follows:

(1) Centralized Sewerage Implementation Programme

Indicators that will be achieved, among others, the percentage of centralized sewer systems implemented; the increased number of sewerage zones where AMDAL/EIA process are carried out; the number of zones where E/S and tender process are ongoing; and the number of zones where the construction of sewer and/or WWTP has been started.

(2) Decentralized Wastewater Management Programme

Indicators to be achieved include increased number of communal wastewater treatment plant with the capacity of 200 households implemented; increased number of village where the communal-led sanitation system (SANIMAS) installed; and increased number of trucks for regular desludging of septic tanks.

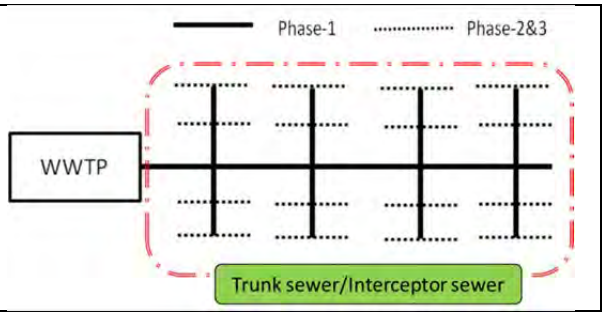
8.2 Step-Wised Implementation Plan

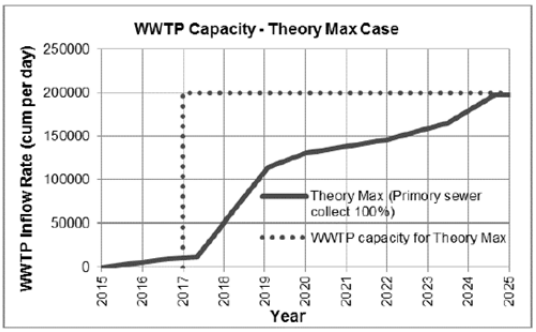
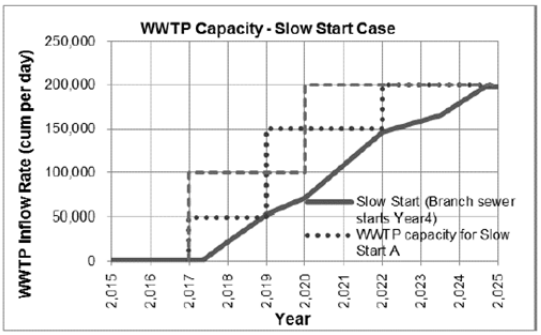
In order to implement the sewerage projects within a limited budget, it is more practical to reduce the financial demand, by constructing the trunk sewer and WWTP in priority, and then in subsequent years constructing the secondary/tertiary sewers and house connections which are financed by the local government and payment of the beneficiaries.

In addition, the project is not targeting the entire sewerage zone, but started the implementation of trunk sewer from high priority areas. The capacity of WWTP also responds to the increase in the volume of wastewater collection due to the installation of the sewer pipelines. A strategic facility design and implementation plan that increases the capacity in stages is essential.

In the step-wised plan, for example, the construction of trunk sewer in the business area and WWTP is scheduled in Phase 1, and the construction of the sub-trunk and trunk sewer in the adjacent areas is planned in Phase-2. And then the secondary/tertiary sewer and house connection is planned to be constructed in the following phases or future projects.

Regarding the WWTP, considering the gradual increase in collected wastewater volume due to the installation of sewer pipes, the planned water volume and water quality shall be set so that the facility at the initial stage of construction will not be excessive capacity. The sewerage facilities shall be gradually extended corresponding to updating and improving the operation method.

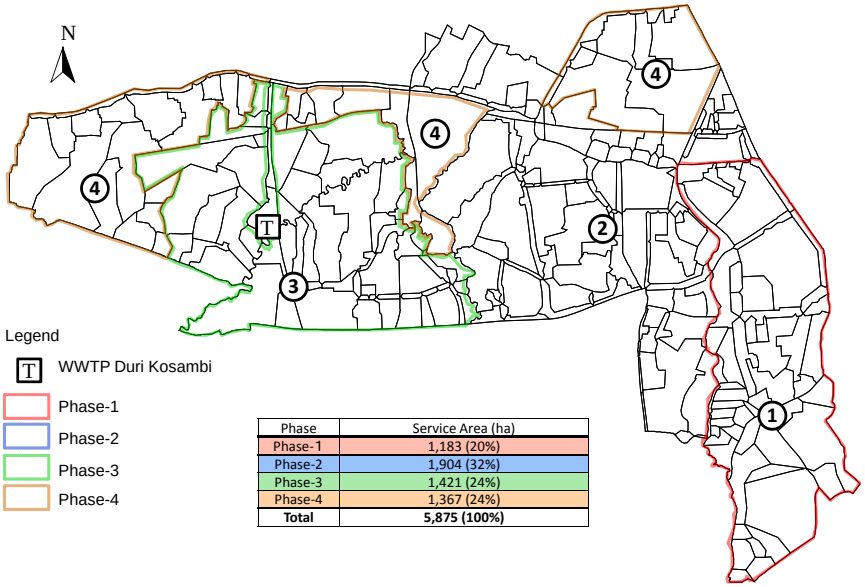
Construction Phase	
Step-wised development of interceptor sewer Collected wastewater: Gray water Phase-1: Trunk sewer in business center & WWTP Phase-2: Sub trunk sewer & trunk sewer in the adjacent areas 2nd & 3rd sewer and house connection is implemented in future projects	

Case 1: Whole trunk sewer & sub-trunk sewer (secondary/tertiary sewer) are constructed	Case 2: Sub-trunk sewer follows the trunk sewer construction with 4-year delay
	

(Preparatory Survey on Central Sewerage Treatment System in Jakarta, JICA 2013)

Figure 8.1 Concept of Step-wised Sewerage Development

The following figure and table show an example of step-wised implementation plan of Zone-6, which were developed under the F/S in 2013 when the NCICD and Governor Regulation 41/2016 had not been formulated. The sewerage zone was divided into four sub-zones, and planned to implement in four phases in totally about 30 years.



Phase	Service Area (ha)
Phase-1	1,183 (20%)
Phase-2	1,904 (32%)
Phase-3	1,421 (24%)
Phase-4	1,367 (24%)
Total	**5,875 (100%)**

Source: JICA F/S Team

Figure 8.2 Sub-zones and phasing of Zone-6 Sewerage Development

Table 8.1 Step-Wised Implementation Schedule of Zone-6 in F/S (2013)

Items	year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
0. PROJECT PREPARATION		★	▬	▬	▬																										
Ⅰ. WWTP																															
Phase 1	4					▬	▬	▬	▬																						
Phase 2	3										▬	▬	▬																		
Phase 3	3															▬	▬	▬													
Phase 4 (Ultimate phase)	3																			▬	▬	▬									
Ⅱ. Sewer																															
(1) Trunk sewer																															
Phase 1	4					▬	▬	▬	▬																						
(2) Main, Secondary and Tertiary sewer																															
Phase 1	7					▬	▬	▬	▬	▬	▬	▬																			
Phase 2	7									▬	▬	▬	▬	▬	▬	▬															
Phase 3	7												▬	▬	▬	▬	▬	▬	▬	▬											
Phase 4 (Ultimate phase)	7																	▬	▬	▬	▬	▬	▬	▬	▬						
Ⅲ. House connection																															
(1) Connection pipe for household																															
Phase 1	8								▬	▬	▬	▬	▬	▬	▬	▬	▬														
Phase 2	8												▬	▬	▬	▬	▬	▬	▬	▬	▬										
Phase 3	8															▬	▬	▬	▬	▬	▬	▬	▬	▬	▬						
Phase 4 (Ultimate phase)	8																			▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬
(2) Connection pipe for non-household																															
Phase 1	5								▬	▬	▬	▬	▬																		
Phase 2	5												▬	▬	▬	▬	▬														
Phase 3	5															▬	▬	▬	▬	▬	▬										
Phase 4 (Ultimate phase)	5																			▬	▬	▬	▬	▬	▬	▬	▬				
[Service coverage ratio]		0%	0%	0%	0%	0%	0%	0%	14%	22%	30%	38%	43%	50%	58%	66%	69%	75%	82%	88%	91%	94%	97%	100%	100%	100%	100%	100%	100%	100%	100%
[Wastewater flow rate]		0%	0%	0%	0%	0%	0%	0%	3%	6%	8%	10%	19%	26%	32%	38%	48%	54%	61%	67%	76%	81%	86%	92%	95%	97%	98%	100%	100%	100%	100%

Source: JICA F/S Team

8.3 Implementation Schedule and Annual Budgets

8.3.1 Implementation Scenarios

In order to develop the implementation schedule and to estimate the annual budget for the sewerage development projects, two alternative scenarios are proposed by the JICA consultant team for the next Mid-Term Sewerage Development Plan.

Two alternative scenarios in developing the implementation schedule and estimating the engineering services (E/S) and construction costs that account for a large proportion of the project budget.
One scenario (Plan-A) plans to achieve the target of 65% served with sewerage systems by 2022, in accordance with the Governor Regulation No. 41/2016; while the other scenario (Plan-B), based on the concept of the step-wised development plan, illustrates the gradual implementation of sewerage systems rather than constructing 100% of facilities at once.

PLAN-A (Acceleration)
In line with the Acceleration Plan and the Governor Regulation 41/2016, completion of the construction of WWTP, main sewer (interceptor) and pumping stations of Zone-1 & 6 and the sewerage zones of phase-1(Zone-2, 3, 5, 7, 8, 4+10) shall be before 2022. It is expected the WWTP in all the zones will start operation before 2022. Secondary and tertiary sewers and house connections are all installed in the next 5 years.

PLAN-B (Step-wised)
Target year of the completion and commencement of service of phase-1 sewerage zones is 2030 when the outer seawall of NCICD will close the Jakarta Bay. Also the step-wised development is applied for the implementation of the sewer and WWTP. An assumption has been made for rough estimation of annual cost that the Main sewer is constructed in 5 to 6 years or more starting from priority sub-zones, the secondary and tertiary sewer will be implemented after the main sewer in 10 years. The construction of WWTP is also step-wised, the first phase construction will require 70% of total construction cost and after 5 years from completion the second phase will start to increase the capacity of WWTP.

8.3.2 Implementation Schedule

For the two alternative scenarios, the implementation schedule and cost estimation for the Zone-1, 6, and the 6 priority zones (Zone-2, 3, 5, 7, 8, 4+10) as shown in the tables below. The schedule has been developed regardless of the availability of financial resources for all sewerage projects.

N.B. The order of implementation of the 6 priority zones after Zone-1 and 6 is planned according to the result of the prioritization explained in Chapter-7. However the priority is suggestion from the JICA consultant team and hence will change in line with the finally decided priority after the consultation within DKI and related institutions.

Table 8.3 Mid-term Sewerage Implementation Plan in DKI Jakarta (Acceleration Plan)

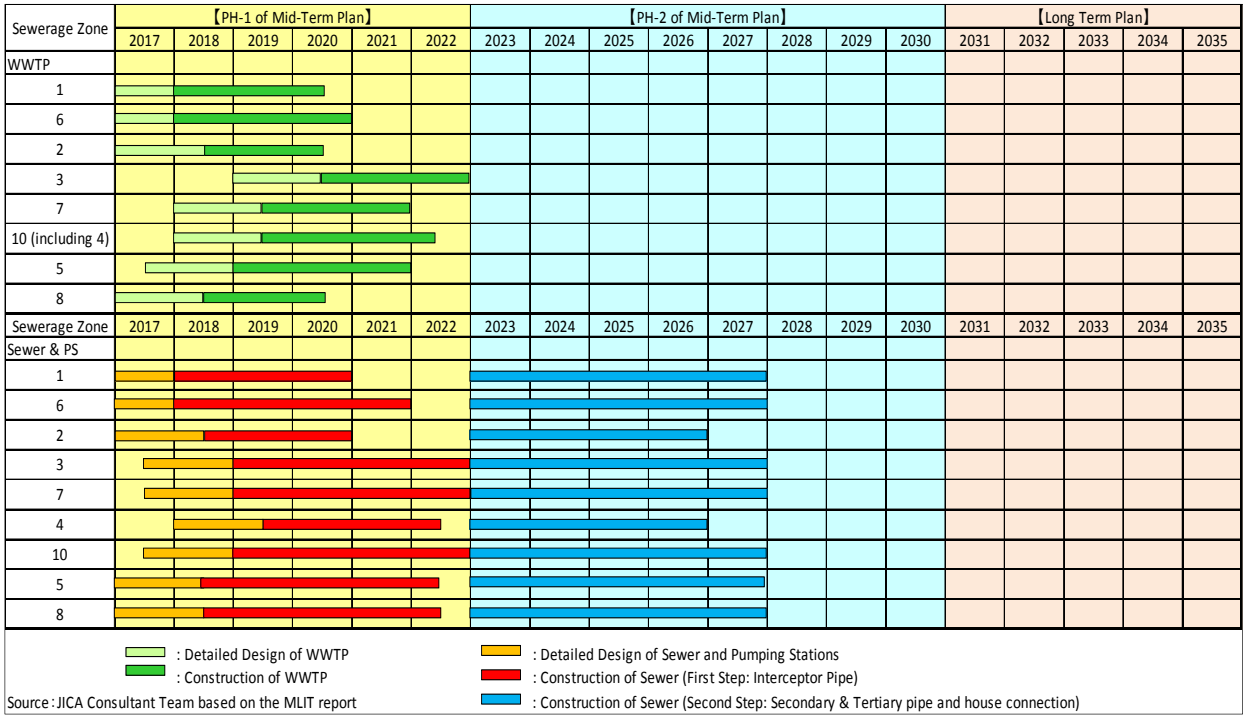
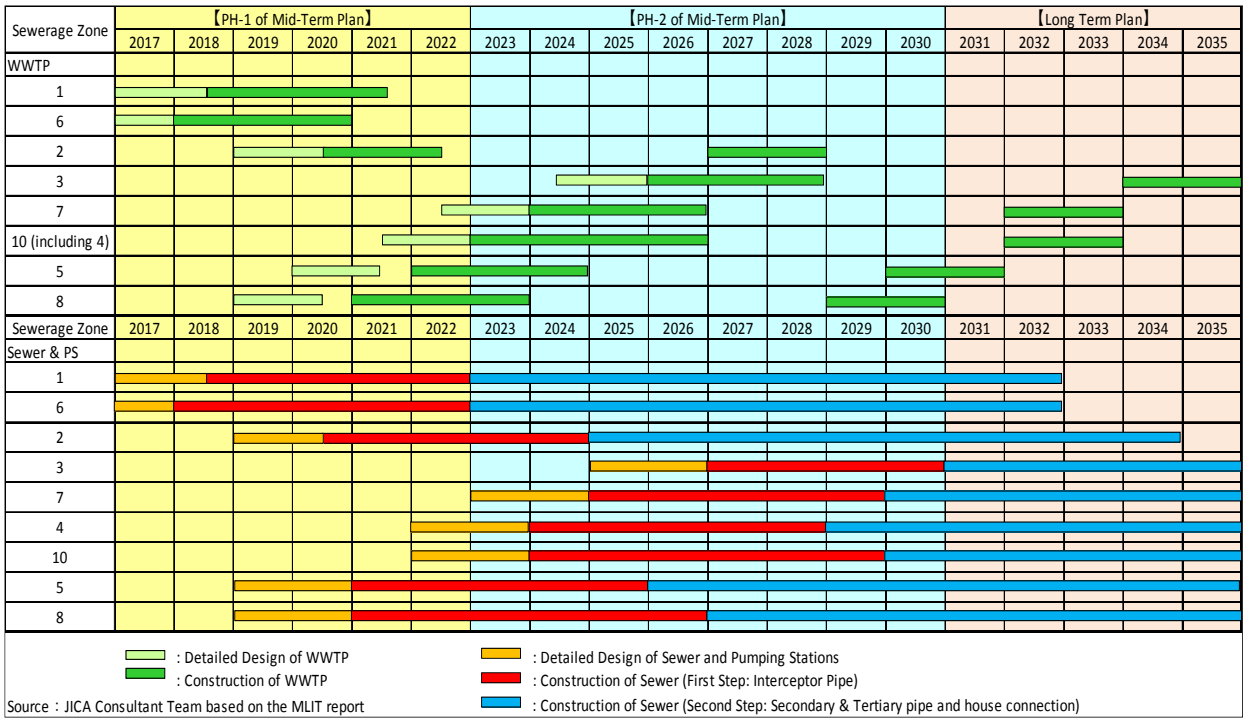


Table 8.4 Mid-term Sewerage Implementation Plan in DKI Jakarta (Step-Wised Plan)



8.3.3 Annual Budget

Estimated annual budgets for both scenarios of sewerage development which responds to the above implementation schedules are illustrated below.

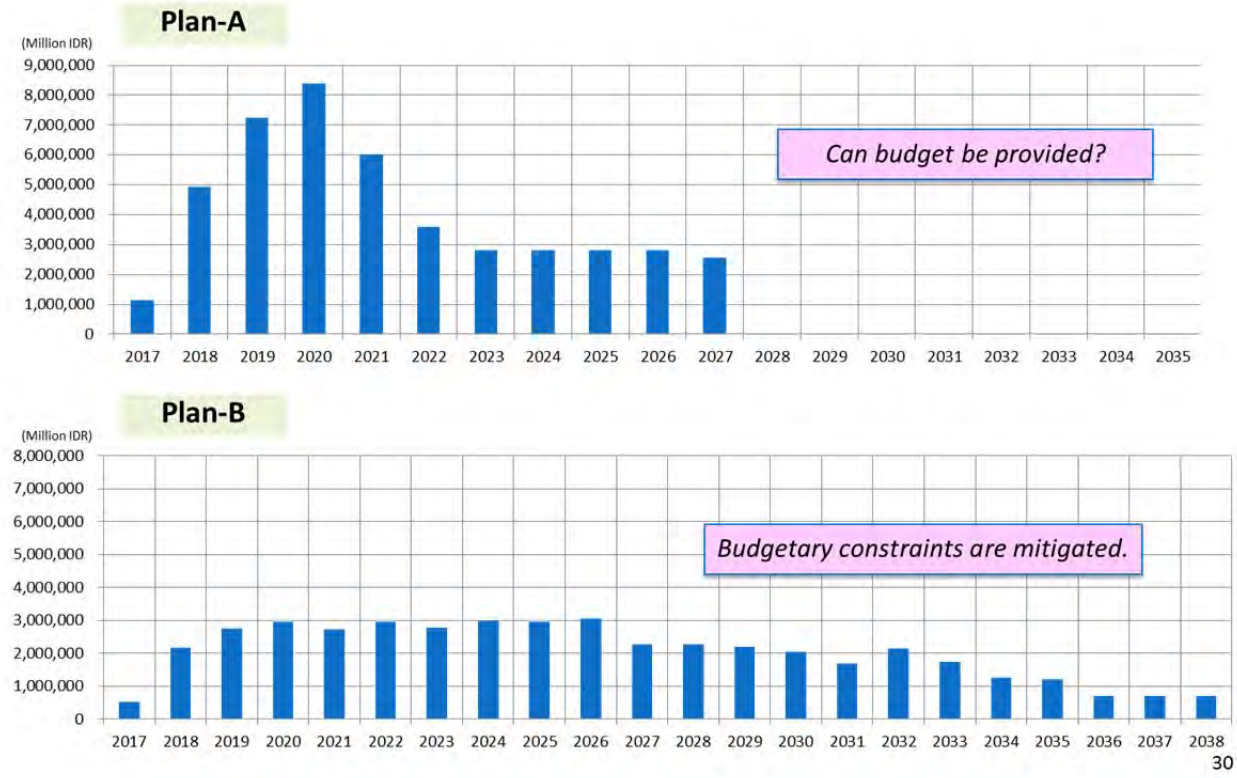


Figure 8.3 Estimated Annual Budget for Priority Sewerage Zones

In the acceleration plan, the annual budget for implementation of all priority zones requires very high financial investment, maximum 8.4 Trillion IDR in the year 2020. On the other hand, in the step-wised plan, the financial demands are averaged more or less 3 Trillion IDR annual.

Those costs are only included the E/S and construction of WWTP, sewer pipes and house connections based on the M/P 2012. All the construction costs require the revision considering the price escalation, improvement of construction technologies and the adoption of the advanced wastewater treatment.

Apart from the costs for E/S and construction of sewerage systems, the budget for the preparatory activities carried out by the DKI officers related to the sewerage projects shall be included in the annual budget, such as the environmental impact assessment (EIA), land acquisition of WWTPs and pumping stations, socialization and public awareness raising activities.

Chapter-9 Performance Indicators

This chapter provides the list of indicators to make the RPJMD more objective and accountable. The indicators shall be measurable and quantitative so that the level of results can be clearly measured. The main contents of Chapter-IX are the table of performance indicators and annual targets.

CHAPTER-IX PERFORMANCE INDICATORS

The framework of the performance indicators and targets is a template of RPJMD which will be developed with the concept of the result based management. Each programme needs to be identified clear inputs and outputs. The indicators are vital important for effective monitoring and evaluation (M&E).

Indicators of performance of sewerage development and wastewater management in Year 2018-2022 was formulated based on the results of the analysis of expected input and outcomes (programme performance). In order to provide a measurable overview of achievement of the programme activities, the performance indicators and annual targets were developed for each programme. The matrix of the performance indicators against the gains of the implementation of wastewater management activities in Year 2018-2022 outlined in the following table:

Table 9.1 Determination of Performance Indicators and annual targets

Programme PI (outcome)	Initial condition 2017	Performance Target Programme					Performance Conditions end of Year 2022
		2018	2019	2020	2021	2022	
		Target	Target	Target	Target	Target	
Percentage of centralized sewerage systems	8% (Zone-0, part of Zone-1,6)	33 (Zone-0,1,6, 2,8)	40 (Zone-0,1,6, 2,8,5)	54 (Zone-0,1,6, 2,8,5,4+10)	60 (Zone-0,1,6, 2,8,5, 4+10, 7)	65 (Zone-0,1,6, 2,8,5,4+10, 7,3)	65%
Number of Zones EIA procedures	2 (Zone-1,6)	2 (Zone-2,8)	1 (Zone-5)	1 (Zone-4+10)	1 (Zone-7)	1 (Zone-3)	8
Number of Zones E/S & tender process	2 (Zone-1,6)	2 (Zone-2,8)	3 (Zone-2,8,5)	2 (Zone-5,4+10)	2 (Zone-4+10, 7)	2 (Zone-3,7)	8
Number of Zones construction	1 (Zone-0)	2 (Zone-1,6)	2 (Zone-1,6)	5 (Zone-1,6, 2,8,5)	5 (Zone-1,6, 2,8,5	6 (Zone-1,6, 2,8,5,4+10)	6
Number of Communal WWTP @200HH		4	4	4	4	4	20
Number of SANIMAS	19	81	200	200	250	250	1000
Number of Truck for Regular desludging	31	69	100	100	100	100	500

N.B. Regarding the percentage of the centralized sewerage systems, it was not calculated based on the completion of the construction but was calculated in accordance with the status of intervention and implementation of the sewerage projects.

Chapter-10 Transition Guidelines and Implementation Rules

RPJMD 2018-2022 is a key element of comprehensive regional development planning framework, therefore adequate provisions need to be considered within the RPJMD formulation process to ensure appropriate transition and implementation by regional government. The Chapter-X outlines the guidelines for transition while the former provincial governor of Jakarta is replaced to the successor and the roles of implementation to maintain the continuation of the plan.

10.1 Guidelines for Transition

The expiration of the RPJMD (2013-2017) will be the same time of the end of official term for the provincial governor of Jakarta, October 2017. For the smooth transition of the previous and next RPJMD, The essential objective of the policy directions of the Long Term Development Plan (RPJPD Jakarta 2005-2025) and the National Medium Term Development Plan (RPJMN 2015-2019) shall be referred to maintain the continuity of regional development and governance.

10.2 Rules of Implementation

Guided by the vision, mission and programmes of RPJMD, each head of SKPD will prepare a strategic plan SKPD for preparing the fiscal budget. Not limited to the sewerage sector, the implementation rules of medium term development plan are as follows (as of the RPJMD 2013-2017):

1. The Executive and Legislative Institutions Jakarta, supported by vertical institutions in the region of Jakarta, as well as the society, including the business community, is obliged to implement programmes in RPJMD Jakarta Year 2018-2022 as well as possible;

2. The Governor of DKI Jakarta in carrying out the regional administration is obliged to direct the implementation of Jakarta RPJMD Year 2018-2022 by moving optimally all the potential and strength of the region;

3. DKI Jakarta Provincial Secretary is obliged to coordinate the implementation of the Jakarta Provincial RPJMD Year 2018-2022;

4. RPJMD is a guideline in drafting SKPD. Therefore all SKPD within the Jakarta Provincial Government is obliged to draw up strategic plan that includes the vision, mission, goals, strategies, policies, programmes, main activities, and seed development in accordance with their duties and functions and become a guideline for the working plan on education each year , based on the RPJMD to guarantee the consistency and continuity of the programme, activity and funding and are set by the head of SKPD and approved by the Governor.

5. In order to improve the effectiveness of the implementation of the Jakarta Provincial RPJMD Year 2018-2022, Regional Development Planning Board (Bappeda) of Jakarta is obliged to guide the process of development planning, monitoring, facilitating and mediating in the drafting of DKI Jakarta Provincial SKPD;

6. Translation of more RPJMD Jakarta Year 2018-2022 for each year is done through the preparation RKPD Jakarta;

7. According to PP No. 3 of 2007, the Governor shall submit a report description Fiscal Year End accountability and report information End of tenure liability which is based on the evaluation results to ensure consistency between policy and implementation and the results of local development plans, Jakarta Provincial Government to control and evaluate the implementation of RPJMD. In this case, control and evaluate the implementation of the Jakarta Provincial RPJMD Year 2018-2022 by each SKPD and coordinated by BAPPEDA DKI Jakarta.

8. That the realization of the Vision, Mission, Policies and Programmes in RPJMD necessary instrument among other regional organizations and human resources (HR). RPJMD this guidance in drafting regional regulations on the Organizational Structure of the regional.

9. In terms of controlling and evaluating the results RPJMD Jakarta Year 2018-2022 showed things that need to be adjusted Taking into account the variety of things that are beyond the control of the Government of Jakarta and is expected to hamper the implementation of the Jakarta Provincial RPJMD Year 2018-2022, the strategies, policies and programmes that have been formulated can be reviewed. Then, the results are consulted to DKI Jakarta Provincial Parliament for further consideration in the implementation process.

10. In terms of implementation changes RPJMD annual target achievement but does not change the target of achieving the ultimate target of medium-term development, the establishment of RPJMD changes contained in respect RKPD year.

Annex-1 Midterm Plan for Decentralized Wastewater Management

1. DKI Government Policy

DKI Governor Regulation No.41/2016 set forth the Development Plan for Decentralized Wastewater Management System as follows;

Article 8

(1) The plan for decentralized wastewater management of domestic waste water consists of:
a. The modification of conventional septic tank that can treat both black water and gray water with the design that makes it easier for desludging;
b. The development of communal IPAL;
c. The implementation of regular desludging in all zones;
d. Integration of Duri Kosambi sludge treatment facility and Pulo Gebang sludge treatment facility with the newly built wastewater treatment plants (WWTPs); and
e. Integration of the on-site sludge treatment functions with WWTPs throughout all the zones.

(2) Target ratio of domestic wastewater management services through decentralized wastewater management system until the year 2022 is 35% (thirty five percent).

2. Actions to be taken by DKI Government during Mid-term Plan

In order to materialize the DKI Government Policy as stated in the above 1, the following actions will be taken by the DKI Government.

1) Preparation of Data Base of septic tanks in DKI Jakarta
2) Implementation of communal WWTP/SANIMAS
3) Regulation for establishing regular desludging system in DKI Jakarta
4) Regulation for improvement of operations and maintenance of ITPs
5) Strengthening the inspection of ITP performance
6) Incorporation of the design of the pre-treatment facility for the on-site sludge into the design of the newly built WWTPs

(The Detailed explanation on the actions recommended by JICA Team is provided in the attached 'Box-1'.)

3. Required capacity for the on-site sludge treatment

The required capacity for the treatment of the on-site sludge which to be reflected in the design of the pre-treatment facilities to be attached to WWTPs and the designing of the newly built WWTPs themselves is estimated to be 3,600m3/day.
(The factors to be considered in estimating the required capacity is provided in the attached 'Box-2'.)

(Box-1) Detailed explanation on the actions recommended by JICA Team

(1) Preparation of Data Base of septic tanks in DKI Jakarta
DKI Government will prepare the data base of household septic tanks in entire DKI Jakarta.

(2) Implementation of communal WWTP/SANIMAS
DKI Government will implement the communal WWTPs with 200 HHs and SANIMAS with 50 HHs to improve the water quality and stop the open defecation around the rivers/canals. The selection of locations will be based on the population density, river and groundwater quality, status of existing facilities etc. The layout and design of facilities, pipes and treatment plant, shall be considered future connection to the centralized sewerage system.

(3) Regulation for establishing regular desludging system in DKI Jakarta
DKI Government will establish regulations enforcing the regular desludging of household septic tanks and individual treatment plants (ITPs) of commercial buildings and office buildings. Regulations will include the responsibility for regular desludging, qualification and training of desludging operators, and financing including tariff structure.

(4) Regulation for improvement of operations and maintenance of ITPs
DKI Government will establish regulations enforcing the improvement of operation and maintenance of ITPs of commercial buildings and office buildings by the building owners. Regulations will include the building owners' responsibility, qualification and training of technical supervisors to be employed by the building owners and the operation and maintenance vendors.

(5) Strengthening the inspection of ITP performance
DKI Government will improve the inspection system of the performance of ITPs of commercial buildings and office buildings, including the creation of designated inspection agencies which will support BPLHD's inspection.

(6) Incorporation of the design of the pre-treatment facility for the on-site sludge into the design of the newly built WWTPs
DKI Government will incorporate the design of the pre-treatment facility for the sludge collected from the household septic tanks and ITPs of commercial buildings and office buildings (hereinafter referred to as 'on-site sludge') into the design of the newly built WWTPs to be built in Duri Kosambi, Pulo Gebang and other zones. For the zones in which there is no space to build such pre-treatment facilities in the newly built WWTPs, and, for the zone in which the completion of the new WWTP in the near future is unlikely, erection of sludge relay station or direct injection of the sludge into the sewers after the appropriate pre-treatment will be options.

(Box-2) The required capacity of sludge treatment

The treatment capacity of the on-site sludge which shall be reflected in the design of the pre-treatment facilities to be attached to WWTPs and the designing of the newly built WWTPs themselves shall be estimated based on the following factors;

(1) Progress of house connection to the sewerage system.
Households and buildings connected to the sewerage system no longer require desludging. Therefore, they are to be deducted from the required capacity for sludge treatment. If the interceptor sewer method is applied at the initial stage of the sewer system development, the households' connection to the sewer system will be realized later but the commercial buildings and office buildings will be connected earlier.

(2) Progress of the adoption of the regular desludging system
The progress of enforcement of regular desludging depends on the strength of the DKI government policy and its acceptance by Jakarta citizens.

(3) Estimation of the sludge volume from the regular desludging system
If we assume that all the household septic tanks in DKI Jakarta remain existing in near future since none of households are connected to the sewer due to the interceptor method, and that all the households in DKI Jakarta are successfully persuaded to join the regular desludging program, the maximum volume of the on-site sludge collected (to be treated) is estimated as follows;

Assumption	Calculation	Daily volume of sludge collection (Required treatment capacity)
All the septic tanks are desludged.	2m3×666,000÷365days	3,649m3

(Assumption)

- Assuming that there are 2,000,000 septic tanks in DKI Jakarta.
- The average size of household septic tanks : 2m3
- Regular desludging is conducted once in three years interval so that the sludge is extracted when the volume of the accumulated sludge reaches on-third of the whole tank volume.
- All the contents (water + sludge) of the septic tank are emptied and transported to the sludge treatment plant and treated.

The above figure (3,649m3/day) does not include the volume of the sludge to be collected from ITPs of commercial buildings and office buildings which may be substantial. In the M/P 2012, the maximum volume of sludge collected from ITPs were estimated to be 1,847m3/day (year 2030) based on the separate sewer system concept. However, on the one hand, under the interceptor concept, it is very difficult to predict how quickly buildings are connected to the sewer. On the other hand, the assumption that the regular desludging is unanimously applied to all the household septic tanks, may not be realistic.

Therefore, in order to avoid the overinvestment, it would be safe to predict that the ITP sludge would offset the shortfall of the septic tank sludge and the maximum volume of on-site sludge to be treated is about 3,600m3/day, which is to be included in the Mid-term Plan.

(4) On-site sludge treatment capacity
Currently, there are two existing on-site sludge treatment facilities (Duri Kosambi and Pulo Gebang) in DKI Jakarta. Their capacities are;

- Duri Kosambi 600m3/day
- Pulo Gebang 600m3/day

Therefore, the additional 2,400m3/day capacity for the on-site sludge treatment, including pretreatment facilities, needs to be accommodated in the newly built WWTPs including the ones to be built in Duri Kosambi and Pulo Gebang.

ANNEX 9
TEXT FOR SUPPORTING FORMULATION REGULATIONS ON MANAGEMENT AND IMPLEMENTATION OF SEWERAGE PROJECT