

Indonesia

**Engineering Survey for
New Capital City Development
in Indonesia
Final Report I**

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Japan International Cooperation Agency (JICA)

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List of Abbreviations

Abbreviation	Context (Bahasa Indonesia)	Translation (English)
APBD	Anggaran Pendapatan dan Belanja Daerah	Availability Payment using the local budget
ASN	Aparatur Sipil Negara	State Civil Apparatus
ATR/BPN	Kementerian Agraria Dan Tata Ruang Badan Pertanahan Nasional	Ministry of Spatial Planning and National Land Agency
AusAID		Australian Aid
BAPPENAS	Badan Perencanaan Pembangunan Nasional	Ministry of National Development Planning
BIM		Building Information Modeling
Bina Marga		Directorate General of Highways
BWP		BAPPENAS Working Papers
Cipta Karya		Directorate General of Human Settlements
DAS	Daerah Aliran Sungai	River basin
DG		Directorate General
DKI Jakarta	Daerah Khusus Ibukota Jakarta	Special Capital Region of Jakarta
GCA		Government Contracting Agency
GIS		Geographic Information System
GR	Peraturan Pemerintah	Government Regulation
HAT	Hak Atas Tanah	Right of Land
HGB	Hak Guna Bangunan	Right of Construction
HGU	Hak Guna Usaha	Right of Business
IHM	ITCI Hutani Manunggal	International Timber Corporation Indonesia Hutani Manunggal
IKN	Ibu Kota Negara	New Capital City
INA		Indonesia Investment Authority
ITS		Intelligent Transport System
JICA		Japan International Cooperation Agency
K-IKN	Kawasan – Ibu Kota Negara	IKN Area
Kemenhub	Kementerian Perhubungan	Ministry of Transportation
KIND		Korea Overseas Infrastructure & Urban Development Corporation
KIPP	Kawasan Inti Pusat Pemerintahan	Government Core Area
KomInfo		Ministry of Communications and Information
KPBU	Kerjasama Pemerintah dan Badan Usaha	Public-Private Partnership
KPBU-IKN	Kerjasama Pemerintah dan Badan Usaha – Ibu Kota Negara	Public-Private Partnership for IKN
KPIs		Key Performance Indicators
KP-IKN	Kawasan Pengembangan Ibu Kota Nusantara	IKN Development Area
KSN	Kawasan Strategis Nasional	National Strategic Area
LKPP	Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah	National Public Procurement Agency
ITCI		International Timber Corporation Indonesia
MBBR		Moving Bed Biofilm Reactor
MENKO-MARVES	Menteri Koordinator Bidang Kemaritiman dan Investasi	National Coordination Ministry and Investments Affairs
MoF	Kementerian Keuangan	Ministry of Finance

Abbreviation	Context (Bahasa Indonesia)	Translation (English)
MoT		Ministry of Transportation
MoHA	Kementerian Dalam Negeri	Ministry of Home Affairs
MLIT		Ministry of Land, Infrastructure and Transport
MSMEs		Micro, Small, and Medium enterprises
NCSIP		New Capital Support Industrial Park
OBC		Outline Business Case
OIKN	Otorita Ibu Kota Negara	Nusantara Capital City Authority
P4I		Partnerships for Infrastructure
PCM		Pre-Construction Meeting
PDF		Project Development Facility
PDRI	Pajak Dalam Rangka Impor	Customs Duty Exemption and Import-Related Taxes
Perumahan		Directorate General of Housing
PJPBMN	Penanggung Jawab Pengelolaan Barang Milik Negara	Director of National Property Management
PPP		Public-Private Partnership
PPN	Pajak Pertambahan Nilai	Value Added Tax
PR	Peraturan Presiden	Presidential Regulation
PUPR	Kementerian Pekerjaan Umum dan Perumahan Rakyat	Ministry of Public Works and Housing
PU-TF		PUPR Infrastructure Development Task Force
ROW		Right of Way
SDA	Ditjen Sumber Daya Air	Directorate General of Water Resources
SOP		Standard Operation Procedure
VGf		Viability Gap Fund
WTP		Water Treatment Plant
WWTP		Wastewater Treatment Plant

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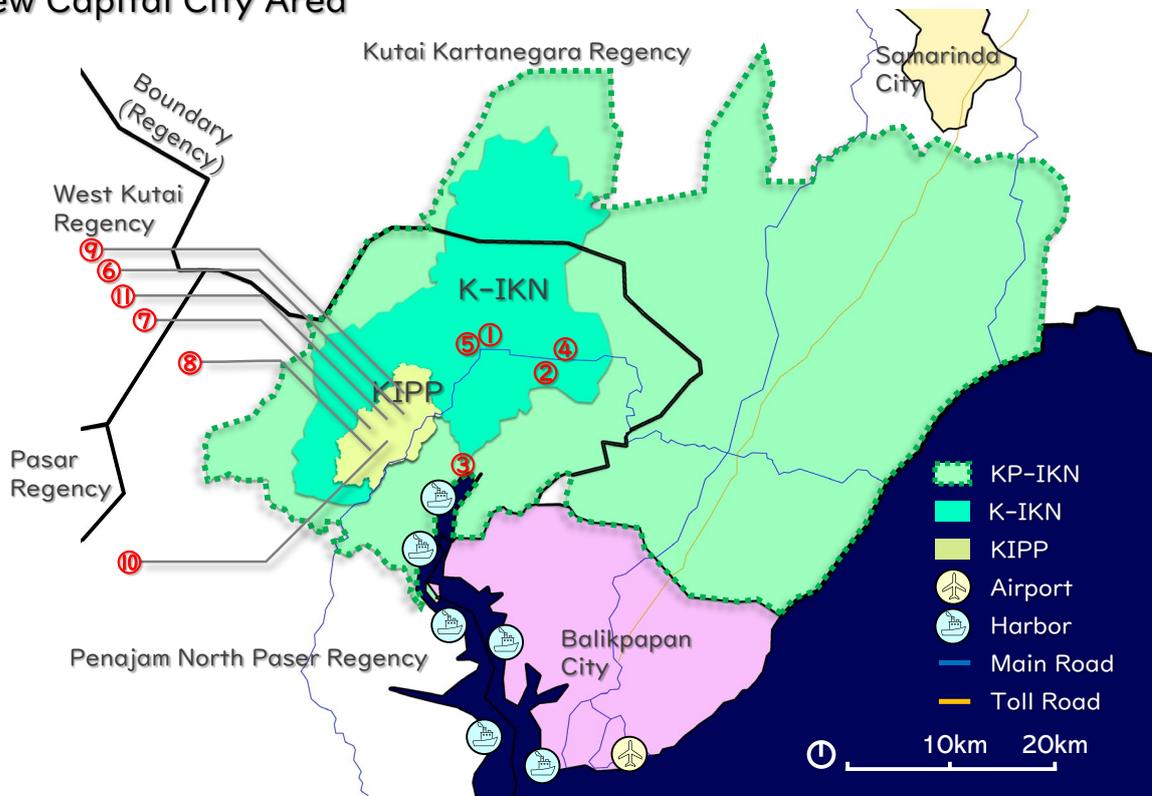
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New Capital City Area



①Bendungan Seapku Semoi (Dam), K-IKN



Source: JICA Consultant Team, Jul.2022

①Bendungan Seapku Semoi (Dam), K-IKN



Source: JICA Consultant Team, May.2023

②Water Treatment Plant, K-IKN



Source: JICA Consultant Team, Sep.2022

③Cita Sabut Harbor, K-IKN



Source: JICA Consultant Team, Jul.2022

④Intake Sepaku , K-IKN



Source: JICA Consultant Team, Jul.2022

④Intake Sepaku , K-IKN



Source: JICA Consultant Team, May.2023

⑤Drainage Way, K-IKN



Source: JICA Consultant Team, Sep.2022

⑥ MPR (Workers' Residential Development Area)



Source: JICA Consultant Team, Jul.2022

⑥ MPR (Workers' Residential Development Area)



Source: JICA Consultant Team, May.2023

⑦ Development Area for Presidential Palace, KIPP



Source: JICA Consultant Team, Jul.2022

⑦ Development Area for Presidential Palace, KIPP



Source: JICA Consultant Team, May.2023

⑧ East Side National Axis



Source: JICA Consultant Team, May.2023

⑨ Sepaku Ring Road – Segment 4



Source: JICA Consultant Team, May.2023

⑩ Zero Point (Benchmark)



Source: JICA Consultant Team, Jul.2022

⑪ Pond, KIPP



Source: JICA Consultant Team, Sep.2022

Summary

1. Project Overview

In August 2019, Indonesian President Joko Widodo announced plans to move the capital from Jakarta to East Kalimantan Province because Jakarta is facing a lot of urban issues, such as subsidence, flooding, and heavy traffic jams. The new capital city is named "Nusantara" or "IKN (Ibu Kota Nusantara)," which will be in the center of Indonesia. Nusantara will be positioned as the new capital city development that will contribute to achieving balanced economic development among regions.

On February 15, 2022, Law No.3/2022 was promulgated and the Master Plan (hereinafter MP) for a new capital city to be in Kutai Kartanegara and North Penajam Paser Regency in Kalimantan was published. The Indonesian government has set the target year for complete relocation in 2045, the 100th anniversary of independence, and will gradually transfer functions to the new capital city. The current goal is to relocate a part of government functions to the Government Core Area (hereinafter KIPP) by August 2024.

Table 1: Overview of Capital Relocation Plan

Name of New Capital	Nusantara or IKN (Ibu Kota Nusantara)		
Location	East Kalimantan Province Location Area: Kutai Kartanegara Regency and North Penajam Paser Regency		
Development Area	Government Core Area (KIPP):	6,856 ha (68.56 km ²)	
	New Capital City Area (K-IKN):	56,181 ha (561.81 km ²)	
	New Capital City Expansion Area (KP-IKN):	256,142 ha (2,561.42 km ²)	
Planning Phase	Phase	Year	Planning Population
	Phase 1(August)	2022-2024	488,409
	Phase 2	2025-2029	1,283,589
	Phase 3	2030-2034	1,452,967
	Phase 4	2035-2039	1,666,121
	Phase 5	2040-2045	1,911,988
Vision	A Global City for All “Kota Dunia Untuk Semua” The World’s Sustainable City A Symbol of National Identity Economic Driver for Indonesia’s Future		
Transfer Cost	IDR 466.04 trillion	JPY 4.2 trillion	-
Government Budge	IDR 90.35 trillion	JPY 0.8 trillion	(19.3%)
PPP	IDR 252.46 trillion	JPY 2.3 trillion	(54.1%)
Private Investment	IDR 123.23 trillion	JPY 1.1 trillion	(26.4%)
Promulgated Law	Law No. 3/2022 enacted on February 15, 2022		

*Conversion is based on JICA rate in July 2022 (IDR 1 = JPY 0.00918)

Source: JICA Consultant Team

This engineering survey will 1) review the existing legal system and plans related to the relocation of the capital city, 2) collect and analyze information on the progress of various projects related to the relocation of the capital city that is considered and implemented by various ministries and departments of the Indonesian government, 3)

confirm the investment plans of the private sector and other donors related to the relocation of the capital city, 4) collect and analyze necessary information on the development plans and actions of the basic infrastructure to be implemented by the Ministry of Public Works and Housing (hereinafter PUPR) in the new capital city development plan, 5) compile advice and recommendations on quality management of the basic infrastructure development, and 6) study the future direction of cooperation by the Japan International Cooperation Agency (hereinafter JICA), including public-private partnerships and promotion of private sector investment.

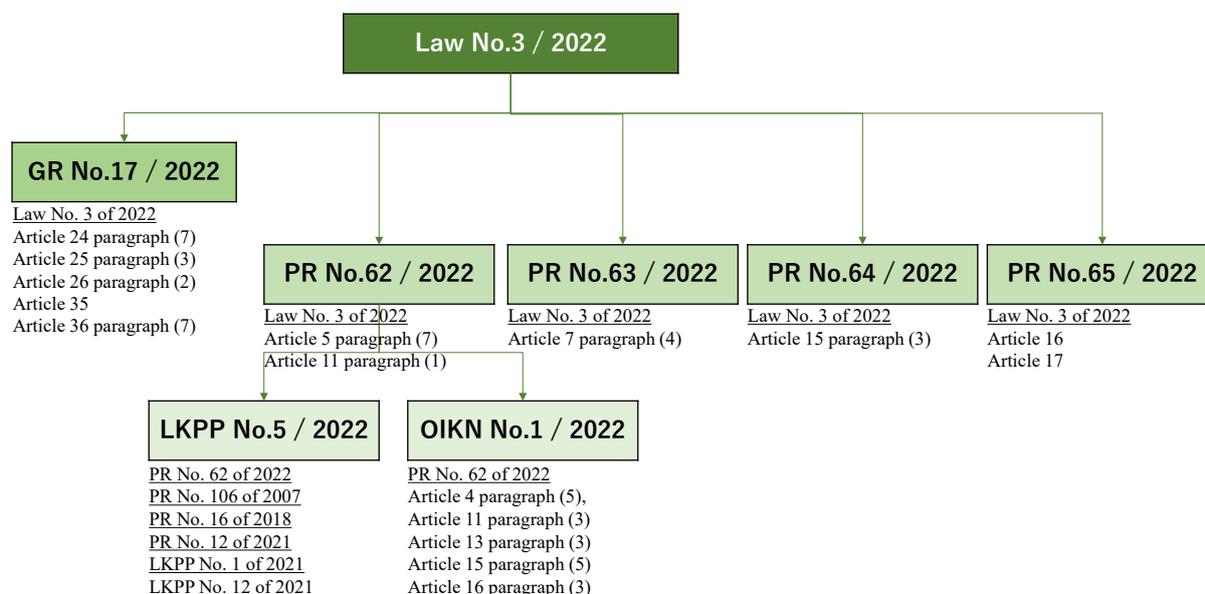
2. Review of Legal Framework and Existing Plans

The laws and regulations related to IKN are being promulgated in sequence. The law for the relocation of the new capital was disseminated in February 2022. The following governmental and presidential regulations were declared in April 2022. And the first ministerial decree of the newly established Nusantara Capital Directorate is implemented on September 9, 2022.

Table 2: IKN-related Laws and Regulations

Law and Regulation	Title	Promulgation Date
Law No. 3/2022	New State Capital Law Annex 1: Map Annex 2: MP	15 February 2022
GR No. 17/2022	Financial Procurement and Budgeting	18 April 2022
PR No. 62/2022	OIKN	18 April 2022
PR No. 63/2022	Details of the MP	18 April 2022
PR No. 64/2022	Spatial Plan	18 April 2022
PR No. 65/2022	Land Acquisition and Management	18 April 2022
Head of LKPP Regulation No. 5/2022	Procurement	18 April 2022
Head of OIKN Regulation No. 1/2022	Organization and Work Processes of OIKN	9 September 2022
Head of LKPP Regulation No. 1/2023	Procurement Processes of OIKN	4 January 2023
GR No. 12/2023	Investment Incentives for IKN	6 March 2023

*GR: Government Regulation, PR: Presidential Regulation, LKPP: National Public Procurement Agency
Source: JICA Consultant Team



Source: JICA Consultant Team

Figure 1: Relationship Diagram of Laws and Regulations Related to the IKN

The structure is such that the conceptual policies are presented at the upper legal level and the contents are embodied in lower government regulation, presidential regulation, and ministerial ordinances.

3. Review of Related Laws and Regulations

In January 2020, the Indonesian government formulated the Medium-term Development Plan for 2020-2024 (PR No. 18/2020) and the new capital city development was identified as a priority project. In this plan, the total project cost for the new capital relocation is approximately IDR 466 trillion, which is almost 3% of the size of the gross domestic product (GDP) of Indonesia in 2021. This plan also indicates that approximately 20% is to be implemented by government budget, over 50% by public-private partnership (PPP), and over 20% by private investment.

Table 3: Description of the New Capital City in the Medium-term Development Plan

Project Name	New Capital City (IKN)		
Benefit	Increase development in Eastern Indonesia for regional equity		
Budget	Total project cost	IDR 466.04 trillion -	JPY 4.2 trillion
	Government budget	IDR 90.35 trillion (19.3%)	JPY 0.8 trillion
	PPP	IDR 252.46 trillion (54.1%)	JPY 2.3 trillion
	Private investment	IDR 123.23 trillion (26.4%)	JPY 1.1 trillion
Implementing Agency	Ministry of National Development Planning (BAPPENAS) Ministry of Spatial Planning and National Land Agency (ATR/BPN) Ministry of Public Works and Housing (PUPR) and other ministries State-owned companies, private companies, and others		
Outline	The relocation of the IKN from Java to Kalimantan is expected to help encourage economic diversification and increase output of non-traditional economic sectors such as services, government, transportation, trade, and manufacturing to sustain the economic growth of Kalimantan. Trade between regions is also expected to rise, which increases employment opportunities and reduces income inequality, as well as creates new investment opportunities and increases the contribution of Kalimantan to the nation.		

Source: JICA Consultant Team based on the Medium-term Development Plan (January 2020)
Converted using JICA rate in July 2022 (IDR 1 = JPY 0.00918)

In an announcement by the Coordinating Ministry for Economic Affairs on December 23, 2022, the Minister of Economic Coordination Regulation No. 21/2022 was promulgated, which determined 210 infrastructure projects and 12 programs to be completed by 2024 as national strategic projects, including new capital city development, and supporting infrastructure. The Coordinating Ministry for Economic Affairs has the authority to coordinate among the following ministries.

The positioning of the project as a national strategic project will enable special facilities to be made for matters that require coordination among relevant ministries and agencies, including of Ministry of Finance, Ministry of Manpower, Ministry of Industry, Ministry of Trade, Ministry of Agriculture, Ministry of Trade, Ministry of Agriculture, Ministry of Spatial Planning and National Land Agency, Ministry of State-owned Enterprises, Ministry of Cooperatives and Small and Medium Enterprises, and other agencies.

The existing relevant development plans including surrounding cities of IKN are listed below.

Table 4: Development Plans for the Existing Surrounding Cities (Other than IKN MP)

Plan Target Area	Indonesia All Areas	East Kalimantan Provinces	Kutai Kartanegara Regency	North Penajam Paser Regency	Balikpapan City	Samarinda City
Institution	BAPPENAS	East Kalimantan Provinces	Kutai Kartanegara Regency	North Penajam Paser Regency	Balikpapan City	Samarinda City
Long-term development plan	Law No.17/2007	East Kalimantan Provincial Regulation No. 15/2008	Kutai Kartanegara Regency Regulation No. 17/2010	North Penajam Paser Regency Regulation No. 1/2012	Balikpapan City Regulation No. 1/2013	Balikpapan City Regulation No. 4/2015
Medium-term development plan	PR No.18/2020	East Kalimantan Provincial Regulation No. 2/2019	Kutai Kartanegara Regency Regulation No. 6/2021	North Penajam Paser Regency Regulation No. 1/2019	Balikpapan City Regulation No. 6/2021	-
Implementation plan	GR No.108/2022	Provincial Governor's Decree No. 18/2022	Provincial Governor's Decree No. 27/2022	-	Balikpapan City Regulation No. 10/2022	-

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Table 5: Category of Spatial Plan

Plan Target Area (Entity)	Language	Title	Year of Issue	Target Year
Indonesia All Areas (National Government)	Indonesian	Peraturan Pemerintah Republik Indonesia Nomor 13 Tahun 2017 Tentang Perubahan Atas Peraturan Pemerintah Nomor 26 Tahun 2008 Tentang Rencana Tata Ruang Wilayah Nasional	2017	-
	English	Government Regulation No. 13 (2017), Amendment to Government Regulation No. 26 (2008), National Spatial Planning		
Whole of Kalimantan Island (National Government)	Indonesian	Peraturan Presiden Republik Indonesia Nomor 3 Tahun 2012 Tentang Rencana tata Ruang Pulau Kalimantan Dengan Rahmat Tuhan Yang Maha Esa Presiden Republik Indonesia	2012	2027
	English	Regulation of the President of the Republic of Indonesia no.3 (2012), Kalimantan Island Spatial Plan		
East Kalimantan Provinces (East Kalimantan Province)	Indonesian	Salinan Peraturan Daerah Provinsi Kalimantan Timur Nomor 1 Tahun 2016 Tentang Rencana Tata Ruang Wilayah Provinsi Kalimantan Timur Tahun 2016-2036 Dengan Rahmat Tuhan Yang Maha Esa Gubernur Kalimantan Timur	2016	2036
	English	Province Regulations East Kalimantan No.1 (2016) about Spatial Plan for the Province of East Kalimantan 2016-2036 with the Grace of God Almighty Governor of East Kalimantan		
Kutai Kartanegara Regency (Kutai Kartanegara Regency)	Indonesian	Peraturan Daerah Kabupaten Kutai Kaarimantan Nomor 9 Tahun 2013 Tentang Rencana Tata Ruang Wilayah Kabupaten Kutai Kartanegara Tahun 2013-2033 Dengan Rahmat Tuhan Kabupaten Kutai Kartanegara Bupati Kutai Kartanegara	2013	2033
	English	Regional Regulation of Kutai Kartanegara Regency No.9 (2013) about Spatial Plan for the Regency of Kutai Kartanegara 2013-2033		
North Penajam Paser Regency (North Penajam Paser Region)	Indonesian	Bupati Penajam Paser Utara Provinsi Kalimantan Timur Peraturan Daerah Kabupaten Penajam Paser Utara Nomor 3 Tahun 2014 Tentang Rencana Tata Ruang Wilayah Kabupaten Penajam Paser Utara Tahun 2013-2033 Dengan Rahmat Tuhan Yang Maha Esa Bupati Penajam Paser Utara	2013	2033
	English	Regional Regulation of Penajam Paser Utara Regency No.3 of 2014 about Spatial Plan for the Regency of Penajam Paser Utara 2013-2033		

Source: JICA Consultant Team

PR No. 65/2022 describes three main schemes for land acquisition: 1) release of forest areas; 2) process for land acquisition for public benefit development, and 3) direct land transactions. It is noteworthy that in the process for land acquisition for public interest development, except in the new capital, the ministries that require land prepare planning documents and the governor decides on the development site. However, in the new capital, the Nusantara Capital City Authority: Otorita Ibu Kota Negara (OIKN) prepares the planning documents and the OIKN Director approves the decision on the development site. The system is designed to allow for flexibility within OIKN. In addition, direct acquisition of land was previously limited to less than five ha, but direct acquisition of more than five ha is now possible after negotiations with landowners.

Regarding land acquisition in the interest of the public interest, enforcement procedures will follow the existing laws and regulations.

- Law No. 2 of 2012: Land Acquisition Process for Development in the Public Interest
- Government Regulation No. 19/2021: Procurement of Land for Construction in the Public Interest (Implementing Regulations of the Omnibus Law)

GR No. 19/2021 is the implementing regulation of the Omnibus Law and is intended to facilitate land acquisition. Article 89 of the GR provides that compensation funds may be deposited in the court and that agencies requiring land may continue the land acquisition process.

PPP projects in the new capital will be granted special incentives. The concept of the PPP system in the new capital (hereafter KPBU-IKN) is presented in the Government Regulation on Financial Procurement and Budget (GR No. 17/2022) and the Presidential Regulation on OIKN (PR No. 62/2022). Detailed regulations are under preparation at the initiative of BAPPENAS and are expected to be promulgated at a later stage.

4. Review of Status and Implementation Progress of Relevant Ministries' Plans and Projects

The tasks related to the preparation, development, and operation of the new capital city will be gradually transferred to OIKN. Each ministry and agency were continuing to prepare and develop their own areas of jurisdiction in accordance with the MP and gradually transfer their functions to OIKN.

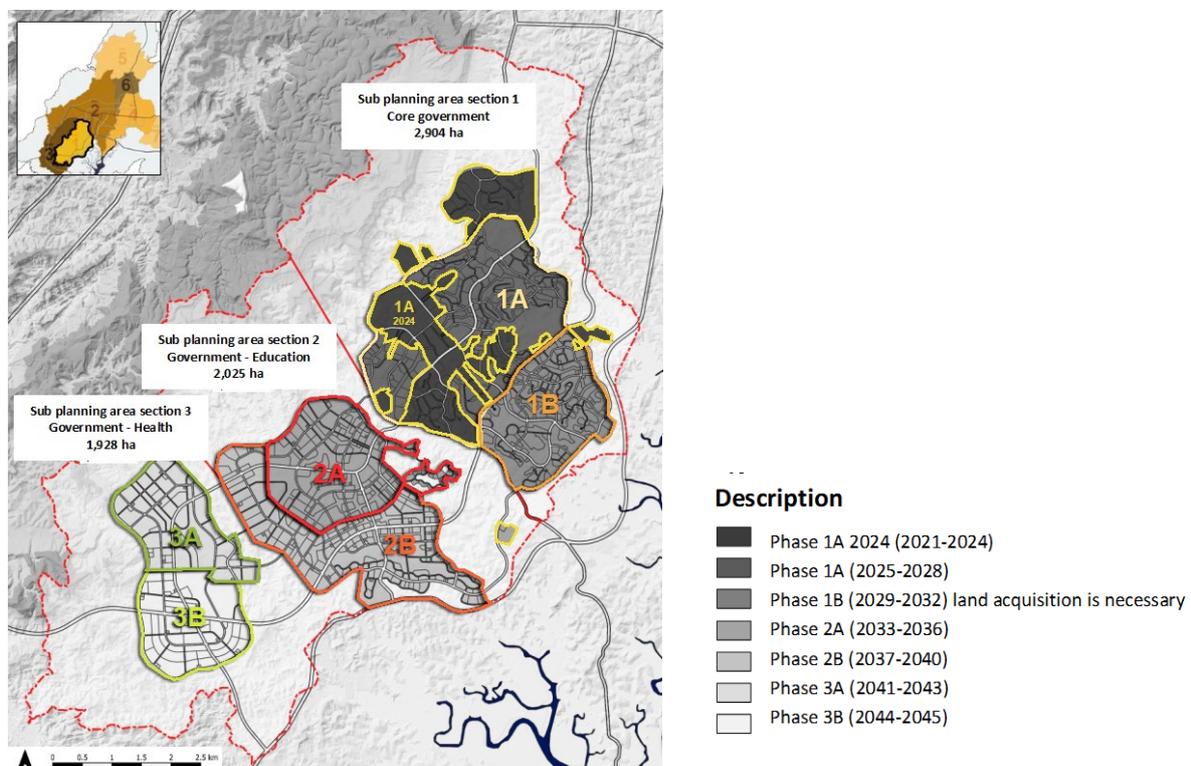
Table 6: Summary of Interviews Conducted with Each Agency

Organization	Position	Interview	Date
BAPPENAS	• Head of Center for Data and Information (Formerly in IKN related division)	• The role of BAPPENAS in relocation of the new capital	13 Oct 2022
ATR/BPN	• Head of Region I Sub-Directorate of Land Acquisition and Land Reserve • Program Coordinator	• BPN's role in the relocation of the new Capital • The process of land expropriation	14 Oct 2022
MoT	• Chief of Planning for Land Transportation Section • Plan Maker • Directorate of Railway • Directorate of Aviation • Directorate of Sea • Transportation Policy Agency (BKT) • Planning Bureau	• Role of the MoT in the relocation of the new capital • The development and operation policies of public transportation (e.g., rail, LRT, bus), airports, and ports	17 Oct 2022
KomInfo	• Directorate General of Informatics Application • Director of LAIP eGovernment	• KomInfo's role in the relocation of the new capital • Smart city and e-government policies in the new capital	14 Oct 2022
OIKN	• Deputy Chairman	• The role of OIKN in the relocation of the new capital	6 Sep 2022
	• Chairman	• The role of OIKN in the relocation of the new capital	3 Oct 2022
	• Secretariat	• Organization of OIKN and its situation of preparation	2 Dec 2022
	• Deputy for Green and Digital Transformation	• Functions of OIKN and its coordination mechanism	20 Dec 2022
	• Deputy for Environment	• Functions of OIKN and its coordination mechanism	23 Dec. 2022

Organization	Position	Interview	Date
PUPR	• Minister of PUPR	• Issues to be considered in the implementation of the new capital city development	13 Jul 2022
	• PUPR-TF Director	• Workshops in the three areas of water supply and sewerage, rivers and drainage, and construction and land development	18-20 Jul 2022
	• PUPR-TF Director	• Explanation of infrastructure development issues based on field survey	20 Jul 2022
	• PUPR-TF Director	• Content 1: Proposal of project implementation mechanism • Content 2: Introduction of project-related companies by the JICA Consultant Team	13 Sep 2022
	• PUPR-TF Director	• Issues related to infrastructure development	14 Sep 2022
	• PUPR-TF (Pre-Construction Meeting)	• Content 1: Introduction of issues related to construction planning • Content 2: Project implementation structure • Content 3: Proposal of necessary standard operation procedure (SOP)	20-22 Sep 2022
	• PUPR ICT Center	• Overview of the project dashboard that comprehensively manages the progress of each project	29 Sep 2022
	• PUPR-TF (Pre-Construction Meeting)	• Introduction of issues related to construction planning	4 Oct 2022

Source: JICA Consultant Team

5. Review of Priority Infrastructure Development Projects in KIPP



Source: PUPR

Figure 2: Phasing Plan for Infrastructure Projects Led by PUPR Within KIPP

The KIPP area is undergoing infrastructure development projects with a construction period until 2045, among which the PUPR-led planning, design, and construction is underway for projects to be completed by August 2024. The development of 1A area and the resulting relocation of public institutions and functions will have a significant impact on the promotion of IKN development in the future.

The KIPP has 34 projects planned, including three projects related to water resources and rivers, six projects related to roads and bridges, 23 projects related to public works, land development, and construction, and two projects related to housing.

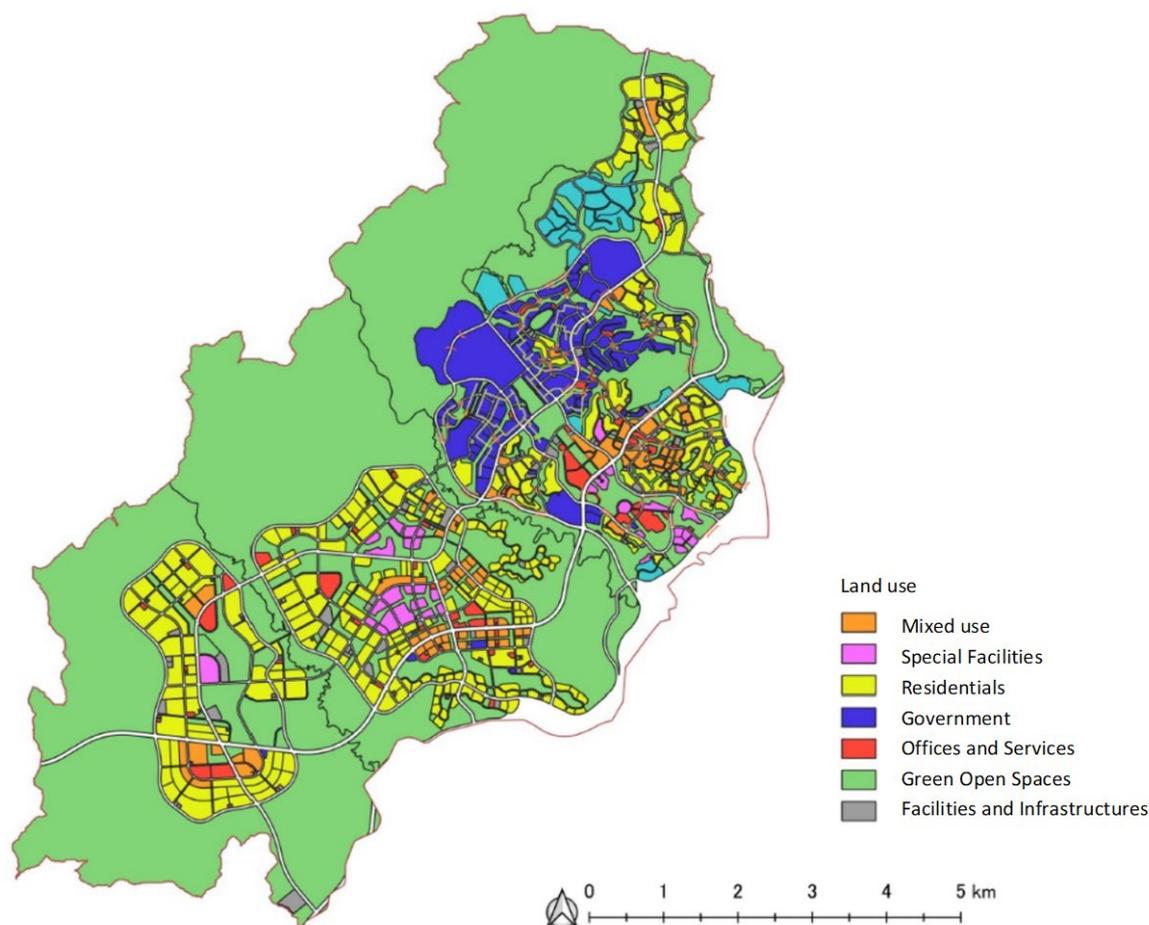
Table 7: Infrastructure Development Project List for KIPP

No.	Project	Total Estimated Cost (Billion IDR)	Total Estimated Cost (Billion USD)
Sumber Daya Air (Directorate General of Water Resources)			
1	Main Drainage of Watershed (DAS) Sanggai 1A (19 Check Dams, 1 Retention Basin, 6 Bottom Controllers)	190.16	13.08
2	Main Drainage of Watershed (DAS) Sanggai 1B (10 Check Dams, 3 Retention Basins, 5 Bottom Controllers)	502.00	34.52
3	KIPP Ponds (19 Ponds)	210.00	14.44
Bina Marga (Directorate General of Highways)			
4	Sepaku Ring Road Segment I (1.75 km)	116.36	8.00
5	Sepaku Ring Road Segment II (1.85 km)	120.17	8.26
6	Sepaku Ring Road Segment III (2.03 km)	120.66	8.30
7	Sepaku Ring Road Segment IV (4.458 km)	193.48	13.30
8	Construction of the West Side of the National Axis Road (2.87 km)	442.20	30.41
9	Construction of the East Side of the National Axis Road (4.08 km)	476.49	32.77
Cipta Karya (Directorate General of Human Settlements)			
10	Mosque Building and Area	897.16	61.69
11	Main Distribution Network (JDU) and Tertiary Distribution Network (JDB) of Sepaku Drinking Water Supply System (SPAM)	897.16	61.69
12	Wastewater Treatment Plant (IPAL) 1, 2, and 3 of KIPP IKN	661.97	45.52
13	Wastewater Piping Network 1 of KIPP IKN	151.60	10.42
14	Wastewater Piping Network 2 of KIPP IKN	473.82	32.58
15	Wastewater Piping Network 3 of KIPP IKN	132.08	9.08
16	Integrated Waste Management Site 1	713.01	49.03
17	KIPP Land Development Phase 1	110.64	7.61
18	KIPP Land Development Phase 2	266.00	18.29
19	Arrangement of National Axis Area Phase 1 (Ceremonial Plaza)	266.00	18.29
20	Arrangement of National Axis Area Phase 2 (Civilian Plaza and Bhinneka Plaza)	450.80	31.00
21	Nusantara Terrace Building and Area	96.16	6.61
22	State Palace Building	1,364.00	93.80
23	Presidential Office Building	1,364.00	93.80
24	Presidential Secretariat Building	1,139.00	78.32
25	Presidential Pavilion Building	1,088.00	74.82
26	Education and Presidential Executive Staff Office Building	714.09	49.10
27	State Guesthouse Building, Paspampres Mess, and Guard Post	584.69	40.21
28	Vice President Palace Building and Area	2,247.00	154.52
29	Coordinating Ministry Office Building and Area 1	1,314.00	90.36
30	Coordinating Ministry Office Building and Area 2	1,442.00	99.16
31	Ministry of Public Works and Public Housing Office Building and Area	968.07	66.57

No.	Project	Total Estimated Cost (Billion IDR)	Total Estimated Cost (Billion USD)
32	Ministry of State Secretariat Office Building and Area	2,575.00	177.07
Perumahan (Directorate General of Housing)			
33	Minister Level Landed Housing	509.10	35.01
34	Construction Worker Residence	584.24	40.18

Source: PUPR June 2022 (IDR 1 = JPY 0.00918, USD 1 = JPY 127.389 based on JICA rate June 2022)

To achieve development concept of “Smart Forest City”, approximately 70% of the land in the land use plan is determined as forested and green space.



Source: PUPR - 2022 JULY 15

Figure 3: Land Use Map for KIPP

The progress as of August 2023, Indonesian government is focused on completing the 34 listed projects and several supporting infrastructure projects located out of KIPP and IKN, which will encourage the relocation of the capital, including private projects.

6. Review of Other Donors' Cooperation Towards IKN

Government Regulation (hereinafter GR) No. 17/2022 stipulates cooperation funds from international donors as part of the financial scheme to be used for capital relocation. Article 65, paragraph 2, of the Decree stipulates that grant and loan aid from bilateral or multilateral international organizations are included as financial cooperation

schemes. There are no specified standards for specific amounts and ratios of donor aid utilization.

It has been confirmed that PUPR does not have a policy of using loans from donors for the basic infrastructure that it aims to develop by August 2024. On the other hand, there is room for the utilization of technical cooperation related to capacity building and the input of grant aid.

As of July 2023, South Korea, Australia and ADB have a project to support development of KIPP.

South Korean government is supporting PUPR mainly on; (1) provide technical advice on the water supply system, including the construction of a 300 L/sec water treatment plant which is implemented by the Korea Water Resources Corporation (K-Water), (2) implement a feasibility study for an immersed tunnel extending from Tung Padang across Balikpapan Bay to the government core area, (3) knowledge transfer in the fields of smart cities, expressway transportation systems and public housing effective for KIPP development.

The Australian Agency for International Development is providing technical cooperation to PUPR in the areas of basic infrastructure construction management for KIPP development.

The ADB, a multinational donor, was procured the consultant for “Nusantara Scoping Study for Application of Nature-based Solutions for Resilient Water Management” to support OIKN on the realization of the concept of Smart Forest City.

7. Review of Private Investment Trends

The Government of Indonesia intends to attract more than 80% of funds for IKN development from private investment including PPP scheme. OIKN and National Coordination Ministry and Investments Affairs: Menteri Koordinator Bidang Kemaritiman dan Investasi (MENKO-MARVES) are the two main agencies in charge of investment promotion activities in the new capital.

The success of attracting the new industrial clusters will depend on the trends in infrastructure development required to support an industry, as well as on government measures such as provision of incentives. LKPP Regulation No. 5/2022 (promulgated on May 18, 2022), which stipulates the regulations for government procurement of the new capital city development, is the first step in the process of the new capital city infrastructure development. On March 6, 2023, GR on Investment Incentives for IKN (GR No. 12/2023) was promulgated. While the overall direction of the incentive scheme is identified, the specific areas of the partner regions and details such as tax reduction rates will be stipulated in the detailed regulations such as OIKN Director General's decree or the Minister of Finance's decree; however, the details of the investment facilitation measures are not yet clear.

In particular, the economic activities in Balikpapan City and Samarinda City, the established urban areas near the proposed new capital city, are expected to be stimulated, and a large temporary inflow of funds is anticipated.

In conjunction with the economic revitalization of the existing urban areas, the food and beverage industry and lifestyle-related service industry (wholesale, retail, etc.) for construction workers and existing residents are expected to expand. In addition, demand for hotel and lodging services for business trips and short-term stays from Jakarta is expected to increase.

Based on the information stated in the several local newspapers, under these circumstances, as of March 2023, over 140 LOIs and EOIs was submitted by the private firms showing their intention and interest to doing the businesses related to the development of IKN. Of these, approximately 20% have come from international firms from Japan, South Korea, Germany, Switzerland, and USA. The construction sector (around 30%) is the most popular sector for EOIs and LOIs, followed by IT (around 20%) and commercial (around 17%), since the IKN project is in the development phase.

The government is still in the process of evaluating the EOIs and LOIs, and it is not yet clear which firms will be selected to participate in the project.

Seminar targeted to Japanese firm was connected on March 16, 2023, by JICA and relevant government agencies, aims to introduce the progress of KIPP development and the business opportunity including Balikpapan and Samarinda. As the result, over 55% of 374 participants are looking for the business opportunities, including over 10% who already start to consider specific project or business. The construction sector showed the most interest, followed by smart city development/IT and energy.

8. Preliminary Advice and Recommendation to Priority Infrastructure Development Projects

During the initial stage of the survey as well as construction works for KIPP, preliminary consideration and advice was given to the following issues:

- Integration of information related to basic conditions of development, including nature condition, drainage plan and dashboard
- Coordination of underground structure design and road construction, including multi utility tunnel
- Ensure future scalability for urban transportation and ICT
- Arrangement and coordination during the construction period
- Implementation organization for project management

In addition to above, assistance on the quality assurance for the construction works conducted by PUPR for Phase-1 development of KIPP was implemented.

As for the further considerations to develop IKN, since the city itself could not be realized at once, timeline or phasing development is required to be determined necessary supports from the surrounding existing cities of Balikpapan and Samarinda by detailed study of the Tri-City concept stated in the MP.

Chapter 1 Project Overview

1.1 Project Background

In August 2019, Indonesian President Joko Widodo announced plans to move the capital from Jakarta to East Kalimantan Province because Jakarta is facing a lot of urban issues, such as subsidence, flooding, and heavy traffic jam. The new capital city is named "Nusantara" or "IKN (Ibu Kota Nusantara)," which will be in the center of Indonesia. Nusantara will be positioned as the new capital city development that will contribute to achieve the balanced economic development among regions.

On February 15, 2022, Law No.3/2022 was promulgated and the Master Plan (hereinafter MP) for a new capital city to be in Kutai Kartanegara and North Penajam Paser Regency in Kalimantan was published. The Indonesian government has set the target year for complete relocation in 2045, the 100th anniversary of independence, and will gradually transfer functions to the new capital city. The current goal is to relocate a part of government functions to the Government Core Area (hereinafter KIPP) by August 2024 under Phase 1.

At present, the relevant ministries and agencies are preparing the relevant laws and regulations, and the Nusantara Capital City Authority (hereinafter OIKN) is being developed to carry forward the transition. On the other hand, the Ministry of Public Works and Housing (hereinafter PUPR) is taking the lead in the development of basic infrastructure for KIPP, Phase 1, as well as the presidential palace and ministry buildings. Within the PUPR, a PUPR Infrastructure Development Task Force has been established, which includes two task forces, namely: 1) Planning Task Force and 2) Implementation Task Force. The Implementation Task Force of the PUPR has shown interest in Japanese technical assistance for quality assurance of basic infrastructure development.

1.2 Outline of this Survey

This engineering survey will 1) review the existing legal system and plans related to the relocation of the capital city, 2) collect and analyze information on the progress of various projects related to the relocation of the capital city that is considered and implemented by various ministries and departments of the Indonesian government, 3) confirm the investment plans of the private sector and other donors related to the relocation of the capital city, 4) collect and analyze necessary information on the development plans and actions of the basic infrastructure to be implemented by PUPR in the new capital city development plan, 5) compile advice and recommendations on quality management of the basic infrastructure development, and 6) study the future direction of cooperation by the Japan International Cooperation Agency (hereinafter JICA), including public-private partnerships and promotion of private sector investment.

1.3 Overview of the New Capital City Development

Table 1.1 shows an overview of the new capital city development. Details of each item are provided in the next chapters.

Table 1.1: Overview of the Capital Relocation Plan

Name of New Capital	Nusantara or IKN (Ibu Kota Nusantara)		
Location	East Kalimantan Province Location Area: Kutai Kartanegara Regency and North Penajam Paser Regency		
Development Area	Government Core Area (KIPP): New Capital City Area (K-IKN): New Capital City Expansion Area (KP-IKN):	6,856 ha (68.56 km ²) 56,181 ha (561.81 km ²) 256,142 ha (2,561.42 km ²)	
Planning Phase	Phase	Year	Planning Population
	Phase 1(August)	2022-2024	488,409
	Phase 2	2025-2029	1,283,589
	Phase 3	2030-2034	1,452,967
	Phase 4	2035-2039	1,666,121
	Phase 5	2040-2045	1,911,988
Vision	A Global City for All “Kota Dunia Untuk Semua” The World’s Sustainable City A Symbol of National Identity Economic Driver for Indonesia’s Future		
Transfer Cost	IDR 466.04 trillion	JPY 4.2 trillion	-
Government Budget	IDR 90.35 trillion	JPY 0.8 trillion	(19.3%)
PPP	IDR 252.46 trillion	JPY 2.3 trillion	(54.1%)
Private Investment	IDR 123.23 trillion	JPY 1.1 trillion	(26.4%)
Promulgated Law	Law No. 3/2022 enacted on February 15, 2022		

*Conversion is based on JICA rate in July 2022 (IDR 1 = JPY 0.00918)

Source: JICA Consultant Team

1.4 Progress of New Capital City Development

Law No. 3/2022 was enacted in February 2022, formally setting forth the policy to proceed with preparations and development for the relocation of the capital. Nusantara is not yet the official capital, and until a new Presidential Regulation (hereinafter "PR") declaring it the capital is issued, the Special Capital Region of Jakarta: Daerah Khusus Ibukota (DKI) Jakarta will continue to function as the capital.

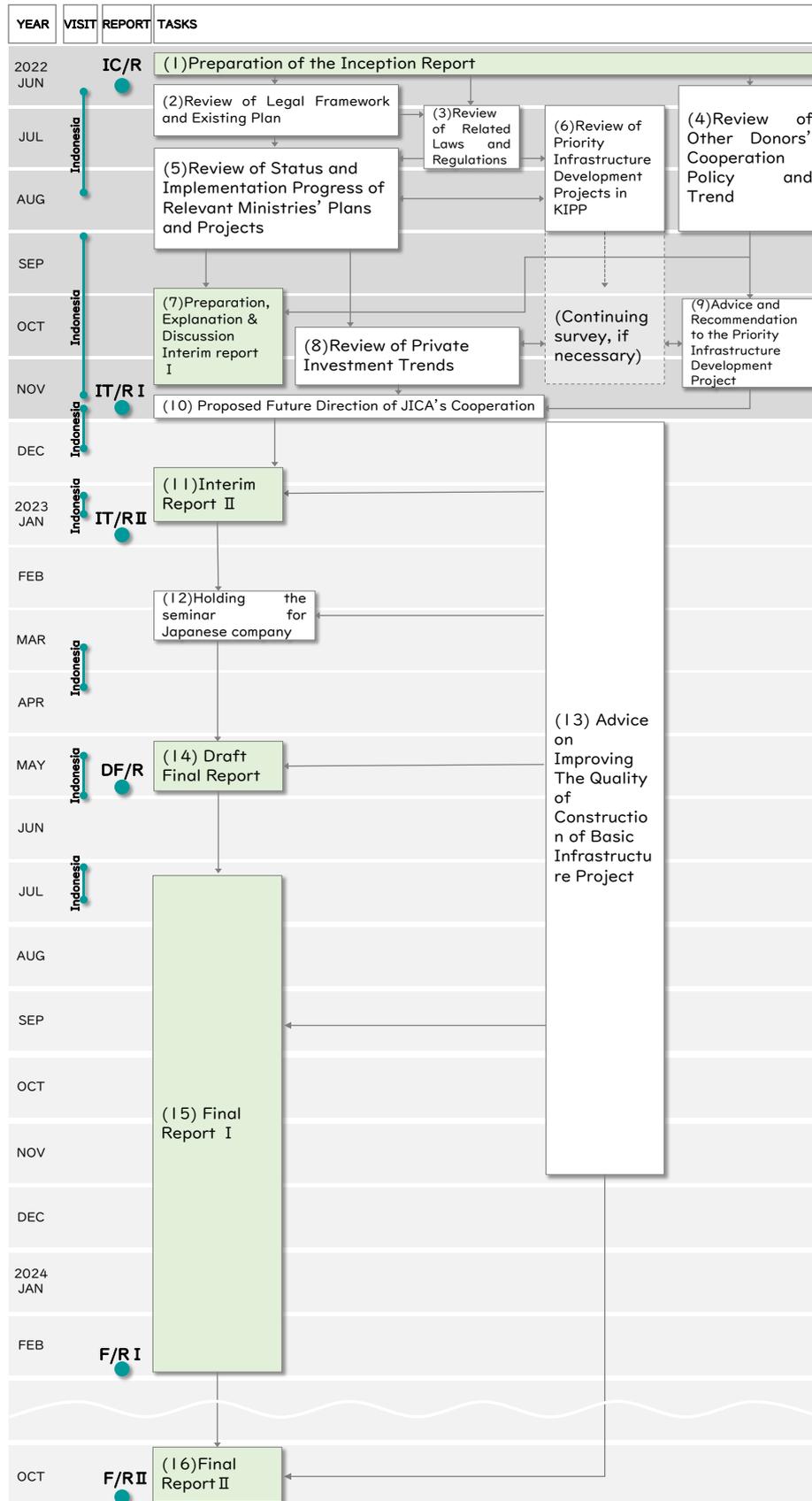
Law No. 3/2022 includes the MP (Development Plan), prepared under the leadership of the Ministry of National Development and Planning (hereinafter referred to as BAPPENAS), which will guide the development of the new capital city. After April 2022, the Government Regulation (hereinafter "GR") and PR were issued under Law No. 3/2022, setting forth rules for the establishment of OIKN, details of the MP, spatial planning, land acquisition and management, and financing. The detailed regulations of these rules are further defined by ministerial ordinances, which are at a lower level. The first ministerial ordinance, Regulation No. 1 of OIKN, has been formulated, but other ministerial ordinances are still in the preparatory stage.

The OIKN, which will be the ministry responsible for promoting the relocation of the capital city, has appointed the President as the head of the Director General and Deputy Director General on March 10, 2022. In turn, high-level position appointments have been announced, but other officials have not yet been recruited and are not functioning as an organization. During the preparation period for OIKN's independence, the ministries with jurisdiction over their respective sectors will be preparing for the relocation. The timing for the transfer of functions from the ministries to OIKN is set forth at the end of 2022, but if the organization has not yet been formed, each ministry will continue to prepare and gradually transfer their functions to OIKN.

Currently, the preparation and construction of the basic infrastructure of KIPP, Phase 1, are ongoing under the jurisdiction of the PUPR. The PUPR is planning 34 projects in KIPP and 25 projects in the surrounding areas. Including package separations, the number of projects tends to increase somewhat.

1.5 Survey Track Record

Figure 1.1 shows the workflow for this engineering study.



Source: JICA Consultant Team

Figure 1.1: Workflow of the Survey

Table 1.2 shows the track record in this survey. The preparation and development relocation of the capital will continue. This is to collect information on each survey item as new progress is made.

Table 1.2: Research Track Record on this Survey

Survey Item	Track Record	Description in this Report
(1) Preparation of the Inception Report	Completed in Jun 2022	-
(2) Review of the Legal Framework and Existing Plan	A review of existing laws and MPs that have been promulgated has been conducted.	Chapter 2
(3) Review of Related Laws and Regulations	A review of existing laws and MPs that have been promulgated has been conducted. Additional information will be collected as new laws and regulations are issued.	Chapter 3
(4) Review of Other Donors' Cooperation Policy and Trend	Organized information on donor trends obtained by the team. Continue to review the trends at each agency.	Chapter 4
(5) Review of the Status and Implementation Progress of Relevant Ministries' Plans and Projects	Conducted hearings on the plans and projects of relevant ministries other than PUPR. Since some of the ministries and agencies have not yet been addressed, the team will continue to review them.	Chapter 5
(6) Review of the Priority Infrastructure Development Projects in KIPP	Information obtained so far on basic infrastructure projects to be implemented by PUPR was summarized. Bidding is being conducted sequentially, and the team will continue to collect the latest information.	Chapter 6
(7) Preparation, Explanation and Discussion of Interim Report	Completed in December 2022	-
(8) Review of Private Investment Trends	Private sector investment trends identified to date were organized. The team will continue to collect information on the latest private investment trends.	Chapter 8
(9) Advice and Recommendation to the Priority Infrastructure Development Project	The contents of the advice provided to PUPR to date were organized. Draft recommendations will be organized and described in the Draft Final Report.	Chapter 9
(10) Recommendations on the Future Direction of JICA	The direction of JICA's cooperation was organized and proposed.	Chapter 10
(11) Preparation of the Interim Report II	Completed in January 2023	
(12) Holding the Seminar for Japanese company	The seminar was held on March 16, 2023, for Japanese companies. Before and after the seminar, a questionnaire was sent to the participating companies.	Chapter 7
(13) Assistance for Quality Assurance on KIPP Basic Infrastructure Development	Advice was provided to improve the quality of construction work performed within KIPP.	
(14) Preparation of the Draft Final Report	Completed in May 2023	-
(15) Preparation of the Final Report I	Completed in February 2024	-

Source: JICA Consultant Team

This study is required to collect and analyze necessary information related to the development plans and content of the construction of primary infrastructure to be implemented by PUPR, as well as to provide advice and give recommendations on the quality management of the basic infrastructure. Currently, the PUPR is the leading ministry in the development of the new capital city since its development is in Phase 1, which is mainly focused on the development of basic infrastructure. During this study, repeated discussions with PUPR and joint site visits were conducted to understand the outline of KIPP's basic infrastructure development and to exchange views on issues raised regarding construction quality. The summary of the

discussions with PUPR is summarized in Table 1.3.

Table 1.3: Overview of Discussion with PUPR

Date	Overview of the Discussion
13 July 2022	[Presentation to the Minister of PUPR] Contents: Issues to be considered in the implementation of the new capital city development
18-20 July 2022	[Observation of PUPR and the Site of the New Capital City Development] Contents: Workshops in the three areas of water supply and sewerage, rivers and drainage, and construction and land development
20 July 2022	[Presentation to the PUPR Task Force] Description: Explanation of infrastructure development issues based on the field survey
13 September 2022	[Pre-construction Meeting at the PUPR Jakarta Office Building] Content 1: Proposal of project implementation mechanism Content 2: Introduction of project-related companies by the JICA Consultant Team
14 September 2022	[Sectoral Meetings] Description: Explanation of issues related to infrastructure development
20-22 September 2022	[Pre-construction Meeting at the New Capital Project Site-01] Content 1: Introduction of issues related to construction planning Content 2: Project implementation structure Content 3: Proposal of the necessary Standard Operating Procedure (SOP)
29 September 2022	[Meeting with the PUPR ICT Center] Content: Overview of the project dashboard that comprehensively manages the progress of each project
4 October 2022	[Pre-construction Meeting at the New Capital Project Site-02] Content: Proposal of issues related to construction planning
15 December 2022	[1 st Site Inspection: Debriefing] Content: Assistance for Quality Assurance on KIPP Basic Infrastructure Development Phase I (2022-2024)
24 January 2023	[2 nd Site Inspection: Debriefing] Content: Assistance for Quality Assurance on KIPP Basic Infrastructure Development Phase I (2022-2024)
14 February 2023	[3 rd Site Inspection: Pre-meeting] Content: Proposal of issues related to construction planning
24 February 2023	[3 rd Site Inspection: Debriefing] Content: Assistance for Quality Assurance on KIPP Basic Infrastructure Development Phase I (2022-2024)
27 March 2023	[4 th Site Inspection: Pre-meeting] Content: Proposal of issues related to construction planning
5 April 2023	[4 th Site Inspection: Debriefing] Content: Assistance for Quality Assurance on KIPP Basic Infrastructure Development Phase I (2022-2024)
16 May 2023	[5 th Site Inspection: Pre-meeting] Content: Proposal of issues related to construction planning
19 May 2023	[5 th Site Inspection: Debriefing] Content: Building Projects
4 July 2023	[6 th Site Inspection: Pre-meeting] Content: Proposal of issues related to construction planning
18 July 2023	[6 th Site Inspection: Debriefing] Content: Building Projects

Source: JICA Consultant Team

1.6 Key Economic Indicators (Reference)

As a reference, Table 1.4 shows the major economic indicators for Indonesia. Negative GDP growth was recorded in 2020, partly due to economic stagnation caused by the spread of the new coronavirus infection, but the economy subsequently recovered in 2021, achieving growth of just under 4%. External debt levels have remained flat.

Table 1.4: Indonesia Key Economic Indicators

1. Population	272.68 million (in 2021)		
2. Area	1,916,907 km ²		
3. GDP per Capita	USD 4,357 (in 2021)		
4. Year	2019	2020	2021
5. Real GDP Growth Rate (%)	5.0	△ 2.1	3.7
6. Consumer Price Inflation Rate (%)	2.7	1.7	1.9
7. Unemployment Rate (%)	5.2	7.1	6.5
8. Trade Balance (in million USD)	3,508	28,301	43,806
9. Current Account Balance (in million USD)	△ 30,279	△ 4,433	3,430
10. Foreign Currency Reserves (in million USD)	125,339	131,139	140,310
11. Outstanding Foreign Debt (in million USD)	403,563	416,935	415,692
12. Exchange Rate (IDR/USD, average at the end of the year)	14,148	14,582	14,308

Source: JETRO "World Trade and Investment Trends Series (Indonesia)" published on September 30, 2022

Key economic indicators for East Kalimantan Province are shown in Table 1.5. The value of the nominal GDP per capita is the second highest in the country, after Jakarta, and is driven by the mining sector, e.g., coal, oil, and natural gas. Japan is the largest export destination for oil and gas.

Table 1.5: East Kalimantan Province Key Economic Indicators

Population	3.57 million (2018 estimate)		
Area	Approximately 130,000 km ²		
State Capital	Samarinda		
Major Products	Coal, oil, and natural gas		
State Nominal GDP	IDR 635.68 trillion (2019)		
Nominal GDP per Capita	IDR 176 million (2019 provisional)		
GDP Breakdown (2019, by industry)	Mining		45.49%
	Processing industry		17.77%
	Construction		9.08%
	Agriculture, forestry, and fisheries		7.92%
	Automobile sales		5.92%
Exports Amount (2019, in million USD)	[Oil and Gas]		
	Japan		1,154
	China		415
	Singapore		81
	[Other than oil and gas]		
	China		3,901
	India		3,241
	Japan		1,226
Malaysia		993	
State Capital	2017	2018	2019
	3.13	2.67	4.77

Source: Consulate General in Surabaya, "Overview of East Kalimantan Province," August 2020.

Chapter 2 Review of Legal Framework and Existing Plans

2.1 Review of the State Capital Law

2.1.1 Legal System in Indonesia

The sources of law in Indonesia are basically codified laws and their effectiveness is defined in the rank order shown in Figure 2.1. In addition to these laws and regulations, there are also regulations issued by ministries and government organizations which take effect when authorized by a superior law or when issued within the scope of their authorities.



Source: Prepared by the JICA Consultant Team based on the "Indonesia Business Law Guide (April 2022).

※UUD: Undang-Undang Dasar = basic law

Figure 2.1: Order of the Codified Law

At the municipal administration level, Provincial Decrees (*Peraturan Daerah: PerDa*) are issued in the provinces (*Provinsi*) as the first tier and in cities (*Kota*) and regencies (*Kabupaten*) as the second tier. At the first tier, the Provincial Council Regulation (*Peraturan Daerah Provinsi*) and Governor's Regulation (*Peraturan Gubernur*) can be issued. At the second tier, the City Council Regulation (*Peraturan Daerah Kota*) or Mayor's Regulation (*Peraturan Walikota*), and the Regency Council Regulation (*Peraturan Daerah Kabupaten*) or Head of Regency Regulation (*Peraturan Bupati*) can be issued.

The provincial government, as an agency of the central government, is responsible for the implementation of the decentralized administrative affairs, as well as the guidance and supervision of the administrative affairs of the cities and regencies. Cities and regencies are the subjects of regional autonomous government in Indonesia and provide basic administrative services within their administrative areas.

2.1.2 Legal Documents Related to the Implementation of the IKN Development

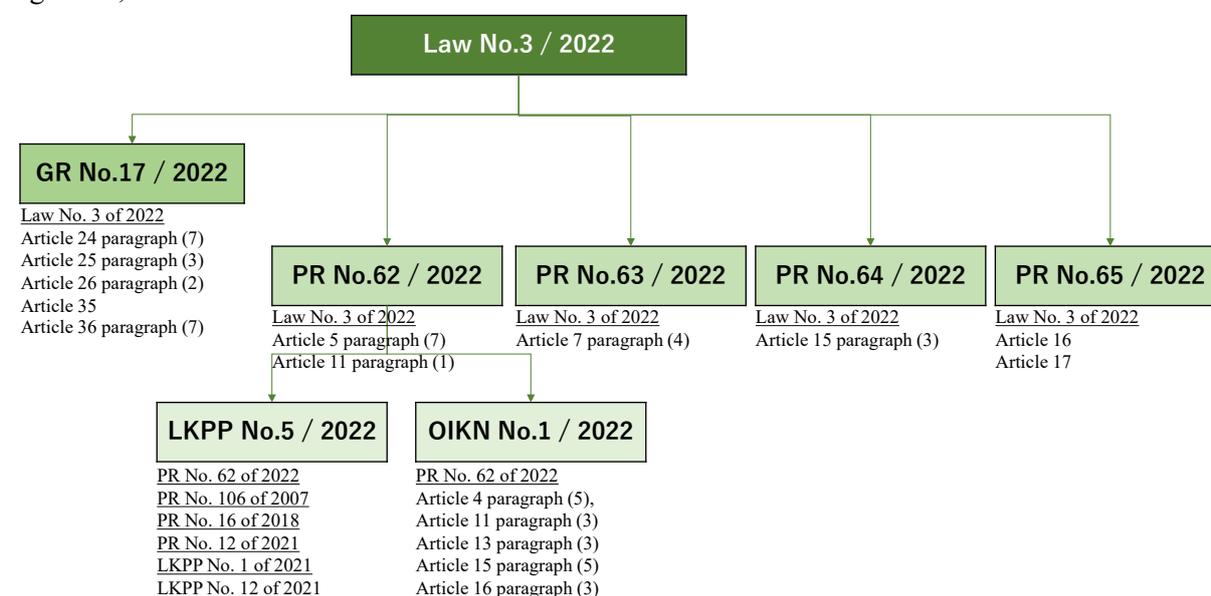
The laws and regulations related to the new capital city (hereinafter IKN) are being promulgated in sequence. The law for the relocation of the new capital was disseminated in February 2022. The following governmental and presidential regulations were declared in April 2022. And the first ministerial decree of the newly established Nusantara Capital Directorate is implemented on September 9, 2022. Table 2.1 shows the list of the promulgated laws.

Table 2.1: IKN-related Laws and Regulations

Law and Regulation	Title	Promulgation Date
Law No. 3/2022	New State Capital Law Annex 1: Map Annex 2: MP	15 February 2022
GR No. 17/2022	Financial Procurement and Budgeting	18 April 2022
PR No. 62/2022	OIKN	18 April 2022
PR No. 63/2022	Details of the MP	18 April 2022
PR No. 64/2022	Spatial Plan	18 April 2022
PR No. 65/2022	Land Acquisition and Management	18 April 2022
Head of LKPP Regulation No. 5/2022	Procurement	18 April 2022
Head of OIKN Regulation No. 1/2022	Organization and Work Processes of OIKN	9 September 2022
Head of LKPP Regulation No. 1/2023	Procurement Processes of OIKN	4 January 2023
GR No. 12/2023	Investment Incentives for IKN	6 March 2023

*GR: Government Regulation, PR: Presidential Regulation, LKPP: National Public Procurement Agency
Source: JICA Consultant Team

Figure 2.2 shows the interrelationship of each law. The structure is such that the conceptual policies are presented at the upper legal level and the contents are embodied in lower government regulation, presidential regulation, and ministerial ordinances.



Source: JICA Consultant Team

Figure 2.2: Relationship Diagram of Laws and Regulations Related to the IKN

2.1.3 Review of the State Capital Law

Law No. 3/2022 announces the new capital of Indonesia to be called “Ibu Kota Nusantara (IKN)” and to be relocated to East Kalimantan from the Special Capital Region of Jakarta: Daerah Khusus Ibukota (hereinafter DKI) Jakarta. The position, function, and role of the State Capital will remain in DKI Jakarta until the Presidential Regulation on State Capital Relocation is enacted. The table of contents of the State Capital Law is listed in Table 2.2. The Master Plan (hereinafter MP) is attached as Annex II: State Capital Law and the details of the MP are explained in PR No. 63/2022. A renewal of information related to the various MP is organized in Section 2.2.

Table 2.2: Table of Contents of the State Capital Law (Law No.3/2022)

Chapter	Content
I.	General Provisions
II.	Formation, Specificity, Status, Territory, and MP <ul style="list-style-type: none"> ▪ Part 1 Formation ▪ Part 2 Position and Specialty ▪ Part 3 Area Coverage ▪ Part 4 MP for the Capital of Nusantara
III.	Form, Structure, Authority, and Government Affairs <ul style="list-style-type: none"> ▪ Part 1 Form and Structure of the Government ▪ Part 2 Authority and Government Affairs
IV.	Division of Regions
V.	Spatial Planning, Land & Land Right Transfer, Environment, Disaster Management, and Defense & Security <ul style="list-style-type: none"> ▪ Part 1 Spatial Planning ▪ Part 2 Land and Transfer of Land Rights ▪ Part 3 Protection and Management of the Environment ▪ Part 4 Disaster Management ▪ Part 5 Defense and Security
VI.	Relocation of Government Institutions, Civil Apparatus, Foreign Government Representatives, and International Organizations/Institutions
VII.	Funding and Management of the State Budget <ul style="list-style-type: none"> ▪ Part 1 Funding ▪ Part 2 Preparation of Work Plans, Implementation, and Accountability of the Revenue and Budget Shopping for the “Nusantara” Capital ▪ Part 3 Governance of State Property
VIII.	Participation of Citizens
IX.	Monitoring and Review
X.	Transition Provisions
XI.	Closing
Annex I	Delineation Map of the National Strategic Area of the State Capital
Annex II	MP of IKN

Source: JICA Consultant Team based on Law No.3/2022

The State Capital Law starts off with the vision of IKN in Chapter I: General Provision. The vision is to become “A Global City for All”, which is managed by becoming a “sustainable city in the world,” “Indonesia’s economic driver for the future”, and “national identity symbol”.

Chapter II sets the grounds for the establishment of OIKN and its role as a special regional government unit. The head of OIKN is to be considered as part of the ministerial level and is appointed by the president. The area of IKN is specified in coordinates and the contents of the MP are stipulated in this chapter as well.

Chapter III specifies the positions and the terms of the head and deputy head of the OIKN. The OIKN, as a special regional government unit, is given special authority such as the authority to grant investment licensing, ease of doing business, as well as the provision of special facilities to parties that support financing in the context of preparation, development, and transfer of IKN and partner regions.

Chapter IV specifies that the IKN is divided into several areas, which will be determined in detail in a presidential Regulation.

Chapter V is divided into five parts. The spatial plan in IKN will refer to the following: (1) National Spatial Plan, (2) Makassar Strait Interregional Zoning Plan, (3) Kalimantan Island Spatial Plan, (4) the Spatial Plan of the National Capital City as Kawasan Strategis Nasional (KSN), and (5) Detailed Spatial Plan for IKN. Within these, item (4) is regulated in PR No. 64/2020 and item (5) will be set under the head of OIKN regulation. Land acquisition in IKN will be made under legal schemes of land acquisition for development in the public interest or direct acquisition. Environment protection and management will also be conducted under the legal schemes and actions will be stipulated in the MP and the spatial plan. Disaster management and security measures will also be specified in the MP and the spatial plan.

Chapter VI stipulates the gradual relocation of government functions to IKN, and the provisions will be regulated in a presidential regulation.

Chapter VII regulates the funding for IKN and the power of the president as the manager of the state finance is delegated to the head of OIKN. Other than the state budget, OIKN may collect special taxes and/or special levies in IKN, which may be stipulated in the OIKN regulation.

Chapter VIII suggests the participation of citizens in the IKN development and management process through various measures including public consultations.

Chapter IX regulates that this law will be monitored legally.

Chapter X specifies that the transition of the State Capital will be stipulated by a presidential decree. Until then, the Regional Government of East Kalimantan Province, the Regional Government of Kutai Kartanegara Regency, and the Regional Government of North Penajam Paser Regency will continue to carry out regional government affairs in the region in accordance with the provisions of laws and regulations.

2.1.4 Review of the IKN Related Regulations

One governmental regulation, four presidential regulations, one LKPP regulation, and one OIKN regulation have been promulgated in connection with the development of the new capital city. The following is a summary of the contents of each regulation and points to be noted.

(1) Government Regulation on Financing and Budgeting (GR No. 17/2022)

GR No. 17/2022 mentions the financial sources and schemes for the preparation, development, and relocation of the new capital city. The table of contents of this regulation is shown in Table 2.3. The sources of funds for the development of the new capital city are broadly divided into the state budget and other funds. According to the funding schemes, the following sources are listed: 1) state spending and financing, including government bonds; 2) investment by state-owned and private companies, and funds from international donor; 3) public-private partnerships (PPP) with special incentives; 4) a special tax for the new capital city; and 5) other schemes.

The PPP with special incentives for the development of the new capital city is called PPP-IKN. The objectives of the PPP-IKN are to obtain financing needs from the private sector for sustainable infrastructure development in the new capital city; to create an investment environment that enables the private sector to develop infrastructure in a high-quality, effective, efficient, and timely manner; and to create an investment environment that allows private sector participation based on fair competition principles. The PPP Law provides for an investment environment that ensures a return on investment by the infrastructure provider. The consistency with existing PPP laws is discussed in detail in Section 3.4.

With the relocation of government agencies, the government-owned assets located in DKI Jakarta are expected to be utilized. The regulation states that the assets will be transferred to the Ministry of Finance within 6 months of the relocation. The utilization of the assets will be conducted through direct nomination of state-owned enterprises or through a bidding process that includes private companies. The revenue from the asset conversion will not be treated as the budget for the new capital city development but will indirectly support government revenue.

It also describes the work plan and budget of OIKN and the timing of the transfer of functions. OIKN operations will begin at the end of 2022 at the latest, and until then, ministries and agencies are preparing in accordance with the MP.

Table 2.3: Table of Contents of the Government Regulation on Financial Procurement and Budgeting (GR No.17/2022)

Chapter	Content
I.	General Provisions
	Funding Sources and Schemes
	▪ Part 1 Funding Sources
	▪ Part 2 Funding Schemes
	▪ Part 3 National Priority Program
II.	▪ Part 4 Non-tax State Revenue
	▪ Part 5 Project/Activity Financing through SBSN Issuance
	▪ Part 6 Funding Scheme through Government and Business Entity Cooperation (Including the concept of the PPP IKN)
	▪ Part 7 Special Taxes and Special Levies of IKN

Chapter	Content
	<ul style="list-style-type: none"> ▪ Part 8 Other Funding Schemes
III.	Work Plan and Budget of OIKN <ul style="list-style-type: none"> ▪ Part 1 Planning and Budgeting of OIKN ▪ Part 2 Budget Implementation Document ▪ Part 3 Mechanism for Amending the Budget of OIKN
IV.	Budget Execution and Accountability <ul style="list-style-type: none"> ▪ Part 1 General ▪ Part 2 Treasury Officer ▪ Part 3 Implementation of the Revenue Budget ▪ Part 4 Implementation of Expenditure Budget ▪ Part 5 Accountability
V.	Management of State Property <ul style="list-style-type: none"> ▪ Part 1 General ▪ Part 2 Management of State Property in the DKI Jakarta and/or Other Provinces in the context of Preparation, Development, and Relocation of the National Capital ▪ Part 3 Management of State Property in IKN
VI.	Management of Assets under Control <ul style="list-style-type: none"> ▪ Part 1 General ▪ Part 2 Management Officer for Asset under Construction ▪ Part 3 Planning of Assets under Construction ▪ Part 4 Allocation of Assets under Construction ▪ Part 5 Usage of Assets under Construction ▪ Part 6 Utilization of Assets under Construction ▪ Part 7 Safeguard and Maintenance of Assets under Construction ▪ Part 8 Removal of Assets under Construction ▪ Part 9 Administration of Assets under Construction ▪ Part 10 Supervision and Control of Assets under Construction ▪ Part 11 Miscellaneous
VII.	Staging and Redirection
VIII.	Governance, Monitoring, and Evaluation <ul style="list-style-type: none"> ▪ Part 1 Governance ▪ Part 2 Supervision and Evaluation
IX.	Miscellaneous Provisions
X.	Closing Provisions

Source: JICA Consultant Team based on GR No.17/2022

(2) Presidential Proclamation on the Organization and Functions of the OIKN (PR No. 62/2022)

The enacted Law No.3/2022 in February 2022 established the method for the creation of OIKN and the appointment of the director general and other personnel. The director and deputy director of OIKN were appointed by the president on March 10, 2022. The Presidential Regulation on the Organization and Functions of OIKN (PR No. 62/2022) was enacted on April 18, 2022. Table 2.4 shows the table of contents of the regulation.

The OIKN will be responsible for the preparation, development, transfer, implementation, and operation of the IKN, and will be established as an institution at a level equivalent to "ministry". The OIKN will be given 28 broad functions, which are detailed in Subsection 2.1.5. OIKN is not a municipality, although it has functions such as infrastructure operation and management that would normally be handled by the local municipality. Therefore, it is an organization whose functions are different from those of the DKI Jakarta, which is an autonomous organization of the existing capital. OIKN is in the process of securing staff and establishing an organizational structure in accordance with this PR.

Table 2.4: Table of Contents of the Presidential Regulation for OIKN (PR No.62/2022)

Chapter	Content
I.	General Conditions
II.	Positions, Duties, and Functions
III.	Organizational Structure of OIKN <ul style="list-style-type: none"> ▪ Part 1 Organizational Structure ▪ Part 2 Head and Deputy Head of OIKN ▪ Part 3 Secretariat of OIKN ▪ Part 4 Deputy Head of OIKN ▪ Part 5 Legal and Compliance Unit of OIKN ▪ Part 6 Work Procedure ▪ Part 7 Financial Rights and Facilities
IV.	Advisory Board of OIKN
V.	Implementation of Preparation, Development, and Relocation of the National Capital <ul style="list-style-type: none"> ▪ Part 1 Funding and Budget ▪ Part 2 PPP for IKN ▪ Part 3 Cooperation between OIKN and Partner Regions
VI.	Establishment of a Regulation of the Head of OIKN
VII.	OIKN's Business Entity
VIII.	Community Participation
IX.	Report on the implementation of preparation, Development, and Relocation of the National Capital
X.	Closing Provisions

Source: JICA Consultant Team based on PR No.62/2022

(3) Presidential Regulation for Detailed MP (PR No. 63/2022)

The PR on the Detailed MP for the New Capital City was enacted on April 18, 2022. The table of contents of the regulation is shown in Table 2.5. A review of the contents is detailed in Section 2.2, and the consistency with the existing development plans of the municipalities surrounding the new capital city is organized in Section 3.2.1.

Table 2.5: Table of Contents of the Presidential Regulation on the Detailed MP for the New Capital City (PR No.63/2022)

Chapter	Content
I.	Preface
II.	Vision, Objectives and Principles of IKN
III.	Basic Principles of IKN Development
IV.	Directions for Spatial and Regional Planning
V.	Directions of Building and Environmental Design of KIPP
VI.	Stages of Development of IKN
VII.	Implementation Framework

Source: JICA Consultant Team based on the PR No.63/2022

(4) Presidential Regulation for Spatial Planning (PR No. 64/2022)

The Presidential Regulation for Spatial Planning of the New Capital City (PR No. 64/2022) was enacted on April 18, 2022. The table of contents of the regulation is presented in Table 2.6. A review of its contents is detailed in Section 2.2 and its consistency with the existing spatial plans of the municipalities surrounding the new capital city

is organized in Section 3.2.2.

Table 2.6: Table of Contents of the Presidential Regulation for Spatial Plan of the New Capital City (PR No.64/2022)

Chapter	Content
I.	General Provisions
II.	Coverage of National Strategic Area of IKN
III.	Role and Function of Spatial Plan of National Strategic Area of IKN
IV.	Objectives, policies, and Strategies of Spatial Planning of National Strategic Area of IKN
V.	Spatial Structure Plan of National Strategic Area of IKN
VI.	Spatial Patten Plan of National Strategic Area of IKN
VII.	Strategic Area in National Strategic Area of IKN
VIII.	Directives on the Spatial Utilization of National Strategic Area of IKN
IX.	Directives on the Spatial Utilization Control of National Strategic Area of IKN
X.	Management of National Strategic Area of IKN
XI.	Public Role in the Spatial Planning of National Strategic Area of IKN
XII.	Duration and Review
XIII.	Miscellaneous Provisions
XIV.	Transitional Provisions
XV.	Closing Provisions

Source: JICA Consultant Team based on PR No.64/2022

(5) Presidential Regulation for Land Acquisition and Management (PR No. 65/2022)

The Presidential Regulation for the Acquisition and Management of Land in the New Capital City (PR No. 65/2022) was issued on April 18, 2022. The table of contents of the regulation is shown in Table 2.7. The process of acquiring a new capital city and its alignment with existing relevant laws and regulations is detailed in Section 3.3. Notably, Chapter 4 of the regulation provides guidelines for controlling the rising cost of land through private land sales by designating OIKN as the preferred party for land purchases in the new capital city and designating land transactions as under OIKN.

Table 2.7: Table of Contents of the Presidential Regulation for Land Acquisition and Management (PR No.65/2022)

Chapter	Content
I.	General Conditions
II.	Land Acquisitions in IKN <ul style="list-style-type: none"> ▪ Part 1 General ▪ Part 2 Forest Area Release ▪ Part 3 Land Acquisition
III.	Land Management I IKN <ul style="list-style-type: none"> ▪ Part 1 General ▪ Part 2 Right of Use ▪ Part 3 Management Rights
IV.	Controlling the Transfer of Land Rights in IKN
V.	Miscellaneous Provisions
VI.	Closing Provisions

Source: JICA Consultant Team based on PR No.65/2022

(6) Agency Regulation on Public Procurement (LKPP Regulation No. 5/2022)

LKPP Regulation on Public Procurement (LKPP Regulation No. 5/2022) was enacted on May 18, 2022. This regulation mentions the use of local business, human resources, and materials. The definition of "local" here is referred to as "Kalimantan". In the New Capital City Development Project, the utilization of local human resources and materials is defined as a priority and only when these conditions cannot be met can they utilize from outside the island.

Table 2.8: Table of Contents of the Agency Regulation of Public Procurement (LKPP Regulation No. 5/2022)

Chapter	Content
I	General Conditions
II	Human Resources for Procurement of Goods and Services
III	Types of Procurement
IV	Packaging Strategies
V	Selection Methods
VI	Types of Contracts
VII	Empowering Local Businesses
VIII	Utilization of Local Human Resources and Materials
IX	Sustainable Procurement of Goods and Services
X	Miscellaneous Provisions
XI.	Transitional Provisions
XII.	Final Provisions

Source: JICA Consultant Team based on the LKPP Regulation No. 5/2022

(7) Head of OIKN Regulation No. 1/2022 on the Organization and Work Processes of OIKN

The first regulation of OIKN was issued on September 9, 2022. The regulation is subordinate to GR and PR since it has been recognized as being on the same level as the "ministry".

OIKN nominates seven deputies under the Chairman and employ personnel to oversee the areas of "Planning and Land Affairs", "Development Control", "Social, Cultural & Community Empowerment", "Green and Digital Transformation", "Environment and Natural Resources", "Funding and Investment", and "Facilities and Infrastructure". At least two of these personnel will be from East Kalimantan.

Table 2.9: Table of Contents of the Head of OIKN Regulation (Head of OIKN Regulation No.1/2022)

Chapter	Content
I	Position, Duties and Functions
II	Organizational Structure of OIKN
III	Secretariat
IV	Organizational Structure
V	Deputy for Planning and Land Affairs
VI	Deputy for Development Control
VII	Deputy for Social, Cultural & Community Empowerment
VIII	Deputy for Green and Digital Transformation
IX	Deputy for Environment and Natural Resources
X	Deputy for Funding and Investment
XI	Deputy for Facilities and Infrastructure

Chapter	Content
XII	Legal and Compliance Unit
XIII	Expert Staffs, Special Staffs
XIV	Function Position
XV	Operation Procedure
XVI	Final Provisions

Source: JICA Consultant Team based on Head of OIKN Regulation No.1/2022

(8) Minister of Finance Regulation No. 13/2022 on Utilization of National Assets

The Minister of Finance Regulation on Utilization of National Assets was enacted on September 16, 2022. It stipulates the listing and utilization of idle national assets that are expected to arise because of the relocation of the new capital city, particularly in the Jakarta Special Province. In this process, facilities (financial support) for utilization may be available through the Head of State Property Management, Penanggung Jawab Pengelolaan Barang Milik Negara (PJPBMN).

Table 2.10: Table of Contents of the Minister of Finance Decree on the Utilization of National Assets
(Minister of Finance Regulation No. 139/2022)

Chapter	Content
I	General Provisions
II	Facility Offer <ul style="list-style-type: none"> ▪ Part 1 General ▪ Part 2 Requirements ▪ Part 3 Facility Offer Phase
III	Facility Offer and Implementation Operation <ul style="list-style-type: none"> ▪ Part 1 Equipment Application ▪ Part 2 Evaluation of Equipment Application ▪ Part 3 Equipment Approval ▪ Part 4 Equipment Introduction ▪ Part 5 Arrangement of Equipment Implementor ▪ Part 6 Result <ol style="list-style-type: none"> 1) Preparation, Submission and Receiving of Results 2) Review of Results 3) Possession and utilization of Results
IV	Responsibility and commitment of PJPBMN
V	Period of Facility Use
VI	Direction, Supervision, and Monitoring
VII	Financial Procurement
VIII	Final Provisions

Source: JICA Consultant Team based on Minister of Finance Decree No. 139/2022

(9) Presidential Regulation for Implementation of New Capital PPP (PR No.6/2022)

The Presidential Regulation for Implementation of New Capital PPP was enacted on December 30, 2022. It supplements GR No.17/2022 and stipulates the method of implementation of PPP-IKN.

Table 2.11: Table of Contents of the Regulation of the Head of OIKN (Ministerial Decree of the Head of OIKN No. 6/2022) on the Procedure for the Implementation of PPPs in New Capital Cities

Chapter	Content
I	General Provisions
II	Scheme and Financial Resources of IKN
III	Implementor of PPP-IKN <ul style="list-style-type: none"> ▪ Part 1 Chief Organizer ▪ Part 2 Integration Officer ▪ Part 3 Committee ▪ Part 4 Advisor ▪ Part 5 Preparation Institutions <ol style="list-style-type: none"> 1) Facilitation for Preparation 2) Kinds of Preparations 3) Institution Panels of Preparation ▪ Part 6 Joint Control Forum
IV	Method of Implementation of PPP-IKN <ul style="list-style-type: none"> ▪ Part 1 General <ol style="list-style-type: none"> 1) Support Activity 2) Forum 3) Implementation of procurement ▪ Part 2 PPP-IKN Initiated by Project Institution (solicited) <ol style="list-style-type: none"> 1) General 2) Planning Phase 3) Determination of Planning 4) Preparation Phase 5) Transaction 6) Implementation Phase ▪ Part 3 PPP-IKN Initiated by Business Operator (unsolicited) <ol style="list-style-type: none"> 1) General 2) Planning Phase 3) Determination of Planning 4) Preparation Phase 5) Transaction 6) Implementation Phase ▪ Part 4 Transition <ol style="list-style-type: none"> 1) Transition from Solicited to Unsolicited 2) Transition from Unsolicited to Solicited 3) Change of Project Institutions
V	Electronic Based Management
VI	Transitional Provisions
VII	Final Provisions

Source: JICA Consultant Team based on Minister of Finance Regulation No. 139/2022

(10) Head of LKPP Regulation No. 1/2023 on PPP Procurement Procedure for IKN

The Head of LKPP Regulation No. 1/2023 of PPP Procurement Procedures for IKN was enacted on January 4, 2023. As for the OIKN on Implementation Procedures, there are changes to the persons and institutions responsible for implementing PPP projects in the new capital. However, there is no provision for special preferential treatment for PPP projects in specific sectors. In considering the implementation of PPP projects, it is necessary to follow future trends in the enactment of bylaws.

Table 2.12: Table of Contents of the Head of LKPP Regulation on PPP Procurement Procedure for IKN
(Head of LKPP Regulation No. 1/2023)

Chapter	Content
I	General Conditions
II	Procurement Entity
III	Procurement of Preparatory Institutions
IV	Procurement of Implementing Entity (Solicited) on Project Agency-Initiated PPP-IKN
V	Procurement of Implementing Entities in Operator-Initiated PPP-IKN (Unsolicited)
VI	Preparatory Organization Panel and Entity Panel Part 1: Procurement by Panel Part 2: Preparatory Body Panel Part 3: Business Entity Panel
VII	Procurement Guarantees
VIII	Supervision, Complaints, and Conflicts of Interest
IX	Final Clauses

Source: JICA Consultant Team based on National Procurement Agency Decree No. 2023-1

(11) GR No. 12/2023 on Investment Incentives for IKN

GR on Investment Incentives for IKN was enacted on March 6, 2023. The regulation stipulates items related to business licensing, business facilitation, investment facilitation, supervision, and evaluation for projects to be implemented in the new capital and partner regions. While the overall direction for convenience provision is provided, the specific areas of the partner regions and details such as tax reduction rates, etc. will be stipulated as detailed regulations in the OIKN Director General's Decree or the Minister of Finance's Decree, and the overall picture of the investment facilitation measures is not yet clear.

Table 2.13: Table of Contents of the GR on Investment Incentives for IKN (GR No. 12/2023)

Chapter	Content
I	General Provisions
II	Business Licensing
III	Business Convenience
IV	Investment Facilitation
V	Supervision
VI	Valuation
VII	Miscellaneous Provisions

Source: JICA Consultant Team based on GR No. 12/2023

Chapter 1, Article 2 states that business licenses, business convenience, and investment convenience shall be granted to business operators in the new capital city or partner regions, and that the business activities for which business licenses, business convenience, and investment convenience are granted in the partner regions shall be stipulated by the Secretary's Decree.

Chapter II, Article 5 states that business licenses and permits in the new capital city and partner regions are not subject to the provisions of the Restrictions on Foreign Ownership of Capital in Certain Business Sectors. This article appears to refer to the list of business sectors attached to PR No. 49 of 2021 on investment business sectors.

The list specifies the percentage of foreign investment in certain business sectors. In effect, the foreign investment restrictions are nullified in the new capital, but Article 6 states that partnership requirements with small, medium, and micro enterprises or cooperatives will apply. The partnership requirement appears to refer to the Head of LKPP Regulation No. 5/2022 of the Director General of the State Procurement Agency, which is discussed above.

Table 2.14: Negative List as Defined in PR No. 49/2021

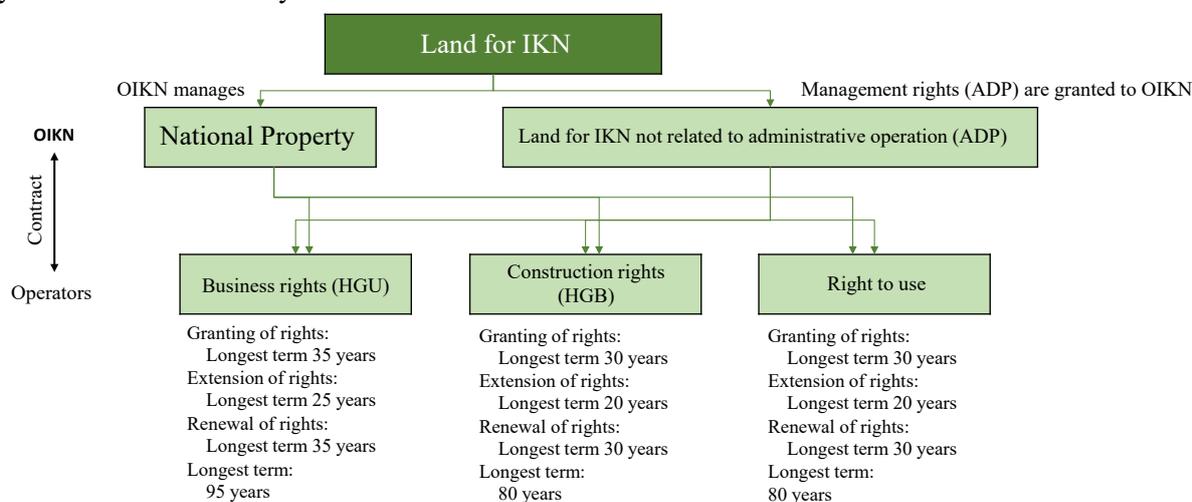
No.	Business Field	Condition
1	Coffee Processing Industry with Geographical Indications	Domestic capital 100%
2	Batik Industry: Stamped Batik	Domestic capital 100%
3	Wooden Structural Goods Industry	Domestic capital 100%
4	Traditional Cosmetics Industry	Domestic capital 100%
5	Traditional Medicinal Raw Materials for Human Use Industry	Domestic capital 100%
6	Traditional Medicines for Human Use Industry	Domestic capital 100%
7	Major Equipment Industry: -Arms and Ammunition Industry -Tank Industry -Defense Radar for Armed Systems Industry -Battleship Industry -Military Aircraft Industry	-Foreign investment up to 49% or -Foreign investment may exceed 49% with the approval of the Minister of Defense if there is a strategic interest
8	Ship Industry: -Pinisi -Chadic -Other wooden vessels of traditional and unique design	Domestic capital 100%
9	Scheduled and unscheduled domestic maritime transportation of passengers	Foreign investment up to 49
10	Domestic marine transportation for tourism	Foreign investment up to 49
11	Pioneer domestic marine transportation for passengers	Foreign investment up to 49
12	Scheduled and unscheduled domestic sea transport for cargo	Foreign investment up to 49
13	Domestic Ocean Transportation for Special Cargo	Foreign investment up to 49
14	Domestic Pioneer Sea Transportation for Cargo	Foreign investment up to 49
15	Traditional (pelayaran rakyat) Domestic Ocean	Foreign investment up to 49
16	Transportation Regular and irregular overseas ocean freight forwarding	Foreign investment up to 49
17	Overseas Ocean Transportation for Special Cargo	Foreign investment up to 49
18	Interstate General Liaison	Foreign investment up to 49
29	Interstate Pioneer Liaison	Foreign investment up to 49
20	General Interprovincial/City Liaison	Foreign investment up to 49
21	Pioneer Interprovincial/City	Foreign investment up to 49
22	Province / City General Liaison Transportation	Foreign investment up to 49
23	Passenger river and lake transportation by regular routes	Foreign investment up to 49
24	Irregular transportation of rivers and lakes for passengers	Foreign investment up to 49
25	Tourist river and lake transportation by irregular routes	Foreign investment up to 49
26	General cargo and/or livestock river and lake transportation	Foreign investment up to 49
27	River and lake transport for special cargo	Foreign investment up to 49
28	Dangerous goods river and lake transportation	Foreign investment up to 49
29	Scheduled Commercial Air Transportation	Foreign ownership must be up to 49% and domestic ownership must be greater than foreign ownership as a whole (single majority)
30	Domestic non-scheduled commercial air transportation	Foreign ownership must be up to 49% and

No.	Business Field	Condition
		domestic ownership must be greater than foreign ownership as a whole (single majority)
31	Air transportation activities	Foreign ownership must be up to 49% and domestic ownership must be greater than foreign ownership as a whole (single majority)
32	Courier activities	Foreign investment up to 49
33	Publishing newspapers, magazines, and newsletters (press)	100% domestic investment in the framework of establishment and up to 40% foreign investment (through the capital market) in the framework of business addition or development
34	Commercial broadcasting organizations	100% domestic capital for establishment, up to 20% foreign capital for business additions or development
35	Subscription broadcasters	100% domestic capital for establishment, up to 20% foreign capital for business additions or development
36	Small pilgrimage and special Mecca pilgrimage trip mediation activities	100% domestic and Muslim
37	Art studios	Domestic capital 100%

Source: JICA Consultant Team based on PR No. 49/2021 on the investment business sector; Attachment III.

Chapter 3 defines three areas of business convenience: provision of land rights (Hak Atas Tanah, HAT), foreign workers, and housing and residential areas.

Land rights are business convenience for the new capital. The land for IKN is under the control of OIKN, and the project operator can obtain business rights (Hak Guna Usaha, HGU), construction rights (Hak Guna Bangunan, HGB), and usage rights by signing a contract with OIKN. At that time, the status of the land will remain an asset under OIKN's management. Previously, HGUs were granted 35 years from grant and a 25-year extension, but the new capital allows a renewal for an additional 35 years. HGBs will be granted for 30 years, extended for 20 years, and renewed for 30 years, in addition to the 35 years granted and 25 years extended previously. The right to use is now granted for 30 years, extended for 20 years, and renewed for 30 years, compared to the previous grant of 25 years and extension of 20 years.



Source: JICA Consultant Team based on GR No. 12/2023

Figure 2.3: Business Convenience for Land

Article 21 provides that in the grant of HAT in the form of HGU, HGB, or right of use on HPL, and subsequent transfer, etc., the land and building rights acquisition tax (BPHTB) will be at the rate of 0% of the acquisition value for a certain period. However, the details of the period and other details will be set forth in a future Secretary's Decree.

The regulations on foreign workers stipulate that businesses operating in the new capital may be granted a 10-year foreign worker authorization, which may be extended. They are also exempted from the obligation to pay compensation for the use of foreign workers for a certain period. The period of exemption will be determined separately in a future Secretary's Decree. Foreign workers will be granted a residence permit for a maximum of 10 years, which can be extended depending on the length of employment.

Chapter IV provides for investment benefits, including income tax benefits, value-added tax exemption, exemption from luxury goods sales tax, customs duties, special tax on capital Nusantara, and special revenue benefits. However, the details of the subject and form of the benefits, acquisition criteria, procedures for application for approval, procedures for granting approval decision, procedures for application for utilization, procedures for granting utilization decision, obligations and prohibitions of taxpayers who acquire the benefits, and cancellation criteria will be established through the Minister of Finance Decree and OIKN Director General Decree in the future.

Table 2.15 shows the provisions related to income tax. The benefits available in the partner regions differ from those in the new capital city.

Table 2.15: Income Tax Convenience Provisions

Item	New Capital	Partner Regions
1	Corporate income tax credit for domestic corporate taxpayers	For domestic corporate taxpayers, corporate tax credit
2	Income tax credit for financial sector activities in financial centers	—
3	Corporate income tax credit for the establishment and/or transfer of head office and/or regional offices	—
4	Gross income tax credit for the implementation of internships, practical training and/or learning activities in the framework of specific competency-based human resources training and development	—
5	Gross income deduction for certain research and development activities	—
6	Gross income deduction for donations and/or expenses for the development of public facilities, social facilities and/or other non-profit facilities	—
7	Government contributions under Article 21 of the Income Tax Act and the Final Tax	—
8	Final Tax income tax on income from gross sales of specified businesses in small and micro enterprises 0%.	—
9	Income tax credit for transfer of title to land and/or buildings	—

Source: JICA Consultant Team based on GR No. 12/2023

Table 2.16 provides details on the corporate tax credits for domestic corporate taxpayers, as discussed above. There are differences in eligible business sectors and periods of preferential treatment between the new capital and partner

regions. In addition, a separate provision on the final income tax exemption applies to small and medium-sized microenterprises (see below).

Table 2.16: Separate Provision on The Final Income Tax Exemption

Item	New Capital	Partner Regions
Investment amount	IDR 10 billion rupiah or more	IDR 10 billion rupiah or more
Business Field	<p>Infrastructure and public services</p> <p>Power generation, including new and renewable energy</p> <p>Highway development and operation</p> <p>Development and operation of seaports</p> <p>Development and operation of airports</p> <p>Development and supply of drinking water</p> <p>Development and operation of health facilities</p> <p>Development and operation of educational institutions</p> <p>Development and provision of information and communication infrastructure</p> <p>Development and management of urban forest parks</p> <p>Development of housing, residential areas and offices</p> <p>Development and management of wastewater</p> <p>Development and management of underground utility networks</p> <p>Development and management of industrial parks and research and innovation centers (industrial and science parks)</p> <p>Development and operation of markets for the public</p> <p>Provision of public transportation</p> <p>Development and operation of passenger or freight vehicle terminals</p> <p>Development and operation of stadiums/sports facilities</p> <p>Economic production</p> <p>Development and operation of shopping centers</p> <p>Provision of tourist facilities and accommodation services/starred hotels</p> <p>Provision of meeting, incentive, convention, and exhibition (MICE) facilities; and</p> <p>Fuel filling and/or electric vehicle charging (battery charging) stations.</p> <p>Other business areas</p> <p>Urban agriculture and/or aquaculture</p> <p>Value-added industries and/or industrial engineering</p> <p>Hardware and/or software industry</p> <p>Commercial services</p> <p>Construction services</p> <p>Real estate brokerage services; and</p> <p>Tourism services and the creative economy</p>	<p>Infrastructure and public services</p> <p>Power generation, including new and renewable energy</p> <p>Highway development and operation</p> <p>Development and operation of seaports</p> <p>Development and operation of airports</p> <p>Development and supply of drinking water</p>
Deduction	100% of corporate taxable income	100% of corporate taxable income
Period	<p>Infrastructure and Public Services</p> <p>30-year fiscal period for investments to be made between 2023 and 2030</p> <p>25-year fiscal years for investments to be made</p>	<p>Infrastructure and Public Services</p> <p>For investments to be made between 2023 and 2030, 25</p>

Item	New Capital	Partner Regions
	between 2031 and 2035 20-year fiscal years for investments to be implemented from 2036 to 2045 Economic output For investments made between 2023 and 2030, 20 fiscal years 15-year fiscal year for investments made between 2031 and 2035 10-year fiscal years for investments to be made between 2036 and 2045 Other Business Sectors 10-year fiscal years for investments made between 2023 and 2030 For investments made between 2031 and 2045, 10 fiscal years (b. 50% deduction)	fiscal years 20-year fiscal years for investments to be made between 2031 and 2035 15-year fiscal year for investments to be implemented from 2036 to 2045

Source: JICA Consultant Team based on GR No. 12/2023

CIT credit facilities are provided to businesses with foreign taxable status for the establishment and/or relocation of their headquarters and/or regional offices. Domestic taxpayers will be granted CIT credit facilities for income received or acquired by the business in Nusantara or by residents in Nusantara. These benefits will be provided until 2045, with a 100% deduction for the first 10 fiscal years and a 50% deduction for the following 10 fiscal years.

A gross income deduction is provided for donations and/or expenses for the development of public facilities, social facilities, and/or other non-profit facilities. The deduction is provided in the form of a gross income credit for the computation of the taxpayer's taxable income up to a specific amount of 200% of the amount of the expenses. This benefit will be provided until 2035.

For the final tax on gross income of specified businesses of small and micro enterprises, domestic taxpayers with investments of less than IDR 10 billion in the new capital city and not including permanent establishments meeting specified requirements may be subject to a 0% final tax for a specified period. The Final Tax is levied on the income from the gross sales of businesses up to IDR 50 billion in a fiscal year received or acquired in a place of business located in the Nusantara Region of the capital city. This benefit will be provided until 2035.

For taxpayers who transfer land and/or building rights, a credit is allowed for 100% of the income taxable amount. This benefit will be provided until 2035.

In the new capital city, the convenience of not collecting the value-added tax and the exemption of the luxury goods sales tax will be provided. In the partner regions, the facilities related to VAT exemptions will be provided, but will not include an exemption from the sales tax on luxuries. The VAT exemption will be applied to certain taxable goods/taxable services of a strategic nature. Tax benefits in the form of an exemption from the new capital's luxury sales tax will be provided for the delivery of luxury residences. This benefit will be provided until 2035.

Similar tariff concessions are provided in the new capital and partner regions. Concessions will be provided for importation of goods for public use by the central or local government for customs duty exemption and import-

related taxes, Pajak Dalam Rangka Impor (PDRI). The details are to be determined in a separate regulation of the Minister of Finance. The duty exemption and PDRI facilities on imports of capital goods for industrial development and upgrading, and duty exemption on imports of goods and materials for industrial development and upgrading will be provided to the following business sectors. These facilities will be provided until 2045:

- a) Development of power plants, including new and renewable energy sources;
- b) Development and operation of highways;
- c) Development and operation of seaports;
- d) Development and operation of airports; and
- e) Water supply development and supply.

Within its own authority, OIKN may establish a tax regime for the Capital Nusantara Special Tax and Special Revenue. It will also be able to offer investment facilities to businesses that meet specific conditions through the OIKN Directorate General Decree. It also states that the following facilities will be provided to support the implementation of investment activities in the new capital city, based on priorities determined by the Secretary of OIKN:

- a) Provision of land or location for businesses;
- b) Provision of facilities and infrastructure;
- c) Provision of investment amenities and security; and/or
- d) Accessibility to immediate and skilled labor.

2.1.5 Authority of Administrative Agencies and Transition

OIKN is a new organization to be established for the purpose of relocating the new capital city. The functions of OIKN are defined in PR No. 62/2022 as shown in Table 2.17.

Table 2.17: Functions of OIKN

No.	Functions
1	Preparation, development, and relocation of the new capital
2	Implementation, monitoring, and evaluation of the new capital MP
3	Revision of the MP for the new capital city
4	Coordination, regulation, monitoring and control of ministries, agencies, local government, and private sector in the development of the new capital city
5	Formulation of strategic and operational measures for the preparation, development and relocation of the new capital and management of the K-IKN
6	Preparation of OIKN work plans and budgets
7	Preparation of OIKN revenue and expenditure plans
8	Preparation and determination of detailed spatial plans
9	Implementation of investment licensing services, improvement of the investment environment, and granting of special incentives to promote investment
10	Planning, procurement, and management of resource use related to human, natural, financial, and technological resources
11	Land acquisition and management
12	Authority to permit transfer of land rights
13	Environmental management and conservation and disaster prevention management
14	Forest management
15	Implementation of the transfer of administrative functions, government officials, national armed forces, national police, foreign embassies, and international organizations
16	Implementation of asset transfers in Jakarta and other provinces and coordination with relevant finance ministries
17	Establishment, guidance, and supervision of entities under OIKN to carry out the work of preparation, development, and relocation of the new capital
18	Coordination with entities responsible for facilities and infrastructure development
19	Implementation and management of cooperation agreements with entities responsible for the preparation, development, and relocation of the new capital
20	Management and implementation of cooperation with partner state governments and other state governments
21	Procurement of goods and services required by OIKN
22	Information management and technical support for tasks of the central government and other agencies
23	Implementation of basic infrastructure, basic human services infrastructure, and social infrastructure
24	Implementation of social development
25	Implementation of regional and economic development
26	Implementation of community engagement through public consultation and other means
27	Implementation of cooperation with experts and consultants
28	Coordination with other ministries, agencies, and provincial governments on 26 functions

Source: JICA Consultant Team based on PR No. 62/2022 and OIKN Regulation No. 1/2022.

OIKN is authorized to implement the main administrative functions normally performed by the local government within the new capital city area. However, the administrative areas of East Kalimantan Province, Kutai Kartanegara Regency, and North Penajam Paser Regency, which are included in the new capital city area, will remain unchanged, and the new capital area will be included within the existing administrative area.

Since the functions of OIKN will cover a wide variety of sectors, it is expected to have many officials from each sector's authorities transferred to the new organization. In actuality, the OIKN and various ministries and agencies will collaborate and coordinate in the preparation, development, and operation of the new capital city.

The functions of the DKI Jakarta, which is the current capital, are regulated in Law No. 29/2007. There, it is clearly stated that the DKI Jakarta is the "State Capital" and an "autonomous region" at the provincial level. Law No.3/2022 describes the deprivation of the 'capital' function of DKI Jakarta, leaving only its function as a 'municipality'. Other local government functions are regulated in Law No. 23/2014. DKI Jakarta, as well as local governments, are to have a governor and a provincial assembly elected by the population, which differs from the OIKN organization in this aspect. The State Capital Law stipulates that the head of OIKN will be selected by presidential nomination and will not have a provincial assembly limited to the operation of the new capital city. DKI Jakarta and other provinces can establish a Governor's Regulation and a Provincial Assembly Regulation, but the OIKN can only establish the Head of OIKN Regulation.

No specific regulations have been issued for future transfers of authority. Since the development of the new capital will be a green field development, there is no population in this area in the initial stage of development. Therefore, it is assumed that the citizens who will flow into the new capital in the future will belong to the existing regional government. When the new capital expands as a city and the population in the area increases, it is assumed that the new capital will become an independent special municipality with an electoral system, but this has not been decided at this time.

2.2 Review of Master Plan

2.2.1 Outline of Review

There have been four MP confirmed for the development of the new capital city: 1) Annex II of Law No.3 described in Section 2.1 above, 2) the detailed MP of PR No.63/2022, 3) MP prepared by the Ministry of National Development Planning, Republic of Indonesia (BAPPENAS), and 4) MP prepared by the Ministry of Public Works and Housing (hereinafter PUPR). Table 2.18 summarizes each MP separately in order of the earliest date prepared, the year of preparation, the author, and the status of the MP. Hereafter, the MPs listed in Table 2.18 will be called BAPPENAS-MP, PUPR-MP, Law No.3 and, PR No.63/2022.

The MPs targeting KP-IKN and K-IKN were prepared by BAPPENAS in December 2020, and then MPs targeting mainly the Government Core Area (hereinafter KIPP) were prepared by the PUPR. After that, PUPR has been updating the MP and related information from time to time. The MPs and related information from both ministries are mainly used as a source of information linked to Law No. 3, which was later promulgated and enforced by the Indonesian government, and its detailed regulations, PR No.63/2022 for KP-IKN, K-IKN and KIPP's development plans.

Table 2.18: Category of MPs and Plans

No.	Language	Plans	Issued	Provider	Status
1	Indonesia	Laporan Akhir MP Penyusunan Rencana Induk Dan Strategi Pengembangan Ibu Kota Negara (MP Ibu Kota Negara/MP IKN)	Dec 2020 (Open to the public)	BAPPENAS	MP
	English	MP Final Report Preparation of a MP and strategy for the development of the national capital (National capital city MP/ MP IKN)			
2	Indonesia	Perencanaan Ibu Kota Negara (IKN)	October 2021 (Public)	PUPR	MP
	English	Planning for the New Capital City (IKN)			
3	Indonesia	Lampiran II, Undang - Undang Republik Indonesia Nomor 3 Tahun 2022 Tentang Ibu Kota Negara	15 February 2022 (Promulgated)	DPR/Parliament: Dewan Perwakilan Rakyat (Parliament)	Law
	English	Annex II, Law of the Republic of Indonesia No. 3 of 2022 about the National Capital City			
4	Indonesia	PR No.63/2022 (Peraturan Presiden Republik Indonesia Nomor 63 Tahun 2022)	18 April 2022 (Promulgated)	National Government	Presidential Regulation
	English	PR No.63/2022 (Presidential Regulation of the Republic of Indonesia Number 63 of 2022)			

Source: JICA Consultant Team based on BAPPENAS-MP, PUPR MP, Law No. 3 and PR No. 63/2022.

The four MPs are described below.

(1) BAPPENAS-MP

The BAPPENAS-MP is a regional planning level MP for KP-IKN and K-IKN, which presents development visions and policies, results of studies and analyses based on natural conditions, and development plans for infrastructure development.

In BAPPENAS-MP, the sections of the MP that mainly contain plans for infrastructure development and matters related to design specifications, such as ministerial ordinance (PUPR) No. 6/2020, No. 4/2017, No. 27/2016, No. 4/2015, No.28/2015, PUPR Development Plan until 2020, and the Development Plan to 2020 of the Ministry of Transportation are considered as sources.

Basically, the BAPPENAS-MP confirmed the factual background that the research and analysis were based on the ministerial decrees and plans of PUPR and other ministries and described the development vision, policies, and infrastructure development plans for the region. Table 2.19 shows the contents of the BAPPENAS-MP.

Table 2.19: BAPPENAS-MP Overview

Chapter	Content	Page
I	Introduction <ul style="list-style-type: none"> ▪ Part 1 National Capital ▪ Part 2 Policy Direction ▪ Part 3 A World Class City for All ▪ Part 4 Approach ▪ Part 5 Roles and Responsibilities 	53
II	Key Performance Indicators <ul style="list-style-type: none"> ▪ Part 1 The Urgency of a Performance Management Framework ▪ Part 2 Methods of Using the Performance Management Framework ▪ Part 3 Proper KPI Development ▪ Part 4 Value Approach Development ▪ Part 5 KPI Decrement to Next Tier 	42
III	Facts and Analysis <ul style="list-style-type: none"> ▪ Part 1 Scope ▪ Part 2 Economics ▪ Part 3 Social ▪ Part 4 Land Consolidation ▪ Part 5 Environment ▪ Part 6 Disaster Risk Assessment ▪ Part 7 Mobility ▪ Part 8 Infrastructure - Energy ▪ Part 9 Infrastructure - Water ▪ Part 10 Infrastructure - Waste ▪ Part 11 Infrastructure - Information and Communication Technology ▪ Part 12 Security Defense ▪ Part 13 Spatial Layout ▪ Part 14 Integrated Analysis 	76
IV	Conceptual Plan <ul style="list-style-type: none"> ▪ Part 1 Introduction ▪ Part 2 Economic Development Strategy: IKN Economic Superhub ▪ Part 3 Social ▪ Part 4 Land Consolidation ▪ Part 5 Environment ▪ Part 6 Disaster Risk Assessment ▪ Part 7 Mobility ▪ Part 8 Infrastructure - Energy ▪ Part 9 Infrastructure - Water ▪ Part 10 Infrastructure - Waste ▪ Part 11 Infrastructure - Information and Communication Technology 	802

Chapter	Content	Page
	<ul style="list-style-type: none"> ▪ Part 12 Security Defense ▪ Part 13 Smart City ▪ Part 14 Spatial Layout 	
V	Spatial Plan <ul style="list-style-type: none"> ▪ Part 1 KP-IKN ▪ Part 2 K-IKN ▪ Part 3 KIPP 	56
VI	Direction of Space Utilization Control <ul style="list-style-type: none"> ▪ Part 1 Direction of Controlling Spatial Utilization of IKN Development Area ▪ Part 2 K-IKN Space Utilization Control Directive ▪ Part 3 KIPP Zoning Regulations Directive ▪ Part 4 Building and Environmental Guideline 	126
VII	Direction of Space Utilization <ul style="list-style-type: none"> ▪ Part 1 Phasing 	45
VIII	Implementation Strategy <ul style="list-style-type: none"> ▪ Part 1 Overview of IKN Roadmap and Development Milestones ▪ Part 2 Capex and Opex Projections ▪ Part 3 Initial Financing Strategy ▪ Part 4 Key Drivers and Follow-Up ▪ Part 5 Risk Management ▪ Part 6 Communication Strategy 	100
Appendix 1	A. Social B. Land C. Environment D. Disaster Risk Assessment E. Mobility F. Infrastructure - Energy G. Infrastructure - Water H. Infrastructure - Waste I. Infrastructure - Information and Communication Technology J. Defense and Security K. Spatial Planning	362
Appendix 2a	Building and Environmental Guidelines (a)	30
Appendix 2b	Building and Environmental Guidelines (b)	29
Appendix c	Risk Assessment	16

Source: JICA Consultant Team based on BAPPENAS-MP

Chapter 1 mainly describes the status of the new capital city development, its policies, vision, and approach, as well as its spatial definition. The vision is described as "a symbol of national identity", "the most sustainable city in the world in accordance with sustainable development", and "the city that will drive Indonesia's future economy".

Chapter 2 describes the key performance indicators (KPIs), which evaluate the development plan to achieve the vision of the new capital city development. Specifically, it describes the items to be set and the KPIs for each item and the status of achievement will be confirmed through the KPI dashboard (Figure 2.3). It is described that this KPI dashboard will be developed in collaboration with the BAPPENAS, PUPR, the Ministry of Spatial Planning and National Land Agency: Kementerian Agraria Dan Tata Ruang Badan Pertanahan Nasional (hereinafter ATR/BPN), and experts.

Principles	INPUT INDICATORS	TARGET	3			Unit of Measurements	2		
			KIPP	K-IKN	KP-IKN		K-IKN		
Designing According to Natural Conditions	placement of green areas (including roof gardens, balconies) in square meters or area of built-up area	100%		S		% of built area	90%- 100%	50%- 90%	<-50%
	% of population within 10 minutes walking radius access to open space (open space is defined as > 300 square meters with 50% planted surface area)	100%		S		% population	80%- 100%	50%- 80%	<-50%
	Percentage of connected green corridor area to total green area in urban area	100%		S		% of green area	80%- 100%	50%- 80%	<-50%
	% of area dedicated to green open space (including roof gardens, green terraces)	50% in 56K, 65% in 256K		S	S	% of land area	>50%	25-50%	<-25%
	hectares of brownfield or rehabilitated cropping areas with forest and natural habitats	50% of existing brownfield area				% total plant area not for renewal	>40%	25-40%	<-25%
	percentage of Kalimantan/Indonesia local plants with total green open space (public parks) in KIPP	80%		S		% of green area	90-100%	50-90%	<-50%
	% of area with flexible access to urban spaces (gathering spaces and/or street vendors) within a 10-minute walking radius	100%		S	S	% area	90%- 100%	50%- 90%	<-50%
	% of area with access to schools, health facilities, places of worship within 10 min walking radius	100%		S	S	% area	90%- 100%	50%- 90%	<-50%
	KLB of public/community space per person compared to the whole area of the region	no differences		S	S	KLB of public space per capita at the regional area level	maximum difference between the upper and lower limits within the neighborhood area	maximum difference between the upper and lower limits within the neighborhood area	maximum difference between the upper and lower limits within the neighborhood area

Source: BAPPENAS-MP Chapter-2

Figure 2.4: KPI Dashboard

Chapter 3 describes the actual situation based on the results of the survey conducted in the KP-IKN regarding economic, social, land management, natural environment, and disaster risks (natural combustion of natural gas and coal methane, earthquakes, landslides, floods, and forest fires) in the wider area, as well as the policies related to mobility, infrastructure (energy, water resources, solid waste, and information communication), and security-related development policies. The integrated analysis lists the public facilities required for the approximately 1.85 million people expected to reside in KP-IKN in the future, and describes the area per facility required, the number of facilities, and the target population. The area per facility is referenced in the "Urban Housing and Environmental Planning Procedure (2004)/SNI 03-1733-2004 (Urban Housing and Environmental Planning Procedure)".

In Chapter 4, the concept of development for KP-IKN is described, based on the development vision of a city where everything is of international standard. In the area of economic development, it is described that industrial clusters were selected from 31 sectors, ranging from agriculture to pharmaceuticals, in three stages. These are the existing industries in East Kalimantan provinces, city industries that conflict with East Kalimantan's industrial sectors, and green and sustainable industries that will improve the performance of existing sectors. The six industrial clusters selected, and the two enablers are given below.

- Industry Cluster

1. Clean Technology Industry: solar panels (photovoltaics) and electric two-wheelers
2. Integrated Pharmaceutical Industry
3. Sustainable Agriculture Industry
4. Ecotourism and Health Tourism
5. Chemical Industry: Petrochemicals and Oleochemicals (palm oil)

6. Low-Carbon Energy

- Implementation (Enabler)

1. Enabler: 21st Century Education
2. Enabler: Smart City and Industry Center 4.0

There are two implementation measures described that will augment the six industrial clusters.

For each infrastructure project related to energy, water resources, waste, and information and communication, demand projections are described, along with population projections for each phase and the description of the location and area of facilities and systems.

For smart cities, policies are described regarding the digital ecosystem of industries using 5G, as well as the transportation, environment, security, public, urban systems, and livability and dynamism sectors. The items pertaining to smart solutions in each of these areas are described below.

- Access and Mobility

Smart Rail & Bus Management, Integrated Mobility Platform, Smart Parking Management, and Real-Time Traffic Management

- Environment and Climate

Integrated Environmental Monitoring, Smart Emergency Management, and Smart Stormwater/Flood Management

- Public Sector

E-Citizen Platform, Centralized Public Database, and Data-driven Urban Planning

- Security and Safety

Smart Public Lighting and Augmented Public Surveillance

- Urban Systems

Smart Landfill Management, Smart Recycling Management, Smart Waste Management, Smart Water Treatment, Smart Building/ Estate Operations, Power Plant Digitization, and Smart Power Grid

- Livability and Dynamism

Primary Healthcare Digitization, Smart Health Insurance Platform, Telemedicine, Urban Comfort Technologies, and Smart Pandemic Management

Chapter 5 describes the spatial plans for KP-IKN, K-IKN, and KIPP. For KP-IKN, the zoning plan is described, as well as the regional centers within KP-IKN, access between centers, and the location of major infrastructure. For K-IKN and KIPP, the railway plan, river plan, land use, spatial plan and location of infrastructure in KIPP were not described.

Chapter 6 describes the direction of spatial control. It mainly describes the direction of activities related to the regulation of public transportation, state roads, infrastructure including electricity, gas, solid waste, water, ICT, environment, forest conservation, food production, land use, forests, public facilities, cultural heritage, local infrastructure, existing communities, development protection areas, cultivation, and disaster risks (earthquake and landslides). The report also includes a list of the main activities to be undertaken within the K-IKN. On the other hand, it describes the planning directions for land use within the K-IKN with respect to the area of use per zone, maximum building height, expected population, and expected population density.

In Chapter 7, the spatial utilization directions are described by phasing. Mainly, infrastructure development policies for dams, wastewater treatment facilities, and water treatment plants within KP-IKN are described for each development phase. The location and anticipated scale of each specific item are summarized in a table.

Chapter 8 mainly describes the development roadmap and the estimated cost of development and its breakdown, with approximately 1,800 ha to be developed by 2024, 10,400 ha by 2035, and 19,100 ha by 2045. It is described that IDR 1,166 trillion (about JPY 12 trillion) will be required to develop about 256,000 ha (including undeveloped area such as forest and ocean) in KP-IKN. The breakdown of the calculation results is given in the figures below. In the transportation sector, the cost of developing LRT, inter-regional railways, and bus networks was added from the 2017 estimate; in the energy sector, it was confirmed that the cost of developing and upgrading solar power plants, hydrogen power plants, and hydrogen and storage batteries was added; in the area of PPPs, it is described that there is a great potential to reduce the burden on the government through the use of private-sector funds in the areas of railways, electricity, toll roads, water supply, and waste.

Asset class	Initial cost estimation (2017) ¹ Trillion IDR	Masterplan CAPEX estimation (MP) ¹ Trillion IDR	Initial estimation difference (2017) and MP Trillion IDR
1 Infrastructure	149	830	680
2 Government employee housing	215	219	4
Government office	65	38	(27)
Community/social	28	63	34
Environment		8	8
Land Acquisition	8	8	0
Total	466	1.166	700

Source: BAPPENAS-MP Chapter 8

Figure 2.5: Cost Comparison by Asset to MP Estimate at 2017 - 1

Asset	Initial Cost Estimate (2017)	Masterplan	Difference
Public Transportation		354	354
Energy	87	299	212
Road	41	82	41
Water	3	39	37
Wastewater	2	17	14
Waste	1	12	6
Airport Upgrades	5	14	14
Telecommunications	0	5	-
Port Upgrade	5	5	4
Blue and Green Corridor		1	1
Open Space	4		(4)

Source: BAPPENAS-MP Chapter 8

Figure 2.6: Cost Comparison by Asset to Master Plan Estimate at 2017 - 2

(2) PUPR-MP

PUPR-MP presents land use plans and infrastructure development plans for the Government Core Area, including IKN's regional plans, the results of studies and analyses based on natural conditions within the Government Core Area, urban design for the Government Core Area, design guidelines for urban development, landscape and architecture, and the Government Core Concept plans for each district within the area are presented. The Ministry of Public Works and Housing-MP is described as a spatial plan based on an agreement with the BAPPENAS and other ministries. Specifically, the MP provides information related to the location of KIPP, reiterating that KIPP will be the center of development within K-IKN. KIPP will be divided into six zones within K-IKN related to education, health, entertainment, research, and economy. Additionally, it is described that PUPR, BAPPENAS, and ATR/BPN coordinated, formulated, and agreed on the following aspects given on Table 2.20. This shows the table of contents of the PUPR-MP.

Table 2.20: PUPR-MP Overview

Chapter	Content	Page
I	Introduction: KIPP Design <ul style="list-style-type: none"> ▪ Part 1 Pillars of IKN Urban Design Vision ▪ Part 2 The Initial Concept of IKN Urban Design -Government Center Core Area (KIPP) 	6
II	The Constellation of IKN in Regional Plan <ul style="list-style-type: none"> ▪ Part 1 The Ritualization of Borneo in the Eyes of the World ▪ Part 2 Position of the New Capital City in the Unitary State of the Republic of Indonesia ▪ Part 3 Constellation of KIPP IKN Planning Locations ▪ Part 4 Super Hub Connectedness Guidance Plan -Tri City ▪ Part 5 Regional Linkage Guidance Plan East Kalimantan ▪ Part 6 Structure Plan K-IKN ▪ Part 7 KIPP Constellation in K-IKN 	19
III	KIPP Land Location Analysis <ul style="list-style-type: none"> ▪ Part 1 KIPP Site Condition ▪ Part 2 KIPP Geotechnical Analysis ▪ Part 3 Multi Criteria Analysis 	12
IV	KIPP Urban Design Vision <ul style="list-style-type: none"> ▪ Part 1 KIPP Urban Design Vision ▪ Part 2 KIPP Urban Design Framework 	22
V	KIPP Urban Design Performance <ul style="list-style-type: none"> ▪ Part 1 KIPP Key Performance Indicator (KPI) ▪ Part 2 General Target of KIPP Key Performance Indicator (KPI) Achievement 	4
VI	KIPP Urban Design Guide Program <ul style="list-style-type: none"> ▪ Part 1 Transformation Concept in KIPP Design ▪ Part 2 Work Transformation ▪ Part 3 Residential Transformation ▪ Part 4 Transformation of Nation and State ▪ Part 5 Transformation of Mobilization ▪ Part 6 Transformation of Preserving the Environment 	29
VII	KIPP Urban Structure Plan and Hierarchy Guidance <ul style="list-style-type: none"> ▪ Part 1 KIPP's Five Design Principles ▪ Part 2 City Spatial Structure Plan in KIPP ▪ Part 3 Principles of Urban Space Hierarchy System in KIPP ▪ Part 4 Sub-BWP Division Plan in KIPP ▪ Part 5 KIPP Precinct Plan ▪ Part 6 KIPP District Plan 	10
VIII	Urban Design Framework Guidance of KIPP Development Plan <ul style="list-style-type: none"> ▪ Part 1 Land Use Guideline Plan ▪ Part 2 Green and Blue Open Space Guidance Plan ▪ Part 3 Road Hierarchy Guideline Plan - ROW ▪ Part 4 Transit Oriented Area Guideline Plan ▪ Part 5 Social and Public Facilities Guideline Plan ▪ Part 6 Public Transportation Guideline Plan 	18

Chapter	Content	Page
	<ul style="list-style-type: none"> ▪ Part 7 Pedestrian Connectivity Guideline Plan ▪ Part 8 Bicycle Connectivity Guideline Plan 	
IX	KIPP Landscape Guidance Plan <ul style="list-style-type: none"> ▪ Part 1 KIPP's General Phasing Plan (Ultimate Plan) ▪ Part 2 General Plan for KIPP Phasing Early Stage 2024 	10
X	KIPP Architectural Guidance Plan <ul style="list-style-type: none"> ▪ Part 1 General Guidelines for Green Open Space Landscaping ▪ Part 2 KIPP Landscape Key Performance Indicator (KPI) ▪ Part 3 Green and Blue Open Spaces Network Guidance Plan in KIPP ▪ Part 4 Typology of Green Open Space in KIPP ▪ Part 5 Nationality Axis Guidance ▪ Part 6 Tri Praja Axis Guidance 	22
XI	Core Government Sub-BWP Precinct Detailed Guidance Plan <ul style="list-style-type: none"> ▪ Part 1 KIPP General Architectural Plan ▪ Part 2 Architectural Design Guide for Government Buildings ▪ Part 3 Architectural Design Guide for Residential Buildings 	48
XII	Sub-BWP Precinct Detailed Guidance Plan in Government Core Area <ul style="list-style-type: none"> ▪ Part 1 Precinct Guidance Plan ▪ Part 2 District Guidance Plan ▪ Part 3 Precinct, District and Subblock Naming Guidelines ▪ Part 4 Sub-WWP Spatial Structure Guidance Plan ▪ Part 5 Land Use Guidance Plan and Calculations ▪ Part 6 Development Intensity Guidance Plan ▪ Part 7 Green and Blue Open Space Guidance Plan ▪ Part 8 Road Hierarchy Guideline Plan - ROW ▪ Part 9 Public Transportation Guideline Plan ▪ Part 10 Water Infrastructure Guideline Plan ▪ Part 11 Urban Drainage Infrastructure Guideline Plan ▪ Part 12 Utilities Infrastructure Guideline Plan ▪ Part 13 Wastewater and Waste Infrastructure Guideline Plan 	30
XIII	Government Precinct Detailed Guidance Plan <ul style="list-style-type: none"> ▪ Part 1 Land Condition Analysis ▪ Part 2 Spatial Structure Guidance Plan ▪ Part 3 Government Precinct Character Guide ▪ Part 4 Subblock Numbering Guidelines ▪ Part 5 Land Use and Intensity Guidance Plan ▪ Part 6 Open Space Guidance Plan ▪ Part 7 Road Hierarchy Guidance Plan - ROW ▪ Part 8 Public Transportation Guideline Plan 	14
XIV	West Precinct Detailed Guidance Plan <ul style="list-style-type: none"> ▪ Part 1 Land Condition Analysis ▪ Part 2 Spatial Structure Guidance Plan ▪ Part 3 West Precinct Character Guide ▪ Part 4 Subblock Numbering Guidelines ▪ Part 5 Land Use and Intensity Guidance Plan ▪ Part 6 Open Space Guidance Plan ▪ Part 7 Street Hierarchy Guideline Plan - ROW ▪ Part 8 Public Transportation Guideline Plan 	12
XV	Core Precinct Detailed Guidance Plan <ul style="list-style-type: none"> ▪ Part 1 Land Condition Analysis ▪ Part 2 Spatial Structure Guidance Plan ▪ Part 3 Precinct Core Character Guide ▪ Part 4 Subblock Numbering Guidelines ▪ Part 5 Land Use and Intensity Guidance Plan ▪ Part 6 Open Space Guidance Plan ▪ Part 7 Street Hierarchy Guideline Plan - ROW ▪ Part 8 Public Transportation Guideline Plan 	12

Source: PUPR-MP

(3) Law No.3/2022

It is primarily a development plan based on planning information from the BAPPENAS-MP and PUPR-MP. It mainly describes the vision for the development of the new capital area (Forest City, Sponge City, and Smart City) and the outline of the fading plan of the development and the facilities to be developed. The KPI and target values are described in the BAPPENAS-MP.

(4) PR No. 63/2022

The MP is mainly based on the contents of the planning information of the BAPPENAS-MP and PUPR-MP. The contents refer to the BAPPENAS-MP and PUPR-MP.

2.2.2 Development Area

At the beginning of each MP, a breakdown of K-IKN is defined as the development target of the new capital city. According to the latest plan, PR No. 63/2022, the overall IKN is listed as 256,142 ha, K-IKN as 56,180 ha, and KIPP as 6,671 ha. Table 2.21 summarizes the outline of the development area status based on PR No. 63/2022.

Table 2.21: Status of the Development Area

Area Name	Status Outline
IKN	Overall development area of the new capital city
KP-IKN	Development area excluding KIPP
K-IKN	Area located in Kutai Kartanegara Regency and North Penajam Paser Regency in East Kalimantan with 13 villages
KIPP	Prioritized development area by government

Source: JICA Consultant Team based on PR No. 63/2022

The BAPPENAS-MP and PUPR-MP define that the whole development area of the new capital city and KP-IKN have the same area. On the other hand, the latest plan, PR No. 63/2022, defines that the area of KIPP is not included in KP-IKN. Table 2.22 shows the definitions of the development areas for each plan. In this report, both IKN and KP-IKN will be referred to as KP-IKN.

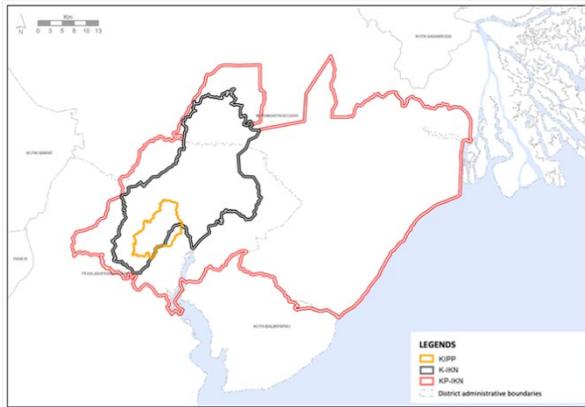
Table 2.22: Information Related to the Development Area of Each of the MPs and Plans

No.	MPs and Plans	Development Area (ha)	Kawasan Pengembangan IKN (KP-IKN) (ha)	Kota IKN (K-IKN : IKN) (ha)	Kawasan Inti Pusat Pemerintahan (KIPP) (ha)	Reference Figure
1	BAPPENAS-MP	256,142.74 ha	256,142.74 ha	56,180.87 ha	6,856 ha	Figure 2.7
2	PUPR-MP	256,142.72 ha	256,142.72 ha	56,181 ha	6,856 ha	Figure 2.8
3	Law No.3/2022	256,142 ha	*199,962 ha	56,180 ha	6,671 ha	Figure 2.9
4	PR No.63/2022	256,142 ha	*199,962 ha	56,180 ha	6,671 ha	Figure 2.10

* While the plan lists the overall development area as 256,142 ha, the area of KIPP is not included as KP-IKN.

Source: JICA Consultant Team based on PUPR-MP, BAPPENAS-MP, Law No. 3/2022, PR No. 63/2022

The development areas from the boundaries in each plan are different depending on the prepared schedule. It is assumed that the reason for the difference in area is that the referenced topographic information is different or that the boundaries of the development area have been reviewed and adjusted. In the latest plan, PR No. 63/2022, the source of the map is from the Geospatial Information Agency. In addition, a marine area of 68,189 ha is listed.



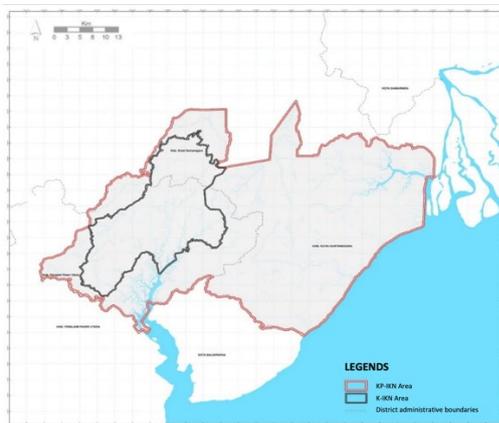
Source: BAPPENAS-MP

Figure 2.7: KP-IKN Area of BAPPENAS-MP



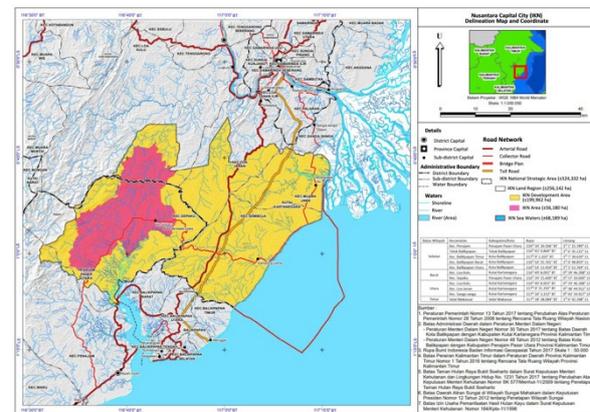
Source: PUPR-MP

Figure 2.8: KP-IKN Area of PUPR-MP



Source: Law No. 3/2022 (Kementerian PPN/BAPPENAS, 2020)

Figure 2.9: KP-IKN Area of Law No.3/2022



Source: PR No. 63/2022

Figure 2.10: KP-IKN Area of PR No.63/2022

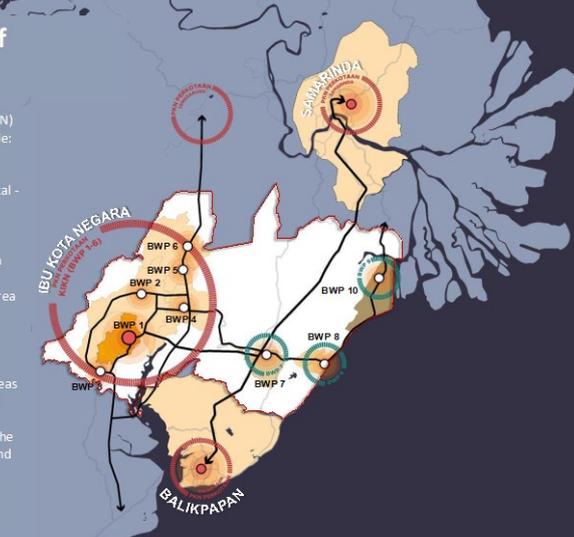
2.2.3 Development Vision

The development vision described in each plan is summarized in Table 2.23. The common vision topics include national symbolism, smart city development, development of public transportation, and infrastructure development.

Both the BAPPENAS-MP and PR No. 63/2022 confirmed that the development visions in the MP are generally consistent. Regarding the Law No. 3/2022, the JICA Consultant Team referred to PR No. 63/2022, which presents a more detailed development vision.

Table 2.23: Overview of the Vision in Each of the MPs and Plans

MP	Outline of Development Visions
BAPPENAS-MP	(1) National identity, (2) Smart, Green, Beautiful, Sustainable, (3) Infrastructure development that meets international standards, (4) Effective and efficient governance, (5) Economic base point in East Indonesia [Economic Development Strategy]: Over time, it was determined that IKN should also become a superhub that strengthens the economy of East Kalimantan and integrates the two major cities that flank it, Balikpapan and Samarinda. Therefore, an update was made to the IKN priority economic clusters.
PUPR-MP	(1) National identity represented value of citizens and nature, value as nationality, value as government, (2) Sustainable economy, society and environment (sustainable development, forest city, sustainable mobility), (3) Smart city, modern international (urban sector, transportation sector, infrastructure sector)

MP	Outline of Development Visions
	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Regional Linkage of East Kalimantan</p> <p>Proposed National Activity Centers (PKN) based on the Ministry's RTR KSN include:</p> <ol style="list-style-type: none"> Changes to East Kalimantan PKN: Balikpapan Urban Area - National Capital - Tenggarong - Samarinda - Bontang (Ministry of ATR, Nov 2020). Economic Linkage of PKN Balikpapan Urban Area - PKN Urban Area of the National Capital (K-IKN) - PKN Urban Area of Samarinda (Ministry of ATR, March 2021). The proposed PKN of the National Capital City consists of 6 (six) Urban Areas (BWP) within the scope of K-IKN as the State Government Center and International Service Center covering the fields of Health, Education, Research and Technology, Tourism, Commercial Services, Digital Industry Smart City applications, e-Government, etc. (Ministry of ATR, March 2021). </div> <div style="width: 50%; text-align: center;">  </div> </div> <p>[Regional Cooperation -East Kalimantan-]: Economic Linkages of PKN Balikpapan Urban Area - PKN Urban Capital City (K-IKN) - PKN Urban Samarinda (Ministry of ATR, March 2021).</p>
PR No.63/2022	<p>(1) National identity, (2) smart, green, beautiful, sustainable (efficient use of resources, land space management, waste and sanitation management, integrated urban transportation services, comfortable living environment), (3) optimization of development in technology, architecture, urban planning, and social sectors (optimization of labor, infrastructure, resources and Optimization of networks)</p> <p>[The Locally Integrated Vision]: It directs that the Superhub of the Capital of the Archipelago will be the driving force of the economy in East Kalimantan Province as well as a trigger that strengthens the supply/value chain between economic activities on Kalimantan Island and other regions in Indonesia so that it becomes more inclusive. This vision will be driven through a strong Three Cities cooperation strategy between the Capital City of Nusantara, Balikpapan and Samarinda which will form a complementary economic development triangle, the development strategy of Partner Regions as part of the economic superhub, as well as strategies for increasing economic linkages and supply chains between superhubs. the economy of the National Capital with other regions in Indonesia.</p>

Source: JICA Consultant Team

The highest effect among MPs, PR No. 63/2022 targets for the realization of the vision are presented as KPIs in eight specific sectors. In general, the vision includes targets for the natural environment and infrastructure development, but no vision or goals were identified for disaster prevention planning for river flooding and earthquake disasters. In terms of the green space requirement related to the “Forest City” concept, the PUPR-MP plans to secure 68% of green space in KIPP, and in consideration of the balance in the new capital city as a whole area, it is assumed that the balance will be adjusted to secure the remaining green space outside KIPP, thus increasing the total area to more than 75%.

The key objectives for each of the sectors identified in the KPIs are listed below.

- Urban Transportation Sector

The vision of the "10-minutes city" is described in the "Urban Transportation" section. Specifically, the vision calls for the achievement of an 80% public transportation share by 2045, and for major facilities to be accessible by public transportation which can be reached by foot in 10 minutes.

- Nature and Environment Sector

For the nature and environment sector, the city will secure at least 75% in green areas (75% in protected areas and 10% in food production areas) out of the 256,142 ha and be developed so that 100% of its residents will be able to access recreational spaces and green areas within 10 minutes. The goal is to develop sufficient green functions in high-rise residential and commercial buildings, as well as in residential buildings in ordinary housing.

- Service Sector

In the community services sector, 100% of residents will be able to access community facilities and services within 10 minutes, and universal design will be implemented for public spaces. Moreover, gender inclusive design will be implemented.

- Energy Sector

The goal for the energy sector is to achieve 60% energy savings in buildings, 100% energy supply using renewable energy, and zero emissions by 2045.

- Sewage, Wastewater, and Solid Waste Sectors

In the area of sewage, wastewater, and solid waste, the target is for the IKN area of 256,142 ha (10% agricultural land) to meet the needs of food production. The target is to meet a 60% reduction in solid waste through recycling by 2045, and for 100% implementation of wastewater treatment by 2035.

- Urban Sector

In the urban area, the goal is to become one of the top 10 most livable cities in the world by 2045. Furthermore, part of the goal is to develop major infrastructure and provide safe and affordable housing by 2045.

- Technology Sectors

In the technology sector, the goal is to achieve a high ranking in the UN E-Government Development Index (EGDI), provide digital connectivity and information and communication technology to all citizens and businesses, and achieve a business satisfaction rate of at least 75% for digital services.

- Social Sector

In the social sector, the goal is to achieve a poverty rate of 0% in K-IKN by 2035 and to raise the region's gross per capita income to a high level.

2.2.4 Planned Population

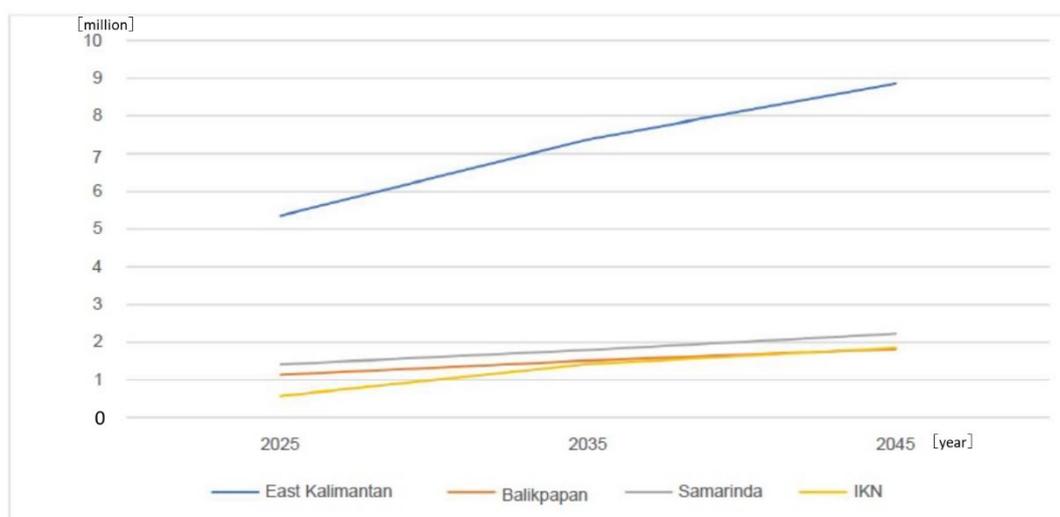
In the PUPR-MP, the population of KIPP in 2045 is planned to be approximately 280,000. On the other hand, for the IKN as a whole development area, PR No. 63/2022 projections round up to approximately 1.9 million people in 2045. This was confirmed to be in accordance with the BAPPENAS-MP, which was planned before the promulgation.

Table 2.24: Phasing Plan of Population in Each of the MPs and Plans

MPs and Plans	Phase 1 (Person) 2020-2024	Phase 2 (Person) 2025-2030	Phase 3 (Person) 2031-2035	Phase 4 (Person) 2036-2040	Phase 5 (Person) 2040-2045
BAPPENAS-MP	616,000	958,000	1,105,000	1,498,000	1,850,000
PUPR-MP (KIPP)	37,421		226,300		275,577
PR No.63/2022	488,409	1,283,589	1,452,967	1,666,121	1,911,988

Source: JICA Consultant Team

The following figure is a population projection of East Kalimantan and three city areas in the BAPPENAS-MP. The population will increase in the future.



Source: BAPPENAS-MP Chapter 5

Figure 2.11: Population Projection of East Kalimantan and Three Cities Area

2.2.5 Land Use Plan

(1) Land Use Category and Area

The Table 2.25 summarizes the area of KIPP's land use described in each MP, separately and in its entirety.

Table 2.25: Land Use Area of Each MP

Land Use		BAPPENA S-MP Chapter 6	PUPR- MP (Summary- 1, Aug. 2021)	PUPR-MP (Oct. 2021)	PUPR-MP (Summary- 2, Dec 2021)	Law No.3	PR No.63/2022
KIPP (ha)		*6,558.52 (Developable Area: 2,447)	6,856.00	6,850.00	6,851.00	6,671.00	6,671.00
Residential	ha	805.00	762.80	98.70	98.70	-	990.90
	%	12.27%	11.13%	1.44%	1.44%	-	14.85%
Government	ha	736.00	340.20	98.70	98.70	-	381.00
	%	11.22%	4.96%	1.44%	1.44%	-	5.71%
Green and Open Space	ha	710.00	4,645.00	4,564.70	4,564.70	-	4,322.00
	%	10.83%	67.75%	66.63%	66.63%	-	64.79%
Office	ha	-	-	243.30	243.30	-	89.50
	%	-	-	3.55%	3.55%	-	1.34%
Mixed Use	ha	-	-	143.10	143.10	-	150.4
	%	-	-	2.09%	2.09%	-	2.25%
Security/ defense	ha	-	-	116.90	116.90	-	119.50
	%	-	-	1.71%	1.71%	-	1.79%
Public Facility	ha	-	-	71.30	71.30	-	80.30
	%	-	-	1.04%	1.04%	-	1.20%
Infrastructure	ha	-	137.12	98.70	98.70	-	99.50
	%	-	2.00%	1.44%	1.44%	-	1.49%
Road	ha	-	548.48	656.50	656.50	-	-
	%	-	8.00%	9.58%	9.58%	-	-
River	ha	-	-	758.10	-	-	-
	%	-	-	11.07%	-	-	-
Embassies / International Organizations	ha	70.00	-	-	-	-	-
	%	1.07%	-	-	-	-	-
Total Area(ha)		2,251.00	6,091.90	6,850.00	6,433.60	-	6,233.10

*Only the development areas within KIPP (Area 1 & Area 2) are covered. Area 1 is 2,447 ha and Area 2 is 693 ha.

Source: JICA Consultant Team based on BAPPENAS - MP, PUPR-MP, Capital Relocation Law, Presidential Decree No. 63 of 2022

Except for the PUPR-MP (October 2021), the total area of each land use does not match the area of KIPP. This may be since roads, rivers, and the like are not included as land uses. On the other hand, BAPPENAS-MP did not confirm the land-use plan as KIPP, since only the land-use plan based on the area classification within K-IKN was described. The PUPR- MP (abridged version (1) August 2021) did not include land use for business, mixed use, public facilities, and security or integrate them into residential and government land use, thus, confirming the high overall percentage use of residential and government land use.

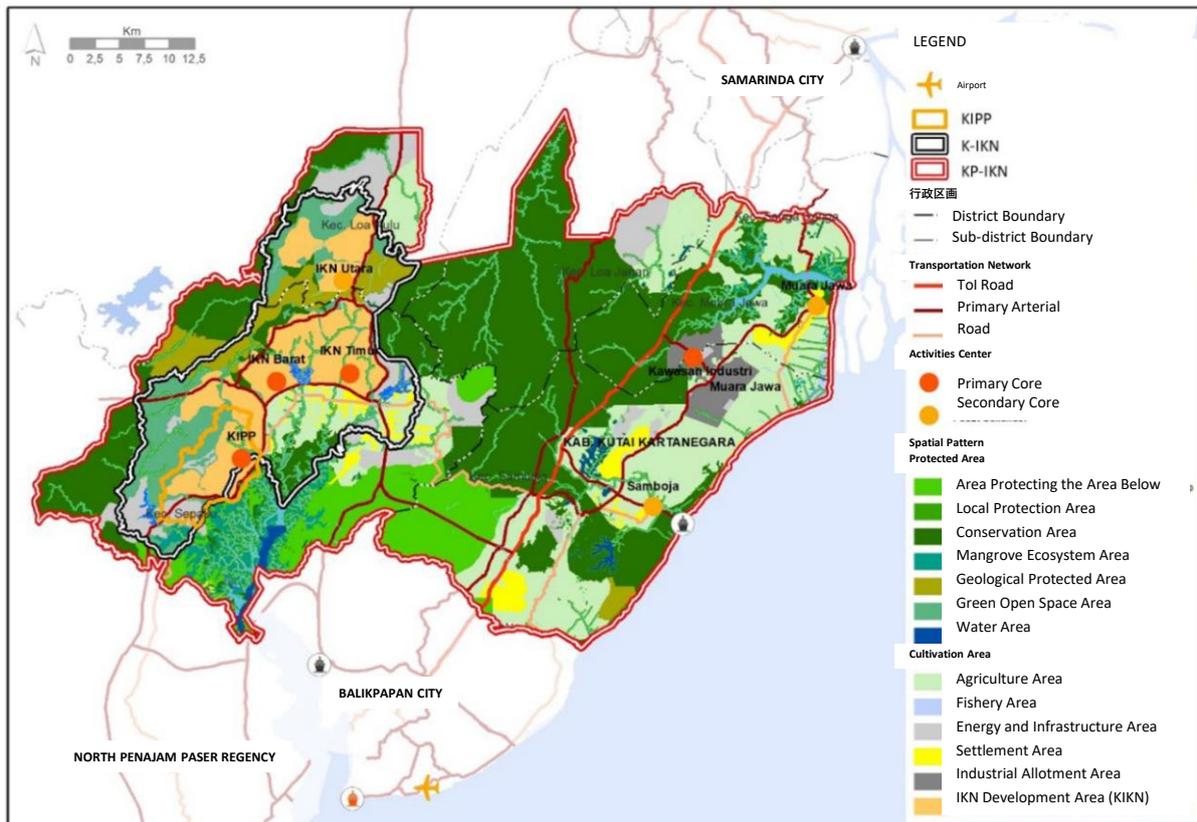
In terms of green space area, the percentage of green and open space in MPs other than BAPPENAS-MP targeting mainly development areas was more than 60%. While securing green space is necessary for the “Forest City” concept, it is desirable to implement effective development control measures to prevent future

sprawl around K-IKN.

(2) BAPPENAS-MP

1) KP-IKN

Below is the land use map of KP-IKN as described in BAPPENAS-MP. The latest version of the regional land use plan map in KP-IKN is shown in the spatial plan of Presidential Decree No. 63 of 2022, which is described in the figure below. The regional land use plan map was prepared based on the land use plan of the BAPPENAS-MP.

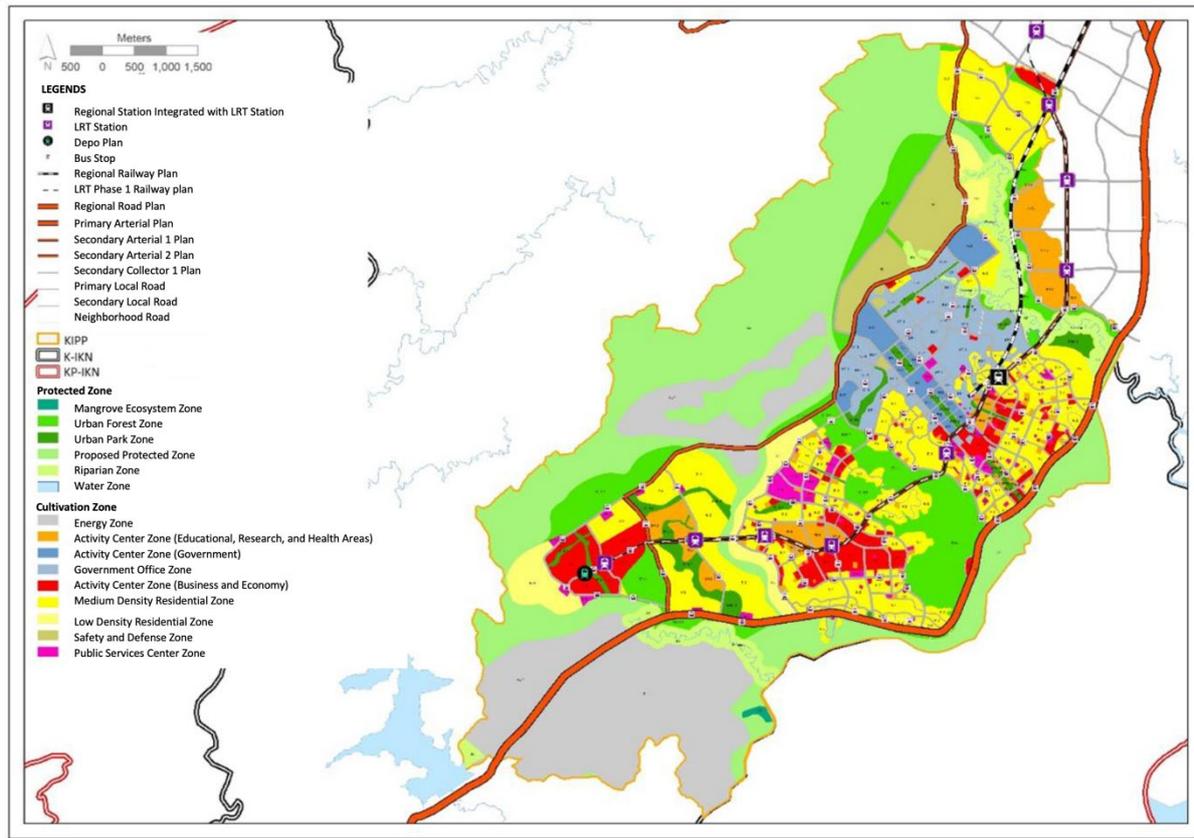


Source: BAPPENAS-MP Chapter 5 (ATR/BPN (2019))

Figure 2.12: Land Use Map of IKN (BAPPENAS-MP, 1:5000)

2) KIPP

Below is the land-use plan map in KIPP as described in BAPPENAS-MP. KIPP's land use plan was confirmed to indicate a concentration of commercial and business areas around the railway station, with residential areas located around the commercial areas, and green areas outside of the commercial areas. It was also confirmed that the land use plan map in KIPP is different with the latest land use planning map in KIPP by PUPR in terms of road alignment and lot shapes.

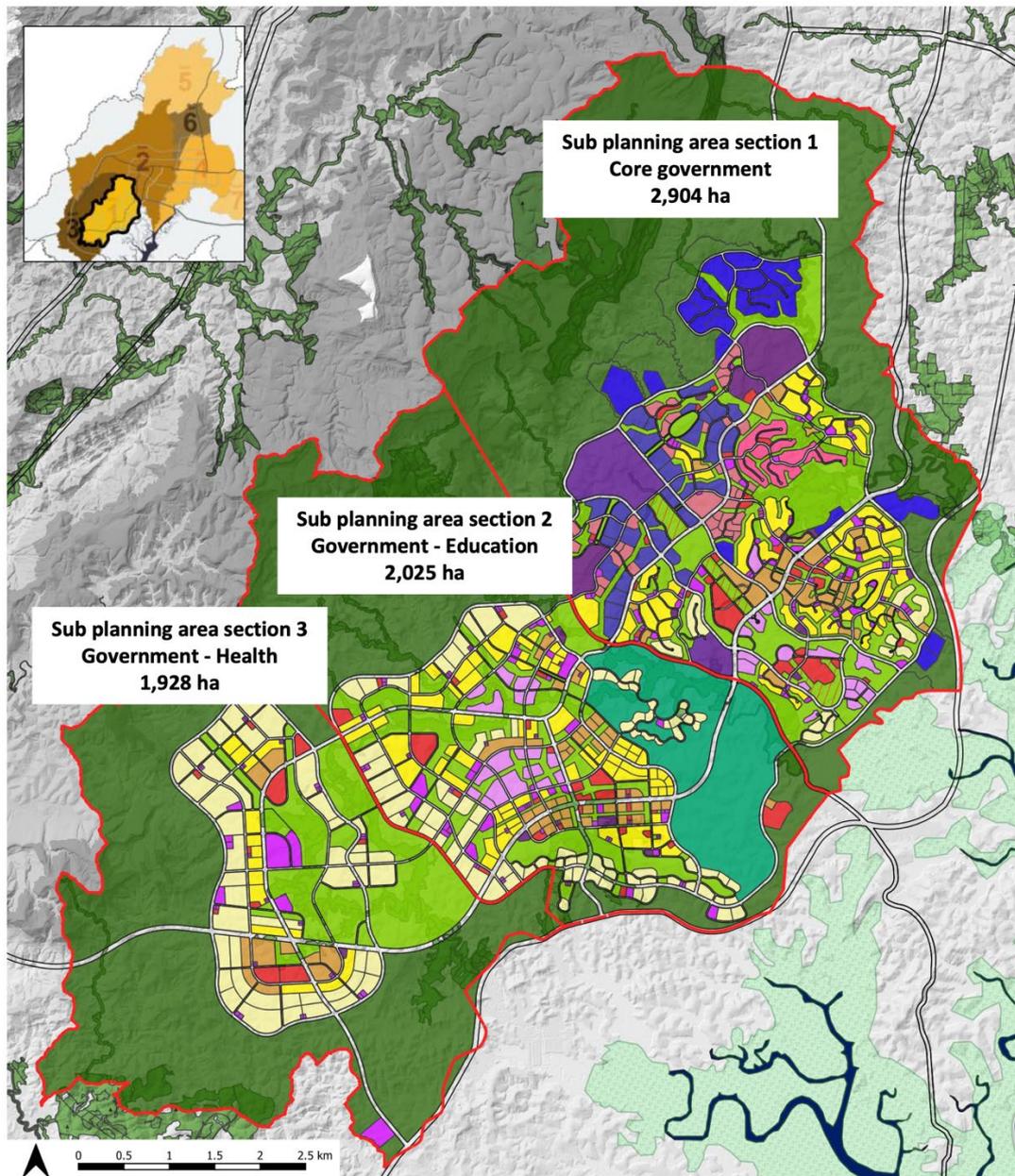


Source: BAPPENAS-MP Chapter 5

Figure 2.13: Land Use Map of KIPP (BAPPENAS-MP)

(3) PUPR-MP

Below is the land use plan map for KIPP as described in the PUPR-MP. Compared to the BAPPENAS-MP, detailed lot plans and road line shapes can be confirmed. On the other hand, it was confirmed that the land use plan does not consider the future railways development plan at this time, as no plans for a railway station or railway land are listed as land use.



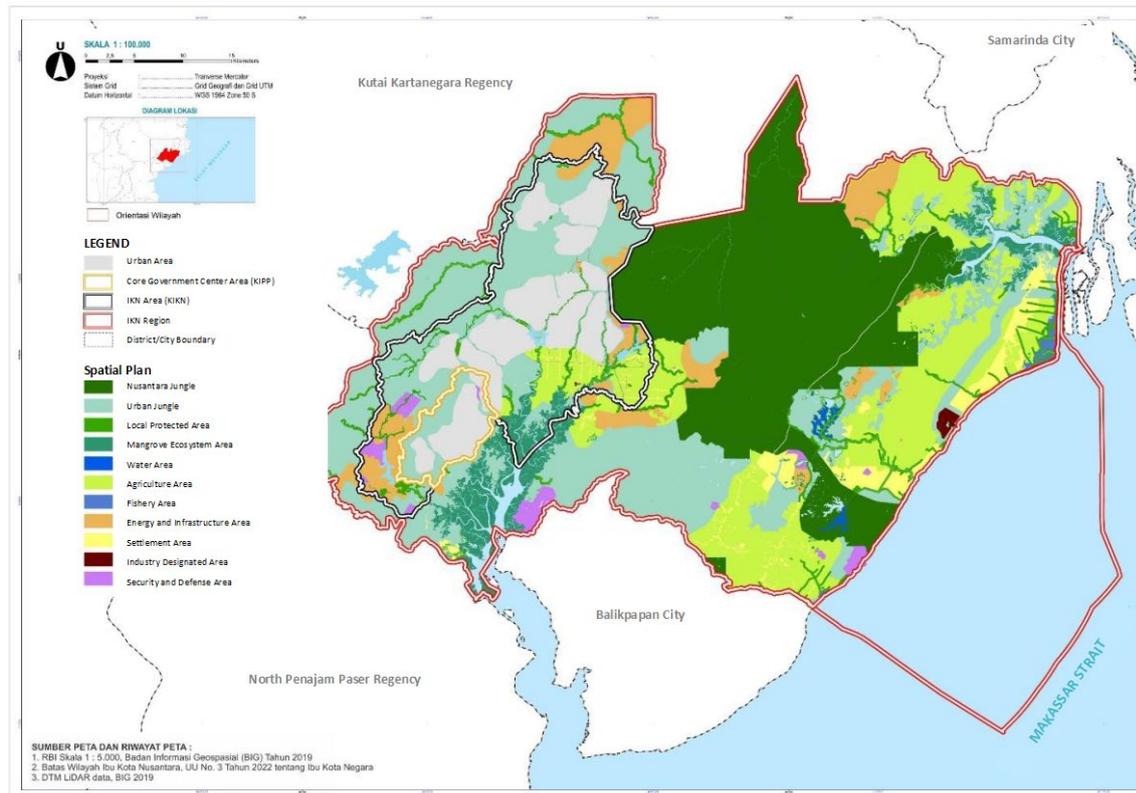
Source: PUPR-MP

Figure 2.14: Land Use Map of KIPP (PUPR-MP)

(4) PR No. 63/2022

1) KP-IKN

Below is the land use plan map of KP-IKN as described in the spatial plan of Chapter 4 of PR No. 63 of 2022. It was confirmed that the land use is divided into 11 kind of land uses: two forest (jungle) areas, a regional protection area, a mangrove ecosystem area, water bodies, agricultural areas, fishing areas, energy and infrastructure, residential areas, industrial areas, and defense and security areas.

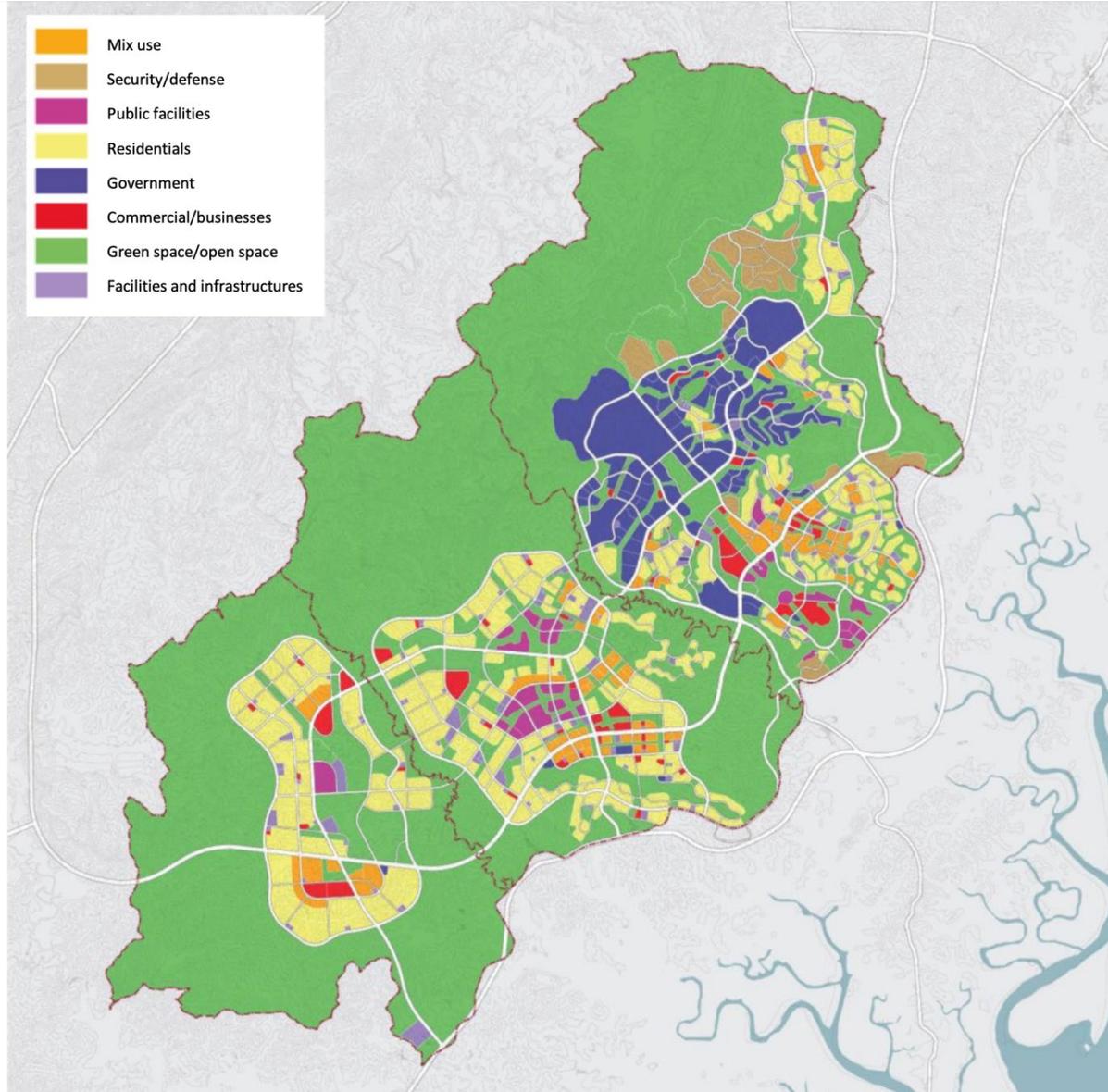


Source: PR No. 63/2022 Chapter 5

Figure 2.15: Zoning Map of K-IKN (PR No. 63/2022)

2) KIPP

The following is the land use plan map of KIPP as described in Chapter 5 of PR No.63/2022. It was confirmed that the road alignment, lot shape, and land use are generally the same as in the KIPP land use plan map in PUPR-MP.



Source: PR No. 63/2022

Figure 2.16: Land Use Map of KIPP (PR No. 63/2022)

(5) Summary

The land use plan confirmed that PUPR has the most up-to-date plan. In large-scale urban development projects such as the New Urban Development Project, land use planning maps are generally kept in a consolidated base map and land use planning maps by ministries and organizations close to the site are reviewed and updated as necessary. This is because of the wide range of adjustments that must be made to the alignment for land development, roads, various utilities, and river design.

2.2.6 Urban Transportation

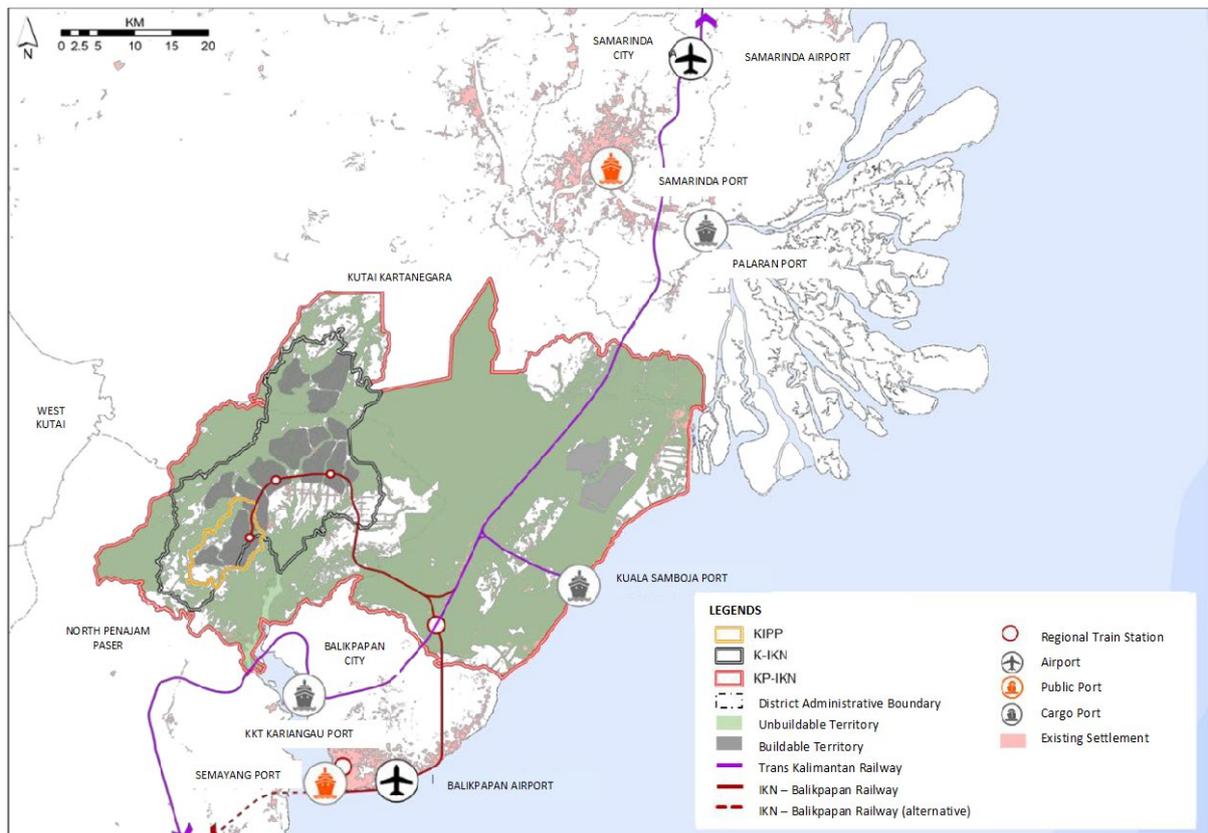
(1) BAPPENAS-MP

1) Regional Railways

a) KP-IKN

In Chapter 4, Section 7 of the BAPPENAS-MP, the concept plan for the Balikpapan to IKN railway corridor describes the route from the Balikpapan Airport to KIPP as approximately 75 km. It also described the need for rail service with an average speed of 120 km/h to achieve the target travel time of 50 minutes or less between locations.

The design criteria for the future survey of the railway plan include a minimum curve radius of 2 km, and a design speed standard of 160 km/h. The plan describes that the rapid train from the airport to the K-IKN gate station will take 28 minutes and to the KP-IKN gate station will take 30 minutes. On the other hand, to realize this concept plan, it is necessary to discuss the natural environment, social environment, and technological aspects with all parties concerned. It is necessary to consider a regional railway for logistics between major gates such as ports and airports, a railway connecting to activity centers including the Alajawa Industrial Zone, and a railway crossing Balikpapan and Kalimantan.



Source: BAPPENAS-MP Chapter 4

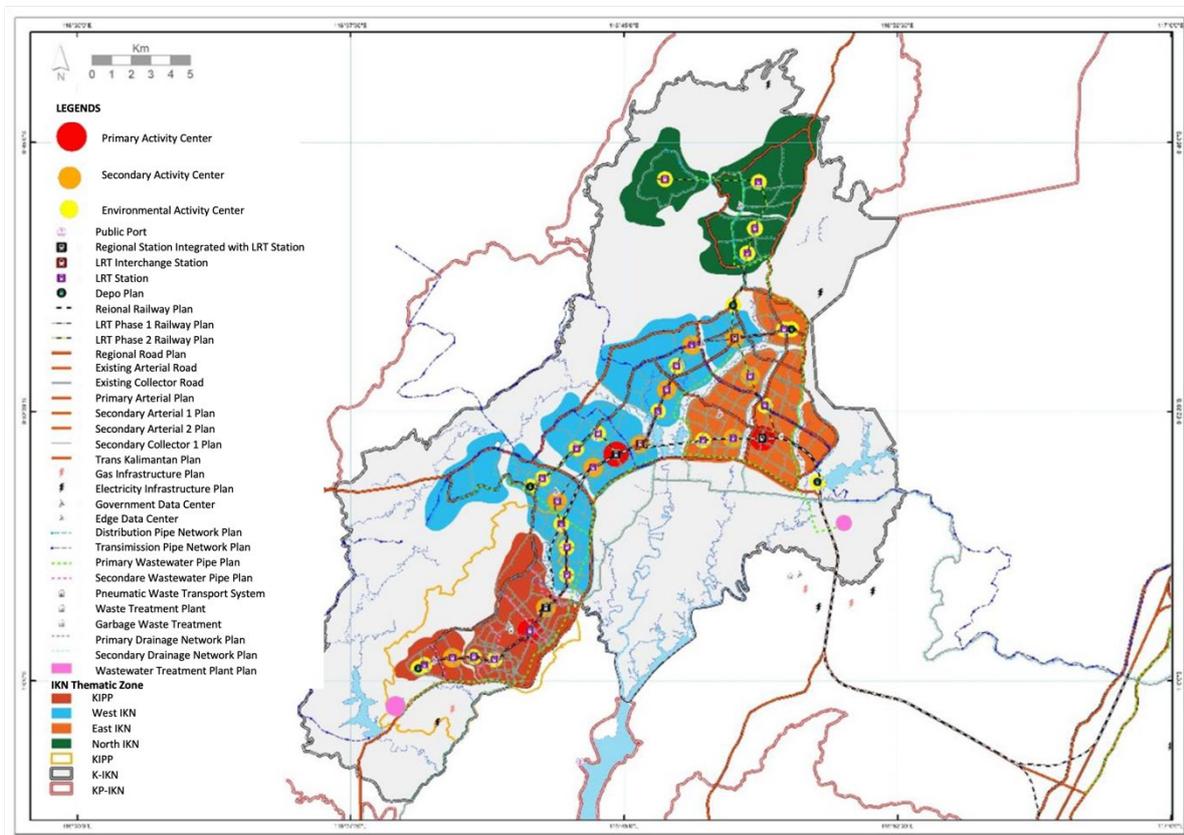
Figure 2.17: Railway Corridor Concept Plan

b) K-IKN and KIPP

It is described that the railway plan in the vicinity of K-IKN must be coordinated with the land use plan, population distribution, and existing road transportation network applicable in K-IKN. The railway plan network is described as needing to achieve the following items, which are specified as KPIs:

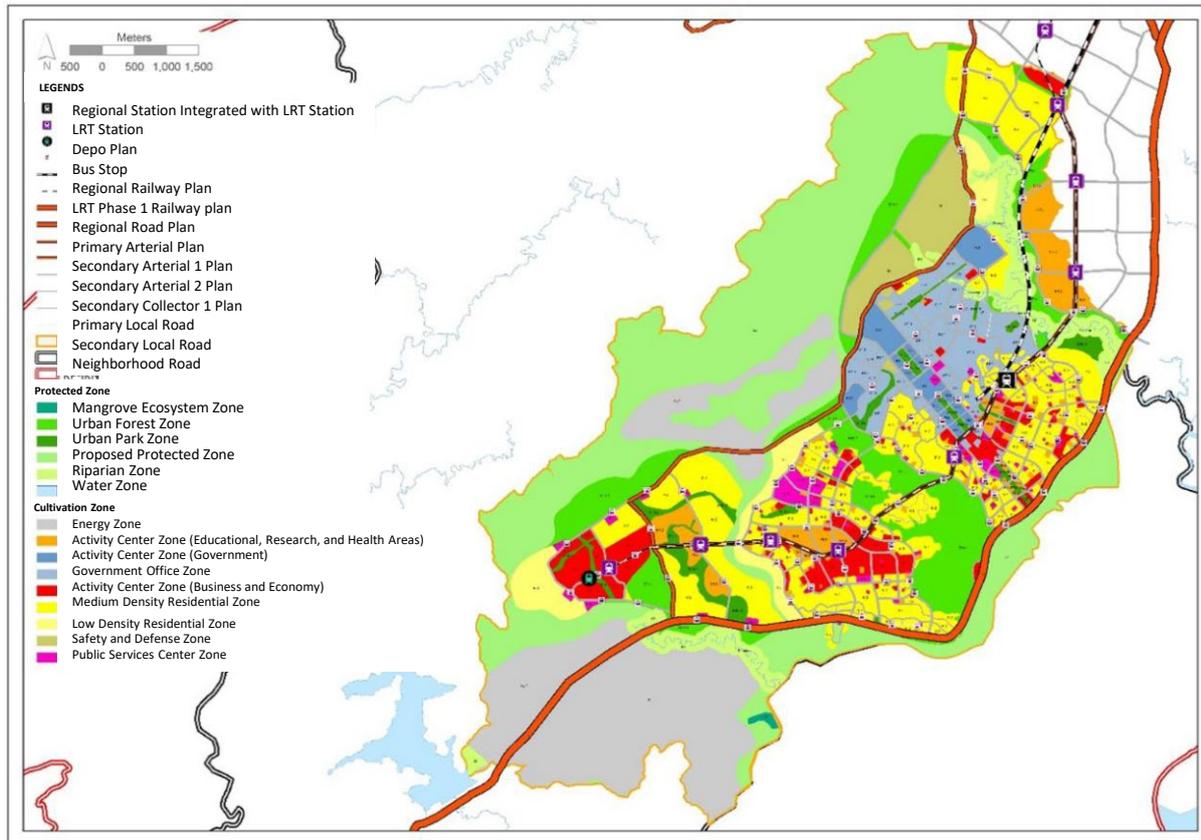
1. 80% of trips should be made by public transportation, with priority given to sustainable modes of transportation.
2. Create a pedestrian-friendly environment and ensure access to basic facilities necessary for daily life, public facilities, and community facilities (education and medical care), with access to the main hubs within 10 minutes.

In consideration of the above, the spatial plan calls for 36 stations (including a rail yard) in K-IKN and eight railway plan stations (including a rail yard) in KIPP.



Source: BAPPENAS-MP Chapter 5

Figure 2.18: Locations of Railways Within K-IKN (Spatial Plan)



Source: BAPPENAS-MP Chapter 5

Figure 2.19: Locations of Railways within KIPP (Spatial Plan)

2) Regional Hub

Inter-regional connections are described as being supported by bus service in the KP-IKN area and surrounding areas. In addition to railway, it is stated that options will be secured for secondary transportation and access for local and remote residents will be improved. It is described that the regional bus route plan will be determined flexibly after the K-IKN becomes operational. On the other hand, based on the Ministry of Transportation's origin-destination (OD) table for East Kalimantan for 2020 in Figure 2.20, it is described that the consideration of connection with small feeder buses as tertiary transportation and consideration of future land use planning are necessary. The OD table shows that there is a lot of travel to and from East Kutai, the eastern neighbor of Kutai Kartanegara Province. Therefore, there is currently a confirmation of migration from Samarinda City and its suburbs to the Kutai Kartanegara Regency where K-IKN is located.

The concept plan proposes the construction of an intercity/long-distance bus terminal within the K-IKN area, in addition to a gate station within the K-IKN boundaries when traveling in and out of KIPP, as the primary mobility hub for primary and secondary transportation in the K-IKN. This would allow transfers between regional railway lines and corridors. This concept is described in the figure below.

Origin point - Destination (O-D)	Paser	West Kutai	Kutai Kertanegara	East Kutai	Berau	North Penajam Paser	Mahakam Hulu	Balikpapan City	Samarinda City	Bontang City	Total
Paser	-	-	142	38	37	5	6	114	718	18	1.078
West Kutai	18	-	27	5	9	4	1	80	218	3	365
Kutai Kertanegara	89	52	-	1.154.862	53.535	79	4	305.148	236	17.390	1.531.395
East Kutai	3	23	1.280.258	-	60.787	19	13	761.527	616	66.531	2.169.777
Berau	42	12	66.216	59.519	-	28	12	351.595	508	26.764	504.696
North Penajam Paser	2	12	91	13	25	-	18	171	15.644	12	15.988
Mahakam Hulu	4	1	3	11	7	19	-	83	871	4	1.003
Balikpapan City	102	178	316.287	774.350	356.776	213	114	-	6.476	57.862	1.512.358
Samarinda City	504	346	216	378	428	15.453	4.756	4.756	-	56	26.893
Bontang City	26	5	20.258	67.957	27.632	8	58.102	58.102	131	-	232.221
Total	790	629	1.683.498	2.057.133	499.236	15.828	63.026	1.481.576	25.418	168.640	5.995.774

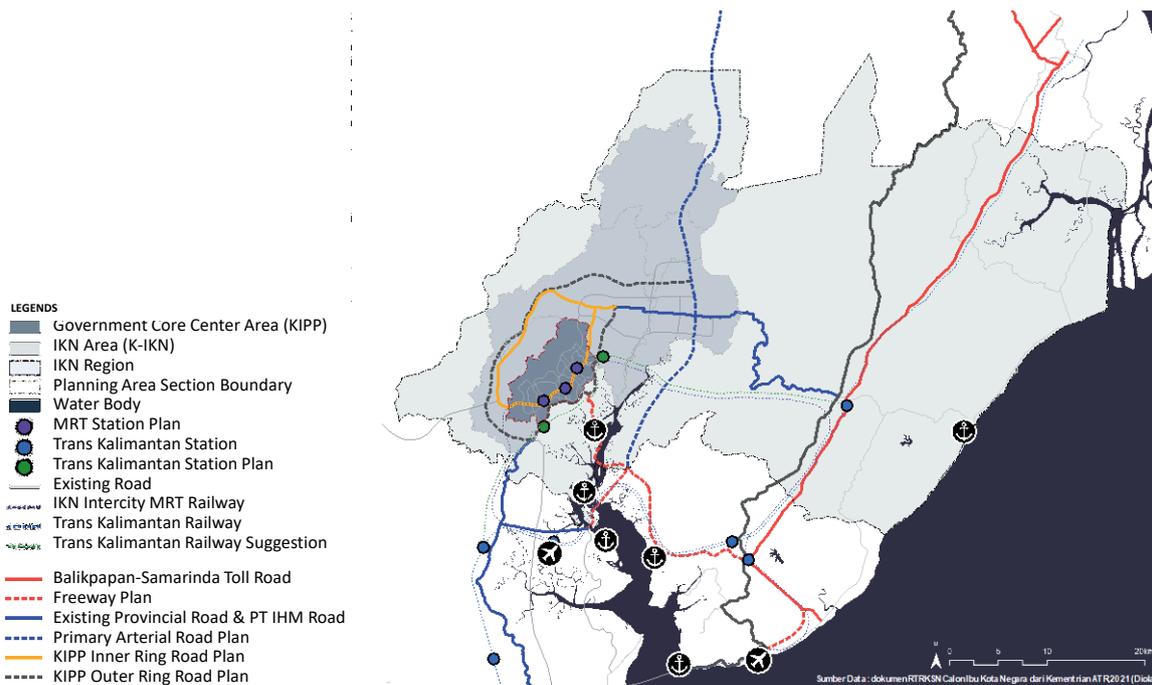
Source: BAPPENAS-MP Chapter 4

Figure 2.20: Table of ODs Among Regions in East Kalimantan (2020)

(2) PUPR-MP

1) Inter-Regional Railway

The Ministry of PUPR-MP is planning five MRT stations within IKN, including three MRT stations within KIPP. A confirmation was made that the planned route presents a linear route that will traverse K-IKN from north to south in the future.



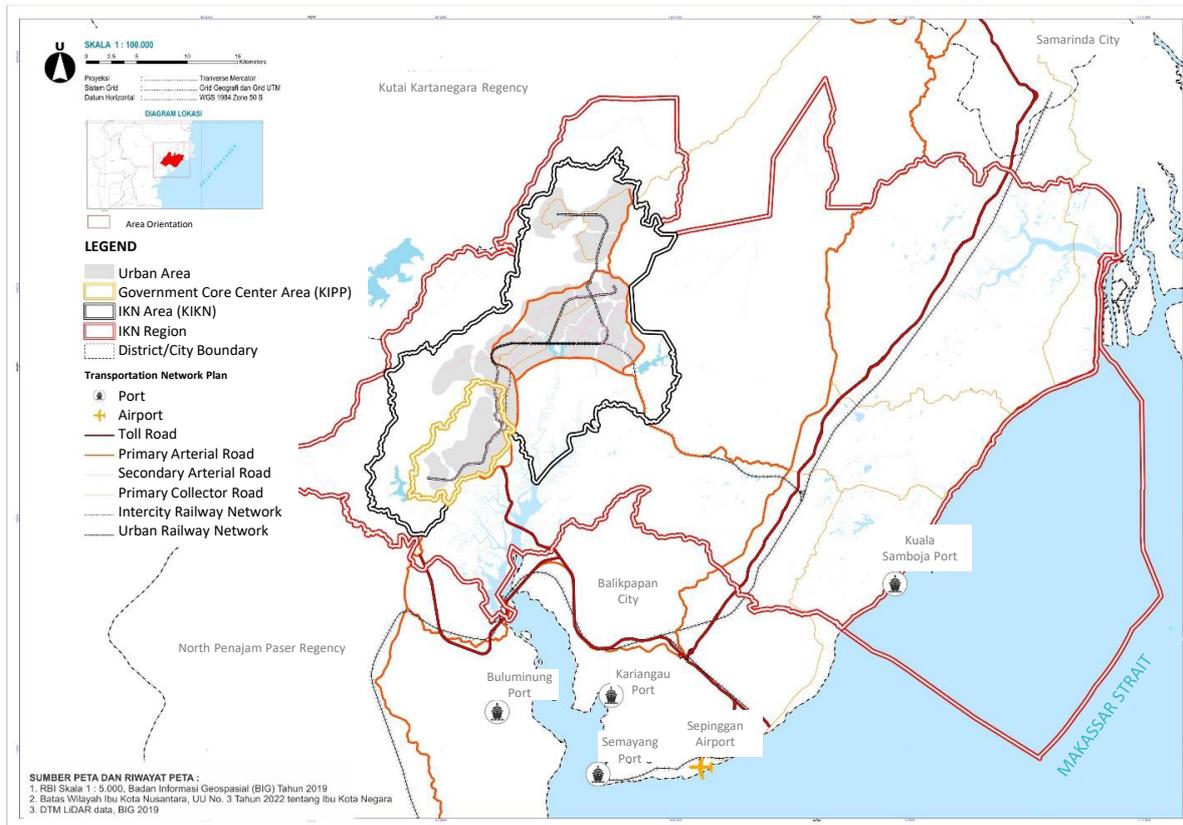
Source: PUPR-MP

Figure 2.21: Location Map of Railway Station

(3) PR No. 63/2022

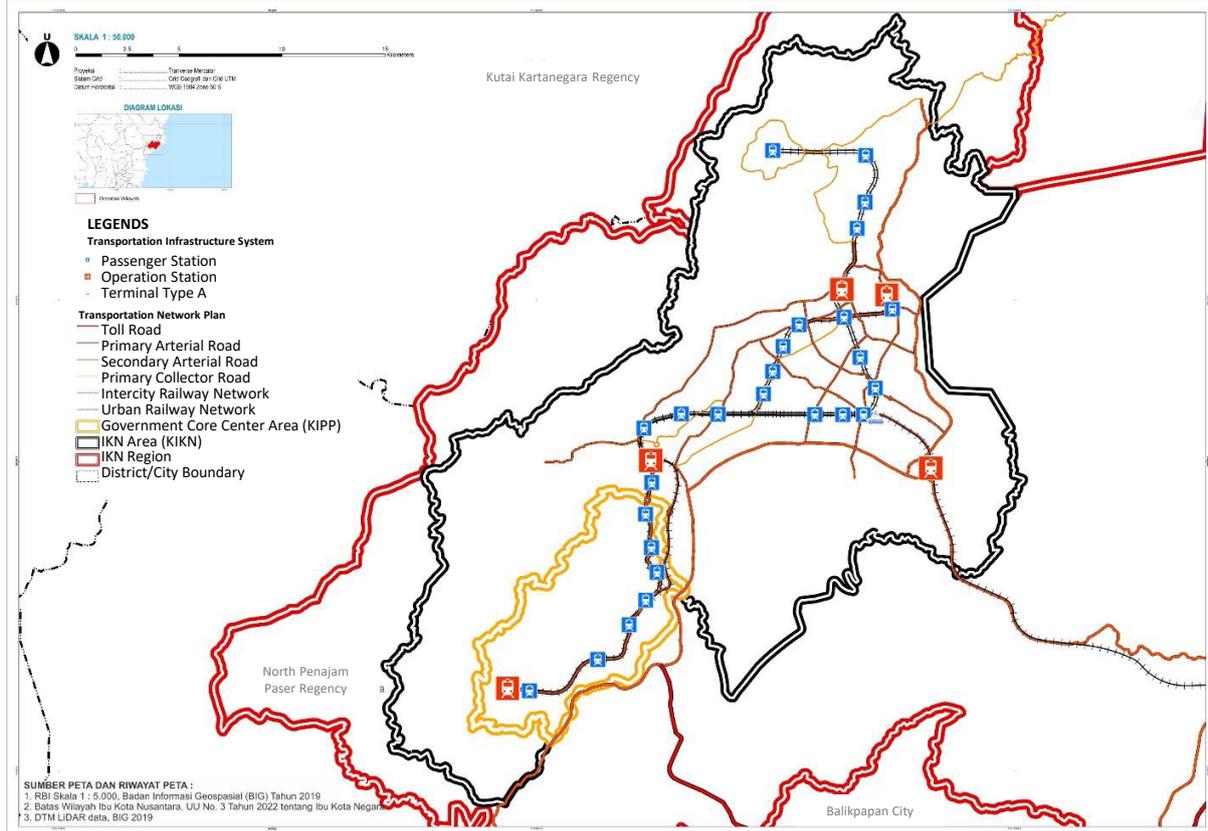
1) Intercity Railway

The following figure shows the concept map for the transportation network in and around IKN as described in Chapter 4 of PR No. 63/2022.



Source: PR No. 63 /2022, Chapter 4

Figure 2.22: Concept Map of KP-IKN's Transportation Network



Source: PR No. 63 /2022, Chapter 4

Figure 2.23: Locations of Railway Lines and Stations within K-IKN and KIPP

The following is the confirmed railway plan for the mass transit system by rail in the Nusantara Metropolitan Area.

1. Passenger railways and transportation nodes (stations)
 - a. Sultan Aji Muhammad Sulaiman Sepinggan International Airport - Karang Joang Samboja - IKN intercity railway
 - b. Inter-city railway from IKN to logistics hubs such as Sepinggan International Airport and Sumayang Port
2. Intercity railway lines for passenger and goods logistics to maritime and air logistics facilities
 - a. Kalimantan passenger train (Samarinda - Balikpapan - Penajam Paser)
 - b. Kalimantan freight train (Samarinda - Balikpapan - Penajam Paser)

2) Roads

The following is the confirmed land logistics network system (road plan) for IKN:

1. Toll road
 - a. Balikpapan-Samarinda (Balsam) Toll Road
 - b. Toll road between Balsam and KIPP Ring Road
 - c. Toll road between Barang Island and KIPP

2. Road
 - a. Trunk road between IKN and Samboja
 - b. Trunk road between IKN and Penajam

3) Sea and Air Logistics (outside KP-IKN)

The following is a confirmation that the marine and air logistics facilities are positioned as the main gateway for domestic and international logistics and passengers in the Nusantara Metropolitan Area:

1. Main ports for international logistics and passengers in Balikpapan City
 - a. Kaltim Kariangau Terminal
 - b. Semayang Port (Pelabuhan Semayang)
2. Ports of collection points for logistics and passengers
 - a. Kuala Samboja Port in Kutai Kartanegara Regency
 - b. Palaran Port in Samarinda City
 - c. Buluminung Port in North Penajam Paser Regency
3. Passenger airport
 - a. Sultan Aji Muhammad Sulaiman International Airport in Balikpapan City
 - b. Aji Pangeran Tumenggung (APT) Pranoto International Airport in Samarinda

2.2.7 Infrastructure Development Demand Forecast

Estimating future demand for each infrastructure in urban development projects is one of the most important tasks in master planning since it affects the decisions on the specifications and equipment of each utility and is the basis for construction cost estimation. In this section, the review is based on Indonesian National Standards (Law No. 17/2019), BAPPENAS-MP (2020), PR No. 63/2022, and Central Bureau of Statistics indicators in the six sectors of water supply, sewerage, electricity, gas, waste, and telecommunications. The estimated demand forecast values for each type of utility are summarized in Table 2.26.

Table 2.26: Demand Forecast of Each of the Utilities

Utilities	Target Area	Demand Forecast (annual assumption)		Referred MPs and Plans
Water	National	60	L/person/day	Law No.17/2019 on Water Resources
	IKN Phase 1	251	L/person/day (Total assumption 56,469,857 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN Phase 2	254	L/person/day (Total assumption 88,689,005 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN Phase 3	276	L/person/day (Total assumption 111,341,986 m ³ /year)	BAPPENAS-MP (2020), Chapter 4

Utilities	Target Area	Demand Forecast (annual assumption)		Referred MPs and Plans
	IKN Phase 4	301	L/person/day (Total assumption 164,238,617 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN Phase 5	325	L/person/day (Total assumption 219,096,198 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN Phase-1	150	L/ person/day	PR No.63/2022 Appendix III
Wastewater	IKN + K-IKN Phase 1	144	L/person/day (Total assumption 52,636,213 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN + K-IKN Phase 2	194	L/person/day (Total assumption 70,951,204 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN + K-IKN Phase 3	244	L/person/day (Total assumption 89,073,788 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN + K-IKN Phase 4	360	L/person/day (Total assumption 131,392,000 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN + K-IKN Phase 5	480	L/person/day (Total assumption 175,278,000 m ³ /year)	BAPPENAS-MP (2020), Chapter 4
	IKN	120	L/person/day	PR No.63/2022 Appendix III
Electric Power	National	1.06	MWh/person/year	Central Bureau of Statistics
	National	1.08	MWh/person/year	Central Bureau of Statistics
	National	1.09	MWh/person/year	Central Bureau of Statistics
	IKN	*4.8	MWh/person/year	BAPPENAS-MP (2020)
	IKN	*4	MWh/person/year	PR No.63/2022 Appendix III
Gas	IKN	0.2	m ³ /day	PR No.63/2022 Appendix V
	IKN Phase 1	1,574	TJ/capital/year	PR No.63/2022 Appendix III
	IKN Phase 2	2,753	TJ/capital/year	PR No.63/2022 Appendix III
	IKN Phase 3	3,474	TJ/capital/year	PR No.63/2022 Appendix III
	IKN Phase 4	4,541	TJ/capital/year	PR No.63/2022 Appendix III
	IKN Phase 5	5,225	TJ/capital/year	PR No.63/2022 Appendix III
	IKN	2,324	MJ/person/year	PR No.63/2022 Appendix III
	IKN	2,300	MJ/person/year	BAPPENAS-MP (2020)
Solid Waste	IKN Phase 1	0.7	kg/person/day	PR No.63/2022 Appendix III
	IKN Phase 2	0.74	kg/person/day	PR No.63/2022 Appendix III
	IKN Phase 3	0.79	kg/person/day	PR No.63/2022 Appendix III
	IKN Phase 4	0.84	kg/person/day	PR No.63/2022 Appendix III
	IKN Phase 5	0.89	kg/person/day	PR No.63/2022 Appendix III
Tele-communication	IKN Broadband Cellular	> 10	Gbps	BAPPENAS-MP (2020)
	IKN	5G		PR No.63/2022 Appendix III
	IKN BTS height	15-42	M	PR No.63/2022 Appendix V

*Since no specific unit was identified for IKN's electric power demand, the amount of electricity that can be generated is shown.

Source: JICA Consultant Team.

The highlighted cell shows the latest infrastructure demand projections as indicated in PR No. 63/2022.

(1) Water

For water supply, BAPPENAS-MP (2020) describes that 100% of the IKN's water demand can be satisfied by surface water abstraction. Specifically, the Sepaku Water Management System and three intake dam facilities such as the Sepaku Semoi Dam (Bendungan Sepaku Semoi), Southern Green Dam (Bendungan Southern Green), and Batu Lepek II Dam (Bendungan Batu Lepek II), and rainwater storage in agricultural zones are described to be addressed in PR No. 63/2022 Appendix III. This indicates the unit demand minimum standard of 150 liters/day per capita per domestic and non-domestic use in Development Phase 1. This minimum standard is lower than the 251 liters/day standard planned for Phase 1 of BAPPENAS-MP (2020). On the other hand, both standards were found to be above the national standard of 60 liters/day based on Law No. 17/2019 of Indonesia.

(2) Wastewater

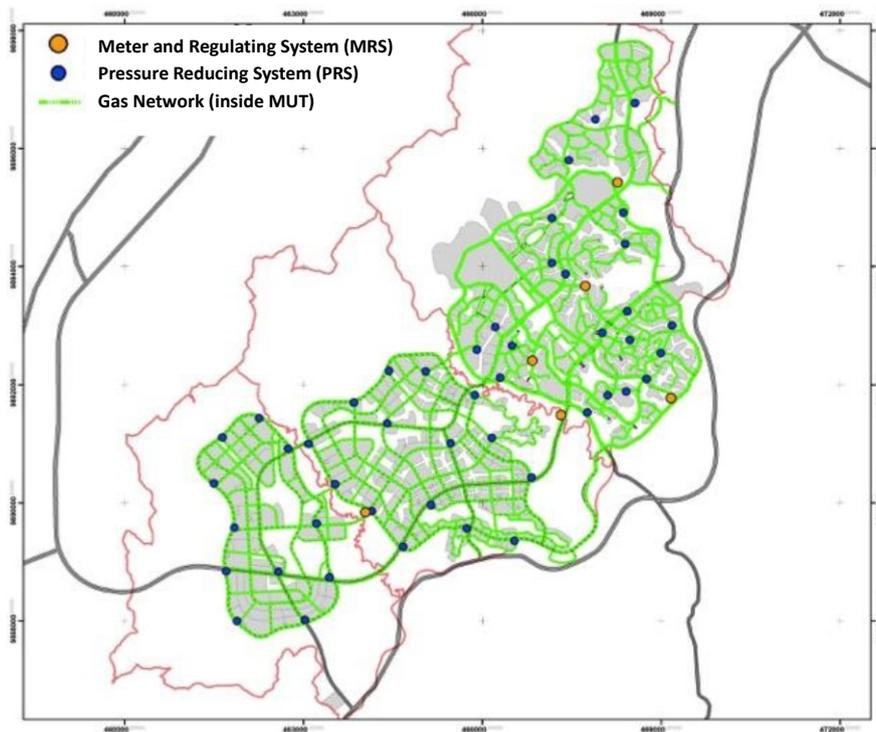
Regarding wastewater, it is confirmed that according to BAPPENAS-MP (2020), 80% of the water consumption is used for the intensity of estimated demand value for sewage. Regarding wastewater treatment, it is described that no special discharge permit is required for the treatment of domestic wastewater when used in daily life, but a permit is required for the construction of sewer connections. It is described that wastewater from car washes, laundry, gas stations, car repair shops, and other commercial and industrial facilities require a discharge permit or the installation of a wastewater treatment facility or equipment with equivalent functions. On the other hand, PR No. 63/2022 confirms that 80% of the water demand of the same PR No. 63/2022 is used as the source of estimated demand value for sewage. This is the same as the calculation and planning of the unit of demand in BAPPENAS-MP (2020), which refers to BAPPENAS-MP (2020) and confirms that 120 liters/day per person is used as the unit of demand. Regarding wastewater treatment, it is described the same as in the BAPPENAS-MP (2020) regarding the rules for the connection of residential, commercial, and industrial facilities to the sewage pipes and the installation of wastewater treatment facilities.

(3) Electric Power

Regarding electric power, BAPPENAS-MP (2020) states that by 2045, the percentage of electricity supplied by renewable energy sources within the new capital city should be 100%. It is predicted that the annual solar radiation in Indonesia is 1,200-1,500 kWh/kWp, which is the highest in Southeast Asia. From this figure, it is described that the country has the potential to generate 208 GW of electric power annually, or about 4.8 MWh/day per person, from solar energy. On the other hand, it is indicated that the new capital city investment for high solar power generation is large, and that the supply of components for solar power generation equipment from Indonesia is not sufficient. It is also described that infrastructure assistance also needs to enable the switch from solar power generation during the day to storage batteries at night.

(4) Gas

Regarding gas, the BAPPENAS-MP (2020) describes a unit demand of $0.2 \text{ m}^3/\text{day}/\text{person}$. This is calculated where the commercial use is 25% of the total residential use and mixed use is 50% of the total residential use. The annual per capita and per city-area demand is described, as well as the need for phased support for the development of a gas network infrastructure capable of using combined natural and hydrogen gas by the year 2045.



Source: PR No. 63/2022, Appendix V

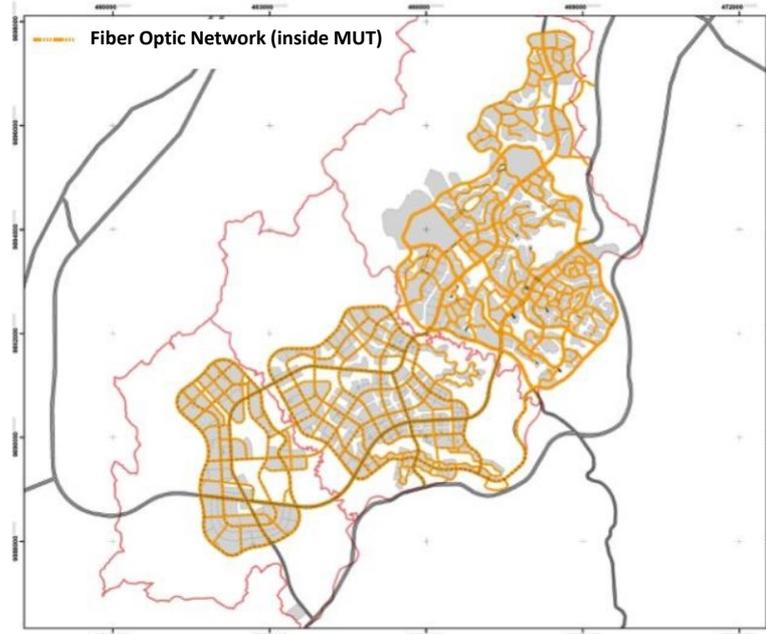
Figure 2.24: Gas Network Plan to be Installed in MUT

(5) Solid Waste

For solid waste, the unit generation of waste is described as $0.70 \text{ kg}/\text{day}/\text{capita}$ (Phase 1). The total amount of solid waste generated in the new capital city is estimated based on an annual increase rate of 1.1% from Phase 1 of unit generation.

(6) Telecommunication

Regarding telecommunications, it is described that KIPP's telecommunications and ICT sector will be assisted by fiber optic infrastructure and cellular telecommunications network infrastructure (4G, 5G or higher). BTS antennas with heights ranging from 15 to 42 m are planned to be installed within KIPP.



Source: PR No. 63/2022, Appendix V

Figure 2.25: Communication Network Plan to be Installed in MUT

2.2.8 List of Planned Projects

The list of projects mentioned in each MP is shown below.

(1) BAPPENAS-MP

The list of major projects listed in the BAPPENAS-MP is shown in Table .

The list of major projects described in the BAPPENAS-MP and planned within the IKN is shown in Table 2.28. It is described that the construction of administrative offices, including the Office of the President, as well as schools and hospitals, will start by 2024. This will be just before the Independence Ceremony to be held at the Office of the President. The relocation of military, police, and state employees is scheduled to begin in 2023, with the continued relocation of state officials and administrative agencies. It is also described that the development of facilities for administrative agencies will continue after 2024, and that the development of housing, schools, and hospitals for non-state officials is scheduled to begin after 2024. The schedule is shown in Figure 2.26.

Regarding infrastructure development, it is described that projects related to water resources (water supply reservoirs), solid waste (pneumatic logistics systems, sorting facilities, and recycling plants), and energy (smart grids and solar power plants) will begin in 2021 and will be partially completed by 2025. The construction of a regional railway plan to Balikpapan Airport, new airport for Very-Very Important Person (VVIP), and bus network by 2024 are planned in other MPs, but no development work has been started as of November 2022.

It is described that after 2024, the development and introduction of smart city technology case studies are planned in conjunction with hardware development.

Table 2.27: List of Development Projects - Buildings Construction Works (BAPPENAS-MP)

No	Buildings Construction Works	Development Phase				
		1	2	3	4	5
1	Presidential and Other Administrative Facilities					
2	Schools					
3	Hospitals					
4	Research and Development Facilities					
5	World-Class Universities					
6	Higher Education Facilities					
7	Innovation Centers and International Hospitals					
8	Heritage Center / Cultural Center					
9	Worship Facilities					
10	National Museum					
11	Cultural Heritage Monuments					

*Phase 1 (-2024), Phase-2 (2025-2029), Phase-3 (2030-2034), Phase-4 (2035-2039), Phase-5 (2040-2045)

Source: JICA Consultant Team based on BAPPENAS-MP

Table 2.28: List of Development Projects - Infrastructure Construction Works (BAPPENAS-MP)

No.	Infrastructure Construction Works	Development Phase				
		1	2	3	4	5
1	City Grid					
2	Energy Storage in Solar Farm					
3	Floating Solar Panel					
4	Hydrogen Storage					
5	Roof Solar Panel					
6	Solar Farm					
7	Substations 150 kV					
8	Pedestrian and Cyclist Bridges					
9	Primary Arterial Road Network					
10	Primary Collector Road Network					
11	Secondary Arterial Road Network					
12	Secondary Collector Road Network					
13	Secondary Local Road Network					
14	Samarinda-Balikpapan Toll Road					
15	Edge Data Center					
16	Government Data Center					
17	Regional Railway Network to Balikpapan Airport					
18	Regional Railway Stations					
19	Inter-city Railway Network					
20	Inter-city Railway Stations					
21	Urban Light Railway Network					
22	Urban Light Railway Stations					
23	Bus Mobility Hub (regional)					
24	Bus Mobility Hub (main)					
25	Bus Mobility Hub (neighborhood)					
26	Bus Stops					
27	Composting Facilities					
28	Hazardous Waste Treatment Facility					
29	PSEL (Incineration Plant)					
30	Material Recovery Facility					
31	Pneumatic Waste Collection Station					
32	Pneumatic Waste Collection System Network					
33	Recycling Facility					
34	Rotary Kiln (incineration)					
35	Sanitary Landfill					
36	Secure Landfill					
37	Temporary Disposal Site					
38	Waste Hub					
39	Waste Truck Parking Space					

No.	Infrastructure Construction Works	Development Phase				
		1	2	3	4	5
40	Batu Lepek II Dam					
41	Rainwater Harvesting Facilities in Government Buildings					
42	Service Reservoirs					
43	Retention Pools					
44	Sepaku Semoi Dam					
45	Sepaku Water Management System					
46	Southern Green Dam					
47	Wastewater Treatment Plant No.1					
48	Wastewater Treatment Plant No.2					
49	Wastewater Treatment Plant No.3					
50	Wastewater Treatment Plant No.4					
51	Water Treatment Plant No.1					
52	Water Treatment Plant No.2					
53	Water Treatment Plant No.3					

Source: JICA Consultant Team based on BAPPENAS-MP

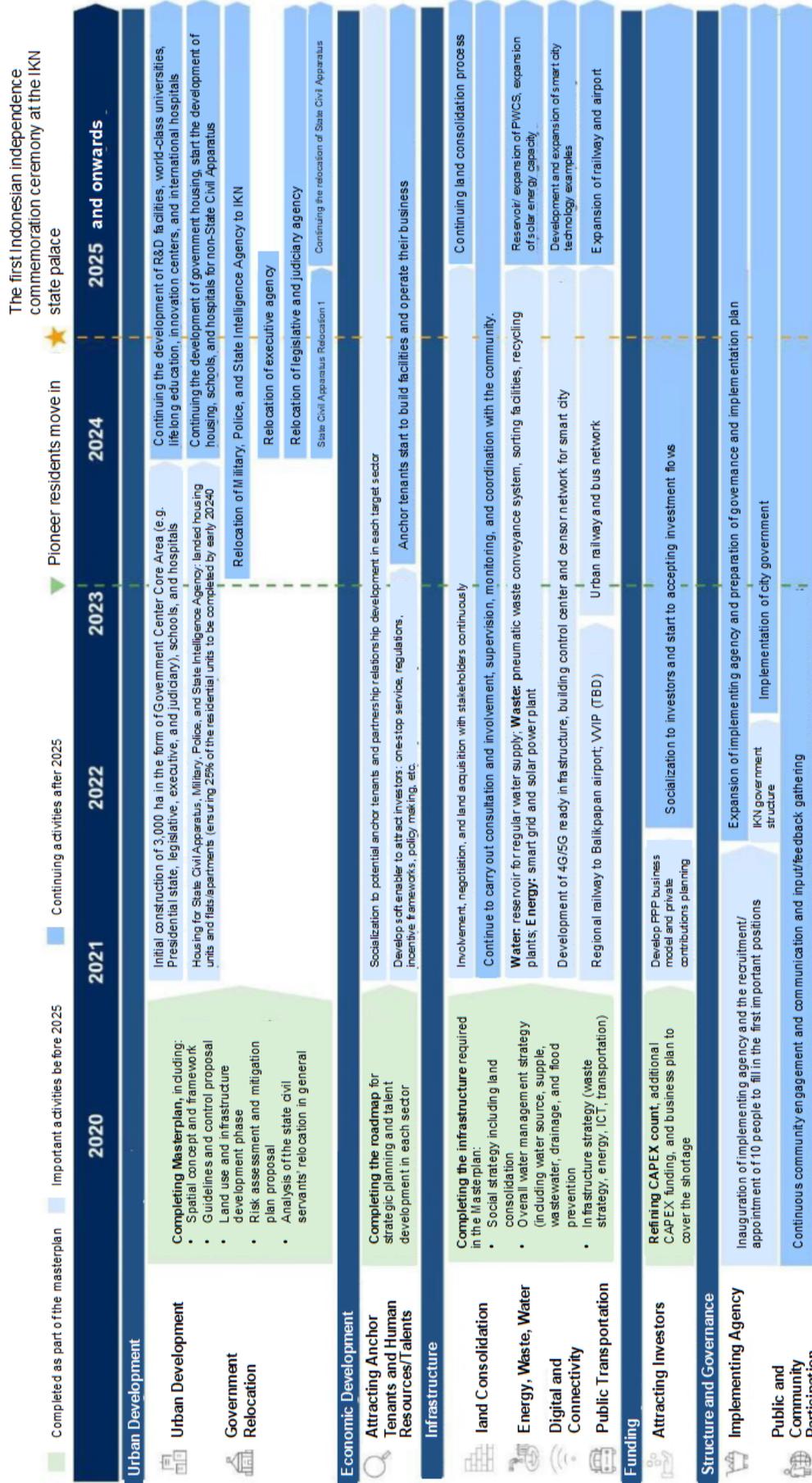


Figure 2.26: List of Development Projects (BAPPENAS-MP)

Source: BAPPENAS - MP

(2) PUPR-MP

The projects planned by the PUPR-MP are described in Chapter 5.

(3) PR No.63/2022

The projects described in PR No. 63/2022 are listed in Table 2.29 and Table 2.30.

Table 2.29: List of Development Projects - Buildings Construction Works (PR No. 63/2022)

No	Buildings Construction Works	Development Phase				
		1	2	3	4	5
1	Presidential Palace					
2	Vice President's Palace					
3	Presidential Compound					
4	State Secretariat Ministry Office					
5	Cabinet Secretary's Office					
6	State Higher Institutions Shared Office (MPR-DPR-DPD RI), BPK RI, MA RI, MK RI, KY RI					
7	State Agencies Mandated by Regulations to be based in the National Capital City's Office (BI, OJK, LPS, BPJS)					
8	Relocated Ministries/Agencies Shared Office					
9	State/Official Landed Houses					
10	State/Official Flats					
11	Government Office Special Facilities					

Source: JICA Consultant Team based on PR No. 63/2022

Table 2.30: List of Development Projects - Infrastructure Construction Works (PR No. 63/2022)

No	Infrastructure Construction Works	Development Phase				
		1	2	3	4	5
1	Electricity Distribution Network, Substations, Supporting Infrastructures					
2	Roof Solar Panel					
3	Floating Solar Panels					
4	Solar Farm					
5	Energy Backup and Storage Facilities					
6	Gas Insulated Substation (GIS) 150 kV					
7	Substations 150 kV					
8	Substation 500 kV					
9	Distribution Substations 20 kV					
10	Underground Cable (UGC) Transmission and Distribution Network					
11	Transmission and Distribution Network					
12	Smart Metering (Electricity)					
13	Urban Gas Network					
14	Composting Facilities					
15	Recycling Facilities					
16	Waste-to-Energy or Waste-to-Product Facilities					
17	Sanitary Landfill					
18	Hazardous Waste Treatment Facility					
19	Hazardous Secure Landfill					
20	Hazardous Medical Waste Treatment Facility					
21	Pneumatic Waste Collection System (PWCS)					
22	PWCS Collection Stations					
23	Waste Collection and Transportation Facilities					
24	Centralized Domestic Wastewater Management System (SPALD-T)					
25	Domestic Wastewater Pipeline Network					
26	Sepaku Intake					
27	Sepaku Semoi Dam					
28	Other Water Source Construction					

No	Infrastructure Construction Works	Development Phase				
		1	2	3	4	5
29	KP-IKN Drinking Water Treatment Plant					
30	2x300 l/s Drinking Water Treatment Plant					
31	1x300 l/s Drinking Water Treatment Plant					
32	Drinking Water Pipeline Network					
33	Drinking Water Main Reservoir					
34	Drinking Water Distribution Network					
35	Drainage, Flood Control, and Sediment Control Infrastructure					
36	Drinking Water Divider Reservoir					
37	Rejuvenation of Housing and Settlements					
38	New Housing for General Public					
39	Construction Workers Housing					
40	Government Data Center					
41	Edge Data Center					
42	Fixed Broadband					
43	Mobile Broadband BTS					
44	Bus Network and Bus Stops/Shelters					
45	TOD System Development					
46	Pedestrian and Cyclist Facilities					
47	Road Infrastructure in KIPP (Secondary Collector & Secondary Local Road)					
48	Freeway Road (Balikpapan – KIPP)					
49	Existing KIPP Access Road Improvement					
50	Bus Network (Balikpapan Airport – KIPP)					
51	Railway Network (Balikpapan Airport – KIPP)					
52	Railway Network (IKN and surrounding areas)					
53	Road Network (KP-IKN and surrounding partner regions)					

Source: JICA Consultant Team based on PR No. 63/2022

2.2.9 Industrial Park Plan

A review of the current situation regarding the planning of industrial parks was conducted for the BAPPENAS-MP and PR No. 63/2022.

(1) BAPPENAS-MP

The BAPPENAS-MP states that in developing industrial park in IKN, the selection of potential development site shall be made from the following perspectives:

1. Ease of development in the initial stage of IKN development
2. Proximity to the main road network leading to commercial ports and airports
3. Not located within a protected area
4. Have relatively flat, large areas of land to prepare for future development of the area
5. Not an agricultural area
6. Near to an existing residential area with a workforce capable of adapting to industrial activity
7. A land that that is developable in the future

It was noted that among the industry-related economic activities, research activities will be conducted primarily within K-IKN, while manufacturing activities will be planned in industrial areas located outside of

K-IKN.

Table 2.31: Development Areas for Each Industrial Sector

Industrial Sector	Activities	Number of Workers	Development Location		
			KIPP	K-IKN	KP-IKN
Electric Vehicles (2-wheeled)	M, R, K	136,382	-	R, K	
Solar PV	M, R, K	9,957	-	R, K	M
Industry 4.0	R, K	44,088	-	R, K	
Biosimilar	M, R, K	23,112	-	R, K	M, K
Vaccine	M, R, K	-	-	R, K	M, K
Active Pharmaceutical Ingredient	M, R, K	37,363	-	R, K	
Herbs	M, R, K	75,229	-	R, K	M
Plant-based protein	M, R, K	7,038	-	R, K	M

R=Research facility, K=Office facility, M=Manufacturing, P=Agriculture

Source: BAPPENAS-MP Chapter 4

The total population in the industrial park in the fifth stage of the industrial park (2045), including construction workers, is estimated to be approximately 301,000 people, and the required area is calculated to be 4,302 ha. On the other hand, IKN's land use plan states that 4,200 ha is allocated for the industrial park, and that future expansion of the industrial park and additional area are envisioned. It was confirmed that infrastructure facilities such as water purification facilities, wastewater treatment facilities, and waste treatment plants are not included in the area of 4,200 ha.

Figure 2.27 shows the zoning map of possible development areas. It was confirmed that the development area of the industrial park in No. 4, which is located east of KP-IKN and outside of K-IKN.

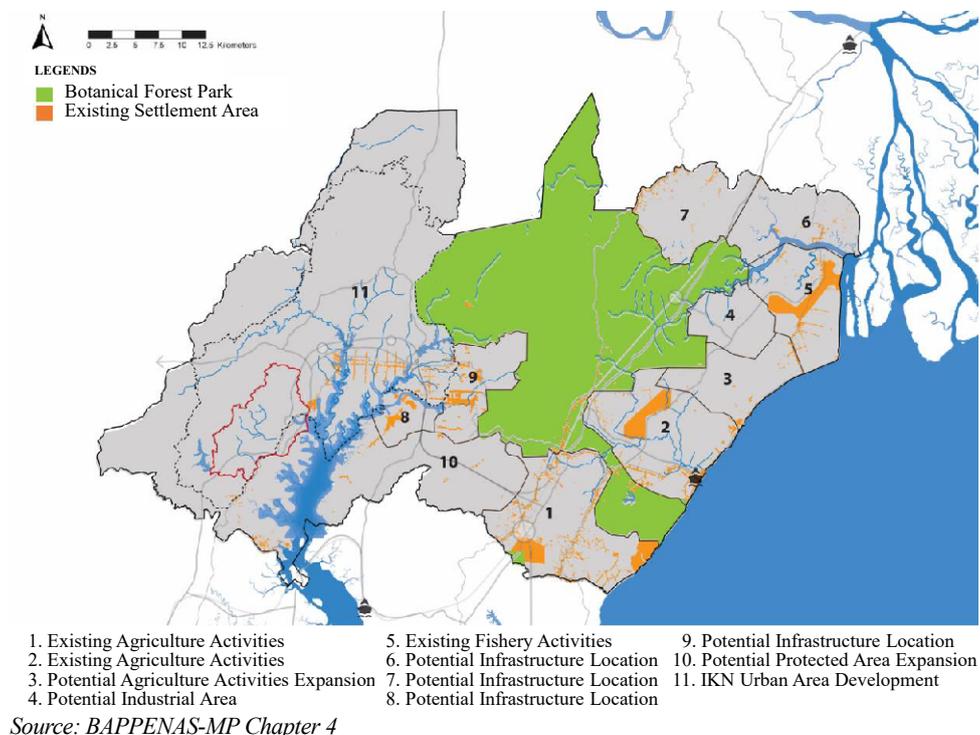
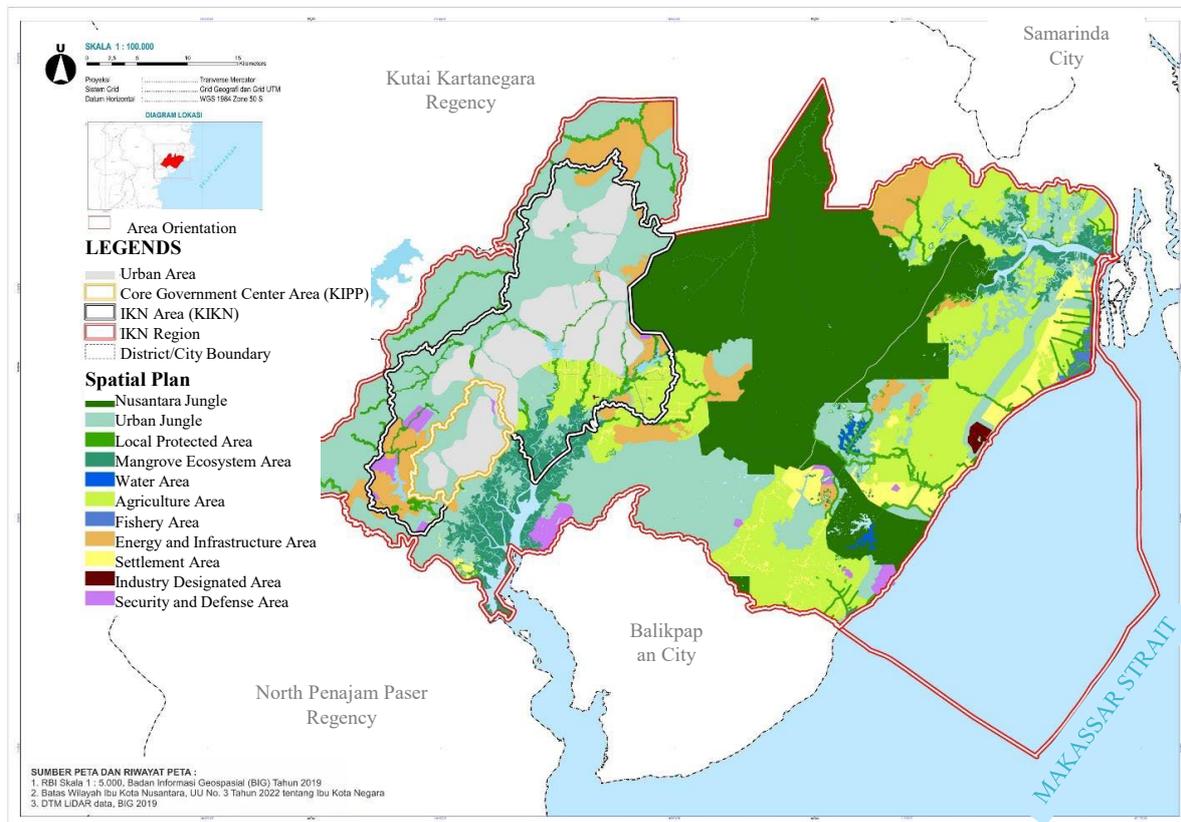


Figure 2.27: Zoning Map Showing Possible Development Areas

(2) PR No. 63/2022

PR No. 63/2022, which is prepared based on the BAPPENAS-MP, describes the spatial plan within the IKN in Chapter 4 (Figure 2.28). However, the zoning shown for the industrial park site is different from the area presented in the BAPPENAS-MP.



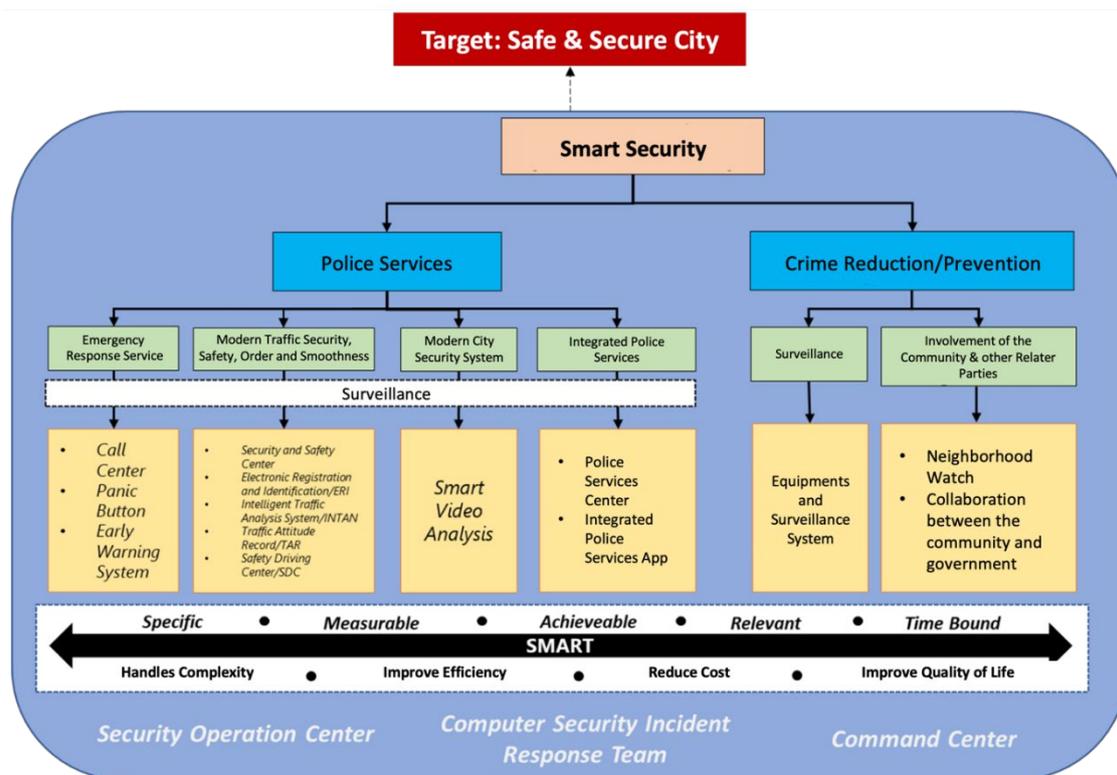
Source: PR No. 63/2022 Chapter 4

Figure 2.28: IKN Spatial Pattern Planning Map

2.2.10 Review for Disaster Prevention Plan

Regarding disaster management planning, the BAPPENAS-MP has conducted a review on natural disaster risks based on existing data on geological information, landslides, river erosion, and forest fires (Appendix-I of BAPPENAS-MP). Since the map data utilized in the review was at a scale of 1:50,000 or less, the review was limited to the MP level and therefore did not cover actual specific evacuation plans, action plans, and other disaster management schemes.

According to PR No. 63/2022 Appendix III, there is a policy for the implementation of a disaster management plan, as part of the security, safety, order, and traffic planning policy, by security intelligence that can predict hazards, disasters, and criminal activities at supported locations. This is described in Subsection 3.9.4 of PR No. 63/2022 Appendix (BAB III) as Smart Security Systems and Policies. The concept of a smart security system is shown in Figure 2.29.



Source: PR No.63/2022, Appendix III

Figure 2.29: Smart Security Concept for New Capital City

In BAPPENAS-MP, landslide risk assessments are evaluated based on slope angle, distance to waterways, kinematics of slope failure, and topographic classification. Moreover, vulnerability is classified into five levels and then evaluated.

2.2.11 Summary

(1) Summary of MP Review

The BAPPENAS-MP covers the KP-IKN and K-IKN area and generally covers the overall the scope as MP. On the other hand, PUPR-MP is the MP for KIPP, and it was confirmed that its planning level is different from BAPPENAS-MP. Regarding the land use planning, PUPR-MP has been updated with road alignments and lot shapes as required in addition to the progress of the site, and the area per land use has been changed as required in the updated version of PUPR-MP. On the other hand, as for the transportation, it was confirmed that the spatial plan of the BAPPENAS-MP has planned the location and number of MRT stations to be installed, while the land use and base map of the PUPR-MP has not provided data for the corresponding railway sites.

Based on the results of the review, it is important that the sectors always use integrated and unified information for land use plans and base maps for large-scale urban development projects to improve consistency in planning, design, and construction. Therefore, it is desirable to establish an implementation system that promotes the integration and organization of information related to the development planning by each sector.

(2) Planning Basis

Basic surveys such as topographic, geologic, water resources, natural (flora and fauna), and social survey were not conducted as required for the MP. Moreover, hydraulic analysis, which is commonly utilized as a planning basis to avoid the flood disaster, was conducted after the MP. As a result, many issues need to be harmonized and modified among relevant projects, such as the road and land development.

(3) Concepts

There are three concepts shown in the MP, which all required to have a clear vision or plan to guide the specific approach to realize them.

The first is that an urban transportation plan has not yet been developed for a “10-Minute City”. An urban transportation system with necessary supporting infrastructure for railways, BRT, cable cars, EVs, and vehicle sharing should be considered.

Secondly, the urban operation and autonomy of the new capital city in the “Smart City/Solution”, E-Government, traffic, public safety, disaster prevention, and CCTV management, among other specific measures, need to be considered.

Lastly, in the “Forest City”, concrete plans other than the 75% green area have not yet been decided. A wide range of measures need to be considered, including clean energy, net-zero, and climate change countermeasures.

(4) Basic Infrastructure Development Plan

Since the development plan was not determined, the plan of basic infrastructure such as road and power supply does not consider the future expansion. For example, bus/public transportation stops are required to be considered in future road right-of-way plans to avoid traffic jam. Moreover, space for communication and power cables for smart solution systems (CCTV monitoring system) will be also required.

(5) Development Sequence

To control the sprout of private sector development, the project area is suggested to be divided into an urbanization zone (a priority and planned urbanization zone) and an urbanization control zone (a zone where urbanization is controlled), just like Japanese urban planned areas. Similarly, the division of zones will help protect the natural environment, prevent disasters, and prevent sprawl in Balikpapan, where there is concern about population decline in the suburbs.

In addition, the development of the new capital city is expected to lead to the economic development of Balikpapan, since this city will be the gateway for all economic activities in the initial development period. Therefore, the MP for this city is also important to support and secure the implementation and realization of the new capital city development.

Chapter 3 Review of Related Laws and Regulations

3.1 Status in the Medium-term Development Plan of the Republic of Indonesia

In January 2020, the Indonesian government formulated the Medium-term Development Plan for 2020-2024 (PR No. 18/2020) and has identified priority projects. As shown in Table 3.1, the new capital city development is also identified as a priority project. In this plan, the total project cost for the new capital relocation is approximately IDR 466 trillion, which is almost 3% of the size of the gross domestic product (GDP) of Indonesia in 2021. This plan also indicates that approximately 20% is to be implemented by government budget, over 50% by public-private partnership (PPP), and over 20% by private investment.

Table 3.1: Description of the New Capital City in the Medium-term Development Plan

Project Name	New Capital City (IKN)		
Benefit	Increase development in Eastern Indonesia for regional equity		
Budget	Total project cost	IDR 466.04 trillion -	JPY 4.2 trillion
	Government budget	IDR 90.35 trillion (19.4%)	JPY 0.8 trillion
	PPP	IDR 252.46 trillion (54.2%)	JPY 2.3 trillion
	Private investment	IDR 123.23 trillion (26.4%)	JPY 1.1 trillion
Implementing Agency	Ministry of National Development Planning (BAPPENAS)		
	Ministry of Spatial Planning and National Land Agency (ATR/BPN)		
	Ministry of Public Works and Housing (PUPR) and other ministries		
	State-owned companies, private companies, and others		
Outline	The relocation of the IKN from Java to Kalimantan is expected to help encourage economic diversification and increase output of non-traditional economic sectors such as services, government, transportation, trade, and manufacturing to sustain the economic growth of Kalimantan. Trade between regions is also expected to rise, which increases employment opportunities and reduces income inequality, as well as creates new investment opportunities and increases the contribution of Kalimantan to the nation.		

Source: JICA Consultant Team based on the Medium-term Development Plan (January 2020)
Converted using JICA rate in July 2022 (IDR 1 = JPY 0.00918)

3.2 Status as National Strategic Project

In an announcement by the Coordinating Ministry for Economic Affairs on December 23, 2022, the Minister of Economic Coordination Regulation No. 21/2022 was promulgated.¹ This regulation identified 210 infrastructure projects and 12 programs to be completed by 2024 as national strategic projects. The New Capital Development and Supporting Infrastructure was also listed as a new program. The Coordinating Ministry for Economic Affairs has the authority to coordinate among the following ministries:

- Ministry of Finance
- Ministry of Manpower
- Ministry of Industry
- Ministry of Trade

¹ <https://www.ekon.go.id/publikasi/detail/4837/dorong-peningkatan-multiplier-effect-dan-serapan-tenaga-kerja-akselerasi-penyelesaian-proyek-strategis-nasional-terus-dipacu-pemerintah>

- Ministry of Agriculture
- Ministry of Trade
- Ministry of Agriculture
- Ministry of Spatial Planning and National Land Agency
- Ministry of State-owned Enterprises
- Ministry of Cooperatives and Small and Medium Enterprises
- Other agencies deemed necessary

The positioning of the project as a national strategic project will enable special facilities to be made for matters that require coordination among the above ministries and agencies.²

3.3 Review for Consistency with Existing Development and Spatial Plans

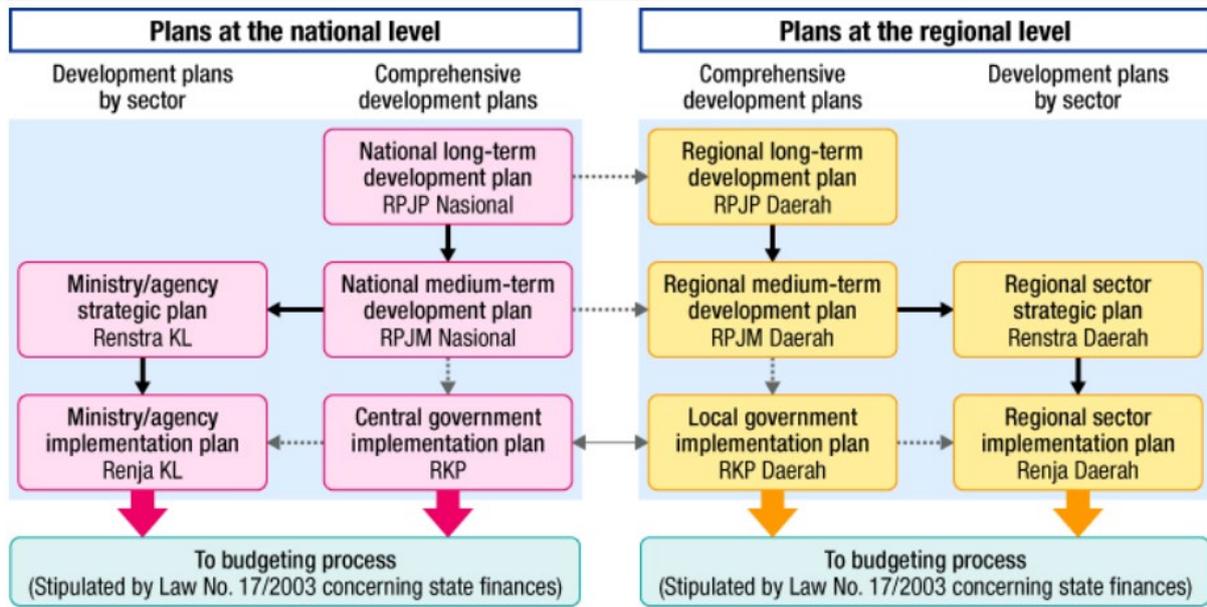
The National Development Planning System Law (Law No. 25/2004) is Indonesia's position on development plan and spatial plan. Next is the Law on Socio-economic Development Plan and Spatial Plan (Law No. 26/2007), which is based on the National Development Planning System Law. Based on the Law No. 26/2007, each municipality has the authority to develop spatial plan, and infrastructure development is implemented based on the plans.

In this section, spatial and development plans of each government for the New Capital City Development Area identified through the survey will be reviewed for consistency with PR No. 63/2022.

3.3.1 Consistency with the Existing Development Plans

The development plan for the new capital city (hereinafter IKN) area is established in Law No. 3/2022 and PR No. 63/2022, as shown in Table 2.1 in Chapter 2. As shown in Figure 3.1, the development plan is based on the national level development plan, and the state and regional governments prepare general development plans and sector-specific long-term, medium-term, and implementation development plans, based on which budget allocations are implemented. This section focuses on the Medium-term Development Plan (PR No. 18/2020) and its consistency with PR No. 63/2022. In addition, it is assumed that the Medium-Term Development Plan will be updated in the future in accordance with PR No. 63/2022 in line with Article 1.9 and Article 2.1.a, b, and e of its General Provisions.

² <https://kppip.go.id/proyek-strategis-nasional/>



Source: Policy Bureau, Ministry of Land, Infrastructure, Transport and Tourism

Figure 3.1: Indonesia's National Development Planning System

The existing development plans for the cities surrounding the IKN area are shown in Table 3.2. The focus was on the New Capital City Master Plan (hereafter referred to as IKN-MP) and the Local Long-term Development Plan, the Local Medium-term Development Plan, and the Local Government Implementation Plan, based on the National Development Planning System Law (Law No. 25/2004). The review focused on checking consistency among the plans in terms of land use planning, development demand forecast, development schedule, disaster prevention planning, and financial planning, in addition to the year of formulation, target year, update schedule, and formulation process. State, provincial, and municipal development plans are not aligned with the IKN-MP. At the next update, each plan needs to be harmonized based on assumptions including population frame, etc.

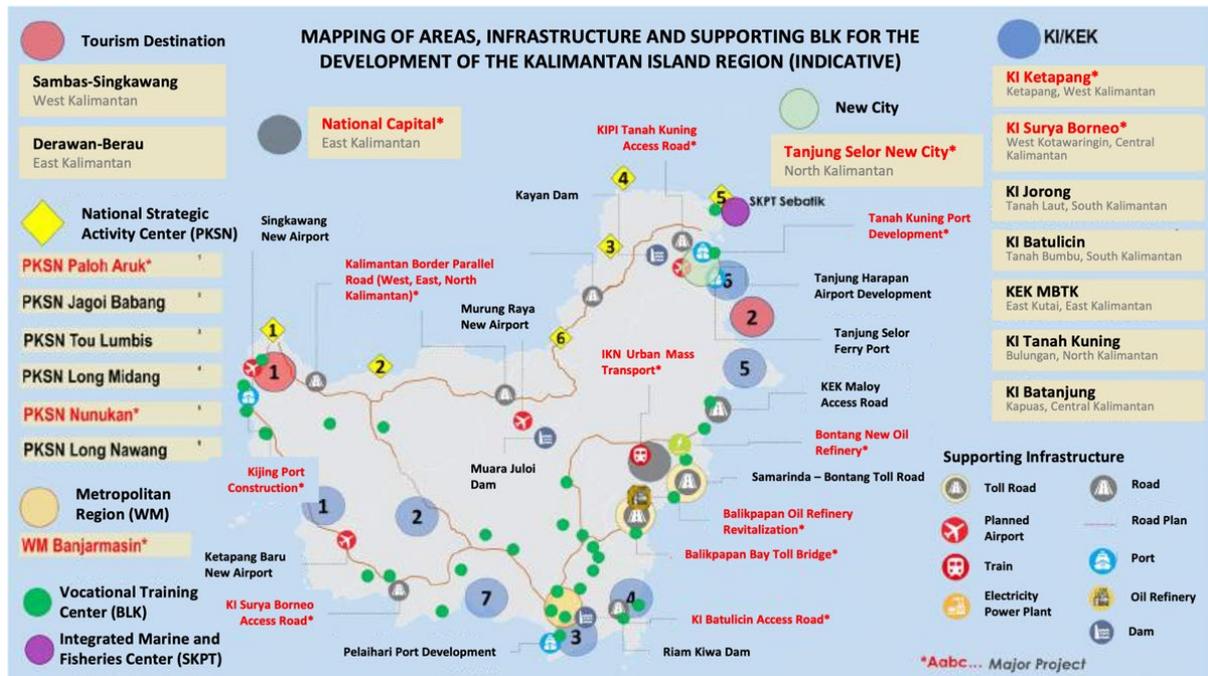
Table 3.2: Development Plans for the Existing Surrounding Cities (Other than IKN MP)

Plan Target Area	Indonesia All Areas	East Kalimantan Provinces	Kutai Kartanegara Regency	North Penajam Paser Regency	Balikpapan City	Samarinda City
Institution	BAPPENAS	East Kalimantan provinces	Kutai Kartanegara Regency	North Penajam Paser Regency	Balikpapan City	Samarinda City
Long-term development plan	Law No.17/2007	East Kalimantan Provincial Regulation No. 15/2008	Kutai Kartanegara Regency Regulation No. 17/2010	North Penajam Paser Regency Regulation No. 1/2012	Balikpapan City Regulation No. 1/2013	Balikpapan City Regulation No. 4/2015
Medium-term development plan	PR No.18/2020	East Kalimantan Provincial Regulation No. 2/2019	Kutai Kartanegara Regency Regulation No. 6/2021	North Penajam Paser Regency Regulation No. 1/2019	Balikpapan City Regulation No. 6/2021	-
Implementation plan	GR No.108/2022	Provincial Governor's Decree No. 18/2022	Provincial Governor's Decree No. 27/2022	-	Balikpapan City Regulation No. 10/2022	-

Note: "o" indicates that the plan has been formulated or obtained. Bold characters in the table refer to the target year of the plan. For the year of formulation, refer to the name of the legal system on which the plan is based. Source: JICA Consultant Team

Figure 3.2 shows the location of the infrastructure development plan for Kalimantan Island as planned in Indonesia's Medium-term Development Plan. In the area around the new capital city, the plan indicates the development and improvement of urban public transportation, petroleum electric power generation facilities, and

highways.



Source: Rencana Pembangunan Jangka Menengah Nasional Tahun 2020-2024

Figure 3.2: Location Map of Major Infrastructure Development Plans in Kalimantan

Below is a summary of confirmation of the consistency of each infrastructure development plan between the Medium-term Development Plan (PR No. 18/2020) and PR No. 63/2022.

(1) Transportation

Regarding transportation plans, each plan describes the existing and planned roads and rail lines, and PR No. 63/2022 is confirmed to be the plan that updates and reflects the planned roads within KP-IKN, based on the Medium-term Development Plan.

(2) Airports and Ports

Regarding the airport and port plan, PR No. 63/2022, the Medium-term Development Plan describes the planning information for the development of airports and ports. Only one airport/port near Balikpapan is described in the Medium-term Development Plan for the airport/port near KP-IKN. On the other hand, PR No. 63/2022 describes the existing airport and port in addition to the port near Balikpapan. It confirms the history of using the described existing airports and ports in the development of the new capital city.

(3) Electric Power

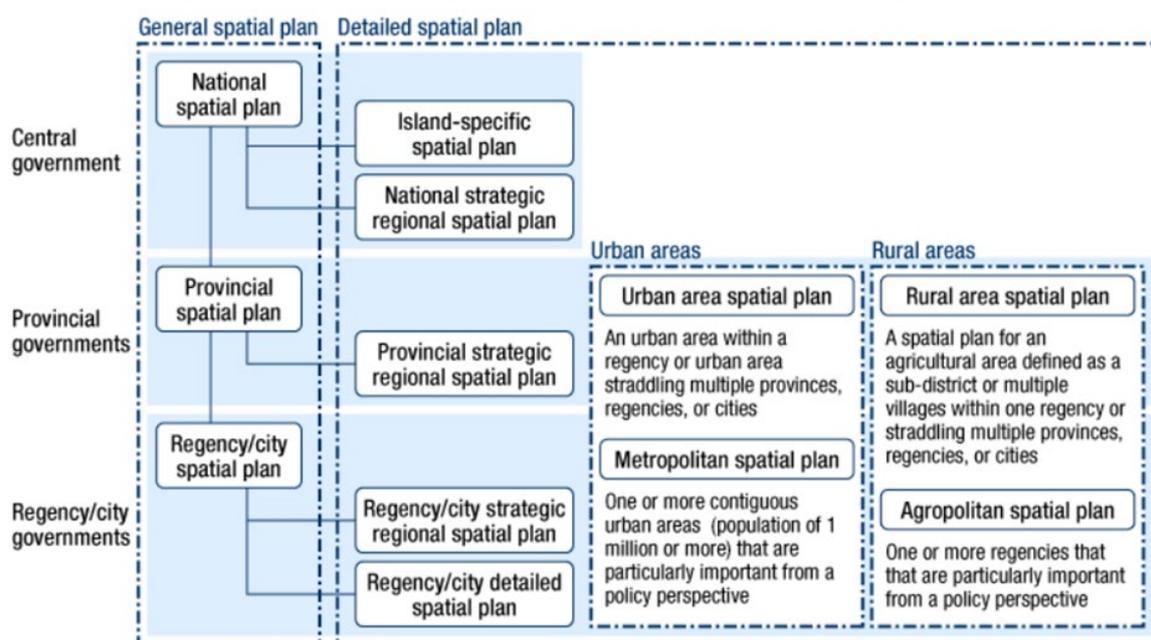
Regarding the electric power facility plan, PR No. 63/2022 describes the existing electric power network, while the Medium-term Development Plan describes the existing electric power network and the planned transmission network. The transmission network near KP-IKN described in the Medium-term Development Plan only describes the location of the transmission network from Samarinda to Balikpapan. On the other hand, PR No. 63/2022 describes the existing transmission network as well as a more detailed existing and

planned transmission network. This confirms the history of the review and updating of the network for the development of the new capital city.

3.3.2 Consistency with the Existing Spatial Plans

The spatial plan for the new capital city is based on PR No. 64/2022. It stipulates that the central government, state and regional governments, and city governments shall formulate a general spatial plan and detailed spatial plan. Although the contents of spatial plans formulated by each level of the Indonesian administrative organization differ in depth, the general structure of spatial plan formulation in Indonesia is basically a systematic flow in which spatial plans are formulated based on higher-level plans. Figure 3.3 shows the systematic flow for spatial plan formulation and the contents of the required spatial plans.

In this study, five spatial plans shown in Table 3.3 will be reviewed, which consist of the National Spatial Plan, the Spatial Plan for Kalimantan Island, the Spatial Plan for East Kalimantan Province, the Spatial Plan for Kutai Kartanegara Regency, and the Spatial Plan for North Penajam Paser Regency.



Source: Policy Bureau, Ministry of Land, Infrastructure, Transport and Tourism

Figure 3.3: Spatial Plan System of Indonesia

Table 3.3: Category of Spatial Plan

Plan Target Area (Entity)	Language	Title	Year of Issue	Target Year
Indonesia All Areas (National Government)	Indonesian	Peraturan Pemerintah Republik Indonesia Nomor 13 Tahun 2017 Tentang Perubahan Atas Peraturan Pemerintah Nomor 26 Tahun 2008 Tentang Rencana Tata Ruang Wilayah Nasional	2017	-
	English	Government Regulation No. 13 (2017), Amendment to Government Regulation No. 26 (2008), National Spatial Planning		
Whole of Kalimantan Island (National Government)	Indonesian	Peraturan Presiden Republik Indonesia Nomor 3 Tahun 2012 Tentang Rencana tata Ruang Pulau Kalimantan Dengan Rahmat Tuhan Yang Maha Esa Presiden Republik Indonesia	2012	2027
	English	Regulation of the President of the Republic of Indonesia no.3 (2012), Kalimantan Island Spatial Plan		
East Kalimantan	Indonesian	Salinan Peraturan Daerah Provinsi Kalimantan Timur Nomor 1 Tahun 2016 Tentang Rencana Tata Ruang Wilayah Provinsi	2016	2036

Plan Target Area (Entity)	Language	Title	Year of Issue	Target Year
Provinces (East Kalimantan Province)		Kalimantan Timur Tahun 2016-2036 Dengan Rahmat Tuhan Yang Maha Esa Gubernur Kalimantan Timur		
	English	Province Regulations East Kalimantan No.1 (2016) about Spatial Plan for the Province of East Kalimantan 2016-2036 with the Grace of God Almighty Governor of East Kalimantan		
Kutai Kartanegara Regency (Kutai Kartanegara Regency)	Indonesian	Peraturan Daerah Kabupaten Kutai Kalimantan Nomor 9 Tahun 2013 Tentang Rencana Tata Ruang Wilayah Kabupaten Kutai Kartanegara Tahun 2013-2033 Dengan Rahmat Tuhan Kabupaten Kutai Kartanegara Bupati Kutai Kartanegara	2013	2033
	English	Regional Regulation of Kutai Kartanegara Regency No.9 (2013) about Spatial Plan for the Regency of Kutai Kartanegara 2013-2033		
North Penajam Paser Regency (North Penajam Paser Region)	Indonesian	Bupati Penajam Paser Utara Provinsi Kalimantan Timur Peraturan Daerah Kabupaten Penajam Paser Utara Nomor 3 Tahun 2014 Tentang Rencana Tata Ruang Wilayah Kabupaten Penajam Paser Utara Tahun 2013-2033 Dengan Rahmat Tuhan Yang Maha Esa Bupati Penajam Paser Utara	2013	2033
	English	Regional Regulation of Penajam Paser Utara Regency No.3 of 2014 about Spatial Plan for the Regency of Penajam Paser Utara 2013-2033		

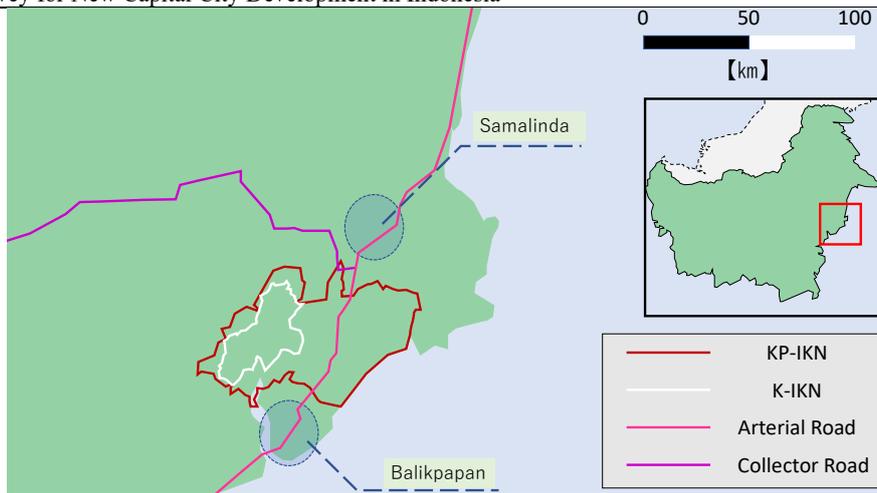
Source: JICA Consultant Team

The Spatial Plan for East Kalimantan Province is based on the National Spatial Plan and the Spatial Plan for Kalimantan Island, PR No. 64/2022, and other spatial plans. Comparison of PR No. 64/2022 with other spatial plans shows that the routes and locations of development in the electric power plan, telecommunication plan, oil and gas network plan, forest protection plan, and natural disaster management system plan are not consistent. And it is confirmed that the electric power plan, telecommunication plan, and oil and gas network plan do not consider the connectivity outside KP-IKN. The review of consistency between PR No. 64/2022 and the spatial plans of each government authority for transportation, airports, ports, electric power, and environment sectors for each major infrastructure is as follows:

(1) Road Plan

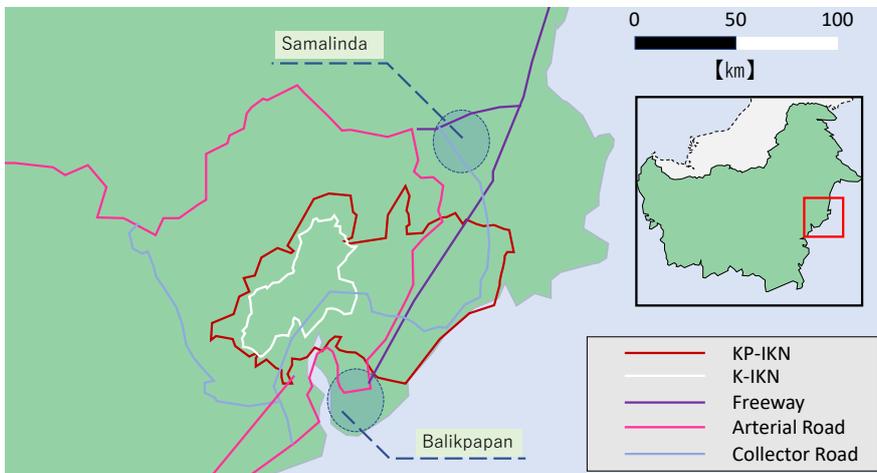
For the road plan, PR No. 64/2022 and the National Spatial Plan, the Kalimantan Island Spatial Plan, and the East Kalimantan Province Spatial Plan were consulted. Each plan described the location maps of highways and arterial roads, and the National Spatial Plan and the Kalimantan Spatial Plan were found to be consistent in terms of the number of roads, road standards, and locations.

PR No. 64/2022 is the Spatial Plan for East Kalimantan Province with the addition of planned roads within KP-IKN. The spatial plans for all of Indonesia and all of Kalimantan, the Spatial Plan for East Kalimantan Province, and the Spatial Plan for PR No. 64/2022 are described in Figure 3.4, Figure 3.5, and Figure 3.6, respectively.



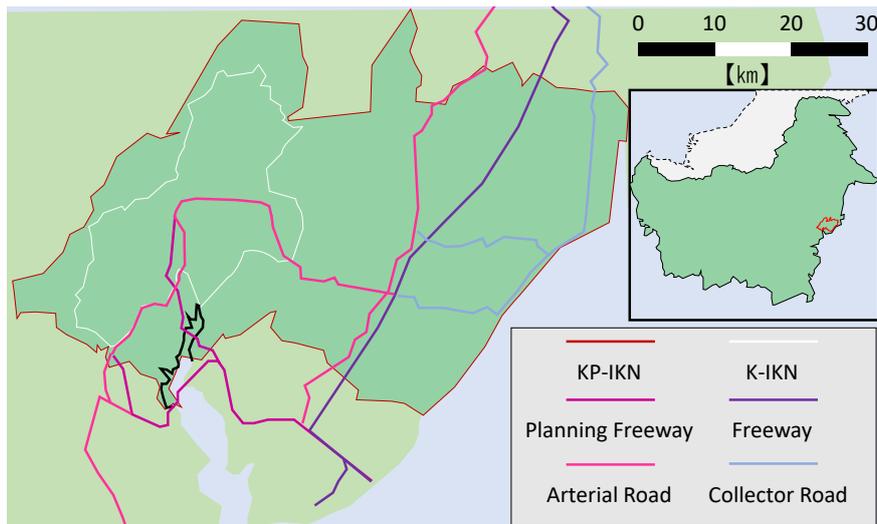
Source: JICA Consultant Team, based on spatial plans for all of Indonesia and all of Kalimantan

Figure 3.4: Road Map Based on the National Spatial Plan and the Kalimantan Island Spatial Plan



Source: JICA Consultant Team based on Spatial Plans for East Kalimantan Province

Figure 3.5: Road Map Based on Spatial Plan for East Kalimantan Province



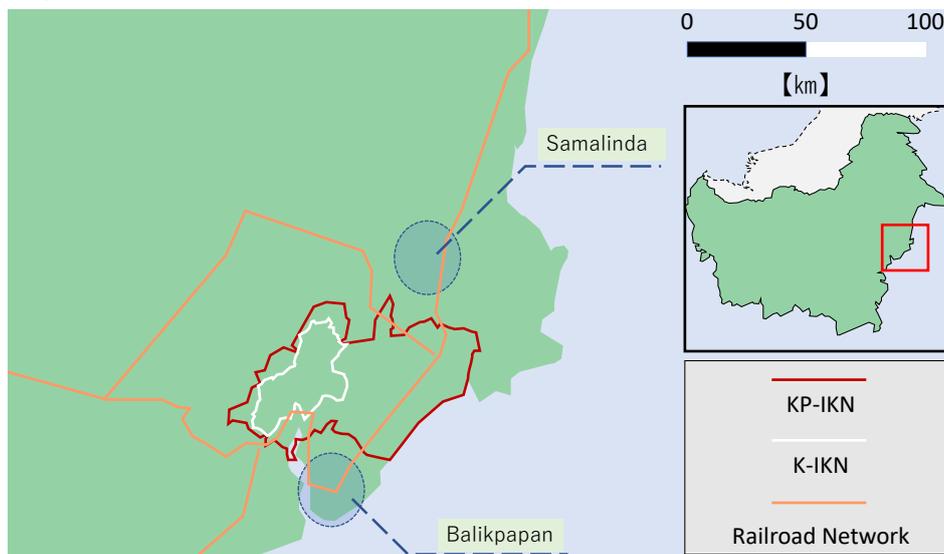
Source: JICA Consultant Team based on PR No.64/2022

Figure 3.6: Road Map Based on PR No. 64/2022

PR No. 64/2022, East Kalimantan Province Spatial Plan, confirms the addition of a highway in the National Spatial Plan and the Spatial Plan for Kalimantan Island. It also shows the history of revisions in the plan so that the road near Balikpapan can go north to the new capital city.

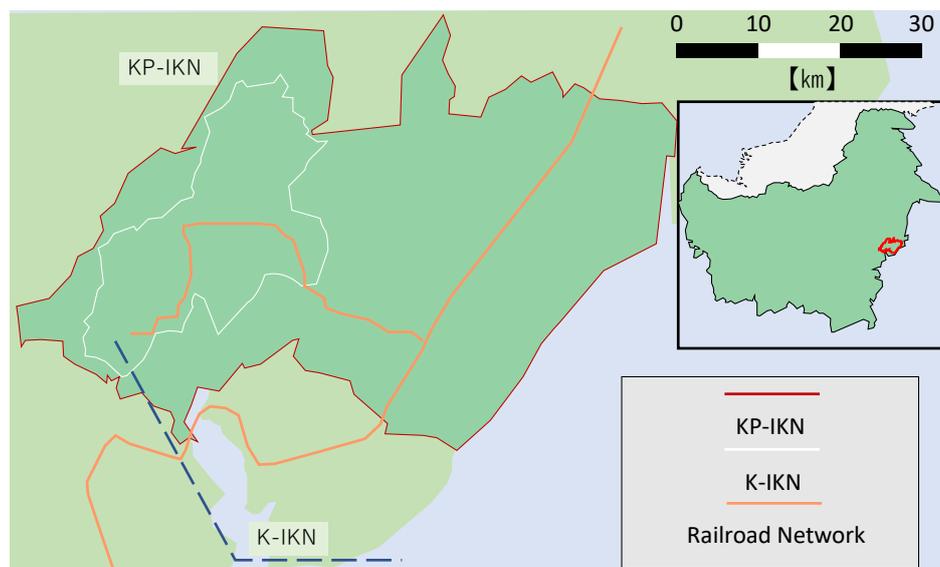
(2) Railway Plan

Regarding railway plan, PR No. 64/2022 and the National Spatial Plan, the Spatial Plan for Kalimantan Island, and the Spatial Plan for East Kalimantan Province describe the location maps of the routes. PR No. 64/2022 adds routes from those spatial plans into K-IKN. The National Spatial Plan, the Spatial Plan for Kalimantan and the Spatial Plan for East Kalimantan Province are described in Figure 3.7 while PR No. 64/2022 is described in Figure 3.8.



Source: JICA Consultant Team based on National Spatial Plan, Spatial Plan for Kalimantan Island, and Spatial Plan for East Kalimantan Province

Figure 3.7: Railway Plan Locations Based on the National Spatial Plan, Spatial Plan for Kalimantan Island, and Spatial Plan for East Kalimantan Province



Source: JICA Consultant Team based on PR No. 64/2022

Figure 3.8: Locations of Railway Lines Based on PR No. 64/2022

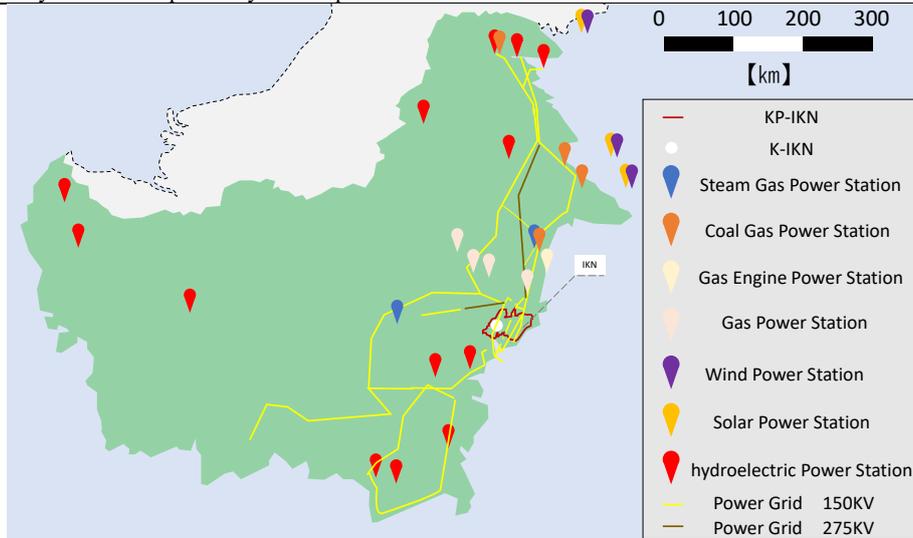
(3) Power Supply Plan

Regarding electric power plans, the planned locations of transmission routes are identified from PR No. 64/2022 and three spatial plans that includes the National Spatial Plan, the Spatial Plan for Kalimantan Island, and the Spatial Plan for East Kalimantan Province; while PR No. 64/2022 includes the generation method, facility locations (including general locations within KP-IKN) and the transmission network. The contents of each plan are summarized in Table 3.4. In addition, the planned transmission routes are shown in Figure 3.9, Figure 3.10 and Figure 3.11.

Table 3.4: Information Related to the Existence or Non-existence of Power Generation Facilities Planned in Accordance with Laws and Spatial Plans

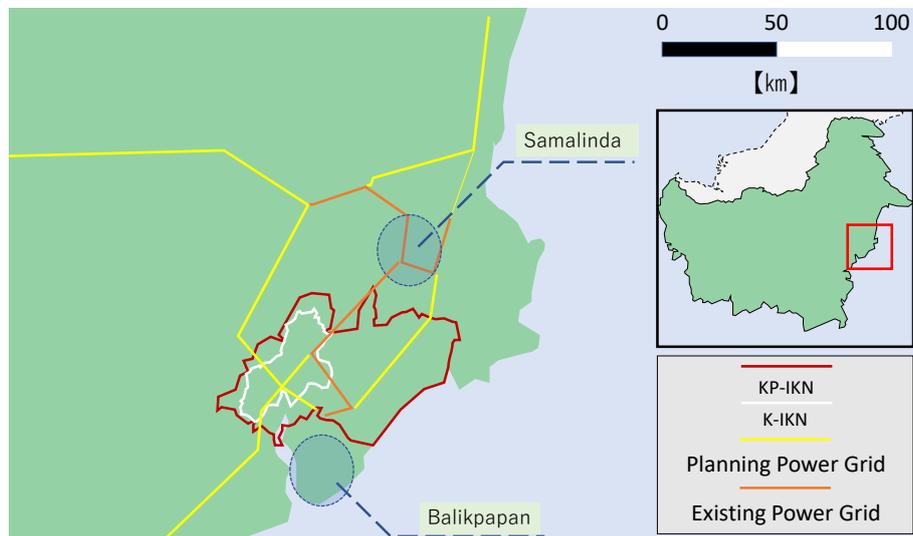
Power Generation Facilities Associated with the New Capital City	Name of Law or Plan (Issued)			
	PR No. 64/2022 (2022)	National Spatial Plan (2008)	Spatial Plan for Kalimantan (2012)	Spatial Plan for East Kalimantan Province (2016)
Hydroelectric Power Plant	N/A	Hydroelectric power generation	Hydroelectric power generation (12 locations), small hydroelectric power generation (one location)	N/A
Steam Power Plant	N/A	Steam power generation	Steam power (18 locations)	N/A
Gas Power Plant	N/A	Gas and steam gas power generation	Gas power (four locations), Gas engine power (one location), Coal gas power (four locations), Steam gas power (two locations)	N/A
Geothermal Power Plants	N/A	Geothermal power generation	N/A	N/A
Diesel Power Plants	N/A	Diesel Power	N/A	N/A
Nuclear Power Plants	N/A	Nuclear power	N/A	N/A
Solar Power Plants	Solar power plants (at least four sites) Area: 14527.70 ha	Solar power	Solar power (three locations)	N/A
Hydrogen Power Plants	South IKN WP (KP-IKN; 1 site)	Hydroelectric power	N/A	N/A
Wind Power Plants	N/A	Wind power	Wind power generation (three locations)	N/A
Ocean Energy Power Plants	Wave power generation	Ocean energy power	N/A	N/A

Source: JICA Consultant Team



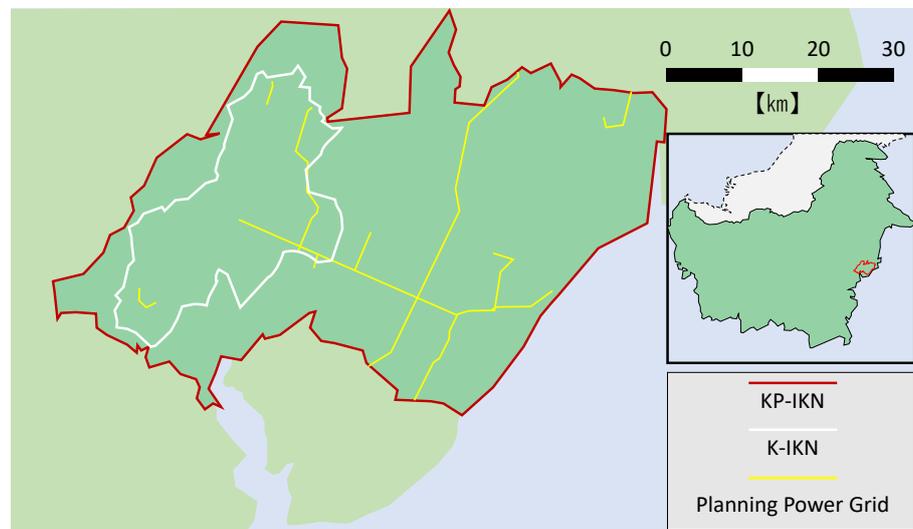
Source: JICA Consultant Team based on the National Spatial Plan

Figure 3.9: Location of Each Power Generation Facility Planned Based on the National Spatial Plan



Source: JICA Consultant Team based on Spatial Plan for East Kalimantan Province

Figure 3.10: Transmission Network Map around IKN Based on Spatial Plan for East Kalimantan Province



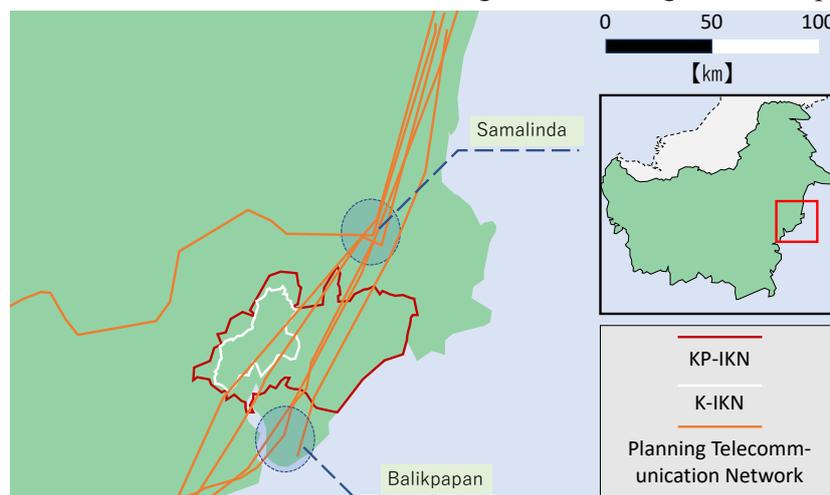
Source: JICA Consultant Team based on PR No.64/2022

Figure 3.11: Transmission Network Map Based on PR No. 64/2022

It was confirmed that the transmission networks of the National Spatial Plan, the Spatial Plan for Kalimantan Island, and the Spatial Plan for East Kalimantan Province differ in the number of units to be developed and their locations. In addition, the spatial plans for the transmission networks among the various administrative bodies are not aligned. Since electric power network of PR No. 64/2022 is limited within IKN, the connectivity from outside cannot be confirmed. However, since the public power supply provider (PLN) has already set up the mobile sub-station, there is no serious issue on the ground.

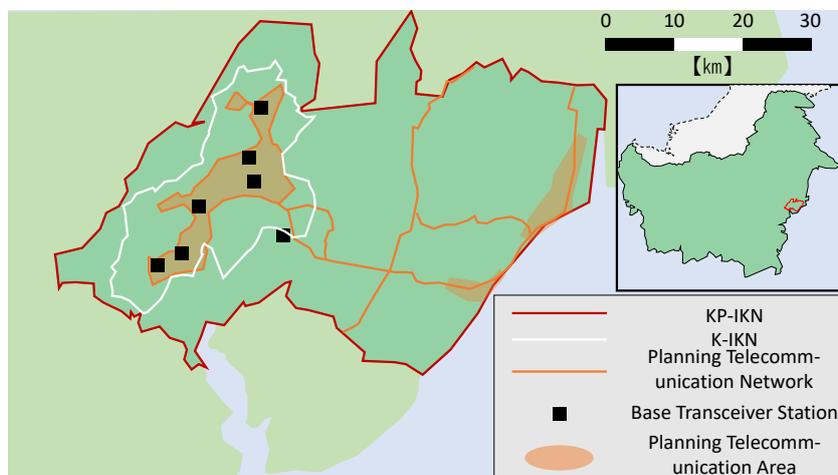
(4) Communication Plan

The communication plans were determined in PR No. 64/2022, the National Spatial Plan, the Spatial Plan for Kalimantan, the Spatial Plan for East Kalimantan Province the Spatial Plan for Kutai Kartanegara Regency, and the Spatial Plan for North Penajam Paser Regency. The National Spatial Plans, spatial plans for Kalimantan Island and East Kalimantan Province determine the communication network; in addition, the location of the switching station was added in PR No. 64/2022. The communication network maps of East Kalimantan Province and PR No. 64/2022 are shown in Figure 3.12 and Figure 3.13, respectively.



Source: JICA Consultant Team based on the Spatial Plan for East Kalimantan Province

Figure 3.12: Communication Network Map Based on the Spatial Plan for East Kalimantan Province



Source: JICA Consultant Team based on PR No.64/2022

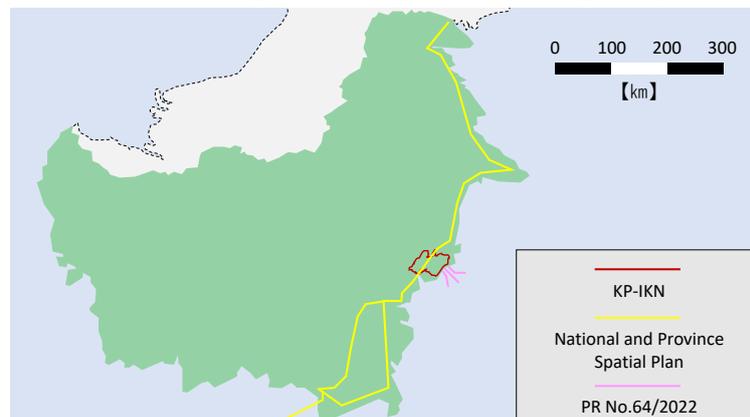
Figure 3.13: Communication Network Map Based on PR No. 64/2022

The number of telecommunication networks described in the Spatial Plan for East Kalimantan Province was confirmed to be higher than the number of telecommunication networks described in the National Spatial Plan and the Spatial Plan for Kalimantan Island.

In the spatial plan pertaining to the telecommunication network in PR No. 64/2022, it is planned to pull the telecommunication network from Samarinda to within K-IKN. On the other hand, the location of the pull-in point from Samarinda to within K-IKN in East Kalimantan Province was confirmed to be different from the location of the pull-in point from outside K-IKN planned in PR No. 64/2022. Therefore, proper coordination shall be required.

(5) Oil and Gas Network Plan

Regarding the oil and gas network plan, it was confirmed that the oil and gas network plan location maps were described in PR No. 64/2022, the National Spatial Plan, and the Kalimantan Island Spatial Plan. It was confirmed that the oil and gas networks in the National Spatial Plan and the Kalimantan Island Spatial Plan are consistent. However, PR No. 64/2022 plans to bring the resource separately from the seaside.

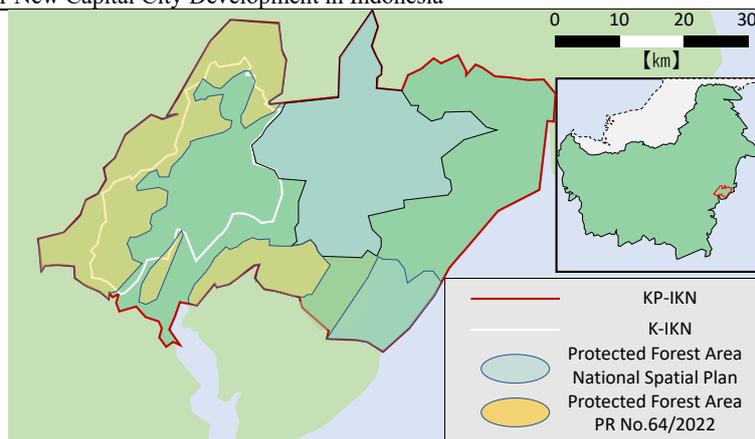


Source: JICA Consultant Team based on Each Spatial Plan

Figure 3.14: Oil and Gas Network Map Based on Each Spatial Plan

(6) Forest Protection Plan

Regarding the forest protection area, the descriptions in the spatial plans for Kalimantan Island, East Kalimantan Province, and Kutai Kartanegara Regency are similar. However, the forest protection area was not described in PR No. 64/2022. Currently, some of the forest protection areas described in the spatial plans for Kalimantan Island, East Kalimantan Province and Kutai Kartanegara Regency are under development, and the coordination among relevant authorities is ongoing as reported.



Source: JICA Consultant Team based on Each Spatial Plan

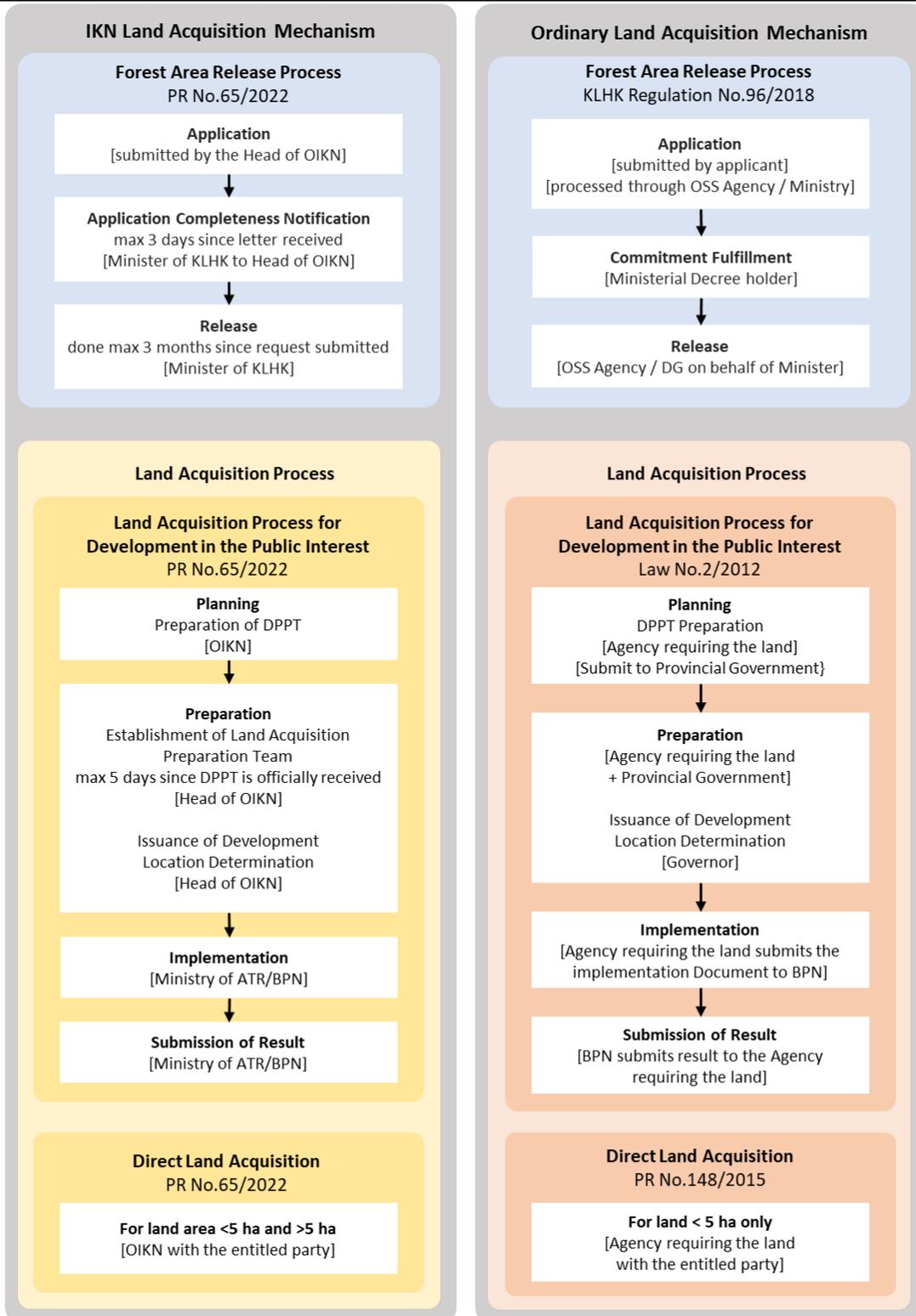
Figure 3.15: Forest Protection Areas Based on Each Spatial Plan

3.4 Differences with the Existing Land Acquisition Process

The flow of the process for land acquisition in the new capital city compared with the normal process for land acquisition is summarized in Figure 3.16.

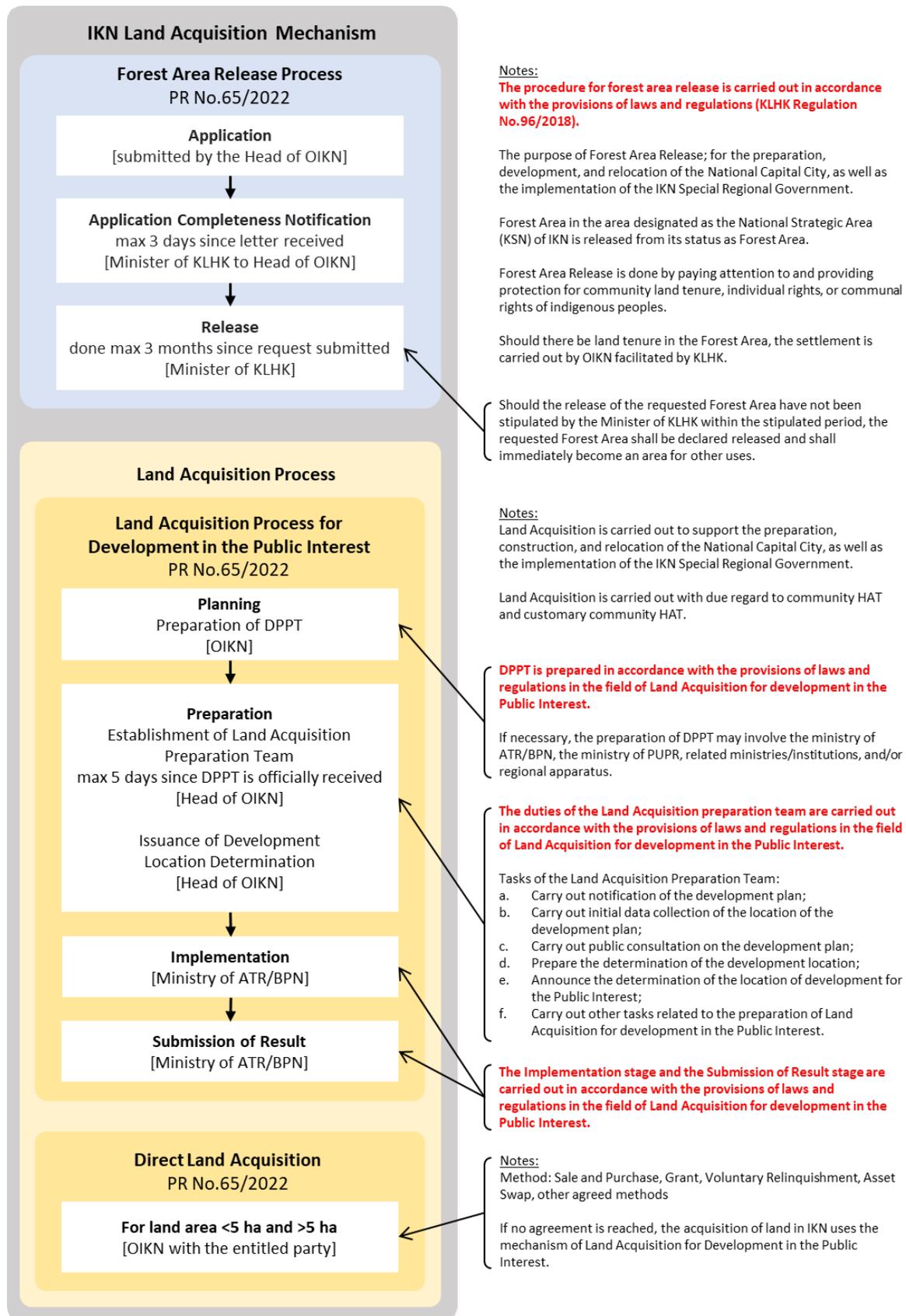
(1) Differences in the land acquisition process

PR No. 65/2022 describes three main schemes for land acquisition: 1) release of forest areas; 2) process for land acquisition for public benefit development, and 3) direct land transactions. It is noteworthy that in the process for land acquisition for public interest development, except in the new capital, the ministries that require land prepare planning documents and the governor decides on the development site. However, in the new capital, OIKN prepares the planning documents and the OIKN Director approves the decision on the development site. The system is designed to allow for flexibility within OIKN. In addition, direct acquisition of land was previously limited to less than five ha, but direct acquisition of more than five ha is now possible after negotiations with landowners.



Source: JICA Consultant Team

Figure 3.16: Process for Land Acquisition (Left: New Capital City, Right: Conventional)



Source: JICA Consultant Team

Figure 3.17: Detailed Process for Land Acquisition in the New Capital City

Regarding land acquisition in the interest of the public interest, enforcement procedures will follow the existing laws and regulations.

- Law No. 2 of 2012: Land Acquisition Process for Development in the Public Interest
- Government Regulation No. 19/2021: Procurement of Land for Construction in the Public Interest (Implementing Regulations of the Omnibus Law)

GR No. 19/2021 is the implementing regulation of the Omnibus Law and is intended to facilitate land acquisition. Article 89 of the GR provides that compensation funds may be deposited in the court and that agencies requiring land may continue the land acquisition process.

BAPPENAS-MP calculates the total cost of each phase of land acquisition. The total cost of land acquisition in the first phase will be just under IDR 2 trillion, and when it comes to Phase 5, the total expenditure is expected to be about IDR 8.5 trillion in total. Estimates of compensation must have been obtained since the planning stage, which are determined based on the results of the assessment from public appraisers who have good qualifications. Before being determined, the assessment process needs to be carried out repeatedly (check and re-check) so as not to cause objections from the rightful party due to unnecessary mistakes.

Table 3.5: Accumulated Compensation Costs Related to Land Acquisition in Each Phase

Phase	Total Amount (IDR)	Total Amount (USD)
1	1,940,143,346,903	133,361,516.83
2	2,705,685,069,097	185,983,301.42
3	903,521,117,742	62,106,208.26
4	1,689,495,805,731	116,132,513.45
5	1,270,959,385,338	87,363,169.19
Amount	8,509,804,724,810	584,946,709.16

Source: JICA Consultant Team based on BAPPENAS MP
 Converted using JICA rate in July 2022 (IDR 1 = JPY 0.00918)

3.5 Review of the PPP Regulations

PPP projects in the new capital will be granted special incentives. The concept of the PPP system in the new capital (hereafter KPBU-IKN) is presented in the Government Regulation on Financial Procurement and Budget (GR No. 17/2022) and the Presidential Regulation on OIKN (PR No. 62/2022). Detailed regulations are under preparation at the initiative of BAPPENAS and are expected to be promulgated at a later stage.

The regulatory framework of the conventional PPP scheme guidelines is shown in Table 3.6.

In Indonesia, the government has been involved in infrastructure development by PPP schemes since 2005. More recently, the PPP law was amended in 2015 to expand the sectors covered; PPP schemes are applicable to both economic and social infrastructure.

The PPP regulation framework establishes implementation procedures, investment recovery schemes, and policies for government guarantees. The schemes applicable to payback of investment include user-pays,

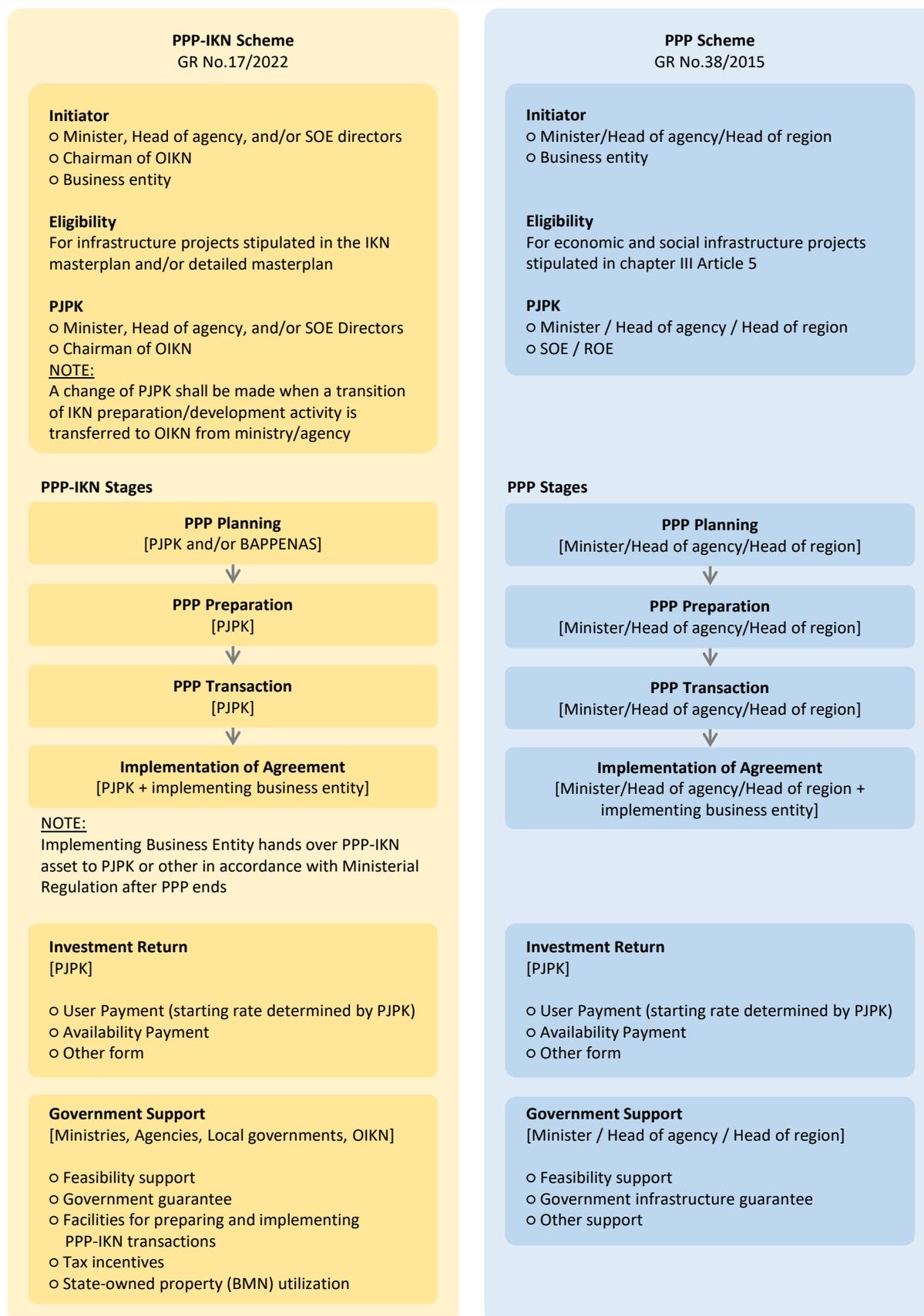
availability-pays, and other schemes. The Government Contracting Authority (hereinafter GCA) determines the scheme. The GCA of a PPP is the minister in charge, the head of the agency, and the director of the national company.

Table 3.6: Regulatory Framework for PPP Schemes

Regulation	Context
Regulatory Framework for PPP Schemes	
PR No.38/2015 Public Private Partnership on Infrastructure Provision	This is general stipulation to support the implementation of national development in order to improve the national economy, the welfare of society and the competitiveness of Indonesia in a global context. This Presidential Regulation mandated to BAPPENAS, LKPP, MoF, and MOHA to stipulate the technical regulation.
Minister of National Development Planning Number 4/2015 Amended Number 2/2020 Operational Guidelines for PPP on Infrastructure Provision	<ul style="list-style-type: none"> · Simplification of studies preparation for both solicited and unsolicited projects; · Adding more sectors of infrastructure as the sector-specific needs growth; · BAPPENAS facilitation for studies preparation; and · Improving the role of PPP Joint Office.
Head of National Public Procurement Agency (LKPP) Regulation Number 19/2015 Guidelines for Procurement of Business Entities on PPP Scheme in Infrastructure Provision	Procurement regulation which applies for unsolicited project and preparation agency.
LKPP Regulation Number 29/2018 Guidelines for Procurement of Business Entities on Solicited PPP Infrastructure Projects	Clarified the guidelines more specifically, especially the terms regarding the two-step bidding.
Regulatory Framework for Availability Payment Scheme on PPP Projects	
Minister of Finance Regulation Number 260/2016 amendment of Minister of Finance Regulation Number 190/2015	Availability payment on PPP scheme in infrastructure provision.
Minister of Home Affairs Regulation Number 96/2016	Availability payment using the local budget (APBD) on PPP scheme in infrastructure provision.
Regulatory Framework for Government Guarantee on PPP Projects	
PR No.78/2010	Government guarantees on PPP infrastructure projects.
Minister of Finance Regulation Number 8/2016 as an amendment of Minister of Finance Regulation Number 260/2010	Guidelines on a government guarantee.
Minister of Finance Regulation Number 30/2012	Contingency liability fund.
Regulatory Framework for Government Support on PPP Projects	
Minister of Finance Regulation Number 170/2018 as an amendment of Minister of Finance Regulation Number 223/2012	Guidelines for the use of Viability Gap Fund (VGF)
Minister of Finance Regulation Number 170/2015 as an amendment of Minister of Finance Regulation Number 143/2013	Guidelines for the use of VGF
Minister of Finance Regulation Number 73/2018	Guidelines for the Project Development Facility (PDF)
Minister of Finance Regulation Number 180/2020	Guidelines for the PDF
Other Related Regulation	
Government Regulation Number 27/2014 as amended by the Government Regulation Number 28/2020	Management of national and regional assets
Government Regulation Number 28/2018	Regulations for the regional cooperations

Source: JICA Consultant Team based on the PPP Book 2021

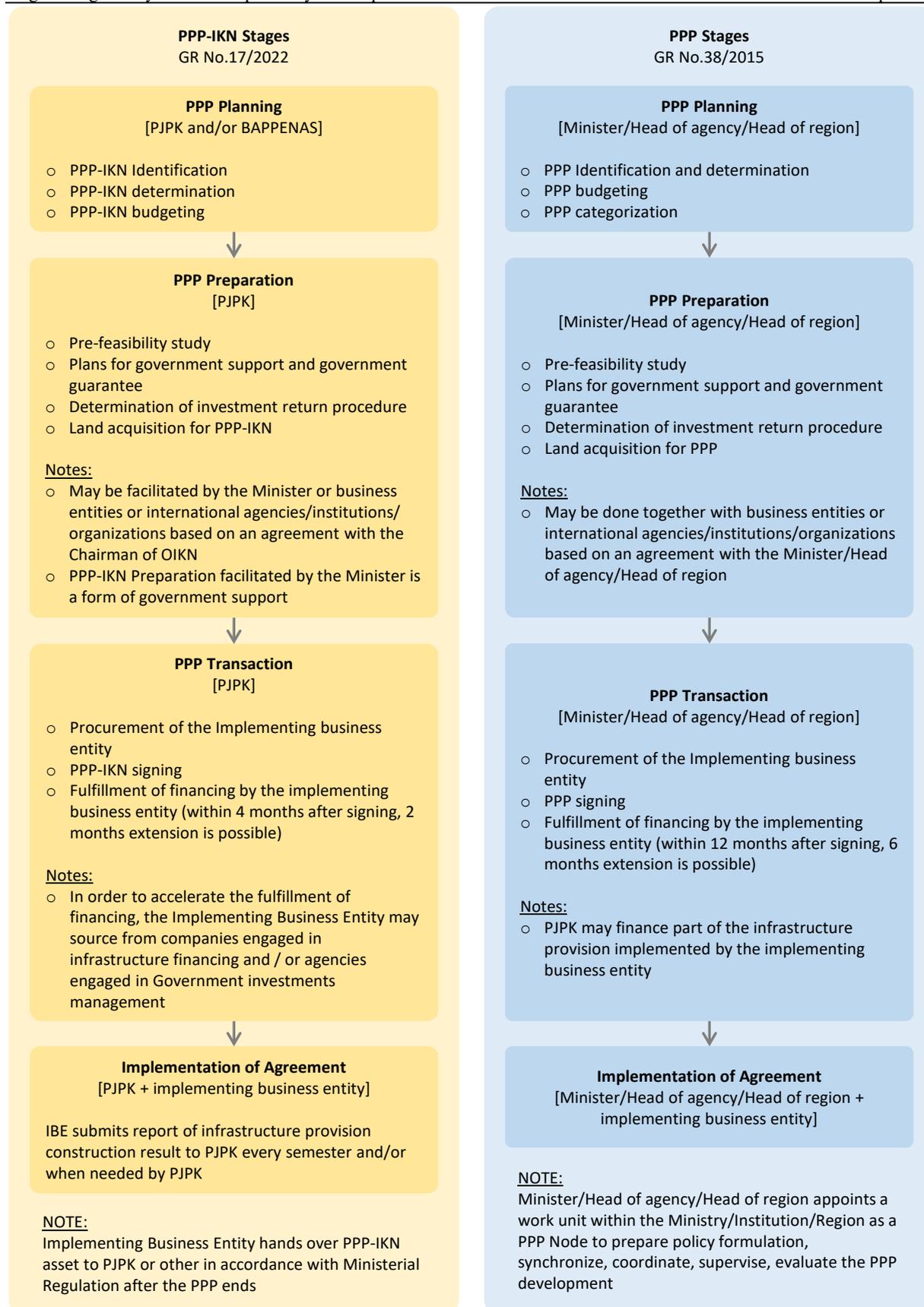
The differences of the concepts between PPP-IKN as presented in GR No.17/2022 and the conventional PPPs are summarized in Figure 3.18, Figure 3.19, and Figure 3.20. An additional point has been added where the OIKN can be the PPP project initiator and the organization in charge of the PPP projects, allowing for the formation of the project. In addition, while government guarantees were previously available for unsolicited proposals in the conventional PPPs, the PPP-IKN also allows the use of availability payments.



PJKP: Person in Charge of Cooperation Project, **SOE:** State-owned Enterprise, **ROE:** Regional-owned Enterprise, **IBE:** Implementing Business Entity.

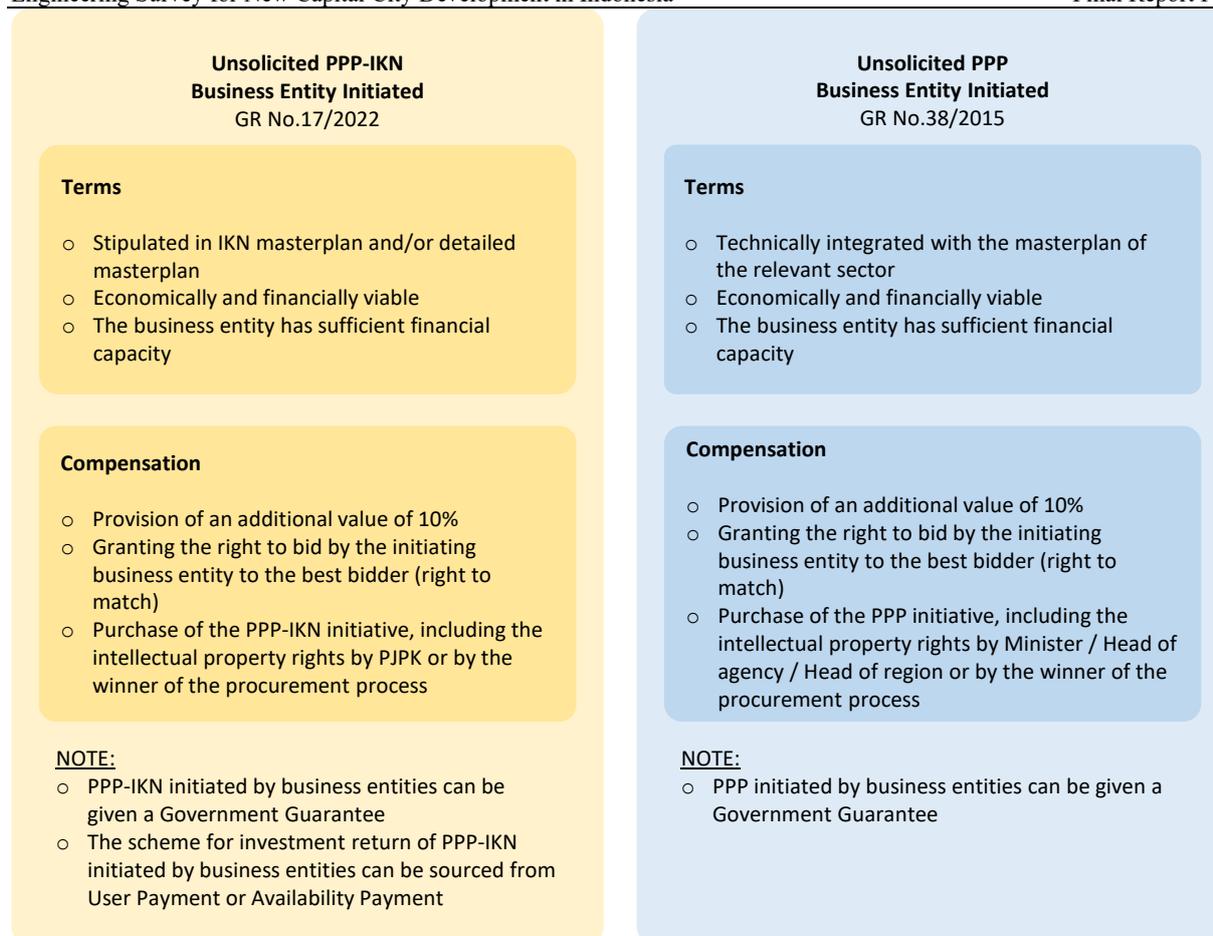
Source: JICA Consultant Team

Figure 3.18: Differences between PPP-IKN and Conventional PPP (Left: IKN, Right: Conventional)



Source: JICA Consultant Team

Figure 3.19: PPP-IKN and Conventional PPP Procedures (Left: IKN, Right: Conventional)



Source: JICA Consultant Team

Figure 3.20: Terms and Compensations for Unsolicited PPPs in PPP-IKN and Conventional PPPs (Left: IKN, Right: Conventional)

3.6 Review of the Omnibus Laws

The Job Creation Law (Law No.11/2020), also known as Omnibus Law, was issued in November 2020 to simplify and align multiple regulations to promote Indonesia's investment ecosystem and job creation. The Omnibus Law consists of 15 chapters as shown in Table 3.7.

Table 3.7: Table of Contents of the Omnibus Law (Law No. 11/2020)

Chapter	Content
I.	General Requirements
II.	Principles, Objectives, and Scope
III.	Improvements of Investment Ecosystems and Business Activities
IV.	Labor
V.	Convenience, Protection, Empowerment of Cooperatives and MSMEs
VI.	Ease of Doing Business
VII.	Research and Innovation Support
VIII.	Land Procurement
IX.	Economic Zones
X.	Central Government Investment and Ease of National Strategic Projects
XI.	Implementation of Government Administration to Support Job Creation
XII.	Supervision and Development
XIII.	Other Provisions
XIV.	Transitional Provisions
XV.	Closing

Source: JICA Consultant Team based on the PR No.64/2022

Derived regulations were ratified, consisting of 45 GRs and 4 PRs. The Omnibus Law allowed for the establishment of a Sovereign Wealth Fund to support national strategic projects, and the Indonesian Investment Agency (hereinafter INA) was established in February 2021.

3.7 Review of the Existing Environmental and Social Considerations

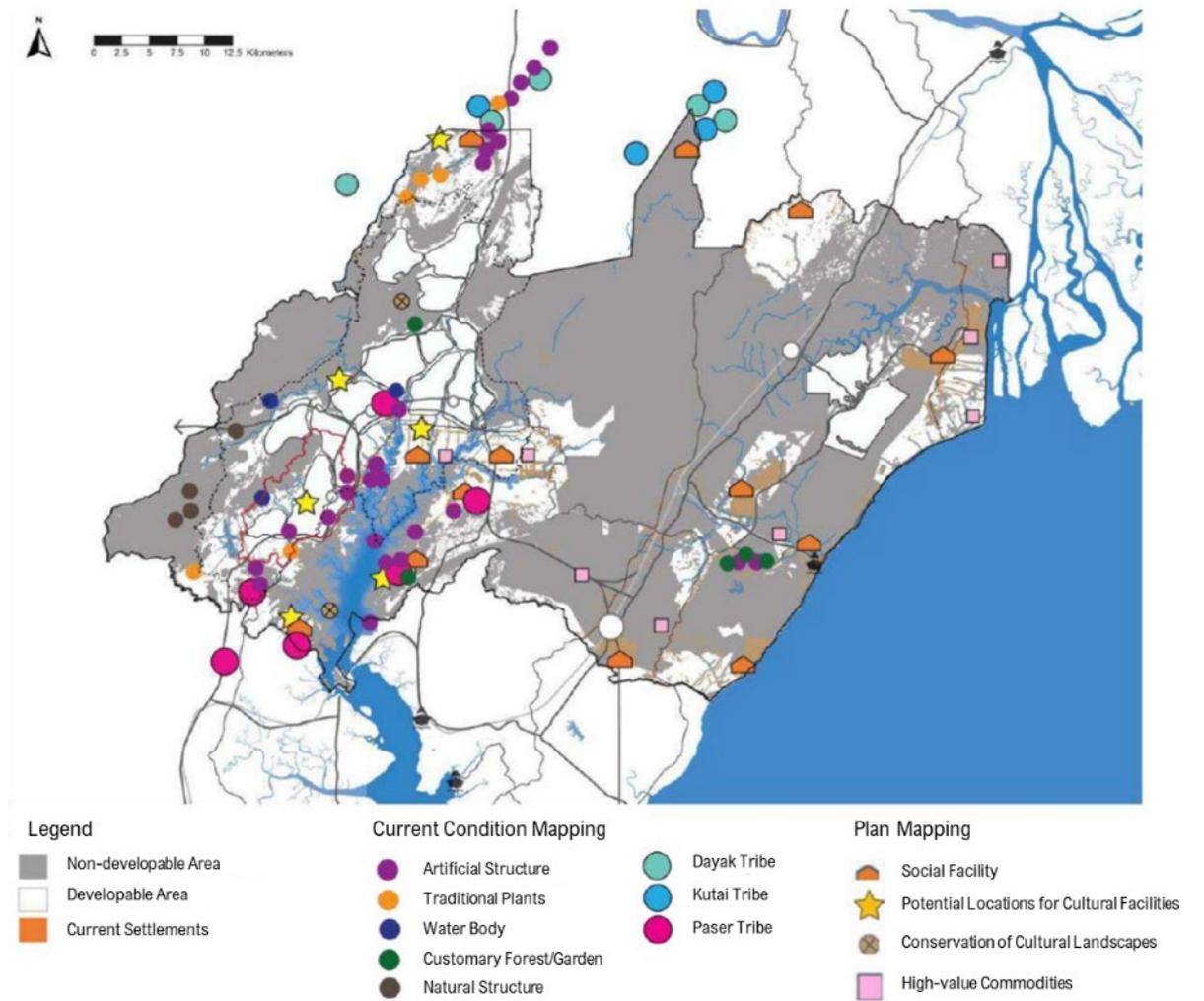
The Master Plan (hereinafter MP) describes the environmental and social considerations for the IKN, but there is no environmental impact assessment for individual projects.

3.7.1 Social

The following items are reviewed and studied in the MP through interviews with or without a questionnaire, discussion, sketches, physical inspection, and data analysis for the IKN area:

1. Population statistics such as administrative boundary, population, occupation, and income
2. Existence of indigenous people
3. Potential of land dispute because of the conflict claims of several stakeholders
4. Location that has socio-cultural value for the local communities such as river, waterfall, dam, and forest
5. Identification of important animals and plants such as orangutan, gibbons, and bear
6. Potential site for tourism activities such as village, beach, reservoir, forest, and waterfall
7. Local commodities such as plantation, agriculture, fishery, industry, and farm
8. Initial stakeholder analysis to classify key stakeholders in the IKN area

The following figure describes the developable areas and non-developable areas that have been planned based on the existing social conditions, socio-economic development plan, and natural environment. It also shows the location and selection of service centers, social facilities, and landscape conservation areas for each region. These are planned with a view to possible future development of industries such as agriculture, fishing, oil and gas, and the like, which will be improved in the MP.



Source: PR No.63/2022 Chapter 4

Figure 3.21: Developable Area and Current and Planned Facilities in IKN

3.7.2 Environment

The following items are reviewed and studied in the MP for the IKN area:

1. Topographic and geological data.
2. Environmental data such as information on mangrove forest, karst, river, lake, beach, high conservation values area, flora, and fauna.
3. In the risk analysis of natural hazards, shallow gas, earthquake, landslide, flood, and forest fire were listed as risk to infrastructures that are to be developed in IKN.

3.7.3 Related Laws and Regulations

The following laws and regulations are listed in the MP:

Table 3.8: Laws and Regulations Related to Indigenous People in the MP

No.	Law/ Regulation	Description
a.	Law No. 5/1960 on Agrarian Principles	The law defines the types of fundamental rights that individuals and business entities can have. It delineates the role of the state with respect to direct land use and the regulation of private rights and private use of land. It also states that Indonesia's agrarian law is "customary" law, or Indonesian customary law, if it does not contradict the national interest or other regulations stipulated in this law.
b.	Law No. 41/1999 on Forestry, as Amended by Law No. 19/2004	Article 1 point 6 of Law No. 41 of 1999 on Forestry has been amended by Constitutional Court Decision No. 35/PUU-X/2012 and now reads "customary forests are forests located within the territory of indigenous peoples. Previously, the word "state" was present in this article. With the removal of the word "state" from the definition, it is now understood that customary forests are no longer state forests.
c.	Law No. 32/2009 on Environmental Protection and Management	This law recognizes indigenous peoples as groups of people who have settled and lived for generations in certain geographical areas because of their attachment to their ancestral home areas; their strong relationship with their environment; and because of the existence of a value system that determines economic, political, social, and legal institutions. In protecting and managing the environment, the government (central, provincial, and local) is assigned and has the authority to establish policies regarding procedures to recognize the existence of indigenous peoples, local wisdom, and the rights of indigenous peoples in relation to environmental protection and management.
d.	Law No. 11/2010 on Cultural Heritage	This law recognizes MHA (Customary Law Community) as the owners of their cultural heritage and gives them the authority to manage it. This law requires observations and data collection on cultural heritage that may be affected by project activities.
e.	Law No. 6/2014 on Villages	The law recognizes the existence and rights of customary law community (MHA), if they have been recognized and MHA can choose to settle in customary villages with their own institutional structures and authorities although this law lacks the support of regulations that provide guidance and institutional mandates for these provisions to become operational. The law authorizes customary villages to undertake custom-based public administration. Compared with other laws, it adopts optional and non-cumulative criteria for recognition of MHA with the presence of territory being mandatory.
f.	Law No. 23/2014 on Regional Government, as Amended by Law No. 9/2015	This law recognizes the existence of customary institutions by giving them the right of "empowerment". Second, this law establishes that customary law is an additional regulation for certain purposes such as village head elections. Third, this law makes customary law the basis for regional development, or as a parameter to measure social cohesiveness.
g.	Law No. 39/2014 on Plantations	Article 12 of this Law states that if the land required for plantation business is the land of customary rights of customary law communities, plantation business actors must conduct deliberations with customary law communities holding customary rights to obtain approval regarding the transfer of land and its compensation. The deliberation process with the customary law communities holding the customary rights shall be carried out in accordance with the provisions of laws and regulations. Article 37 explains that the authorized officials are prohibited from issuing plantation business licenses on the land of customary rights of customary law communities. The provision of prohibition is exempted if an agreement has been reached between the customary law communities and plantation business actors regarding the surrender of land and its compensation.
h.	Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Regulation No. 9/2015 on Procedures for Determining Communal Rights to Land of Customary Law Communities and Communities Located in	This regulation contains establishment procedures and transitional provisions for communal land rights of MHA and local communities residing in certain areas. This regulation sets out the requirements and criteria for confirming communal land rights of MHA and community land rights, outlines the procedures and requirements for applying for land rights for MHA and communities residing in certain areas, identification, verification, and field checks, as well as reporting and determination of communal land rights as well as requirements for MHA and communities

No.	Law/ Regulation	Description
	Certain Areas	in certain areas to manage land for which land rights have been granted.
i.	Minister of Home Affairs Regulation No. 52/2014 on Guidelines for the Recognition and Protection of Customary Law Communities	This regulation contains guidelines for protecting indigenous groups, from the formation of committees, the recognition and protection stage, dispute resolution, guidance and supervision, and funding.
j.	East Kalimantan Provincial Regulation No. 1/2015 on Guidelines for the Recognition of Customary Law Communities in East Kalimantan Province	This regulation contains guidelines for the recognition of MHA in the province of East Kalimantan, including guidance, supervision, and funding. Based on Article 54 of this Regional Regulation, in utilizing space and natural resources, it is carried out based on ownership, control, or granting of certain rights based on laws and regulations or on customary laws and habits that apply to space in local communities.
k.	East Kalimantan Provincial Regulation No. 1/2016 concerning the Regional Spatial Plan for East Kalimantan Province 2016-2036	Article 50 of East Kalimantan Regional Regulation No. 1 of 2016 on the East Kalimantan Spatial Plan 2016-2036 states that in each zoning of the Spatial Planning Area it is necessary to resolve conflicts over customary rights and land tenure by communities within the forest area based on laws and regulations.

Source: JICA Consultant Team based on PP. 52-54, Appendix I, MP

Chapter 4 Review of Status and Implementation Progress of Relevant Ministries' Plans and Projects

In this chapter, the status and implementation of the capital relocation-related projects under the jurisdiction of the main ministries involved in the relocation will be reviewed. These main ministries are BAPPENAS, which oversees preparing the MP; the Ministry of Spatial Planning and National Land Agency (hereinafter ATR/BPN), which is in responsible for land administration; the Ministry of Transport (hereinafter MoT), which is responsible for transportation administration; and the Ministry of Communications and Information (hereafter KomInfo), which is in responsible for smart city policies and other related activities. The status and implementation of plans and projects of KomInfo will be reviewed.

In addition, it has been indicated that tasks related to the preparation, development, and operation of the new capital city will be gradually transferred to OIKN, and OIKN's operations are set to begin by the end of 2022. Until then, each ministry and agency will continue to prepare and develop their own areas of jurisdiction in accordance with the MP. If OIKN does not start operations by the end of 2022, each ministry and agency will continue to prepare and gradually transfer their functions to OIKN.

The summary of interviews conducted with each agency is shown in Table 4.1.

Table 4.1: Summary of Interviews Conducted with Each Agency

Organization	Position	Interview	Date
BAPPENAS	<ul style="list-style-type: none"> Head of Center for Data and Information (Formerly in the new capital city (hereinafter IKN) related division) 	<ul style="list-style-type: none"> The role of BAPPENAS in the relocation of the new capital 	13 Oct 2022
ATR/BPN	<ul style="list-style-type: none"> Head of Region I Sub-Directorate of Land Acquisition and Land Reserve Program Coordinator 	<ul style="list-style-type: none"> BPN's role in the relocation of the new capital The process of land expropriation 	14 Oct 2022
MoT	<ul style="list-style-type: none"> Chief of Planning for Land Transportation Section Plan Maker Directorate of Railway Directorate of Aviation Directorate of Sea Transportation Policy Agency (BKT) Planning Bureau 	<ul style="list-style-type: none"> Role of the MoT in the relocation of the new capital The development and operation policies of public transportation (e.g., rail, LRT, bus), airports, and ports 	17 Oct 2022
KomInfo	<ul style="list-style-type: none"> Directorate General of Informatics Application Director of LAIP eGovernment 	<ul style="list-style-type: none"> KomInfo's role in the relocation of the new capital Smart city and e-government policies in the new capital 	14 Oct 2022
OIKN	<ul style="list-style-type: none"> Deputy Chairman 	<ul style="list-style-type: none"> The role of OIKN in the relocation of the new capital 	6 Sep 2022
	<ul style="list-style-type: none"> Chairman 	<ul style="list-style-type: none"> The role of OIKN in the relocation of the new capital 	3 Oct 2022
	<ul style="list-style-type: none"> Secretariat 	<ul style="list-style-type: none"> Organization of OIKN and its situation of preparation 	2 Dec 2022
	<ul style="list-style-type: none"> Deputy for Green and Digital Transformation 	<ul style="list-style-type: none"> Functions of OIKN and its coordination mechanism 	20 Dec 2022
	<ul style="list-style-type: none"> Deputy for Environment 	<ul style="list-style-type: none"> Functions of OIKN and its coordination mechanism 	23 Dec 2022
PUPR	<ul style="list-style-type: none"> Minister of PUPR 	<ul style="list-style-type: none"> Issues to be considered in the implementation of the new capital city development 	13 Jul 2022
	<ul style="list-style-type: none"> PUPR-TF Director 	<ul style="list-style-type: none"> Workshops in the three areas of water supply and sewerage, rivers 	18-20 Jul 2022

Organization	Position	Interview	Date
		and drainage, and construction and land development	
	• PUPR-TF Director	• Explanation of infrastructure development issues based on field survey	20 Jul 2022
	• PUPR-TF Director	• Content 1: Proposal of project implementation mechanism • Content 2: Introduction of project-related companies by the JICA Consultant Team	13 Sep 2022
	• PUPR-TF Director	• Issues related to infrastructure development	14 Sep 2022
	• PUPR-TF (Pre-Construction Meeting)	• Content 1: Introduction of issues related to construction planning • Content 2: Project implementation structure • Content 3: Proposal of necessary standard operation procedure (SOP)	20-22 Sep 2022
	• PUPR ICT Center	• Overview of the project dashboard that comprehensively manages the progress of each project	29 Sep 2022
	• PUPR-TF (Pre-Construction Meeting)	• Introduction of issues related to construction planning	4 Oct 2022

Source: JICA Consultant Team

4.1 Ministry of National Development Planning (BAPPENAS)

The BAPPENAS led the formulation of the MP for the development of the new capital. It is also currently responsible for the study of regulations and institutions related to PPP-IKN and for the promotion of PPP projects in the new capital city. The Master Plan (hereinafter MP) has already been prepared in December 2020, and some of the 10-minute city, smart city, and forest city concepts have been confirmed to be reflected in PR No. 63/2022. The MP update is planned to be conducted every five years. After the delegation of authority to OIKN, it will be the main entity in charge of the MP update, and BAPPENAS will handle the project procedures related to individual PPPs and, donor acceptance procedures. Specifically, BAPPENAS will include projects related to the new capital city in the PPP book published annually by BAPPENAS, as well as in the list of donor projects and will serve as the point of contact for private sector and donor acceptance and procedures. The contents are under consideration for the design of an incentive and procedural system that is user-friendly for the private sector.

Currently, no donors are involved in supporting BAPPENAS' jurisdiction in relation to the new capital city. Since the legal and institutional preparations are being carried out with BAPPENAS' budget and personnel, no requests for external assistance have been raised. Preparations related to the new capital city can be handled within the existing capacity of BAPPENAS, and external assistance is not required at this time. On the other hand, since it is the government's policy to implement most of the development of the new capital through PPP, there is a concern about whether BAPPENAS will be able to play its role in the acceptance/procedure period in the event of a rush of PPP projects in the future.

4.2 National Land Agency (ATR/BPN)

The ATR/BPN is divided into the ATR, which has jurisdiction over spatial planning, and the BPN, which has jurisdiction over land administration. In this study, interviews were conducted with people responsible for land administration in BPN. As a supplementary note, the spatial plan for the new capital city was formulated as a new presidential regulation (PR No. 64/2022) under a different framework from the existing spatial planning law (Law No. 26/2007), and thus is positioned outside the jurisdiction of the Ministry of Spatial Planning.

The BPN, which has jurisdiction over land administration, has drafted a part of PR No. 65/2022 on land acquisition tied to the Capital Relocation Law. It has already been enacted as a PR. During the development phase, the administrative procedures for land acquisition will be carried out by the ministries, including the OIKN. The specific procedural flow was determined in Section 3.3. Land management will be carried out by each of the ministries and agencies that receive income from the land.

According to PR No. 65/2022, OIKN has the priority right to purchase land in the area of the new capital city, and land transactions are under the authority of OIKN. During the hearing, it was noted that individuals who already own land in the new capital city are only allowed to sell it to government agencies (including foreign embassies). In other words, only government agencies are allowed to purchase land in the new capital city. In the future, government agencies, including OIKN, will continue to hold the lands, except for the existing privately owned lands. The private sector, on the other hand, will be allowed to develop businesses with the right to use the land.

The person in charge stated that the acquisition of land necessary for the development of basic infrastructure and the Government Core Area (hereinafter KIPP) will be carried out with public funds, mainly by the Ministry of Public Works and Housing (hereinafter PUPR), which is responsible for the development project. In the future, OIKN will need to expand the scope of land acquisition, but there are limits to the amount of public funds that can be invested. The policy seems to prevent skyrocketing land prices by only allowing the sale of land to the public. However, the scope of land acquisition is vast. OIKN's view is that the project will be carried out through a PPP that includes land acquisition. On the other hand, by doing so, the business potential of the project will be reduced. The financing of land acquisition is a concern, as OIKN will face implementation challenges in the future.

4.3 Ministry of Transportation (Kemenhub)

The Kemenhub is mainly responsible for 1) preparing a grand design of the IKN area and a master transportation plan for the new capital, 2) providing the necessary construction support services from the surrounding areas to the new capital development area, and 3) providing support regarding the issuance of permits for access to the IKN. In contrast, OIKN is responsible for the implementation and operation of the development. In the operational phase, OIKN is expected to manage the operation of the public transportation system, while the actual operations are expected to be outsourced to private companies. On the other hand, PUPR will have authority over physical infrastructure such as roads. As for the implementation budget for the development of the new capital city within the ministry, the plan is basically to implement it through PPP, which is necessary to attract investment.

The 10-minute city concept presented in the MP will be achieved by providing a variety of public transportation systems, and Kemenhub is developing a trunk and feeder transportation network using a variety of public transportation systems including a railway plan, LRT, BRT, buses, and self-driving vehicles. For the railways, three lines are planned to be constructed in Phase 2 after 2024: an intercity railway line, an intra-urban railway line, and a direct airport railway line. Currently, each line is in the pre-feasibility study stage, and plans for financing and other aspects are not yet known.

In airport development, the focus is on utilizing the existing Balikpapan and Samarinda airports. Plans for a new airport have also been raised, but the location has not yet been determined.

There are plans for new and reconstructed ports, including construction material loading ports, but these are still in the study stage, and financing and other details have yet to be determined. Kemenhub is using base data from BAPPENAS and PUPR for the transportation MP.

In other areas, Kemenhub oversees large-scale infrastructure projects such as railway plans, airports, and ports, but the financing of these projects has not yet been considered. Under the government system that relies on PPPs for infrastructure development after Phase 2, issues remain regarding Kemenhub's capacity to promote projects.

4.4 Ministry of Communication and Information Technology

KomInfo contributes to the development of the telecommunications environment and promotes smart city measures related to the development of the new capital city in cooperation with OIKN. It is promoting smart transportation using automated driving and the introduction of ICT related to solid waste, energy management, healthcare, and education systems. Specifically, it is working on the development of a national data center, the construction of a secure network, and the development of a super-application for the new capital city.

A super application is an application that aims to integrate and provide all the functions necessary for daily life, and it can access a variety of applications or serve as a platform.

There are four national data centers to be developed in the country, one of which is planned for the new capital. Existing data centers are in Bekasi (cost: approximately USD190 million, loaned by the French government) and Batam (cost: approximately USD160 million, loaned by the Korean government). The two data centers in the new capital city and Labuan are both estimated to cost around USD 400 million to develop. The two projects are expected to be financed by loans from foreign governments or PPPs.

KomInfo expects to provide a command center to support the smart city development of the new capital city. The development of a dashboard to be made available to citizens and businesses has also been given as a task, but specific studies have not progressed.

The Presidential Regulation on E-Government (PR No. 95/2018) and the Presidential Regulation on One Data Policy (PR No. 39/2022), drafted by KomInfo in the past, will also guide the new capital city's policies. Ministerial Regulation No. 8/2009 of the Minister of Environment also describes smart cities. A new GR on Smart Cities is currently being drafted by the Ministry of Home Affairs and is expected to be finished by the end of this year. This is also expected to be one of the guiding principles for the new capital city.

Expectations are high for Japan to participate in the development of the data center and command center, the development of super applications, and the participation of Japanese companies with smart technology. However, it is difficult to deliver smart technology using public funds as a financial resource, and KomInfo expects that value-added services will only be provided through PPPs and private investment.

4.5 Nusantara Capital City Authority

Currently, the responsible ministries/agencies cover their respective areas of interest in development activities. According to Law No.3 of 2022, OIKN will be the responsible ministry for activities for the new capital city development starting in 2023. If OIKN does not agree to the transfer, the ministries/agencies will If OIKN does not accept the transfer, the ministries/agencies will continue their work on development activities.

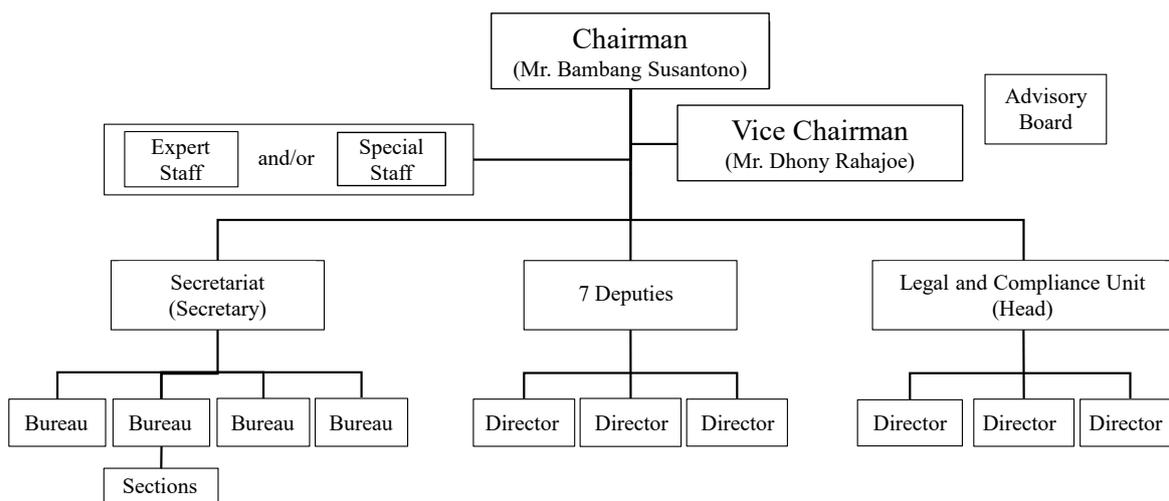
Meanwhile, the Chair and Vice-Chair of OIKN were appointed in March 2022, and the remaining Transition Support Team for the preparation, development, and transfer of the new capital city was appointed in State Regulation No. 105/2022. The composition of the OIKN Transition Support Team is shown in Table 4.2.

Table 4.2: OIKN Transition Support Team Members

Title		Name
Chairman		Bambang Susantono, President of OIKN
Vice-Chairman		Dhony Rahajoe (Vice President, OIKN)
Administrative Office	Secretaries	Dr. AJS Adiwijaya
	IT Team	Dr. Sidik Pramono (Coordinator) Panji Himawan, S.E.
	Specialist Team	Dr. Ir. Wicaksono Sarosa, Mep. (Coordinator) Prof. Masjaya, M.Si. Sofian Sibarani, ST., MUDD. Irfan Ahadi Tachrir, S.H. Yose Rizal, S.T.
The Chairman of each Adjustment Department		
Planning		Head of the PUPR Task Force for Planning of IKN Development
Development Control		Head of the PUPR Task Force for Planning of IKN Development
Infrastructure and Land		Director General of Land Procurement and Land Development, Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN)
Environment, Forestry, & Climate Change		Chairman General of the Ministry of Environment and Forestry
Investment		Chairman of the Ministry of Investment/ Main Secretary of the Investment Coordinating Board
Technology Transformation & Innovation		Prof. Mohammad Ali Berawi, M.Eng.Sc, Ph.D.
Social and Community Empowerment		Dr. Diani Sadiawati, SH, LL.M.
Funding		Director General of State Assets, Ministry of Finance

Source: JICA Consultant Team

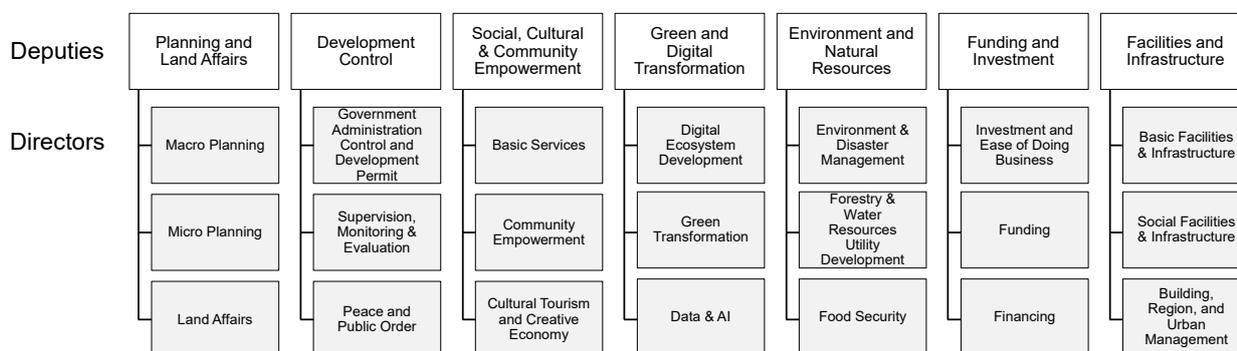
Subsequently, the Head of OIKN Regulation No.1/2022 promulgated on September 9, 2022, regulated the organizational structure of OIKN and the duties of key personnel. OIKN appoints seven deputies. The organizational chart is shown in Figure 4.1.



Source: JICA Consultant Team based on Head of OIKN Regulation No.1/2022

Figure 4.1: Organizational Structure of OIKN

As shown in Figure 4.2, seven deputies govern “Planning and Land Affairs”, “Development Control”, “Social, Cultural & Community Empowerment”, “Green and Digital Transformation”, “Environment and Natural Resources”, “Funding and Investment”, and “Facilities and Infrastructure”. As of December 2023, three deputies have been nominated in the field of “Development Control”, “Green and Digital Transformation”, and “Environment and Natural Resources”. Under the deputies, three directors are planned to be nominated.



Source: JICA Consultant Team based on Head of OIKN Regulation No.1/2022

Figure 4.2: Organizational Structure of OIKN (Deputies and Directors Level)

Table 4.3: 7 Deputies of OIKN

Deputy	Name
Planning and Land Affairs	Mia Amalia
Development Control	Thomas Umbu Pati
Social, Culture & Community Empowerment	Alimuddin
Green and Digital Transportation	M. Ali Berawi
Environment and Natural Resources	Myrna Asnawati
Funding and Investment	Agung Wicaksono
Facilities and Infrastructure	Silvia Halim

Source: JICA Consultant Team

A summary of the discussion between the JICA Consultant Team and OIKN Vice Chair Dhony Rahajoe on September 6, 2022, is presented in Table 4.4. As discussed, one of the challenges is that OIKN still needs to

recruit staff and function as an organization.

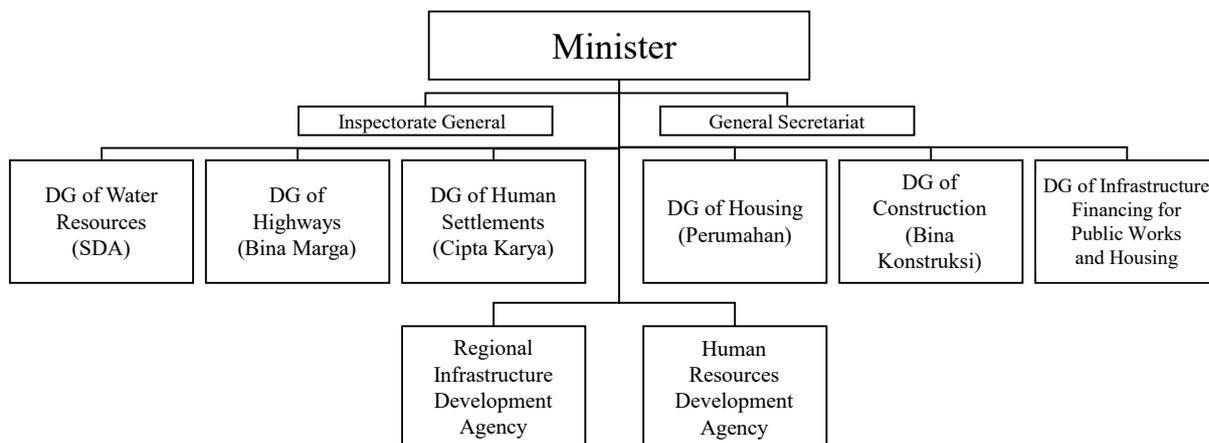
Table 4.4: Summary of the Discussion Meeting with OIKN

topic	Contents
About OIKN	<p>The organization of the Transition Support Team has not been easily established and only Director Bambang and Deputy Director Dhony have been active. Therefore, in the spirit of "One Map, One Plan, One Policy," the team is promoting the agreement and cooperation of many stakeholders to fulfill their responsibilities.</p> <p>Currently, OIKN does not have the necessary organizational units, but through the 4C approach (Communication, Collaboration, Consolidation, and Cooperation), it is promoting the development of the new capital city with the cooperation of many people.</p> <p>The President of Indonesia believes that the autonomy of the new capital city must be different from the existing one, and that it must be a proactive organization modeled after private organizations such as Google. In doing so, the President hopes to attract new businesses, including crowdfunding, and some of Java's existing economic activities.</p> <p>The Indonesian Chamber of Commerce and Industry (KADIN), together with OIKN, has also established the IKN-TF to:</p> <ol style="list-style-type: none"> 1) Review existing laws and regulations related to investment attraction. 2) Identify matters requiring improvement. 3) Improve laws and regulations (preferential measures over special economic zones (SEZs)). 4) Improve laws and regulations (preferential measures over SEZs).
New Capital City Development	<p>As the population grows in the new capital city, investment will follow.</p> <p>Currently, government officials believe that the population will move once housing is built, but there is talk within the government that settlement will be difficult until an ecosystem for living is established.</p> <p>In the new capital city, only the right to use state-owned land is granted to the private sector; it cannot be sold. Number of years for the rights are as follows:</p> <p>Commercial use: maximum 35+25+35=95 years</p> <p>Other uses including residential: maximum 30+20+30=80 years</p> <p>This restriction on the sale of land is a major hurdle in attracting investment; OIKN needs to consult with the Ministry of Finance with a proposal for the sale of state-owned land.</p>
Other	<p>The purpose of the new capital city is not to develop infrastructure but to provide services that support their lives, such as commerce, healthcare, education, and entertainment, since the foundation of the new capital city will be the movement of people.</p> <p>Currently, PUPR is leading the infrastructure development, but OIKN has also informed President Joko of the importance of building an Ecosystem (living environment) for daily life.</p> <p>OIKN believes that after April 2022, the government's development policy will shift from infrastructure development to Ecosystem development.</p>

Source: JICA Consultant Team

4.6 Ministry of Public Works and Housing (PUPR)

According to PR No. 27/2020 on the PUPR, the PUPR has the task of carrying out government affairs in the areas of public works and public housing to assist the President in the operation of the state government. Therefore, the PUPR is also responsible for public works and public housing development in the new capital city. The PUPR is managed by six departments and other agencies, as shown in Figure 4.3.



Source: JICA Consultant Team

Figure 4.3: Organizational Structure of PUPR

Within the PUPR, the New Capital City Infrastructure Development Task Force was established in November 2021 in accordance with PUPR Ministerial Regulation No. 1419/2021. The Task Force for Planning completed the tasks stipulated in the regulation, and its work was transferred to the Implementation Task Force.

Table 4.5: PUPR Task Force of IKN Infrastructure Development

No.	Name
Task Force for Planning	
1	Ir. Imam S. Ernawi, MCM, M.Sc
2	Ir. Joessair Lubis, CES
3	Ir. Antonius Budiono, MCCM
4	Ir. Atyanto Busono, MT
5	Dr. Ir. Arie Setiadi Moerwanto, M.Sc
6	Ir. Dedy Permadi, CES
7	Ir. Sumirat, MM
Task Force for Implementation	
1	Dr. Ir. Danis Hidayat Sumadilaga, M.Eng.
2	Ir. Didiet Arief Akhdiat, M.Si
3	Ir. Dodi Krispadmadi, M.Env
4	Ir. Atyanto Busono, MT
5	Ir. Charisal Akdian Manu, M.Si
6	Suparman, ST, M.Si
7	Ir. Adjar Prajudi, MCM.MCE
8	Agus Sulaeman, S.T, M.M
9	Ir. Trisasongko Widiyanto Dipl. HE

Source: JICA Consultant Team based on the Regulation of PUPR Minister No. 1419/2021

In order to carry out many infrastructure projects at the same time, the challenge of implementation needs to be transferred back to the planning team and plans need to be modified to adjust to the site conditions. However, the Task Force for Implementation is no longer functioning, so the communications between the planners and implementers have not been officially executed.

Although OIKN was established to prepare and develop IKN, the organization needs more time to officially function with a full staff. Until then, the PUPR is the leading ministry to implement the development. Overall coordination between ministries is expected by the OIKN.

Chapter 5 Review of Priority Infrastructure Development Projects in KIPP

5.1 Review of the Overall Plans and Progress

The Government Core Area (hereinafter KIPP) area is undergoing infrastructure development projects with a construction period until 2045, among which the Ministry of Public Works and Housing (hereinafter PUPR)-led planning, design, and construction is underway for projects to be completed by August 2024. The project area to be implemented in 2024 (1A area) is shown in Figure 5.1.

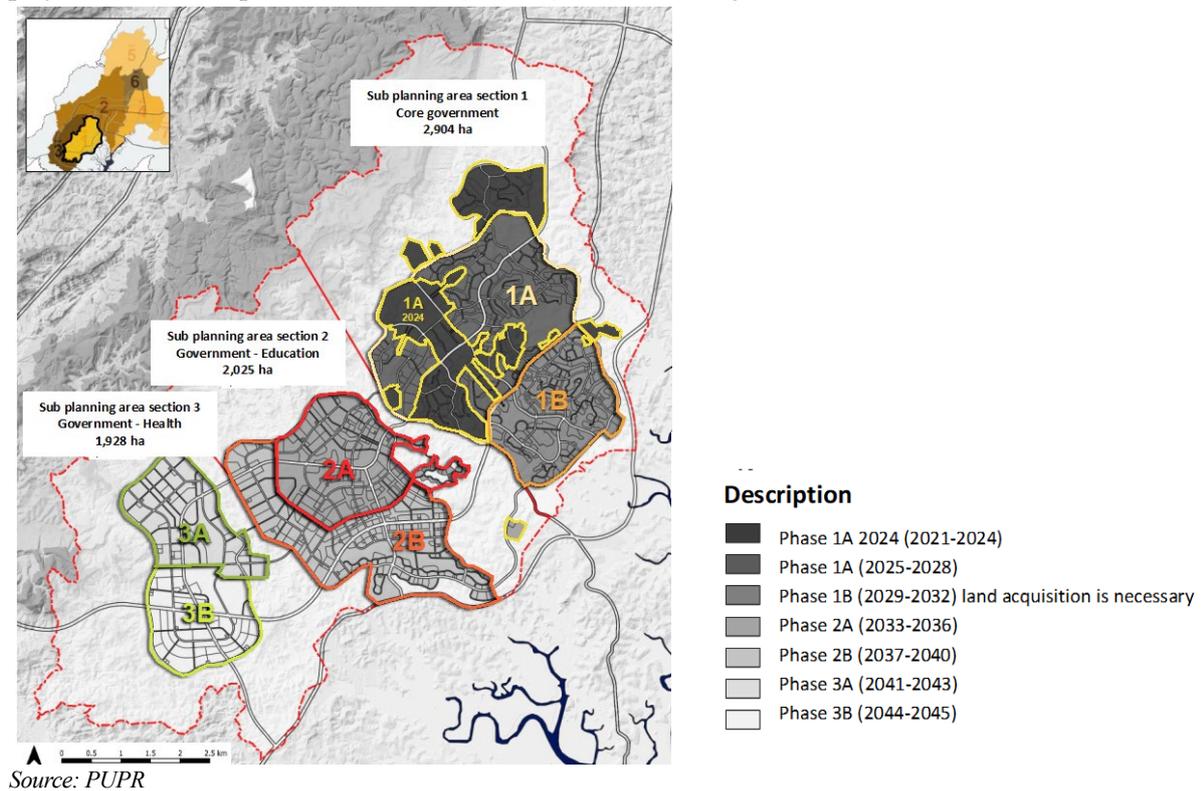


Figure 5.1: Phasing Plan for Infrastructure Projects Led by PUPR Within KIPP

The development of 1A area and the resulting relocation of public institutions and functions will have a significant impact on the promotion of the new capital city (hereinafter IKN) development in the future.

5.2 Progress in Project Implementation

The KIPP has 34 projects planned, as shown in Table 5.1, including three projects related to water resources and rivers, six projects related to roads and bridges, 23 projects related to public works, land development, and construction, and two projects related to housing.

Table 5.1: Infrastructure Development Project List for KIPP

No.	Project	Total Estimated Cost (Billion IDR)	Total Estimated Cost (Billion USD)
Sumber Daya Air (Directorate General of Water Resources)			
1	Main Drainage of Watershed (DAS) Sanggai 1A (19 Check Dams, 1 Retention Basin, 6 Bottom Controllers)	190.16	13.08
2	Main Drainage of Watershed (DAS) Sanggai 1B (10 Check Dams, 3 Retention Basins, 5 Bottom Controllers)	502.00	34.52
3	KIPP Ponds (19 Ponds)	210.00	14.44
Bina Marga (Directorate General of Highways)			
4	Sepaku Ring Road Segment I (1.75 km)	116.36	8.00
5	Sepaku Ring Road Segment II (1.85 km)	120.17	8.26
6	Sepaku Ring Road Segment III (2.03 km)	120.66	8.30
7	Sepaku Ring Road Segment IV (4.458 km)	193.48	13.30
8	Construction of the West Side of the National Axis Road (2.87 km)	442.20	30.41
9	Construction of the East Side of the National Axis Road (4.08 km)	476.49	32.77
Cipta Karya (Directorate General of Human Settlements)			
10	Mosque Building and Area	897.16	61.69
11	Main Distribution Network (JDU) and Tertiary Distribution Network (JDB) of Sepaku Drinking Water Supply System (SPAM)	897.16	61.69
12	Wastewater Treatment Plant (IPAL) 1, 2, and 3 of KIPP IKN	661.97	45.52
13	Wastewater Piping Network 1 of KIPP IKN	151.60	10.42
14	Wastewater Piping Network 2 of KIPP IKN	473.82	32.58
15	Wastewater Piping Network 3 of KIPP IKN	132.08	9.08
16	Integrated Waste Management Site 1	713.01	49.03
17	KIPP Land Development Phase 1	110.64	7.61
18	KIPP Land Development Phase 2	266.00	18.29
19	Arrangement of National Axis Area Phase 1 (Ceremonial Plaza)	266.00	18.29
20	Arrangement of National Axis Area Phase 2 (Civilian Plaza and Bhinneka Plaza)	450.80	31.00
21	Nusantara Terrace Building and Area	96.16	6.61
22	State Palace Building	1,364.00	93.80
23	Presidential Office Building	1,364.00	93.80
24	Presidential Secretariat Building	1,139.00	78.32
25	Presidential Pavilion Building	1,088.00	74.82
26	Education and Presidential Executive Staff Office Building	714.09	49.10
27	State Guesthouse Building, Paspampres Mess, and Guard Post	584.69	40.21
28	Vice President Palace Building and Area	2,247.00	154.52
29	Coordinating Ministry Office Building and Area 1	1,314.00	90.36
30	Coordinating Ministry Office Building and Area 2	1,442.00	99.16
31	Ministry of Public Works and Public Housing Office Building and Area	968.07	66.57
32	Ministry of State Secretariat Office Building and Area	2,575.00	177.07
Perumahan (Directorate General of Housing)			
33	Minister Level Landed Housing	509.10	35.01
34	Construction Worker Residence	584.24	40.18

Source: PUPR (USD/IDR rate (0.00006730797 USD/IDR) is based on JICA rate 2022 JUNE)

On August 29, 2022, 19 projects were contracted. From these, ten projects are related to KIPP as shown in

Table 5.2 (No. 2 and 5). These projects are included in KIPP's list of infrastructure development projects above.

Table 5.2: PUPR's Contracted Projects (August 2022)

No.	Sector	Stage	Project	Area	Contractor	Contract Payment (IDR)
1	River improvement	Construction supervision	Main Drainage of Watershed (DAS) Sanggai 1A	KIPP	PT Hilmy Anugerah, PT Yodya Karya, PT Mulya Sakti Wijaya	7,472,824,140
2	Roads and bridges	Construction	Sepaku Ring Road Segment IV	KIPP	PT Waskita Karya and Tbk-Guntur KSO	181,791,955,343
3	Roads and bridges	Construction supervision	Sepaku Ring Road Segment IV	KIPP	PT Adiya Widyajasa	6,029,242,000
4	Roads and bridges	Construction supervision	Construction of the West Side of the National Axis Road (The construction of this component has not yet been contracted.)	KIPP	PT SEECONS	6,256,681,000
5	Roads and bridges	Project	Construction of the East Side of the National Axis Road	KIPP	PT Yodya Karya	5,063,877,000
6	Land development	Construction	KIPP Land Development Phase 1	KIPP	PT Pembangunan Perumahan	92,345,569,408
7	Land development	Construction supervision	KIPP Land Development Phase 2	KIPP	PT Yodya Karya	3,272,876,958
8	Land development	Project	KIPP Eastern Residential Area	KIPP	PT Ciriayasa Engineering Consultant	8,023,997,970
9	Land development	Project	KIPP Hankam Precint Settlement Area	KIPP	PT Virama Karya	8,264,507,053
10	Housing	Construction	Construction Worker Residence (The construction of this component has not yet been contracted.)	KIPP	WG-Adhi Construction	567,008,043,760

Source: JICA Consultant Team based on PUPR

5.3 Review of the Plans and Progress by Sector

5.3.1 Hydraulic, River, and Drainage

(1) Project Outline and Action Plans

1) Project Outline

The Sanggai Watershed Master Plan (hereinafter MP) and its detailed design were prepared in 2020. Flood control developments are then planned for the Sanggai 1A and 1B watersheds within the KIPP from 2022 to 2024.

2020: the MP and Detailed Design on Flood Control and Main Drainage in Sanggai Watershed

2022-2024: Flood Control Development in Sanggai Watershed

Flood Control Developments are as follows:

- Sanggai 1A watershed
One retention pond, 19 check dams, and six ground sills, with cost estimation of IDR 190.16 billion.
- Sanggai 1B watershed
Two retention ponds, ten check dams, and five ground sills, with cost estimation of IDR 487 billion.

The JICA Consultant Team requested the MP data and detailed design data from the “Direktorat Jenderal Sumber Daya Air” of PUPR. The followings findings are from the existing MP data.

2) Action Plans

a) Mahakam River Basin

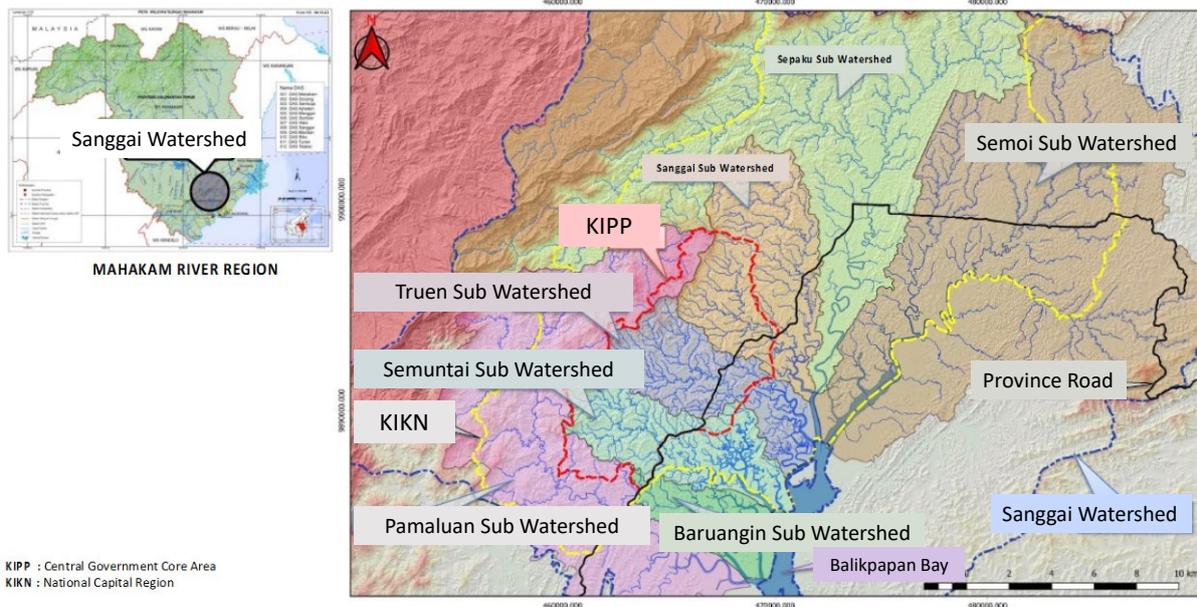
The IKN belongs to the Sanggai Watershed of the Mahakam River Basin.

The watersheds covered by KIKN are the following sub-river basins:

- Sub DAS Pamaluan (outside KIPP)
- Sub DAS Baruangin (outside KIPP)
- Sub DAS Semuntai (inside KIPP)
- Sub DAS Trunen (inside KIPP)
- Sub DAS Sanggrai (inside KIPP)
- Sub DAS Sepaku (outside KIPP)
- Sub DDAS Semoi (outside KIPP)

For KIPP, there are three main DAS (river basins).

- Sub DAS Semuntai
- Sub DAS Trunen
- Sub DAS Sanggai



Source: MP Pengendalian Banjir DAS Sanggai 05 Juli 2022 (Presentation Material)

Figure 5.2: Sanggai Watershed

b) Flood Analysis

Table 5.3 shows the summary of the results of the hydrologic and hydraulic analyses of the Sanggai Watershed.

Table 5.3: Various Analysis Results from the Flood Analysis in the MP Pengendalian Banjir DAS Sanggai

Document	MP Pengendalian Banjir DAS Sanggai 06-07-2022 (Presentation Material)																																																																													
Hydrological Analysis (Slide 7-14)	Available data: 35 years of daily rainfall from 1986 to 2020 Probability distribution: evaluated by six probability distribution models (Normal, Log Normal, Pearson III, Log Pearson, Gumbel, GEV). Design rainfall depth: about 242 mm/day (see the following tables) Rainfall duration: 12 hours Rainfall waveform: Model rainfall hyet																																																																													
	<table border="1"> <thead> <tr> <th rowspan="2">No</th> <th rowspan="2">Recurrence Period (year)</th> <th colspan="6">Frequency Distribution</th> <th rowspan="2">Isohyat (mm)</th> </tr> <tr> <th>Normal</th> <th>Log Normal</th> <th>Pearson Type III</th> <th>Log Pearson</th> <th>Gumbel</th> <th>GEV</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1000</td> <td>233.23</td> <td>293.52</td> <td>309.45</td> <td>320.33</td> <td>308.67</td> <td>274.01</td> <td></td> </tr> <tr> <td>2</td> <td>500</td> <td>224.85</td> <td>274.33</td> <td>288.12</td> <td>296.43</td> <td>287.15</td> <td>259.91</td> <td></td> </tr> <tr> <td>3</td> <td>100</td> <td>203.05</td> <td>229.77</td> <td>238.17</td> <td>242.41</td> <td>237.08</td> <td>224.07</td> <td>249.54</td> </tr> <tr> <td>4</td> <td>25</td> <td>180.3</td> <td>190.51</td> <td>194.06</td> <td>196.67</td> <td>193.59</td> <td>189.17</td> <td></td> </tr> <tr> <td>5</td> <td>10</td> <td>161.76</td> <td>163.17</td> <td>163.67</td> <td>165.94</td> <td>164.17</td> <td>163.37</td> <td></td> </tr> <tr> <td>6</td> <td>5</td> <td>144.36</td> <td>140.79</td> <td>139.35</td> <td>141.57</td> <td>140.89</td> <td>141.59</td> <td></td> </tr> <tr> <td>7</td> <td>2</td> <td>111.11</td> <td>105.44</td> <td>103.01</td> <td>104.65</td> <td>105.72</td> <td>106.24</td> <td></td> </tr> </tbody> </table>	No	Recurrence Period (year)	Frequency Distribution						Isohyat (mm)	Normal	Log Normal	Pearson Type III	Log Pearson	Gumbel	GEV	1	1000	233.23	293.52	309.45	320.33	308.67	274.01		2	500	224.85	274.33	288.12	296.43	287.15	259.91		3	100	203.05	229.77	238.17	242.41	237.08	224.07	249.54	4	25	180.3	190.51	194.06	196.67	193.59	189.17		5	10	161.76	163.17	163.67	165.94	164.17	163.37		6	5	144.36	140.79	139.35	141.57	140.89	141.59		7	2	111.11	105.44	103.01	104.65	105.72	106.24
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Runoff Analysis (Slide 15-18)	If hourly rainfall data is available, verification of the pre- and post-measurement flow rates are required using the actual rainfall waveforms from previous major floods.																																																																													
	Runoff analysis method: HEC-HMS (SCS method). Probability years: five cases of two years, five years, ten years, 25 years, and 100 years. Number of watershed divisions: Truen River: 19 divisions; Semuntai River: 17 divisions; Sanggai River: 28 divisions Runoff discharge at each watershed is calculated on a sub watershed basis. Watershed constant: SCS method curve number is set for each land use. Runoff analysis result: The water flow in the current land use, future land use, and after countermeasures at the downstream most point in each watershed at the 100-year probability are shown in the table below.																																																																													

	<table border="1"> <thead> <tr> <th>Condition</th> <th>Trunen River</th> <th>Semuntai River</th> <th>Sanggai River</th> </tr> </thead> <tbody> <tr> <td>Current condition</td> <td>222 m³/s</td> <td>222 m³/s</td> <td>287 m³/s</td> </tr> <tr> <td>Future condition</td> <td>248 m³/s</td> <td>243 m³/s</td> <td>324 m³/s</td> </tr> <tr> <td>After countermeasures</td> <td>191 m³/s</td> <td>210 m³/s</td> <td>240 m³/s</td> </tr> </tbody> </table>	Condition	Trunen River	Semuntai River	Sanggai River	Current condition	222 m ³ /s	222 m ³ /s	287 m ³ /s	Future condition	248 m ³ /s	243 m ³ /s	324 m ³ /s	After countermeasures	191 m ³ /s	210 m ³ /s	240 m ³ /s
	Condition	Trunen River	Semuntai River	Sanggai River													
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Future condition	248 m ³ /s	243 m ³ /s	324 m ³ /s														
After countermeasures	191 m ³ /s	210 m ³ /s	240 m ³ /s														
	<p>The impact of increased runoff due to future land use is considered, and the effects of the measures are also considered.</p>																
<p>Inundation Analysis (Slide 22-23)</p>	<p>Flood inundation analysis has been conducted by HECRAS inside and outside the KIPP. The result of flood inundation analysis is shown in the figure below.</p> <p>Within KIPP Trunen, Semuntai, and Sanggai rivers at flows of Q100 Flood inundation affects the tidally influenced estuary (outside KIPP). Flow velocity distribution is above 1.00 m/s.</p> <p>Outside KIPP Topographically relatively flat, tidal influence extends upstream across the state highway, and the flood inundation area is along this influence zone. Flood depth is 0.50-1.00 m, flood duration is 3-6 hours.</p>																
	<p>Flood inundation area outside of KIPP may extend upstream to the state highway, so planning must be done to ensure that roads are not inundated during flooding.</p>																

Source: JICA Consultant Team

Table 5.4 shows the summary of the results from the flooding simulation of the Sanggai Watershed.

Table 5.4: Findings from Flooding Simulation in the Flood Control Plan of PUPR

Document	RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN (Presentation Material)
Flooding Simulation	<p>Flooding locations and photographs of the Sanggai watershed, as well as flooding factors, are organized and overlaid with the results of a flooding simulation in Q100.</p> <p>The floods that occurred previously were outside of the KIPP location but were included in the KIKN and impacted the access road to KIPP.</p> <p>The results of the inundation simulation at the 100-year probable discharge in the Sanggai</p>

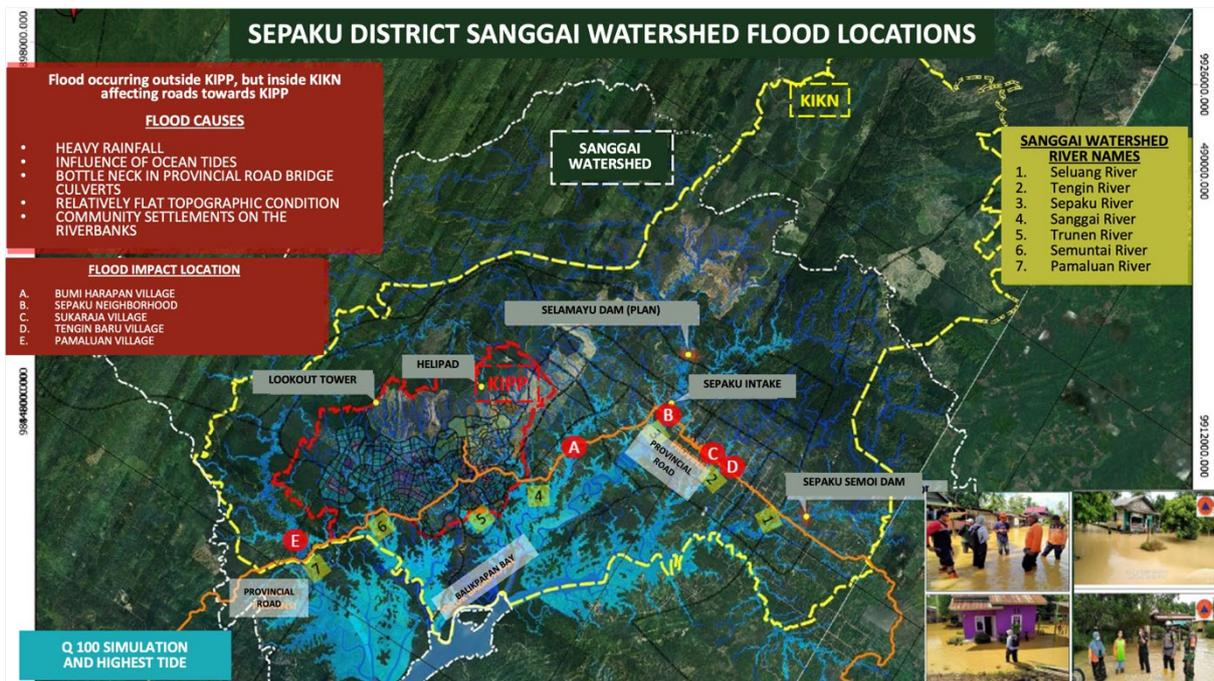
watershed (light blue color in Figure 5.3), the locations of previous floods (points of A to E in Figure 5.3), and their photographs are shown in Figure 5.3.

Possible causes of flooding include the following:

- Heavy rainfall
- Tidal influence
- Bottlenecks on province road bridges with culverts
- Flattening topography
- Residential areas within the river area

Flooding locations are outside of KIPP but within KIKN and occur around the access road crossing to KIPP. Flooding points are within the inundation area in the flood inundation simulation. It is necessary to eliminate the bottleneck point at the road crossing and to adjust the road planning by securing the width of the river improvement at the river crossing road planning.

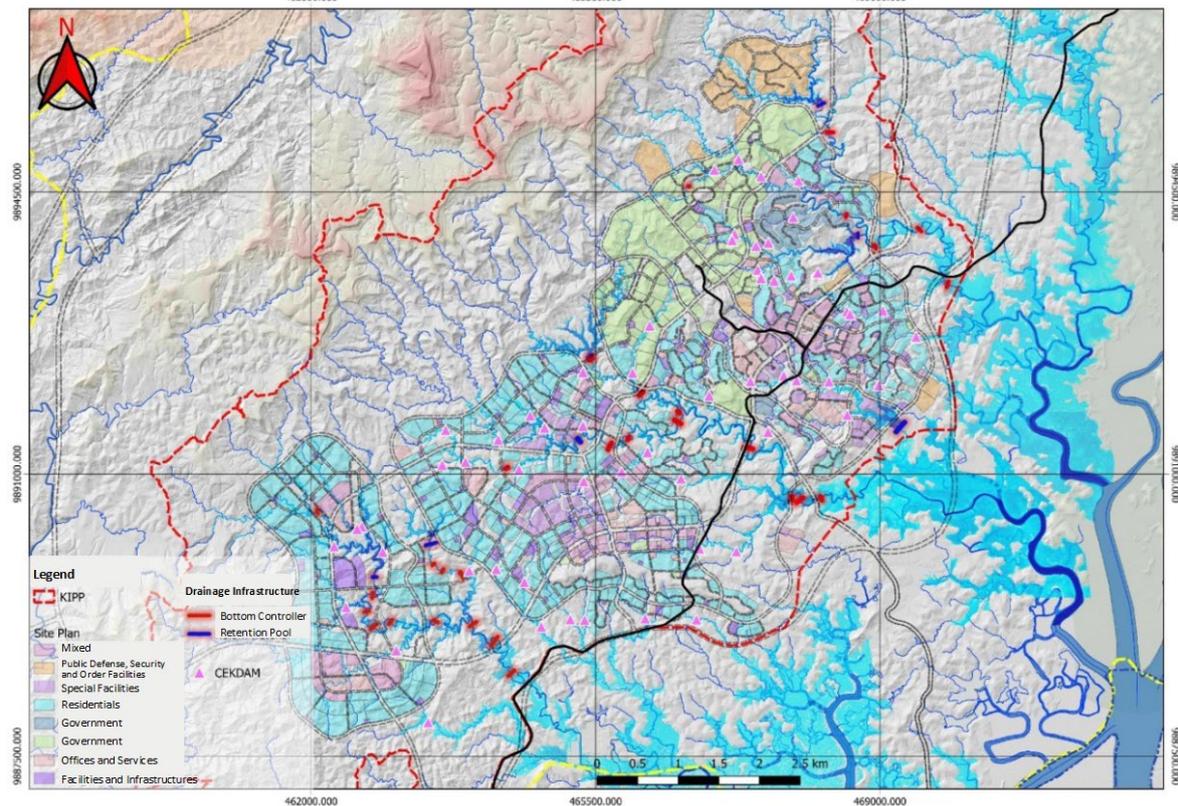
Source: JICA Consultant Team



Source: RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN - 2022 JULY 5

Figure 5.3: Flooding Locations and Photographs of the Sanggai Watershed

The overlay of the inundation analysis results, topographic map, and land use plan is shown in Figure 5.4. The light blue color in the figure indicates the inundation area, and it can be confirmed that the planned road route outside of KIPP is located within the inundation area.



Source: MP Pengendalian Banjir DAS Sanggai 05 Juli 2022 (Presentation Material)

Figure 5.4: Overlay of Inundation Analysis Result with the Topographic Map and Land Use Plan

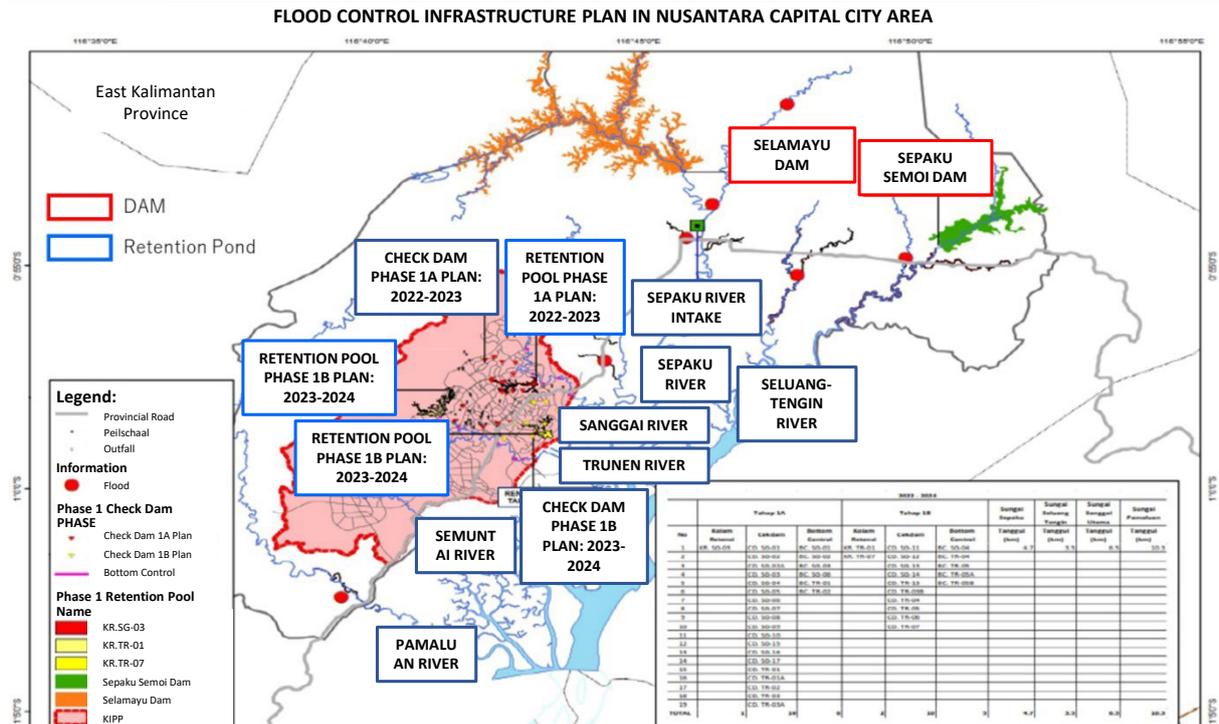
c) Flood Control Facilities

Table 5.5 shows the summary of flood control facilities within the IKN.

Table 5.5: Outline of Flood Control Facilities in the Flood Control Plan of the PUPR

Document	RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN (Presentation Material)
Findings	The location map of flood control facilities within the IKN is shown in Figure 5.5. The following flood control facilities are planned. -Two dams are planned outside of KIPP. -Three retention ponds are planned within the KIPP.
	It is important to ensure that the flood control functions are maintained during the design process.

Source: JICA Consultant Team



Source: RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN 2022 July 5 (JICA Consultant Team added locational information)

Figure 5.5: Location Map of Flood Control Facilities

(2) Design (Drawings, Specifications) and Construction Plans

Design drawings and construction plan were confirmed from the “MP Pengendalian Banjir DAS Sanggai 06-07-2022 (Presentation Material)” and “RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN”. These are given in the following tables.

1) Design (Drawings, Specifications)

Table 5.6: Findings from the Drawings in MP Pengendalian Banjir DAS Sanggai

Document	MP Pengendalian Banjir DAS Sanggai 06-07-2022 (Presentation Material)																																																			
Water Level at Road Crossing Point (Slide 33-34)	Some results of the water level and water surface width during flooding (Q100) at road crossings are shown in the table below. In the bridge section, it is proposed to maintain a 1 m clearance under the girder.																																																			
	Example of flood levels in the Sanggai River																																																			
	<table border="1"> <thead> <tr> <th rowspan="2">No</th> <th rowspan="2">River Name</th> <th rowspan="2">Bridge Name</th> <th colspan="2">Distance from the Estuary (m)</th> <th rowspan="2">MA Elevation (m)</th> <th rowspan="2">Wet Width (m)</th> </tr> <tr> <th>Distance</th> <th>Cumulative</th> </tr> </thead> <tbody> <tr> <td></td> <td>Sanggai 1</td> <td></td> <td></td> <td>4,927.0</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>GR.EX SG1</td> <td>146.3</td> <td>5,073.3</td> <td>5.32</td> <td>15.19</td> </tr> <tr> <td></td> <td></td> <td>JMB.SG-06</td> <td>66.7</td> <td>7,635.0</td> <td>9.03</td> <td>57.53</td> </tr> <tr> <td></td> <td></td> <td>JMB.SG-22</td> <td>1,085.6</td> <td>8,720.6</td> <td>11.42</td> <td>34.90</td> </tr> <tr> <td></td> <td></td> <td>JMB.SG-20</td> <td>1,018.9</td> <td>9,739.5</td> <td>14.41</td> <td>13.79</td> </tr> <tr> <td></td> <td></td> <td>JMB.SG-21</td> <td>985.5</td> <td>10,725.0</td> <td>16.86</td> <td>24.67</td> </tr> </tbody> </table>	No	River Name	Bridge Name	Distance from the Estuary (m)		MA Elevation (m)	Wet Width (m)	Distance	Cumulative		Sanggai 1			4,927.0					GR.EX SG1	146.3	5,073.3	5.32	15.19			JMB.SG-06	66.7	7,635.0	9.03	57.53			JMB.SG-22	1,085.6	8,720.6	11.42	34.90			JMB.SG-20	1,018.9	9,739.5	14.41	13.79			JMB.SG-21	985.5	10,725.0	16.86	24.67
	No				River Name	Bridge Name			Distance from the Estuary (m)		MA Elevation (m)	Wet Width (m)																																								
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	River cross section at the Bridge																																																			
	Information and coordination with Bina Marga required.																																																			

Runoff Control Discharge Due to Land Development (Slide 35)

The amount of runoff control associated with land development (Zero Delta Q) is studied in three tributary watersheds (Trunen, Semuntai, and Sanggai). The result of the Sanggai tributary watershed is shown in the table below. The amount to be shared by the primary tributary watersheds in each watershed has been set, and the runoff discharge will be controlled (temporarily stored) by runoff control facilities.

Example results of the runoff control study in the Sanggai tributary watershed.

No	River Name	Existing Condition (m ³ /dt)			Upcoming Condition (m ³ /dt)			ΔQ (m ³ /dt)		
		Q ₂₅	Q ₅₀	Q ₁₀₀	Q ₂₅	Q ₅₀	Q ₁₀₀	Q ₂₅	Q ₅₀	Q ₁₀₀
1	Sanggai	214.60	250.00	287.10	242.50	282.80	324.10			
2	Sanggai 1	120.60	140.80	161.00	129.90	150.10	170.60	9.10	9.30	9.60
3	Sanggai 1-1	10.00	12.00	14.00	11.90	13.90	15.90			
4	Sanggai 1-2	11.80	14.10	16.30	13.70	15.90	18.20			
5	Sanggai 1-2.1	1.80	2.15	2.48	2.08	2.42	2.77			
6	Sanggai 1-3	17.10	20.50	23.90	20.50	23.90	27.40			
7	Sanggai 1-3.1	2.01	2.42	2.82	2.42	2.82	3.23			
8	Sanggai 1-3.2	0.81	0.97	1.13	0.97	1.13	1.30			
9	Sanggai 1-3.3	0.57	0.68	0.80	0.68	0.80	0.91			
10	Sanggai 1-3.4	6.03	7.23	8.42	7.23	8.42	9.66			
11	Sanggai 1-3.5	1.78	2.14	2.49	2.14	2.49	2.86			
12	Sanggai 1-4	4.90	5.80	6.60	5.40	6.30	7.10			
13	Sanggai 1-5	40.30	45.90	51.60	39.10	44.90	50.90			
14	Sanggai 1-5.1	2.56	2.92	3.28	2.49	2.86	3.24			
15	Sanggai 1-5.2	15.32	17.45	19.62	14.86	17.07	19.35			
16	Sanggai 2	8.20	9.70	11.30	9.70	11.20	12.90	1.50	1.50	1.60
17	Sanggai 3	21.00	24.80	28.70	24.60	28.70	32.90	3.60	3.90	4.20
18	Sanggai 4	24.90	29.50	34.20	28.00	32.50	37.30	3.10	3.00	3.10
19	Sanggai 5	35.70	42.00	48.50	40.40	46.70	53.30	4.70	4.70	4.80

It is important to ensure the prescribed runoff control function by means of temporary storage facilities such as retention ponds.

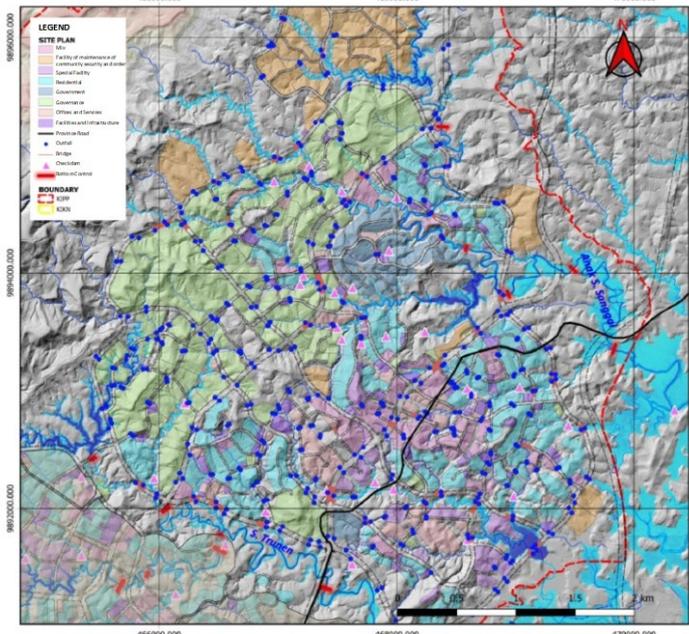
Water Level at Outlet (Slide 36)

The location and elevation of the drainage outlets from the drainage system within the KIPP area to the river have been established. Each dimension is established by the following:

- Location: upstream of existing river structures (check dams, ground sills, retention ponds)
- Foundation height: the water level at Q100

Example of drainage outlet water level study results in Sanggai tributary watershed

No	River Name	Building Name	Distance from the Estuary (m)		MA Elevation (m)	Remarks
			Distance	Cumulative		
III	Sanggai					
		WD-SG-01	22,968	22,968	33.00	
	Sanggai 1					
		CD-SG-19	1,262	3,631	2.80	
		BC-SG-04	1,296	4,927	4.07	
		BC-SG-03	1,647	6,574	6.61	
		BC-SG-02	994	7,568	7.91	
		KR-SG-01	4,579	12,147	22.00	

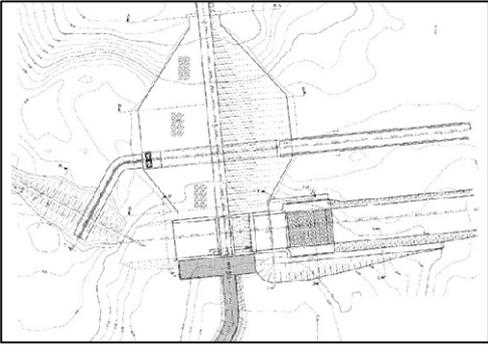
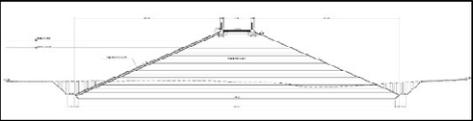
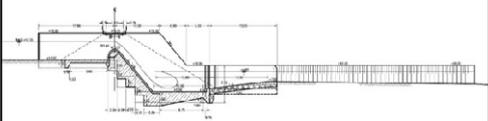
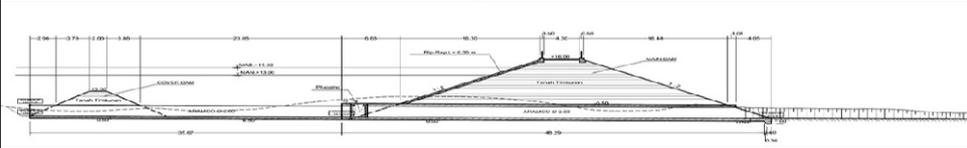
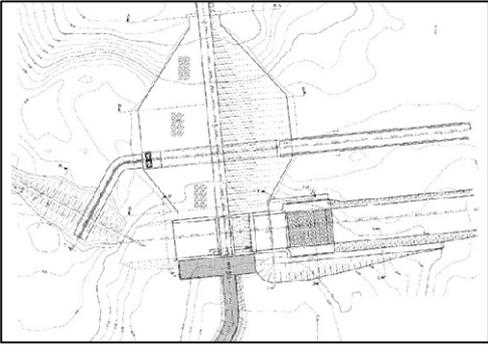
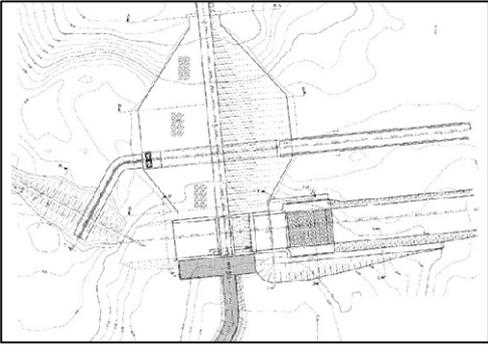


Location of outlet (blue points at the upper figure)

Location and water level information of the outlets should be provided and coordinated with Cipta Karya, Bina Marga.

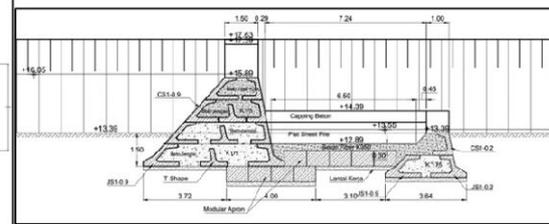
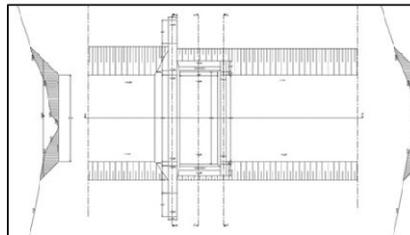
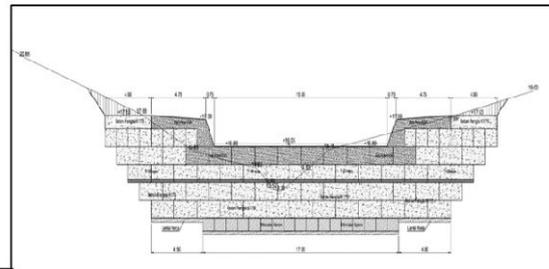
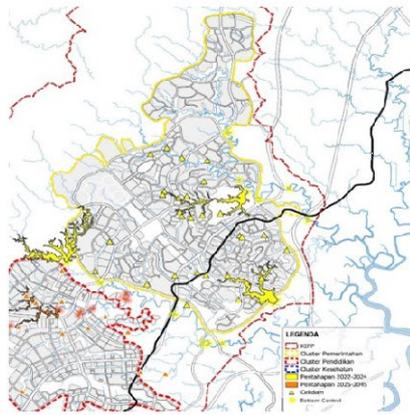
Source: JICA Consultant Team

Table 5.7: Facility Specifications and General Drawings in the Flood Control Plan of PUPR

Document	RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN (Presentation Material)				
<p style="text-align: center;">Facility Specifications and General Drawings (Slide 15-18)</p>	<p>General drawings of retention ponds, check dams, ground sills, and outlets are shown below. Based on the general drawings, the specifications of each facility are as follows:</p> <p>Retention Pond:</p> <p>The height of the embankment is 9 m, the length of the top is 88 m, and the total storage capacity is 254,000 m³. The slope of the upstream and downstream faces is 1.0(V): 2.0(H).</p> <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>RETENTION POND SG-03</p> </div> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> - River Name : Sanggai Tributaries - Catchment Area : 2.256 km² - Reliable Discharge : 39 lt/s - Flood Reduction : 13.10 m³/s - Total Storage Volume : 254.10 x 10³ m³ - Effective Storage Volume : 183.91 x 10³ m³ - Dead Storage Volume : 70.19 x 10³ m³ - Normalized Storage Area : 14.13 Ha </td> <td style="width: 50%; vertical-align: top;"> <p>The retention pond serves to reduce the flood peak, so that the downstream river section will flow a smaller discharge than the planned discharge. With a small discharge, it is expected that the flow velocity decreases.</p> </td> </tr> </table> <table border="0" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> - Dam Type : Homogenous Soil - Embankment - Maximum Dam Height : 9.00 from riverbed - Peak Dam Elevation : + 16.00 m (dpl) - Dam crest length : 88 m - Dam crest width : 4.00 m - Low Water Level (MAR) : + 11.00 m - Normal Water Level (MAN) : + 13.00 m - Flood Water Level (MAB) : + 14.39 m - Upstream Slope : 1.0 (V) : 2.0 (H) - Downstream Slope : 1.0 (V) : 2.0 (H) - Riverbed Elevation : + 7.00 m (dpl) - Dam Use Period : 50 years </td> <td style="width: 50%; vertical-align: top;">  </td> </tr> </table> <div style="display: flex; justify-content: space-around; margin-top: 10px;">   </div>  <p>Check dam:</p> <p>Weir height is about 5.8 m, weir length is 34 m, and overflow length is 15 m.</p> <p>Check dams are installed to capture sediment runoff from within the KIPP.</p>	<ul style="list-style-type: none"> - River Name : Sanggai Tributaries - Catchment Area : 2.256 km² - Reliable Discharge : 39 lt/s - Flood Reduction : 13.10 m³/s - Total Storage Volume : 254.10 x 10³ m³ - Effective Storage Volume : 183.91 x 10³ m³ - Dead Storage Volume : 70.19 x 10³ m³ - Normalized Storage Area : 14.13 Ha 	<p>The retention pond serves to reduce the flood peak, so that the downstream river section will flow a smaller discharge than the planned discharge. With a small discharge, it is expected that the flow velocity decreases.</p>	<ul style="list-style-type: none"> - Dam Type : Homogenous Soil - Embankment - Maximum Dam Height : 9.00 from riverbed - Peak Dam Elevation : + 16.00 m (dpl) - Dam crest length : 88 m - Dam crest width : 4.00 m - Low Water Level (MAR) : + 11.00 m - Normal Water Level (MAN) : + 13.00 m - Flood Water Level (MAB) : + 14.39 m - Upstream Slope : 1.0 (V) : 2.0 (H) - Downstream Slope : 1.0 (V) : 2.0 (H) - Riverbed Elevation : + 7.00 m (dpl) - Dam Use Period : 50 years 	
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**CHECK DAM
(19 Units)**

The check dam is planned to capture sediment, especially in anticipation of development activities in the KIPP cluster 1A area. The priority of check dam construction is adjusted to the schedule of development activities in the area.

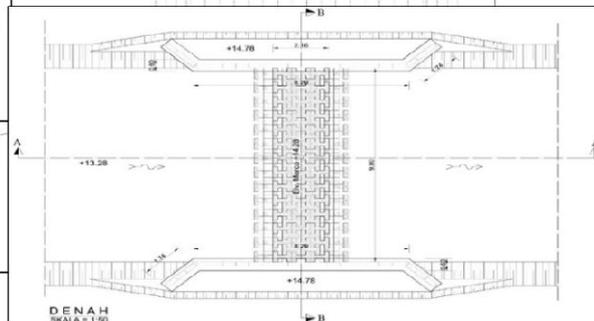
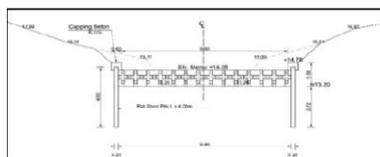
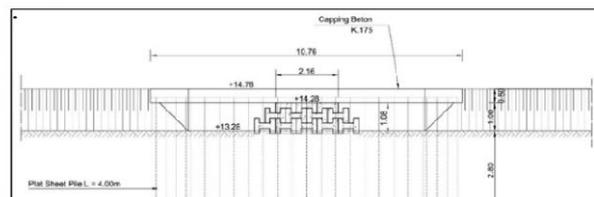
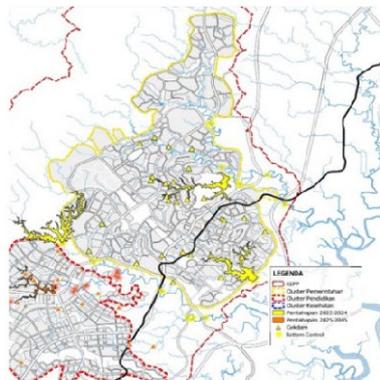


Ground sill:

Height: approximately 1 m; length: 9.9 m.

**BOTTOM
CONTROLLER
(6 Units)**

The bottom controller/ground sill is planned to control the slope of the riverbed and protect the planned structures that cross the river (Bridges, etc.) upstream, in hope that water damage can be controlled.

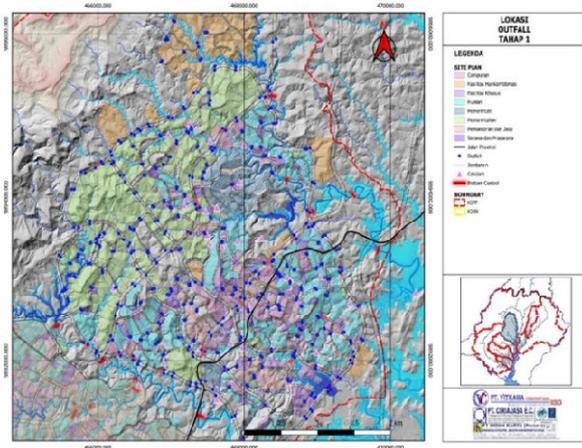
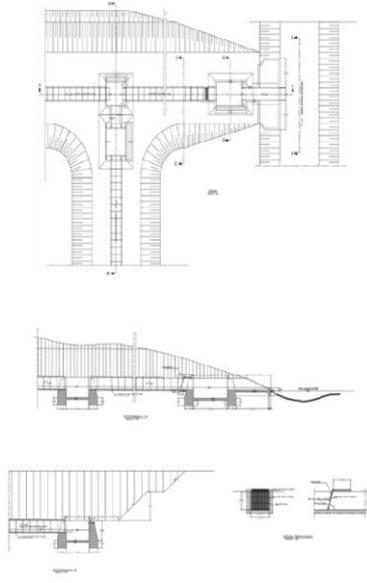


Outlets:

2 m wide x 2 m high, with sediment storage attached.

**OUTFALL/OUTLET
(42 Units)**

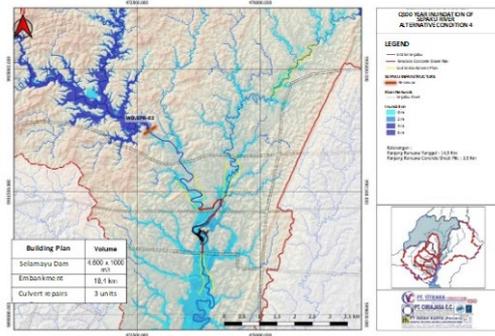
The outlet/outfall building is planned to capture water flowing from the area drainage before it enters the natural river, functioning also as a sediment catcher.



In the detailed design, it is important to design each facility to satisfy its flood control function and to ensure safety based on the local survey and geological conditions.

**Flood Control
Development
Plan of
Sepaku River
(Slide 19-20)**

Flood Protection Development in Sepaku River from 2023 to 2024
 With the construction of the Selamayu Dam, the flood flow Q100 of the Sepaku River will be reduced by about 75% and the downstream river flow will be Q25 available.
 Although there are no land constraints yet, indigenous people are reluctant to relocate because their livelihoods are near the river.



Selamayu Dam's flood control effect is as large as 75%, and its implementation should be ensured since it greatly affects the scale of downstream river improvement, where the bottleneck points are located.

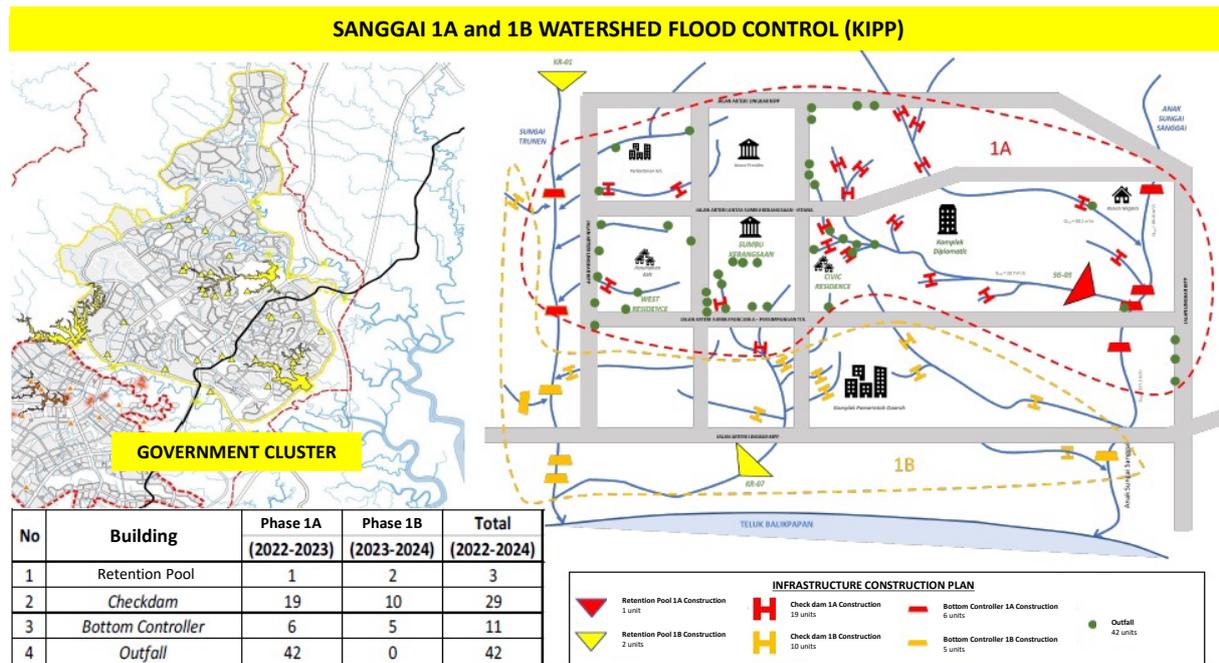
Source: JICA Consultant Team based on RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN 2022 July 5

2) Construction Plans

Table 5.8: Construction Schedule

<p>Document</p>	<p>RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN (Presentation Material)</p>																												
<p>Construction Schedule (Slide 12, Slide14)</p>	<p>(Construction schedule on flood control facilities within KIPP from 2022 to 2045) Flood control facilities within KIPP will be constructed in two phases as follows: 2022-2024: Flood control facilities in and around the government cluster; 2025-2045: Flood control facilities in and around the education and health cluster.</p> <div style="text-align: center;"> </div> <p>Construction schedule in Sanggai 1A and 1B (Figure 5.6) Flood control development for the Sanggai 1A and 1B watersheds of KIPP for 2022-2024 is shown, which will be constructed in two phases, Sanggai 1A and 1B. The phases are shown in the table below.</p> <table border="1"> <thead> <tr> <th rowspan="2">No.</th> <th rowspan="2">Construction</th> <th>Stage 1A</th> <th>Stage 1B</th> <th>Total</th> </tr> <tr> <th>2022-2023</th> <th>2023-2024</th> <th>2022-2024</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Retention Pond</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>2</td> <td>Check Dam</td> <td>19</td> <td>10</td> <td>29</td> </tr> <tr> <td>3</td> <td>Groud Sill</td> <td>6</td> <td>5</td> <td>11</td> </tr> <tr> <td>4</td> <td>Outfall</td> <td>42</td> <td>0</td> <td>42</td> </tr> </tbody> </table> <p>By 2022-2024 three retention ponds, 29 check dams, 11 ground sills, and 42 outlet works will be constructed.</p>	No.	Construction	Stage 1A	Stage 1B	Total	2022-2023	2023-2024	2022-2024	1	Retention Pond	1	2	3	2	Check Dam	19	10	29	3	Groud Sill	6	5	11	4	Outfall	42	0	42
No.	Construction			Stage 1A	Stage 1B	Total																							
		2022-2023	2023-2024	2022-2024																									
1	Retention Pond	1	2	3																									
2	Check Dam	19	10	29																									
3	Groud Sill	6	5	11																									
4	Outfall	42	0	42																									

Source: JICA Consultant Team



Source: RENCANA PENGENDALIAN BANJIR KAWASAN INTI PUSAT PEMERINTAHAN - 2022 JULY 5

Figure 5.6: Location and Schedule of Flood Control Facilities around the Government Cluster

(3) Procurement Plan (Contents and Terms of Bidding Document)

The individual packages, subject to the Directorate General of Water Resources (hereafter SDA) were already in the bidding stage. From the leaked information, the JICA Consultant Team is unable to confirm the contents of the bid documents.

(4) Construction Organization and Implementation Plan

According to interviews with SDA, the contractors in the individual packages implement the construction work while the construction supervision consultants supervise the construction.

(5) Construction Quality Management Plan

The individual packages subject to the SDA are based on the Guideline for Construction Safety Management System (SMKK) of PUPR Ministerial Regulation No. 2021. According to the pre-construction meeting (PCM) held in September 2022, contractors and supervision consultants are required to submit an implementation plan document that outlines the construction safety plan, construction quality plan, etc., based on how the work will be carried out.

In the PCM, the SDA confirmed the following from the contractors and the supervision consultants to ensure the safety of construction work:

- Contractors and supervision consultants should submit the contract implementation plan documents under the PUPR Ministerial Regulation No. 2021 and PUPR Ministerial Circular No. 10 of 2022.
- In the Guideline for Construction Safety Management System (SMKK) of PUPR Ministerial Regulation No. 2021, the following five documents are required:

<Documents of SMKKG>

- Conceptual Draft of Construction Safety Management System (SMKK)
- Construction Safety Plan (RKK)
- Construction Work Quality Plan (RMPK) and Quality Program
- Work Plan for Environmental Management and Monitoring (RKPPL) and Work Traffic Management Plan (RMLLP)
- Other provisions in SMKKG

The Operational Guidelines for the Implementation of Construction Safety in PUPR, PUPR Ministerial Circular No. 10 of 2022, contain the following four items of construction safety implementation, which will be applied in the contracts of contractors and supervision consultants:

- Engineering Safety
- Safety and Occupational
- Public Safety
- Environmental Safety

Table 5.9: Construction Schedule Operational Guidelines for the Implementation of Construction Safety in the Ministry of PUPR (PUPR MINISTER CIRCULAR LETTER No. 10 Year 2022)

Document	PROFIL PERENCANAAN PEMBANGUNAN INFRASTRUKTUR KAWASAN IBU KOTA NEGARA PEMBANGUNAN DRAINASE UTAMA DAN PENGENDALI BANJIR (Presentation Material)	
Section	Slide3	
Contents	Operational Guidelines for the Implementation of Construction Safety in the Ministry of PUPR	
	1. Engineering Safety a. PCM b. Work Permit Application c. Material Inspection d. Inspection/Calibration Equipment e. Hazard Identification and Risk Control f. Incoming, Inspection and Test Plan (ITP) g. Implementation of Inspection and Testing of Construction Work h. Change of Work Implementation i. Testing and Commissioning	2. Safety and Occupational a. General Rules of Occupational Safety and Health (Basic Safety) on Projects b. Construction Safety Communication c. Inspection/Management Labor Health d. Workplace Environmental Settings e. Working Hours Arrangement f. Driving Arrangements g. Worker Mess (Temporary Worker Housing) and Worker Areas h. Safety Training Construction for Labor i. Use of PPE j. Safety Provisions in Construction Work k. Emergency Response l. Construction Safety Audit

Source: JICA Consultant Team based on PROFIL PERENCANAAN PEMBANGUNAN INFRASTRUKTUR KAWASAN IBU KOTA NEGARA PEMBANGUNAN DRAINASE UTAMA DAN PENGENDALI BANJIR

(6) Summary of Major Concerns and Challenges

Based on the review of the existing related documents and site visit, the following challenges are found:

- Water levels and water surface widths at road crossings have been studied and proposed. If the proposed water surface width and water levels are not secured at the road crossing, there is concern that flooding may occur upstream of the road crossing. It is important to coordinate and harmonize details with other sectors at the planning and design stage.
- The location and height of the drainage outlet (water level at 100-years return period) have been considered and proposed. If the proposed water level at the drainage outlet is difficult to drain, the connecting channel will not be able to drain by gravity, and there is concern that flooding damage may occur upstream of the connecting channel. It is important to coordinate and harmonize these details with other sectors at the planning and design stage.
- The amount of runoff control associated with land use change has been studied in three tributary watersheds (Trunen, Semuntai, and Sanggari), and it is proposed that runoff control facilities (such as retention ponds) should be implemented. It is important to monitor the implementation of runoff control facilities within the watershed.
- The existing road was constructed prior to the river improvement and is not consistent with the river improvement plan. As a result, road crossings have become bottleneck points, causing flooding damage every year.
- Flooding damage occurs every year at existing road crossings. Therefore, early rehabilitation is needed based on the river improvement plan. On the other hand, there is a possibility that the river will remain as a bottleneck point due to problems of land acquisition and securing budgets. In this case, there is still a lot of land upstream that can be effectively utilized, which can be addressed by flood control facilities such as dams and flood control basins.

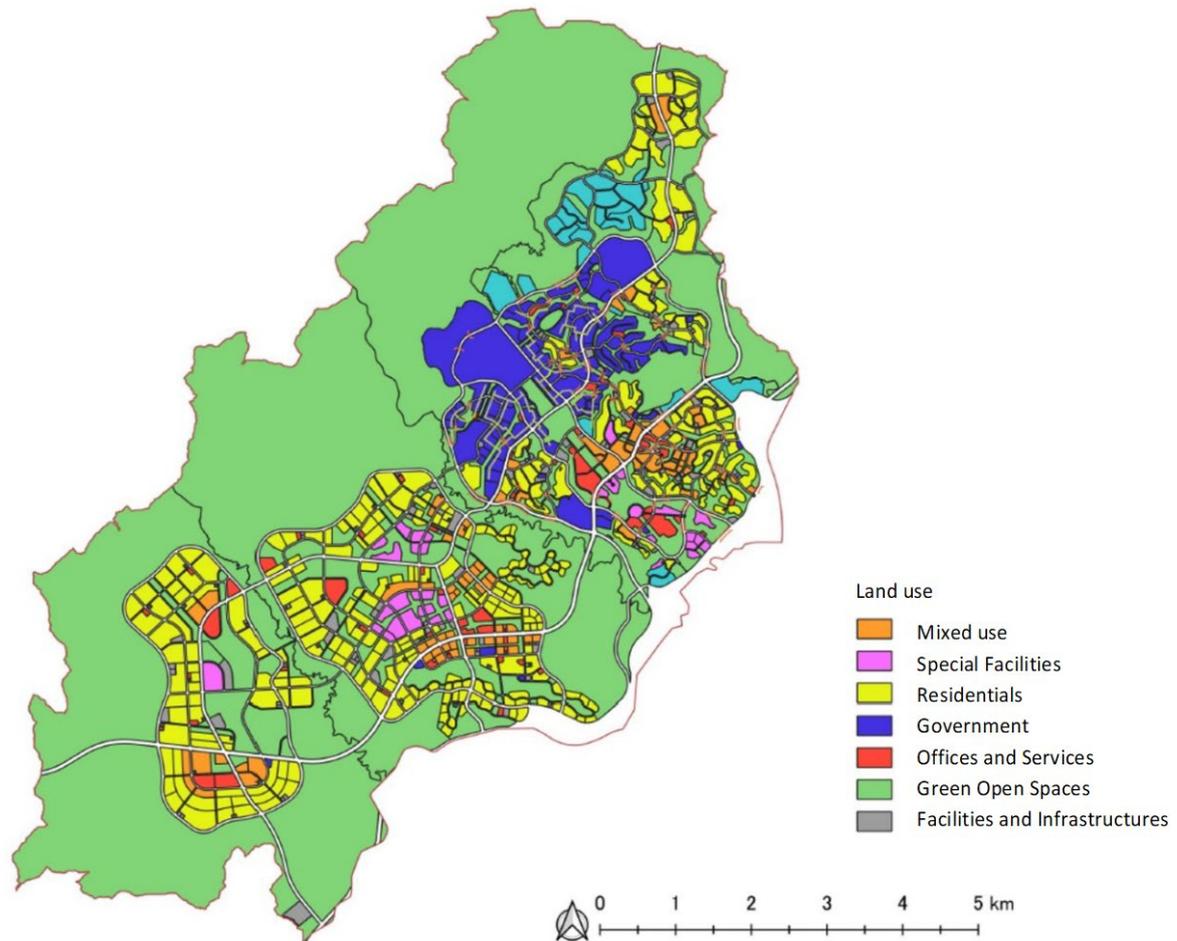
5.3.2 Land Use and Land Grading

Based on the review of the existing related documents and site visit, the following challenges are found:

(1) Land Use

An "integrated base map" (base map), which includes information on river green areas, roads, and residential development areas, has not been confirmed by the PUPR. A base map with integrated basic information is needed for future construction phases to proceed with infrastructure development and improvement, such as invert levels for utility trenches, tapping points for each utility, and confirmation of utility ditches' interference at intersections.

The current land use plan map overlaid with the topographic map confirmed that there is not enough space for planned riparian areas such as existing major waterways, rivers, and reservoirs. To avoid erosion of residential areas due to flooding, it is necessary to secure a buffer in the river area for maintenance and management, while utilizing the natural alignment of the river, and without installing permanent structures or implementing inadvertent changes to the river alignment.



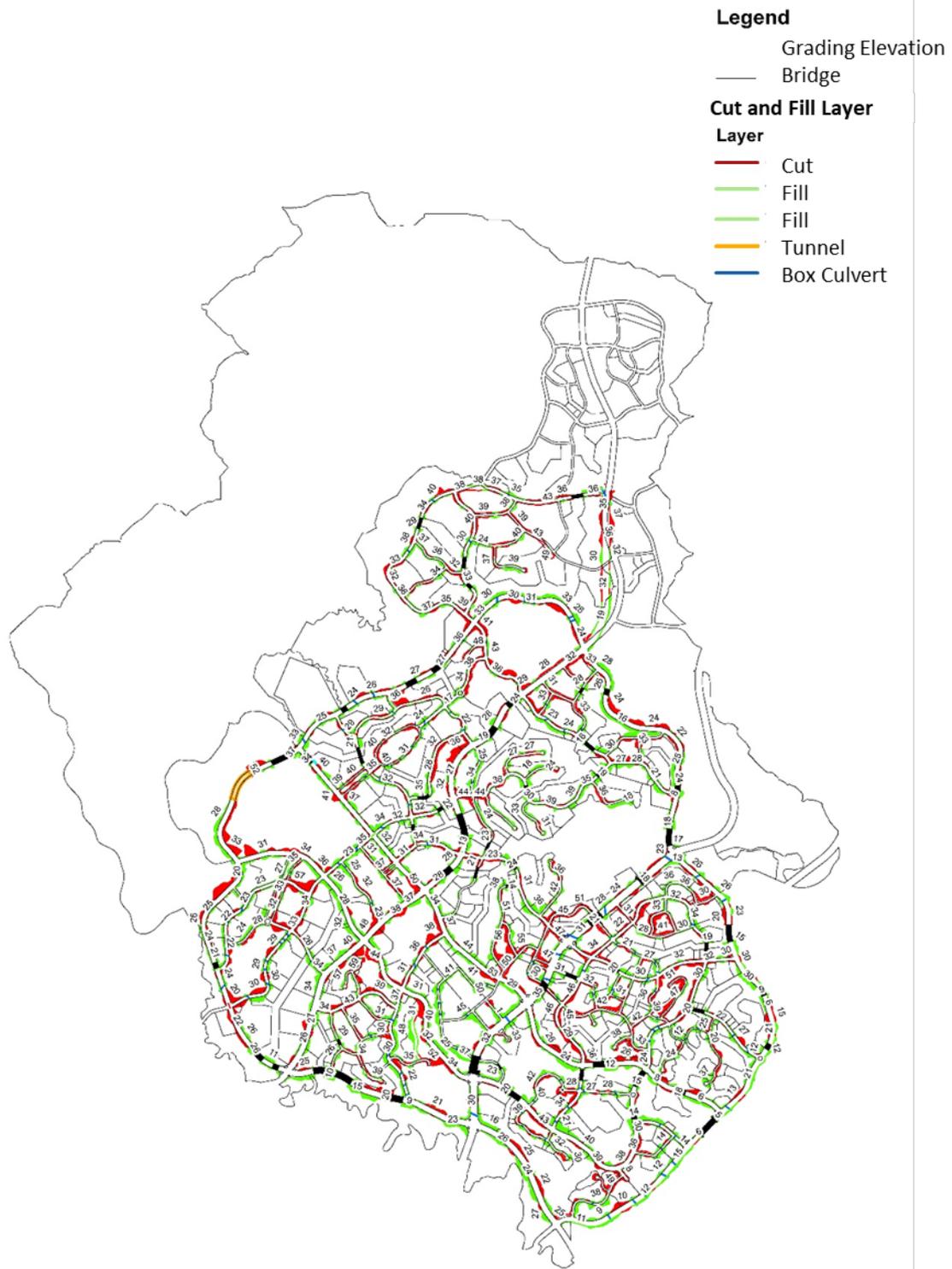
Source: PUPR - 2022 JULY 15

Figure 5.7: Land Use Map for KIPP

(2) Land Grading

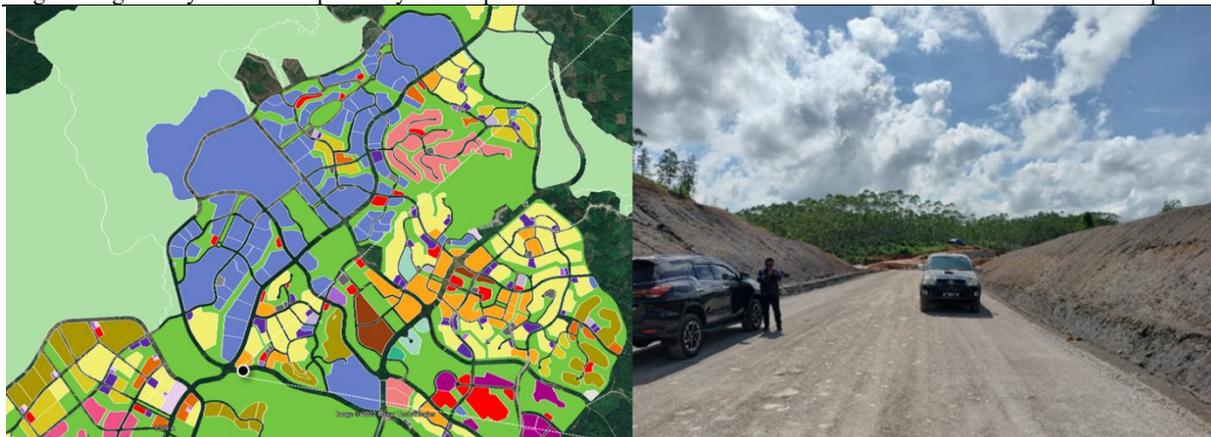
The topography of the development area is steeply sloping. If the height of the development lot is planned to follow the road elevation, a large amount of earthwork (cut and fill) will be required for land development as well as road construction. This situation will be costly and time-consuming. The locator will be responsible for the burden of paying for the development cost. In addition, if the planned height of the development lot follows the shape of the natural topography, the access points from the road to the development lot will be limited, which may cause problems, especially when connecting gravity-sensitive utilities such as drainage and sewer lines to the road.

The impact of ground subsidence on the embankment should be planned based on a construction schedule that considers the time required for the ground to settle. Appropriate construction plans are needed, including measures to protect the slope after the cut and the installation of drainage. Adequate space should be secured near the development area for both the quality of the fill material and the earth removal area. In addition, topsoil treatment, planting treatment, and treatment of structures to be removed must also be planned and executed with consideration for the environment and an appropriate development plan to ensure quality.



Source: PUPR - 2022 August

Figure 5.8: Land Grading Plan for the Roads in KIPP



Source: Photo- JICA Consultant Team, MAP-JICA Consultant Team prepared based on Land Use Map from PUPR

Figure 5.9: Under Construction Grading Level of Road and Development Area

5.3.3 Road and Bridges

(1) Project Outline and Action Plans

Table 5.10 shows the list of proposed road construction packages.

Table 5.10: List of Proposed Road Construction Package

No.	Construction Package	
I	Logistics Road Construction in the KIPP Area	
1	Sepaku Ring Road Segment 1	1.750 km
2	Sepaku Ring Road Segment 2	1.850 km
3	Sepaku Ring Road Segment 3	2.275 km
4	Sepaku Ring Road Segment 4	4.460 km
II	Road Construction in KIPP Area	
5	National Axis Road East Side including Multi Utility Tunnel	2.963 km
6	National Axis Road West Side including Multi Utility Tunnel	2.990 km
7	Feeder (District) Road Construction Package in IKN Area	5.399 km
8	Access Road to Mosque in IKN Area	1.426 km
III	Logistics Road Construction in IKN Area	
9	Logistics Road to Access to the River Port, IKN	
10	Widening to Dual 2-Lane from Sp. Itci to Sp.3 Riko, Section 1	8.724 km
11	Widening to Dual 2-Lane from Sp. Itci to Sp.3 Riko, Section 2	
12	Road Construction from Sp. 3 Riko to Pulau Balang Bentang Pendek	
IV	IKN Toll Road Construction	
13	IKN Toll Road: Segment KKT Kariangau - Sp. Tempadung	
14	IKN Toll Road: Segment Sp. Tempadung - Jembatan Pulau Balang	
15	IKN Toll Road: Segment Karang Joang - KKT Kariangau	
16	IKN Toll Road: Planning and Supervision by the Core Team	
17	IKN Toll Road: Supervision of Segment KKT Karingau - Sp. Tempadung	
18	IKN Toll Road: Supervision of Segment Sp. Tempadung - Jembatan Pulau Balang	
19	IKN Toll Road: Supervision of Segment Karangjoang - KKT Kariangau	

No.	Construction Package	
V	Widening of Pulau Balang Bentang Pendek Bridge	
20	Widening of Pulau Balang Bentang Pendek Bridge	
21	Land Acquisition for the Bridge Widening	
VI	Sepaku Market Bypass	
17	Sepaku Market Bypass	3.06 km
18	Land Acquisition for Sepaku Market Bypass	5.96 ha
19	Access Road Construction to the IKN Mentawir Nursery	10.96 km
VII	Logistics Port Construction	
20	Logistics Jetty for the Construction of IKN	1 unit
21	Land Acquisition for Port Construction	4.50 ha
	Land Acquisition	
	Land Acquisition for Toll Road	
23	Land Acquisition of right-of-way (ROW) 120 m for Section 3.a from Karangjoang to KKT Kariangau	
24	Land Acquisition of ROW 120 m for Section 3.b from KKT Kariangau to Sp. Tempadung	
25	Land Acquisition of ROW 120 m for Section 5.a from Segmen Sp. Tempadung to Pulau Balang Bridge	
	Land Acquisition for Non-Toll Roads	
27	Land Acquisition ROW 44 m for Section from Sp. Itcii to Sp.3 Riko	
28	Land Acquisition ROW 44 m for Section from Sp.3 Riko to Pulau Balang Bentang Pendek Bridge	

Source: PUPR BM Translation: JICA Consultant Team

It was informed that the National Axis Road East Side and West Side, both of which includes MUT below, are the main trunk roads in the KIPP area. These have a ROW width of 54 m. These National Axis Roads are designed as a Primary Collector Road with 50 km/h limits and a maximum 5.0% vertical grade, taking into consideration autonomous vehicle operations in the future.

The locations of the main lines proposed for construction are shown in Figure 5.10 and Figure 5.11.

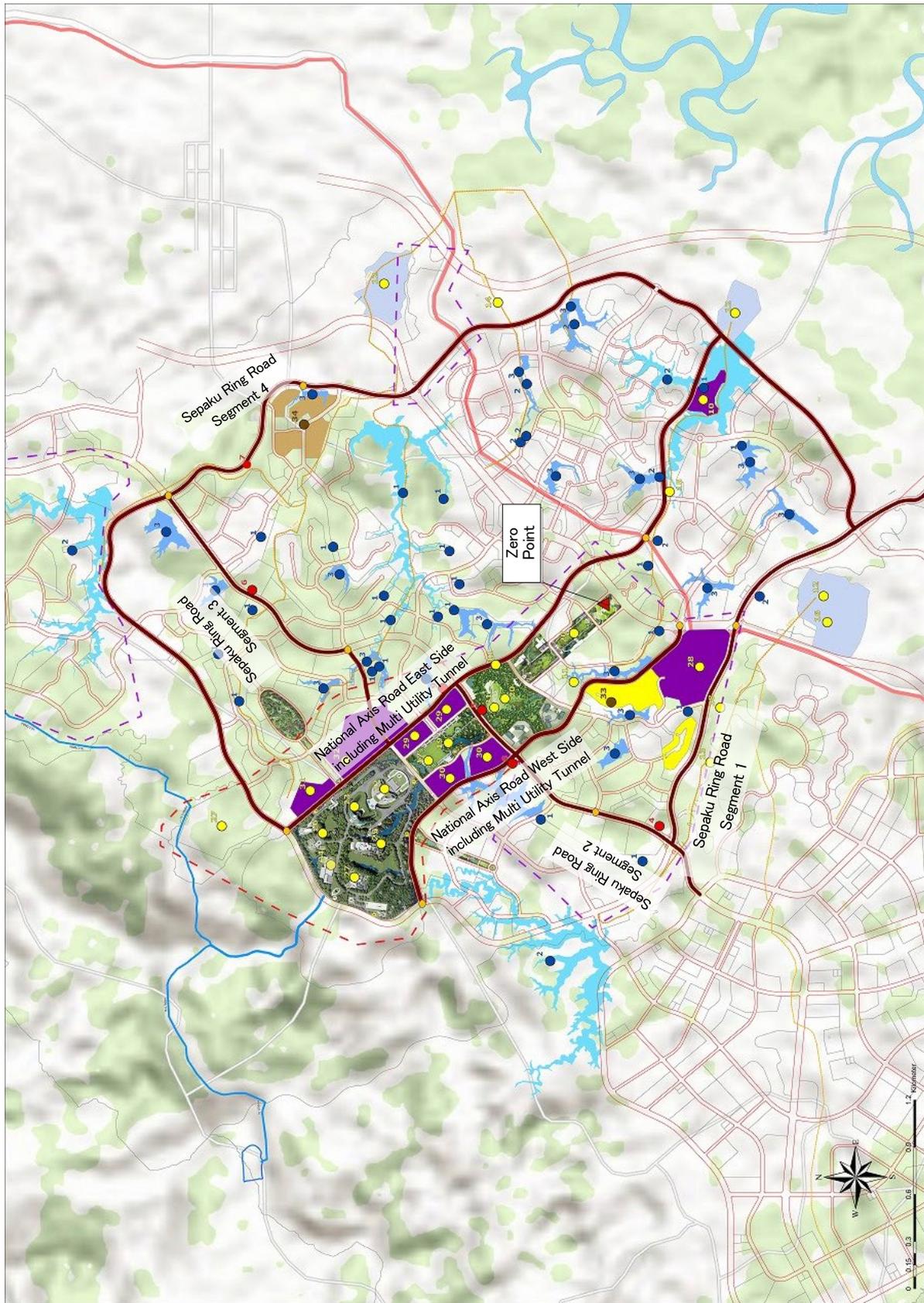


Figure 5.10: Proposed Road Network in IKN Area

Source Map by PUPR



Figure 5.11 : Proposed Road Network Outside of IKN

Source Map by PUPR

(2) Design (Drawings, Specifications) and Construction Plans

1) Road Classification in Indonesia

Roads in Indonesia are grouped by system, function, status, and class. These are as follows:

a) Road Network System

- Primary Road Network System
- Secondary Road Network System

b) Function

- Arterial Road
- Collector Road
- Local Road
- Environmental Road

c) Status

- National Road
- Provincial Road
- District Road
- Urban Road
- Village Road

d) Class

Road grades are divided into two categories: a. by functional specification and b. by combination of road function and design vehicle.

i. Road Classification According to Differences in Functional Specifications

- Highways: complete entry/exit restrictions, no level crossings, median separations, two lanes or more in one direction, lane widths of 3.5m or more.
- Arterial roads: partially restricted access, with median, more than two lanes in one direction, lane width of more than 3.5m.
- Medium-scale roads: conducive to medium-distance traffic, two or more lanes in opposite directions, lane width of at least 7m.
- Small roads: used for local domestic traffic, two lanes in each direction or more, lane width 5.5m or more.

ii. Road Classification by Combination of Road Function and Design Vehicle

- First class road: Arterial roads or auxiliary arterial road with a design vehicle of 2.55m or less in overall width, 18m or less in overall length, 4.2m or less in overall height, and 10t maximum axle weight.
- Second class roads: Arterial roads, auxiliary arterial roads, local roads, or neighborhood roads with a maximum design vehicle width of 2.55m or less, a maximum overall length of 12m or less, a maximum overall height of 4.2m or less, and a maximum axle weight of 8t.
- Third class road: An arterial road, auxiliary arterial road, regional road, or neighborhood road with a maximum design vehicle width of 2.2m or less, a maximum overall length of 9m or less, a maximum overall height of 3.5m or less, and a maximum axle weight of 8t.

- Special class roads: Arterial roads with a maximum design vehicle width of 2.55m or more, total length of 18m or more, total height of 4.2m or less, and maximum axle weight of more than 10t.

2) Road Classification of Urban Roads in Urban Area Subdivision 1, KIPP

KIPP definition of streets within urban area 1 is defined as the following categories according to road width:

- ROW 54m: Primary Collector
- ROW 44m: Secondary Collector
- ROW 36m: Secondary Collector
- ROW 24m: Secondary Collector
- ROW 16m: Secondary Collector
- ROW 12m: Secondary Collector

3) Geodetic Data of 0 Point

In the KIPP area, there is a 0 Point Monument, as shown in Figure 5.12, which shall be the base reference point of co-ordinates and elevation of all construction works in IKN.



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.12: Titik Nol = Zero Point Monument



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.13: 0 Point Metal Frame and Survey Nail

Geodetic data of the 0 Point is presented in Table 5.11:

Table 5.11: Geodetic Data of the 0 Point

Longitude	Latitude
East 116° 42' 30.26"	South 00° 58' 21.84"
UTM X-Y Co-ordinates	
X = 9892481.5840	Y = 467556.8862
MSL (Mean Sea Level) Elevation	
84.594m	

Source: JICA Consultant Team based on PUPR

4) Current Construction Work

Sepaku Ring Road Segments 1, 2, and 3 are under construction. The following four photos show the site conditions.



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.14: Current Condition of Sepaku Ring Road Segment 2



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.15: Unlined Gutter Retaining Rainwater



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.16: Drainage Box Culvert Under Construction



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.17: Temporary Bridge (Bailey Bridge) Laid Next to the Proposed Location

Sepaku Ring Road will be constructed in two phases. The first phase will be constructed as a logistics road (gravel road) with narrower width, and the second (final) phase will be constructed with a permanent road with full ROW width, and by 2024 will be extended both sides.

As shown in Figure 5.14, the road construction is almost completed as a logistics road with side gutters and untreated cut slope. It was informed that the existing ground contains peat layers at the upper level, and this layer is not suitable as construction materials. Clayish soil is also included in existing ground. Clayish soil expands when exposed to water and humidity. Clayish soil is also not suitable as construction material.

At the site, excavated unsuitable soils are removed and dumped. The remaining excavated soils, judged as suitable materials, are reused in the site. Such “sort-out” activity is good for qualified construction.

Figure 5.15 shows the unlined excavated gutter keeping rainwater. When the drainage system is established with an appropriate outlet, then the system is expected to function well.

Figure 5.16 and Figure 5.17 show the construction site of the drainage box culvert and bridge, respectively. The construction of the drainage box culvert was observed in several locations. The required section area of the box culvert shall be determined by the design discharge and vertical grade of culvert. It was informed that the design discharge of every river crossing point was estimated by the SDR.

There was no construction site for the double box culvert or triple box culvert. It is anticipated that the

provision of one drainage box culvert at every river crossing point is sufficient for the design discharge given by the SDR.

The bridge type shown in Figure 5.17 is the Bailey Bridge. This is a temporary bridge for the logistics road. In the second (final) phase, the Bailey Bridge is to be replaced with a PC I-Girder Bridge having a wider and permanent width.

a) Logistics Road Construction

The Sepaku Ring Road observed during the site visit was being constructed as a logistics road. The following are the comments of the JICA Consultant Team:

- Almost completed sections were cut sections. Road surface was stable and hard. It was ready for heavy vehicle traffic.
- A fill section is required to cross over the valley where the drainage box culvert is planned, as seen in Figure 5.16. It will be high embankment structure. During the fill works, inclusive backfill works behind the structure, compaction works shall be carefully carried out, at a moisture content of fill material suitable for the required density. Otherwise, consolidation settlement may occur.
- Depending on the underground condition, high embankment in the sloped valley may cause landslides. Appropriate countermeasures shall be considered.
- There were no cut slope protection works. For the logistics road, unlined cut slope would be agreeable. As the unlined slope may be damaged by heavy rain, it is requested to conduct a daily inspection and maintenance work.

b) Road Construction as Permanent Road

The National Axis Road East Side and West Side will be constructed as permanent road, hopefully from October 2022. The construction of permanent road shall be carried out strictly by following the required technical specifications.

Based on the Sepaku Ring Road visit, it is expected to have enough roadbed strength in the cut section. However, the stability of the fill section is not known at present. Fill material including borrow material and reuse material from the excavation works shall be carefully assessed, following the technical specifications.

Slope protection shall be designed/constructed to be durable considering the weather conditions such as rainfall intensity, alteration of temperature, and wind velocity.

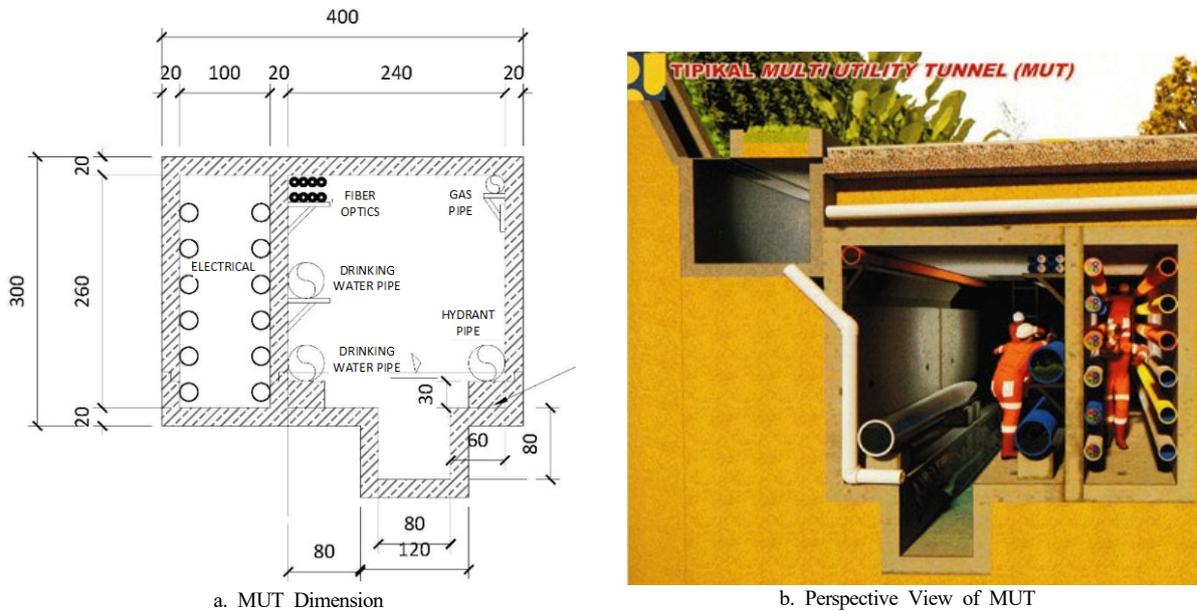
5) MUT: Multi Utility Tunnel

A multi-utility tunnel (MUT) will be installed in almost all major roads in IKN. Figure 5.18 shows the proposed MUT that will be placed under the sidewalks of the National Axis Road East Side and West Side only. As shown in Figure 5.18, MUT will accommodate the following:

- Water Main
- Power Line
- Communication Line (Fiber-Optic Cable)
- Gas
- Hydrant

It is noted that the MUT design for narrower ROW roads is not yet proposed.

In case that all roads constructed by Bina Marga have MUT, then it is important to find out the best solution of MUT treatment at road intersections to avoid the possible collision of two MUTs. Instead of MUT, it would be advisable to use an embedded sheath to store utilities, on some occasions, which may offer more flexible handling than MUT.



Source: PUPR

Figure 5.18: MUT for National Axis Road East Side and West Side

(3) Procurement Plan (Contents and Terms of Bidding Document)

The following figure shows the implementation schedule of road construction by Bina Marga. As seen in the schedule, Sepaku Ring Road Segments 1, 2, and 3, which are intended as logistics roads during the construction, are to be completed soon, with a slight time delay. Sepaku Ring Road Segment 4 was contracted at the end of August to start the construction on site.

Other Bina Marga Roads such as the National Axis Road East and West Side, Sepaku Market Bypass, Logistics River Port, and Port Access Road will start construction at the end of 2022 or the beginning of 2023 and be completed by the end of March 2024 as scheduled.

As introduced in Section 5.2, contracts of 19 project components were signed on the 29th of August 2022. The following figure shows the list of 19 project components. In the list, Nos. 5 to 7 and Nos. 15 to 19 are the road and bridge projects of Bina Marga. Through this list, it was known that the IKN Toll Road Construction (KKT Kariangau - Sp. Tempadung - Jembatan Pulau Balang) and Widening of Pulau Balang Bentang Pendek Bridge were contracted. These routes would give the shortest access from Balikpapan to the IKN area as stated in subchapter (10) 2) Access to IKN.

Table 5.12: List of 19 Projects Contracted on 29th August 2022

Total Packages (19 packages); Total Procurement Ceiling (IDR 5,562.70 B)*				
NO.	PROVIDER NAME	PACKAGE NAME	UNOR	Contract Value (Rp)
1	PT. ANTUSIAS RAYA	DED of Pemaluan River Flood Control	SDA	1,750,747,500.00
2	PT. ADITYA ENGINEERING CONSULTANT	LARAP for Flood Control in Sepaku District	SDA	2,112,274,000.00
3	PT. ADITYA ENGINEERING CONSULTANT	LARAP Phase II of Sepaku Semoi Dam	SDA	1,698,910,500.00
4	PT. HILMY ANUGERAH KSO PT. YODYA KARYA (PERSERO) KSO PT. MULYA SAKTI WIJAYA	Supervision of Sanggai 1A Watershed Flood Control Development (KIPP);	SDA	7,472,824,140.00
5	WASKITA - GUNTUR KSO	Construction of IKN Work/Logistics Roads (KIPP): Development Package for the Sepaku Ring Road Segment 4	BM	181,791,955,343.18
6	WIKA - PP - JAKON, KSO	IKN Toll Road KKT Kariangau - Sp. Tempadung Segment	BM	1,908,516,031,896.30
7	WASKITA - NINDYA - MODERN, KSO	IKN Toll Road Sp. Tempadung - Balang Island Bridge Segment	BM	2,198,255,285,290.68
8	PT. Pembangunan Perumahan (Persero) Tbk	Preparation of the Central Government Core Area (KIPP) Phase I	CK	92,345,569,408.03
9	PT. Yodya Karya (Persero)	Construction Management for the Preparation of the Central Government Core Area (KIPP) Phase I	CK	3,272,876,958.00
10	PT. CIRIAJASA ENGINEERING CONSULTANTS	KIPP East Precinct Area Development Plan (RPK)	CK	8,023,997,970.00
11	PT. Virama Karya (Persero)	KIPP Defense Settlement Area Development Plan (RPK)	CK	8,264,507,053.50
12	WG - ADHI KSO	Construction Worker's Housing Development	Per	567,008,043,760.00
13	CV. PATOYA INDAH	Supervision of Development of Raw Water Supply for Mentawir Nursery North Penajam Paser Regency	SDA	947,769,000.00
14	Risa Binatama - Asta Millenia KSO	Development of Raw Water Supply for Mentawir Nursery North Penajam Paser Regency	SDA	28,851,091,000.00
15	PT. Adiya Widyajasa	Construction of IKN Work/Logistics Roads (KIPP): Technical Supervision Package for the Development of the Sepaku Ring Road 4	BM	6,029,242,000.00
16	PT. SEECONS	Road Construction in KIPP: Technical Supervision Package for the Construction of the West Side of the National Axis Road	BM	6,256,681,000.00
17	PT. Yodya Karya (Persero)	Road Construction in KIPP: Engineering Planning Package for East Side National Axis Road, Feeder Road (District) and Access to Mosques in the National Capital Region	BM	5,063,877,000.00
18	PT. Wesitan Konsultasi Pembangunan	Duplication of Short Span Balang Island Bridge : Independent Proof Check (IPC) Package Design of Short Span Balang Island Bridge	BM	2,168,715,000.50
19	Hutama-Adhi-Bangun Cipta (KSO)	Construction of Ship Collision Protectors (Fenders) and Complementary Buildings for the Balang Island Bridge	BM	291,165,431,000.00

Source: PUPR

(4) Construction Organization and Implementation Plan

1) Logistics Access Going into IKN

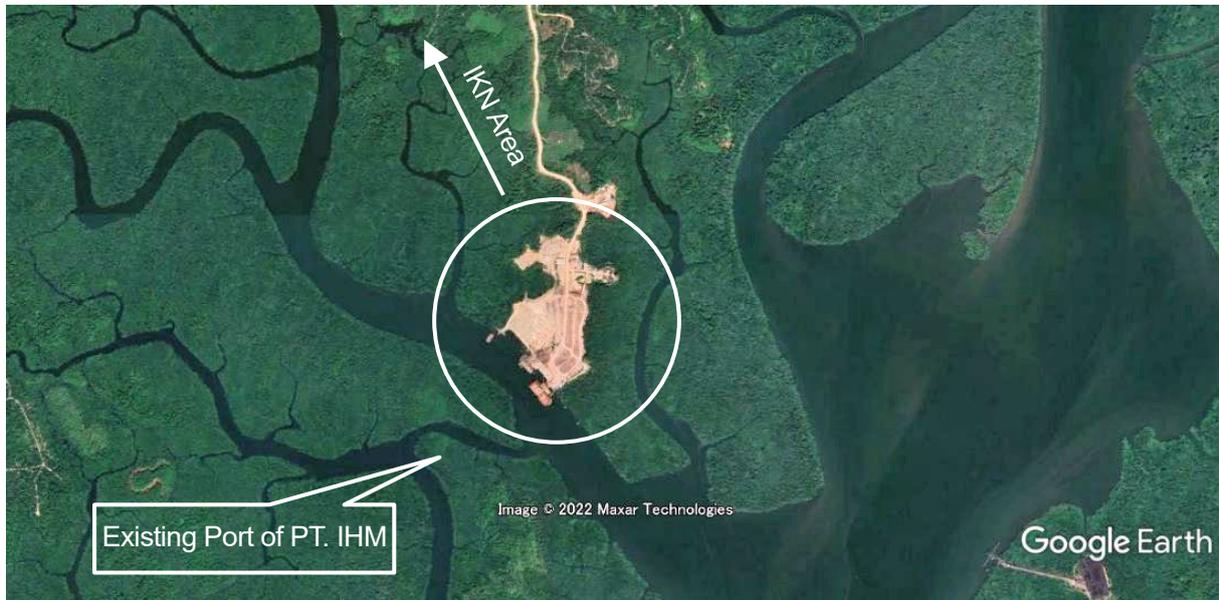
To bring equipment and materials to the construction site of IKN, there are three routes that can be used as follows:

- Northern Logistics Route from North to Jalan Samboja-Sepaku, Jalan Negara to reach the IKN site.
- Southern Logistics Route from South to Jalan Silkar, Jalan Negara to reach the IKN site.
- Maritime Logistics Route from outside of Kalimantan to Balikpapan Bay.

Logistics route 1 and 2 above utilize the existing roads. As the traffic axle load increase due to the logistics activities, it is necessary to strengthen the existing pavement structure. The vertical grade of the existing road is extremely steep and bumpy. Taking into consideration heavy vehicle traffic during the IKN construction, it is advisable to improve the existing steep grade to a gentle one, if possible. Due to the increased traffic by heavy vehicles during construction, it is anticipated to have more traffic accidents than at present. Traffic

safety guidelines shall be established.

The maritime logistics route is essential to receive materials/equipment from outside of Kalimantan. Cargo vessels will reach Balikpapan and enter the Balikpapan Bay. The new port (jetty) is to be constructed next to the existing port of ITCI Hutani Manunggal (PT. IHM), with a new logistics road parallel to the PT. IHM's existing access road. To cope with the possible increase in handling volume, several new port (jetty) locations are currently being studied.



Source: Google Earth

Figure 5.20: Location of Proposed New Port (Jetty) Next to PT. IHM Port

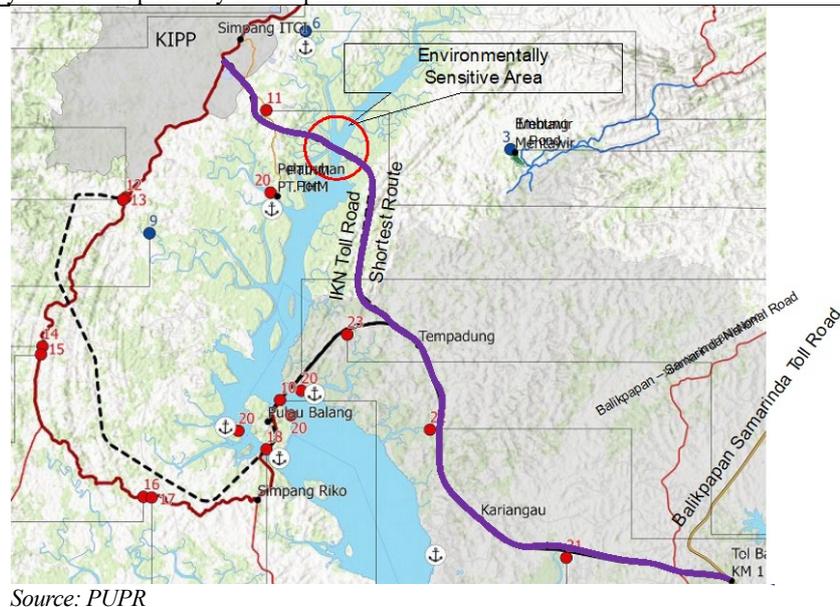
2) Access to IKN

Travel time from Balikpapan to the IKN area via Samboja is around two hours. It is crucial to shorten the travel time for the smooth implementation of IKN construction and for residents and visitors to IKN after the construction is complete.

To realize this requirement, the IKN construction of the IKN Toll Road, Karang Joang Kariangau Tempadung Jembatan Pulau Balang, is proposed. Now, the IKN Toll Road is scheduled to connect to the logistics road of Pulau Balang Bentang Pendek Sp. (Simpang: Intersection) 3 Riko – Sp. Itci.

The route connecting the IKN Toll Road, and the logistics road is not the shortest route. There is a shortcut proposal to extend the IKN Toll Road from Tempadung to KIPP directly traversing Balikpapan Bay. Due to the environmental requirement, the way of traveling to Balikpapan Bay would be by an immersed tunnel. The feasibility study (FS) for the submerged tunnel (2022) will be conducted in cooperation with the Korean government. The detailed design is expected to be conducted after 2023 based on the FS. The source of the schedule is "PUPR - IKN Toll Tunnel".³

³ <https://www.msn.com/id-id/berita/nasional/estimasi-pupr-terowongan-tol-bawah-laut-di-ikn-telan-biaya-rp-3-triliun/ar-AA13MaM6>



Source: PUPR

Figure 5.21: Proposed IKN Toll Road of the Shortest Route

(5) Construction Quality Management Plan

During the construction period, the road network is important for the smooth implementation of the projects in the IKN to provide access to the project site by delivering workforce, equipment, and material. For example, the access road to the site shall be completed before the start of the building project.

As such, the completion date of every road construction shall be scheduled referring to the implementation schedule of other projects.

However, as presented in Table 5.10, the proposed new access roads (logistics roads) in the IKN area are limited to Sepaku Ring Road Segments 1, 2, 3, and 4. The construction work of the Sepaku Ring Road Segments 1, 2, and 3, as logistics roads, would be completed in October or November 2022. The construction of the Sepaku Ring Road Segment 4 has just started and is scheduled to be completed at the end of March 2024.

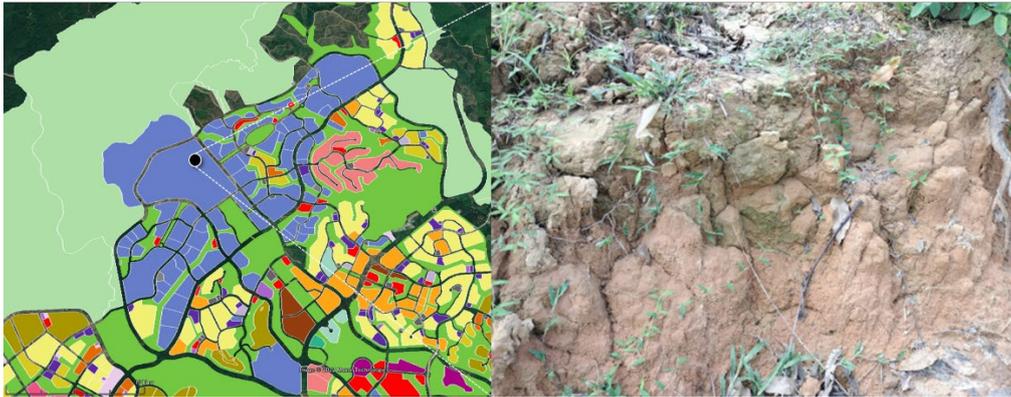
The PUPR declared to ban the road construction other than the proposed road alignment to protect the existing natural environment. It is judged that, along with the use of Sepaku Ring Road as logistics road, the existing PT. IHM's logging road network shall be fully utilized as access roads in the IKN area, as much as possible.

(6) Summary of Major Concerns and Challenges

Based on the review of the existing related documents and site visit, the following challenges are found:

1) Road

- Existing ground may contain peat and/or clayish layers at the upper level, which are not suitable as construction materials. If this is the case, it will be necessary to bring sufficient material and for it to be stored properly. Moreover, there should be necessary consideration on the construction period and method since clayish soil will expand when exposed to water or humidity.



Source: Photo- JICA Consultant Team, MAP-JICA Consultant Team prepared based on Land Use Map from PUPR

Figure 5.22: Peat and/or Clayish Layers

- There should be necessary coordination with Cipta Karya for the drainage outlet which is not located in the river/canal. The land surrounding the road will be developed and may cover the outlet.
- ROW is required to consider future expansion for the utility corridor to accommodate drainage, water supply, sewer, power and telecommunication lines, bus stop, walking path, bicycle lane, and other planned functions.



Source: Photo- JICA Consultant Team, MAP-JICA Consultant Team prepared based on the Land Use Map from PUPR

Figure 5.23: Existing Road Condition in Phase-1 Development Area

- For the box culvert for the existing canal/stream crossing, it is necessary to consider the size based on the drainage plan prepared by the SDA, and not based on the existing condition.
- The design of the MUT, which will accommodate the water supply, power line, communication line, gas, and hydrant, is required to consider the security and safety of workers during operation and maintenance which requires the inputs/conditions from the utility service providers who will utilize the tunnel. Drainage and sewer lines need to be given priority at an intersection, therefore the depth of the tunnel at the road crossing point will be different. Moreover, it is necessary to avoid the collision of two MUTs at an interchange.

- During the construction period, the road network is important for the smooth implementation of the projects in KIPP to provide the access to the project site by delivering workforce, equipment, and material. Therefore, the completion date of every road construction shall be scheduled referring to the implementation schedule of other projects.

2) Bridge

- It is necessary to follow the drainage plan prepared by the SDA especially on the span length, pier shape, and location in order not to avoid the river flow and reduce the capacity. In addition, the girder bottom level shall be higher than the high-water level of the river with consideration of the margin to avoid collision with drifting objects.

5.3.4 Water Supply, Sewerage and Solid Waste

(1) Project Outline and Action Plans

1) Project Outline (Water Supply)

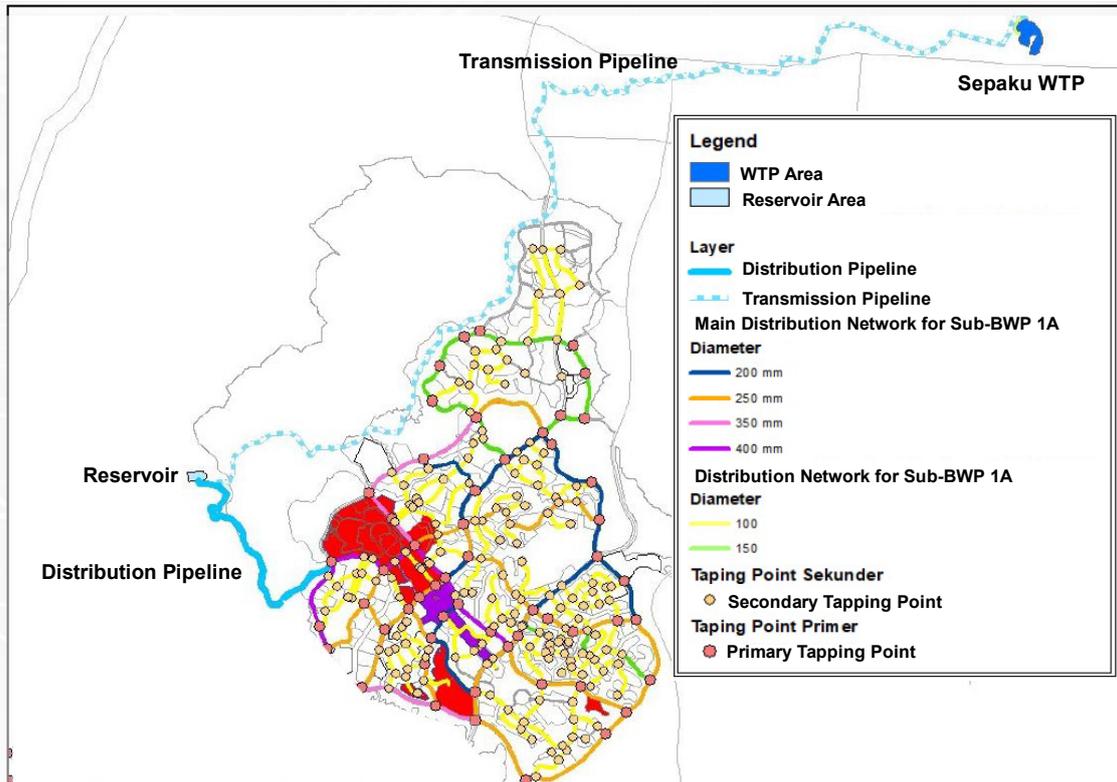
The phase 1 project of water supply consists of the following three construction packages. The target year of all packages is 2024.

- Water treatment plant (IPA) with a capacity of two 300 L/s and reservoir, IDR 446.51 billion
- Transmission pipeline from the IPA to the reservoir, IDR 718.71 billion
- Main distribution network (JDU) and sub-distribution network (JDP) of the Sepaku Drinking Water Supply System (SPAM), IDR 172.64 billion

2) Action Plan (Water Supply)

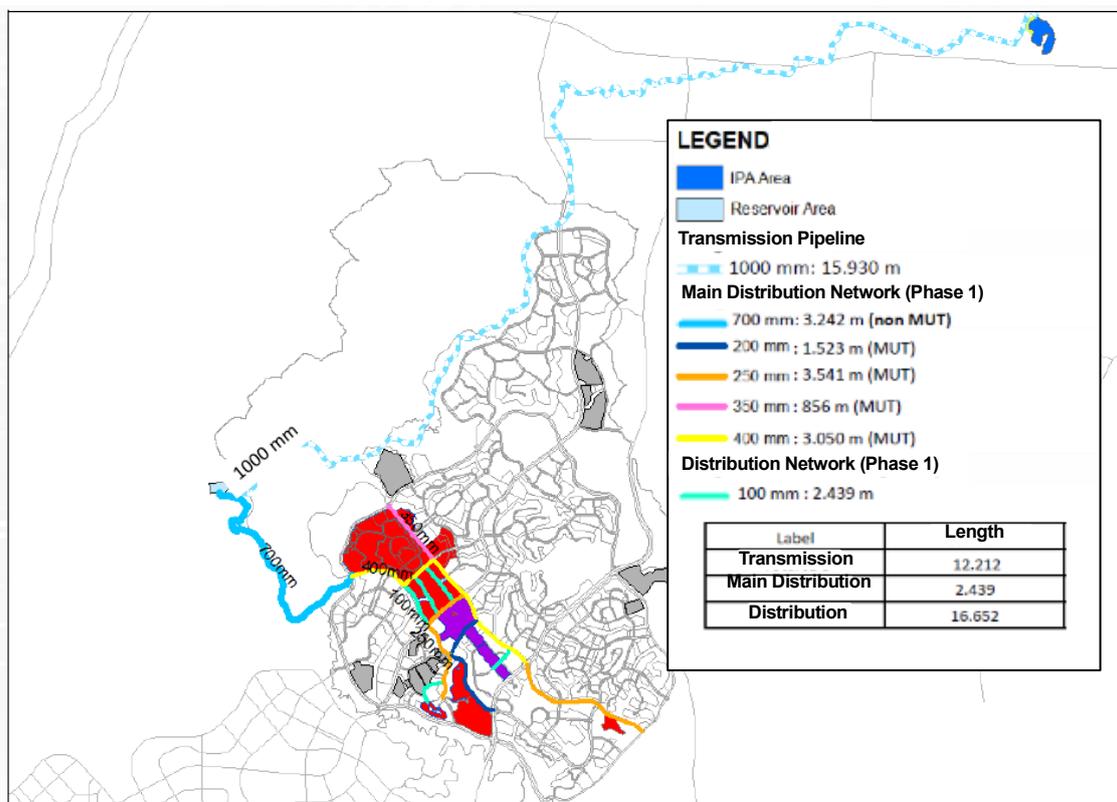
Figure 5.24 shows the whole water supply system of KIPP. Two raw water intake facilities will be developed under the SDA. Cipta Karya oversees the water treatment plant, transmission pipeline, and distribution network. Cipta Karya will install water distribution network from the reservoir to the tapping parcel near the boundary of building and housing. However, it is not clearly defined who is responsible for the installation of the pipe from the tapping parcel to the building and housing.

Figure 5.25 shows the future development plan of water transmission and distribution network in the Sub-WP 1 area of KIPP. However, the distribution network will be developed in a limited area of Sub-WP 1A by 2024 as shown in Figure 5.26.



Source: Pembangunan Ibu Kota Negara TA 2022 2024 as of 07 July 2022, PUPR Translated by JICA Consultant Team

Figure 5.25: Scope of Water Transmission and Distribution Network Development (Ultimate)



Source: Pembangunan Ibu Kota Negara TA 2022 2024 as of 07 July 2022, PUPR Translated by JICA Consultant Team

Figure 5.26: Scope of Water Transmission and Distribution Network Development in Phase 1

The planning conditions of the water supply development are shown in the following Table 5.13.

Table 5.13: Planning Conditions (Water Supply)

Item	Conditions	Sources
Served Population	1.7 to 1.9 million by 2045	MP
Domestic Water Demand	150 liter/capita/day (lpd)	MP
Non-Domestic Water Demand	30% of domestic demand	MP
Industrial Water Demand	0.75 l/sec/ha, Loss factor of 1.2	MP
Water Resource	Surface water from the Sepaku Semoi Dam and the Sepaku River will be used as water sources of the new capital city because it has advantages in reliability, supply capacity, and OPEX compared to other sources.	MP
Treatment Process	Conventional treatment process (coagulation, clarification, and disinfection) can be applied based on the raw water quality.	MP
Distribution to KIPP Area	Combination of tower tanks and underground tanks will be applied. Distribution pipe will be installed in the MUT.	MP
Tariff Collection System	The detail of tariff collection system and its amount has not been determined because most of the facilities to be developed by 2024 are government-related facilities.	Meeting on 29 th July
Water Resource	Capacities of the Sepaku river intake and Sepaku Semoi dam are 3,000 liters/sec and 2,000 liters/sec respectively. Treated water will be sent to the main reservoir in KIPP and distributed to KIPP area.	Site Survey at Intake

Source: JICA Consultant Team

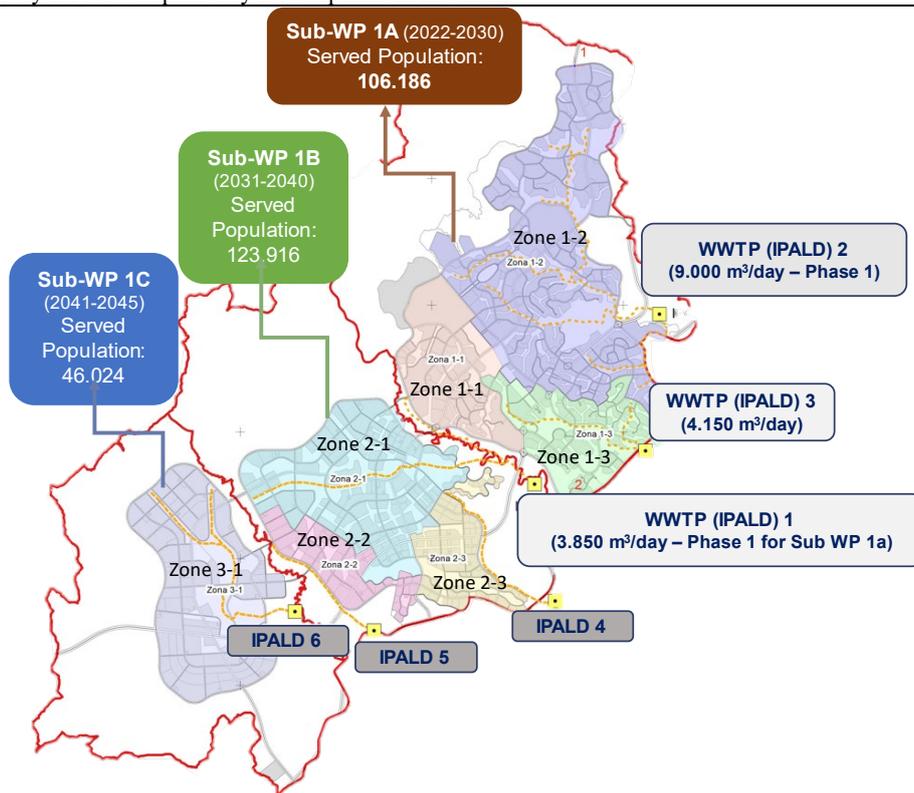
3) Project Outline (Sewerage)

Phase 1 project of sewerage consists of the following four construction packages. The target period of the wastewater treatment plant is December 2024, and the wastewater pipeline networks are targeted to be finished by August 2025.

1. Wastewater Treatment Plant (WWTP/ IPAL) 1, 2, and 3 for KIPP IKN, IDR 661.97 billion
2. Wastewater Pipeline Network 1 for KIPP, IDR 151.6 billion
3. Wastewater Pipeline Network 2 for KIPP, IDR 473.82 billion
4. Wastewater Pipeline Network 3 for KIPP, IDR 132.08 billion

4) Action Plan (Sewerage)

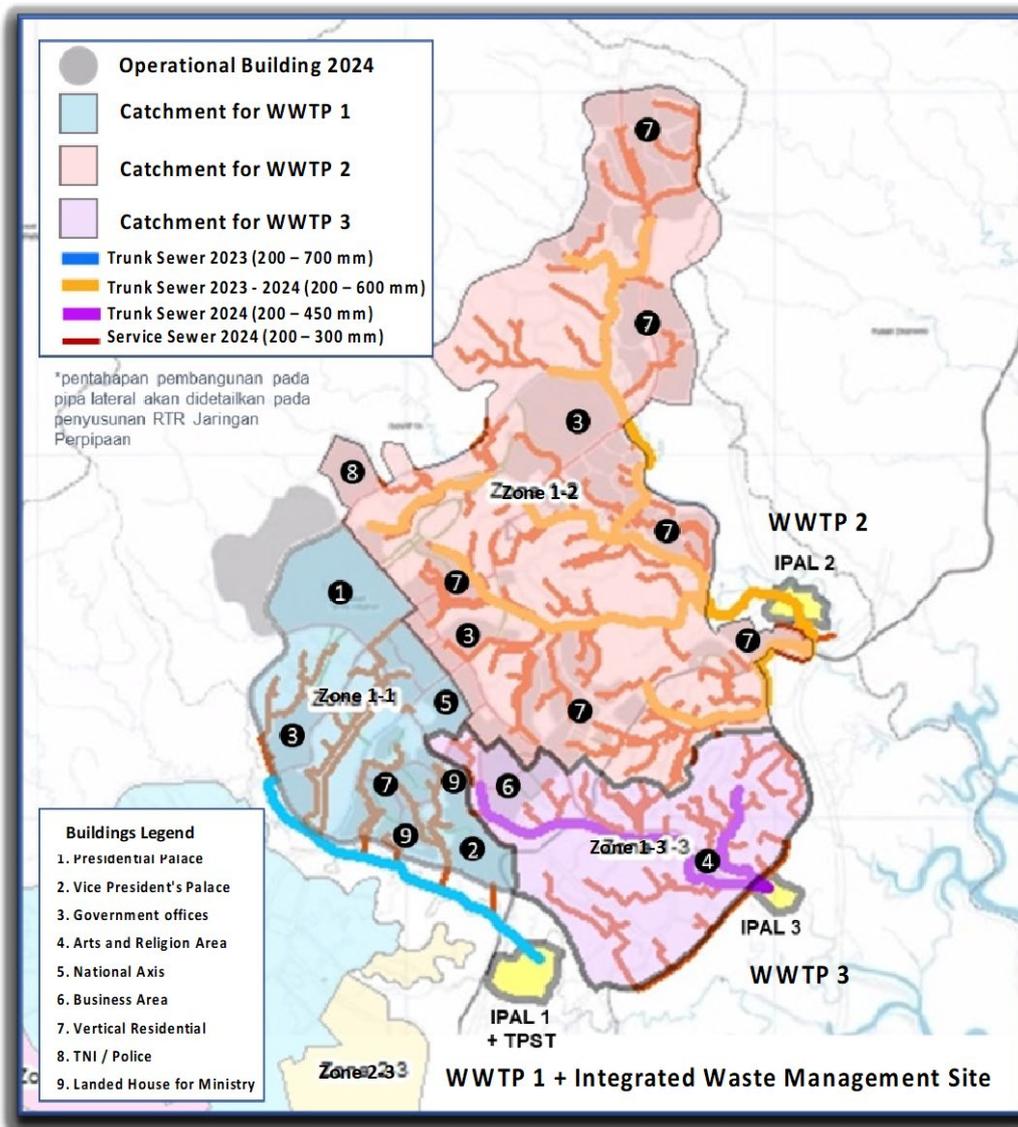
Figure 5.27 shows the phasing plan of the sewer system in KIPP from 2022 to 2045. Three WWTPs and sewer pipeline network will be developed until 2024 and 2025 respectively as Phase 1 Project in the Sub-WP 1A area.



Source: PUPR (22nd July 2022) - Sistem Pengelolaan Air Limbah Domestik KIPP – IKN Translated by JICA Consultant Team

Figure 5.27: Sewerage System Development Plan in KIPP by 2045

Figure 5.28 shows the pipeline network in the Sub-WP 1A area. The Sub-WP 1A area is divided into three catchments and each catchment has its own WWTP. WWTP 1 and integrate waste management site (TPST) will be developed in the same area.



Source: PUPR (22nd July 2022) - Sistem Pengelolaan Air Limbah Domestik KIPP – IKN Translated by JICA Consultant Team

Figure 5.28: Sewerage System Development Plan in KIPP by 2024

Planning conditions of the sewerage development are shown in the following Table 5.14.

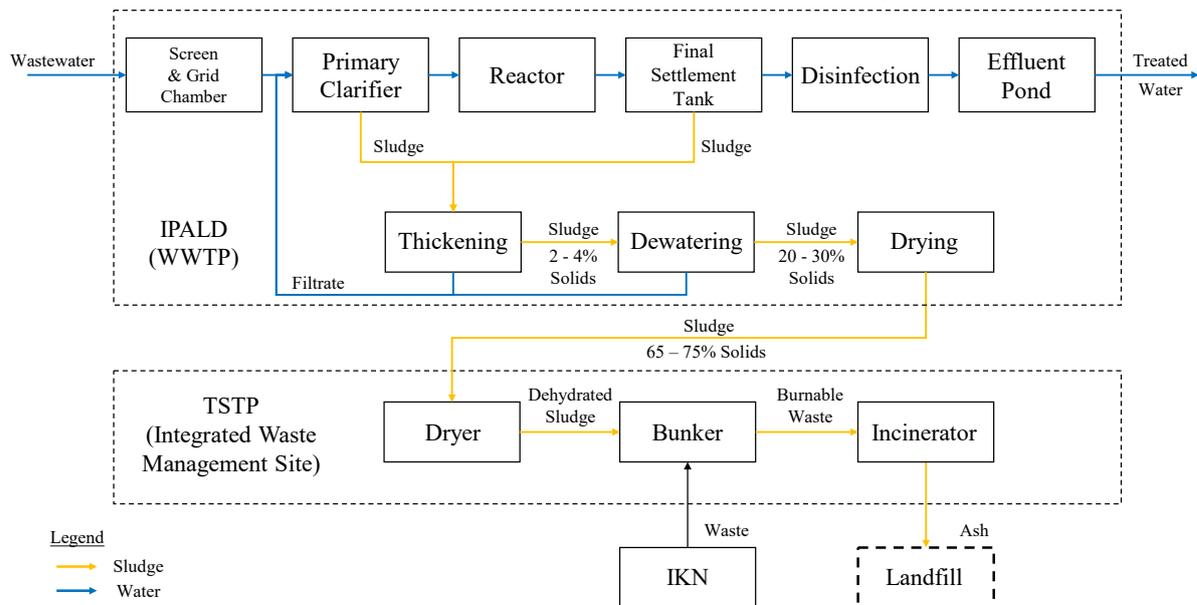
Table 5.14: Planning Conditions (Sewerage)

Document	Item	Planning Conditions
MP	Sewerage System	Separate sewer
	Sewer Collection	Gravity sewer
	Service Ratio	100% by 2035
	Sewage Volume	80% of water consumption
	WWTP Capacity	Total 17,000 m ³ /day (WWTP 1: 3,850 m ³ /day, WWTP 2: 9,000 m ³ /day, and WWTP 3: 4,150 m ³ /day)
	Sewer Line Network	Total 70.13 km Zone 1-1: 13.95 km, d = 200 – 700 mm Zone 1-2: 27.32 km, d = 200 – 600 mm Zone 1-3: 18.86 km, d = 200 – 450 mm
	Wastewater to be Treated	Domestic wastewater and non-domestic wastewater excluding industrial water will be collected and treated at WWTP.

Document	Item	Planning Conditions
	Treatment Process	Moving Bed Biofilm Reactor (MBBR) was selected as the treatment process in WWTP due to its small footprint and easy operation.
	Sludge Management	Sludge generated from the wastewater treatment process is planned to be treated by anaerobic digestion to generate methane (CH ₄). It will be used as a fuel for drying sludge.
Meeting on 2 nd August	During Construction	A decentralized wastewater treatment system will be used before developing centralized sewer system. An example of this would be the WWTP and sewer network in IKN
	House Connection	No raw or regulation that requires building owners to connect to the sewer system has been enacted. Building codes are responsible for it.
	Operation and Maintenance	The detail of tariff collection system and its amount has not been determined because most of the facilities to be developed by 2024 are government-related facilities.
	Sludge Management	Sludge from WWTP will be incinerated at the integrated waste management site (TSTP) after the thickening, dewatering, and drying process. However, the location of the landfill where incinerated ash will be buried has not been decided yet. (Refer to Figure 5.30) <u>This policy is different from the MP.</u>

Source: JICA Consultant Team

Figure 5.29 shows the wastewater and sludge treatment flow. Sludge from WWTP is planned to be incinerated in TSTP. However, the exact location of the landfill for the incinerated ash has not been yet fixed.



Source: JICA Consultant Team

Figure 5.29: Wastewater and Sludge Treatment Flow

(2) Design (Drawings and Specifications) and Construction Plans**1) Water Supply**

Table 5.15 shows the findings of the design and construction plan from related documents, meetings with PUPR, and site surveys.

Table 5.15: Findings Related to Design and Construction (Water Supply)

Document	Section	Findings
Meeting on 18 July	Scope of Work	The following three construction packages are under tender process and will be managed by the consultant that Cipta Karya will hire. The target year of all packages is 2024. Water Treatment Plant with a capacity of 300 l/sec x 2 at Sepaku Intake. The main water reservoir in KIPP is included. Transmission pipeline from WTP to the main water reservoir Distribution network in KIPP The distribution network will be installed around the government office and housing in the Phase 1 project targeting 2024. (Refer to Figure 5.35)
	Contract	All projects will be implemented as design-build.
	International Donor	WTP at Sepaku Semoi Dam will be constructed by a grant from the Korean government.
Meeting on 29 July	Design Condition	Unit water consumption: 150 l/capita/day Daily Maximum Factor: 1.25 Non-domestic water consumption: 30% of the domestic water use Total population in BWP 1A: around 106,186 Total water demand: 314.55 l/sec
	Scope of Work	For distribution, Cipta Karya will install a water pipe from the main water reservoir to the tapping parcel that is in conjunction with the boundary between public and private users.
	Expected Technical Issues in the Detailed Design Stage	Countermeasures against water hummer will be required because the elevation difference between the main reservoir and Sepaku WTP is more than 100 m.

Source: JICA Consultant Team

2) Sewerage

Table 5.16 shows the findings of the design and construction plan from related documents, meetings with PUPR, and site surveys.

Table 5.16: Findings Related to Design and Construction (Sewerage)

Document	Item	Planning Conditions
Meeting on 18 July	Contract	Wastewater treatment plants will be developed by design-build (DB). For sewer network, the detailed design and construction will be bid out separately.
	Sewer Alignment	Sewer is planned to be installed along a river/canal in riparian because that area is lower than other areas and is suitable for collecting sewage by gravity. For KIPP, since all the development plots are under the government, land acquisition will not become a problem for sewer installation.
Meeting on 2 August	House Connection	Cipta Karya is responsible for the inspection basin that will connect the service pipe and each building (Refer to Figure 5.33 in page 5-48).
	Effluent Quality	As shown in Table 5.17 below
Site Survey at WWTP 1(IPAL 1)	Under Construction	In IKN areas outside of KIPP, decentralized treatment systems will be used until the sewage treatment plants and pipeline network are completed.
	House Connection	There is no law or regulation that obliges building owners to connect to the sewage system (equivalent to the Japanese Sewerage Law). (This is equivalent to the Sewerage Law in Japan). The Building Standard Law does.
	Maintenance	The method and amount of fee collection has not been discussed at this time. This is because most of the areas to be developed by 2024 are government-related facilities.

Document	Item	Planning Conditions
	Sludge Management	Sludge generated at sewage treatment plants will be incinerated at the Integrated Waste Management Plant (TSTP) after being thickened, dewatered, and dried. On the other hand, the specific landfill site for incinerated ash has not yet been determined. Although this is different from the sludge disposal policy of the MP mentioned above, according to the Directorate General of Human Settlements, incineration is the correct course of action.

Source: JICA Consultant Team

Parameters regulated as effluent quality standards are different between the effluent quality standard and the MP and the latest standard to be applied to the IKN project (refer to Table 5.17). The latest standard was received from PUPR, and it is the strictest among the three.

Table 5.17: Comparison of Wastewater Effluent Quality Standard

Parameter	Unit	Effluent Quality Standard ¹⁾	MP ²⁾	IKN Project ³⁾
pH		6-9	6-9	6-8
BOD	mg/L	30	30	15
COD	mg/L	100	100	50
TSS	mg/L	30	30	20
Ammonia	mg/L	10	10	5
Oil and Grease	mg/L	5	5	1
Total Coliform	CFU/100ml	3000	N/A	1000
Phosphorus	mg/L	N/A	1	1
Nitrogen	mg/L	N/A	20	1

Source: 1) PerMen Environment and Forestry No. 68, 2016, 2) Table 4-185, Chapter 4, MP, 3) PUPR

Construction of WWTP had not yet started as of the 20th of July 2022 when the JICA Consultant Team visited the project site with PUPR. The following figure shows the planned construction site Figure 5.30 of WWTP 1. shows the planned construction site of WWTP 1.



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.30: Planned Construction Site of WWTP 1

3) Others

Table 5.18 shows the findings related to the coordination between other sectors, SDA, Bina Marga, and Perumahan.

Table 5.18: Findings Requiring Coordination with Other Sectors

Site	Related Sector	Findings
Road	Bina Marga, Sumber Daya Air, and Cipta Karya	Design coordination between the divisions is insufficient. For example, the cross-section of the drainage channel crossing the road is smaller than upstream and it causes flooding. (Refer to Figure 5.35 on pages 5-49)
Existing Water Reservoir	All	This reservoir is owned by the private company, PT. ITCI, but PUPR is trying to acquire this reservoir because they plan to get water for construction here.
	All	SDA will manage water resources of construction water. At least six water resources have been selected as a resource of water for construction. (Refer to Figure 5.33)

Source: JICA Consultant Team

The existing reservoir (Embung Nursey Itchi) is planned to be used as one of the water resources for construction. It is located at a latitude of 0°57'39.79"S and longitude of 116°43'3.47"E. However, it is owned by a private company, PT ITCI, and PUPR is trying to acquire this reservoir. Water resources including this reservoir for construction will be managed by SDA according to PUPR. Figure 5.31 on the next page shows the location of the six candidates for the water reservoir for construction.



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.31: Existing Water Reservoir for Construction

(3) Procurement Plan (Contents and Terms of Bidding Document)**1) Water**

Table 5.19 shows the procurement status of the water supply project. The procurement of consultants for the environmental impact assessment was cancelled. PT Virama Karya is negotiating the contract for the management consultant of the whole project. The other packages are under preparation.

Table 5.19: Procurement Status of Water Supply Project as of 24 October 2022

No.	Package	Type	Budget	Status
1	Environmental Impact Assessment Consultant for SPAM Sepaku	Consultant	IDR 2.0 billion	Cancelled
2	Management Consultant of SPAM Sepaku	Consultant	IDR 28.17 billion	Under Negotiation (PT Virama Karya)
3	(DnB) Construction of Water Treatment Plant with Capacity of 300 l/s and Building of SPAM Sepaku	Contractor	IDR 345.72 billion	Under Preparation
4	(DnB) Main Distribution Network (JDU) and Tertiary Distribution Network (JDP) of Sepaku Drinking Water Supply System (SPAM)	Contractor	IDR 172.64 billion	Under Preparation
5	(DnB) Construction of Transmission Pipeline Package 1	Contractor	IDR 265.1 billion	Under Preparation
6	(DnB) Construction of Transmission Pipeline Package 2	Contractor	IDR 457.62 billion	Under Preparation

Note: DnB means Design and Build

Source: Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah (<https://lpse.lkpp.go.id/eproc4>)

Table 5.20 shows the project implementation schedule of each package of the water supply project. Compared to the above procurement status, the details of two construction packages have been changed and shown below:

1. Capacity of WTP has changed from 2 x 300 L/s to 300 L/s.
2. Transmission pipeline construction has been divided into two packages.

Table 5.20: Project Implementation Schedule of Water Supply Project

No.	Item	Year																																			
		2022												2023												2024											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
A Construction Management SPAM Sepaku Construction																																					
1	Preparation of the Construction Management (MK) auction (DIPA revision, TOR preparation and tender documents)	[Gantt chart showing activity from Jan 2022 to Feb 2022]																																			
2	MK Bidding	[Gantt chart showing activity from Feb 2022 to Mar 2022]																																			
3	MK Contract	[Gantt chart showing activity from Mar 2022 to Apr 2022]																																			
MK Task Details:																																					
3.1	Supervision of DED package DnB	[Gantt chart showing activity from Apr 2022 to Jun 2022]																																			
3.2	Supervision of DnB Development Implementation	[Gantt chart showing activity from Jun 2022 to Sep 2022]																																			
3.3	Supervision of maintenance	[Gantt chart showing activity from Sep 2022 to Dec 2022]																																			
B Development of WTP with 2x300 L/sec Capacity and SPAM Sepaku Support Building																																					
1	DnB Auction for WTP Construction with 2x300 L/sec capacity and Supporting Buildings for Sepaku SPAM	[Gantt chart showing activity from Jul 2022 to Aug 2022]																																			
2	WTP Development Implementation with 2x300 L/sec capacity and Supporting Buildings for Sepaku SPAM	[Gantt chart showing activity from Aug 2022 to Dec 2022]																																			
C Construction of the drinking water transmission piping network of the Sepaku SPAM																																					
1	DnB Auction for Sepaku SPAM Drinking Water Transmission Piping Network Construction	[Gantt chart showing activity from Aug 2022 to Sep 2022]																																			
2	The Implementation of the Construction of the Sepaku SPAM Drinking Water Transmission Pipeline Network	[Gantt chart showing activity from Sep 2022 to Dec 2022]																																			
D Construction of Main Distribution Network (JDU) and Shared Distribution Network (JDP) of SPAM Sepaku Phase 1																																					
1	DnB Auction for the Construction of Main Distribution Network (JDU) and Shared Distribution Network (JDP) of SPAM Sepaku Phase 1	[Gantt chart showing activity from Sep 2022 to Oct 2022]																																			
2	Implementation of Distribution Network Construction for Main (JDU) and Shared Distribution Network (JDP) of SPAM Sepaku Phase 1	[Gantt chart showing activity from Oct 2022 to Dec 2022]																																			

Source: PEMBANGUNAN IBU KOTA NEGARA TA 2022 2024 as of 07 July 2022, PUPR Translated by the JICA Consultant Team

2) Sewerage

Table 5.21 shows the procurement status of the sewerage project. PT. Multi Karadiguna Jasa agreed to a contract for the engineering design of the sewer network for IDR 7 billion on the 16th of September 2022. However, the other packages except for the above are already under preparation.

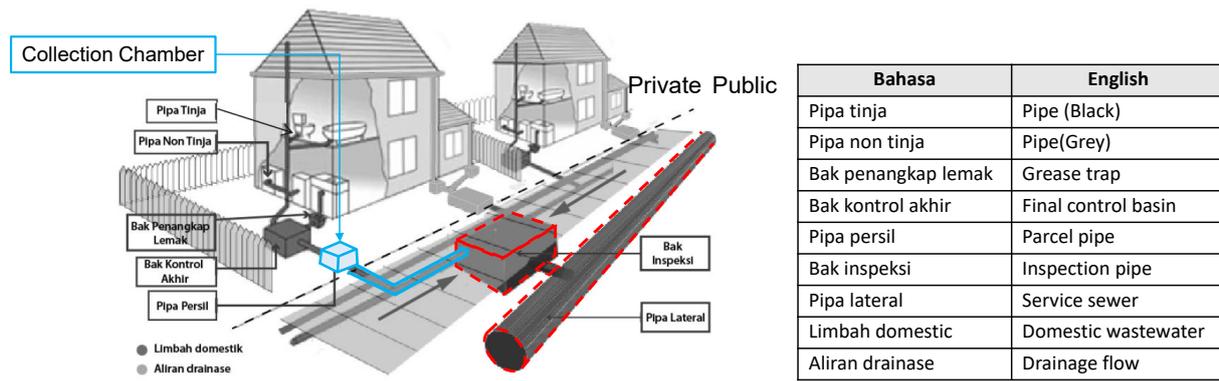
Table 5.21: Procurement Status of Sewerage Project as of 24 October 2022

No.	Package	Type	Budget	Status
1	Management Consultant of Wastewater Treatment Plant and Pipe Network	Consultant	IDR 42.4 billion	Under Preparation
2	(DnB) Wastewater Treatment Plant (IPAL) 1, 2, 3 of KIPP IKN	Contractor	IDR 661.97 billion	Under Preparation
3	Engineering Design of Wastewater Piping Network in Government Core Area (KIPP) IKN	Consultant	IDR 7 billion	PT. Multi Karadiguna Jasa signed contract on 16 Sept. 2022
4	Wastewater Piping Network 1 in Government Core Area (KIPP) IKN	Contractor	IDR 151.6 billion	Procurement will start after engineering design
5	Wastewater Piping Network 2 in Government Core Area (KIPP) IKN	Contractor	IDR 473.82 billion	ditto
6	Wastewater Piping Network 3 in Government Core Area (KIPP) IKN	Contractor	IDR 132.08 billion	ditto

Note: DnB means Design and Build

Source: JICA Consultant Team based on Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah (<https://lpse.lkpp.go.id/eproc4>)

Table 5.22 presents the project implementation schedule for each package of the sewerage project. The procurement of the management consultant and contractor of WWTP is behind the original schedule.



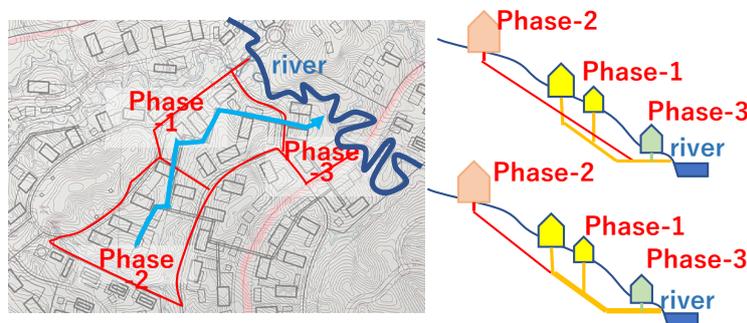
Legend

- - - Cipta Karya is responsible for construction
- - - Cipta Karya is recommended to be responsible for construction

Source: JICA Consultant Team based on the Figure 18, Lampiran II, PerMen PUPR No.4 2017

Figure 5.33: Cipta Karya’s Current and Recommended Work for House Connection

3. Sewer network may be developed in several phases. Earlier stage development needs to install the (1) sewer line deeper than the later stage, or (2) sewer line including the volume of wastewater to be generated in the future as shown in Phase-2 and Phase-3 in Figure 5.34. For (1), the construction cost of the sewer will be higher than that of (2) and the alignment of the future sewer needs to be considered during Phase-1. Otherwise, the sewer lines for Phase-2 and Phase-3 cannot be installed properly. For (2), the estimation of future wastewater volume is important. The sewer may overflow when it is designed to be smaller than the actual volume. On the other hand, if it is larger than the actual, the construction cost will be excessive.



Source: JICA Consultant Team

Figure 5.34: Considerations for Staged Development of Sewer Network

4. Environmental impact on the area surrounding WWTP is insufficiently considered. Items such as the green buffer for odor protection and the pond check before discharge were not considered.
5. A part of the effluent from WWTP will be recycled for non-potable use. However, rainwater reuse is more economical than sewage reuse due to the constant rainfall throughout the year in the new capital city.
6. Sewage sludge will be incinerated with general waste, and a part of the ash will be reused. Specific uses for incinerated ash need to be considered because there is no detailed plan in the MP.
7. Construction schedule of WTP follows the intake facility of Sepaku River because of the proximity of both facilities. The construction of the intake of Sepaku River is delayed due to a delay in material procurement. This, in turn, may affect the schedule of the WTP construction.

8. Water pipe bridges need to be demolished and reconstructed in conjunction with drainage channels in need of expansion.



Source: JICA Consultant Team (19 JUL 2022)

Figure 5.35: Water Pipe Bridge Crossing Drainage Canal

1. The details of the de-centralized treatment system, such as the septic tank and johkaso, should be considered during the construction and before developing WWTP and the sewer network.

2) Operation and Maintenance Stage

1. Operation and maintenance organization structure should be developed. It is necessary to establish the laws and regulations that will serve as the basis for the new organization. Water and sewage tariff, together with its collection system will also need to be considered.
2. Sludge from WWTP is planned to be incinerated in TSTP. However, the exact location of the landfill where the incinerated ash will be buried should be determined because it has not yet been fixed.

5.3.5 Building/Architecture

(1) Project Outline and Action Plans

In KIPP, there are 13 building projects under Cipta Karya (Building Section) and two projects under Perumahan for the 2022 to 2024 period as shown in Table 5.23.

Table 5.23: List of Building Projects

No	Project Name	Map
10	Mosque Building and Area	
21	Nusantara Terrace Building and Area	
22	State Palace Building	
23	Presidential Office Building	
24	Presidential Secretariat Building	
25	Presidential Pavilion Building	
26	Education and Presidential Executive Staff Office Building	
27	State Guesthouse Building, Paspampres Mess, and Guard Post	
28	Vice President Palace Building and Area	
29	Coordinating Ministry Office Building and Area 1	
30	Coordinating Ministry Office Building and Area 2	
31	Ministry of Public Works and Housing Office Building and Area	
32	Ministry of State Secretariat Office Building and Area	
33	Minister Level Landed Housing	
34	Construction Worker Residence	

Source: JICA Consultant Team based on Projects Map provided by PUPR

(2) Design (Drawings and Specifications) and Construction Plans

Table 5.24 shows the summary of findings based on interviews with Cipta Karya (Building Section) and Perumahan.

Table 5.24: Results of Interviews with PUPR (Buildings)

Explanation/ Document	Responsible Section of PUPR	Findings
Plan of Buildings in the Presidential Area (verbal explanation only)	Cipta Karya (Building Section)	<ul style="list-style-type: none"> - Stage 1 includes the State Palace Building, Presidential Office Building, Presidential Secretariat Office, Nusantara Terrace Building, and supporting buildings. - Stage 2 includes the Presidential Pavilion Building, Education and Presidential Executive Staff Office Building, and State Guesthouse Building. - Cipta Karya explained by showing the basic design drawings, but the document has not yet been received by the JICA Consultant Team. - The following site plan and bird's eye perspective drawing are taken from the Executive Summary of Urban Design Development of KIPP, IKN.

Explanation/ Document	Responsible Section of PUPR	Findings
		 <p>Land Area 55.7 Ha</p> <p>Maximum Building Coverage Ratio 60%</p> <p>Building Ground Area 334.200 m2</p> <p>keyplan</p> <p>LEGEND</p> <ul style="list-style-type: none"> (A) = CEREMONY GROUND (B) = PALACE (C) = PRESIDENT OFFICE (D) = MOSQUE (SUPPORTING) (E) = PRESIDENT PARLIAMENT (F) = STATE GUARD HOUSE (G) = EDUCATION BUILDING (H) = SPECIAL STAFF OFFICE (I) = PRESIDENT SECURITY GUARD OFFICE (J) = PRESIDENT SECURITY GUARD MESS (K) = MAIN GUEST BUILDING (SUPPORTING) (L) = PARKING, CITY OFFICE BUILDING (SUPPORTING) (M) = FIRE DEPARTMENT BUILDING (SUPPORTING) (N) = CHECK POINT POST (O) = SOUTH EAST GATE (MAIN ENTRANCE) (P) = NORTH GATE (SIDE ENTRANCE) (Q) = SOUTH GATE (SIDE ENTRANCE) (R) = WEST GATE (BACK ENTRANCE) <ul style="list-style-type: none"> - Special conditions related to security may be considered for implementation.
<p>Plan of Buildings of Coordinating Ministry (verbal explanation only)</p>	<p>Cipta Karya (Building Section)</p>	<ul style="list-style-type: none"> - There will be four areas for Coordinating Ministry for Economic Affairs, Coordinating Ministry for Political Legal and Security Affairs, Coordinating Ministry for Human Development and Culture, and Coordinating Ministry for Maritime and Investment Affairs. - Each area consists of four buildings with a total capacity of 1,300 people. Each building has six stories and one basement. - All towers have the same conceptual design, but slight differences might occur based on the topographical conditions of each site. - Furniture is not included in the package’s scope and will be procured by each ministry. - 3D perspective images were presented, but the drawings and further outline information have not been explained. - This building area should be important considering that its location is next to the Presidential Area and major urban elements along Sumbu Kebangsaan (National Axis). - Cipta Karya explained by showing the basic design drawings, but the document has not been received by the JICA Consultant Team. - The following bird’s eye perspective drawing is taken from the Executive Summary of Urban Design Development of KIPP, IKN.

Explanation/ Document	Responsible Section of PUPR	Findings
		
<p>Basic Design of Construction Worker Residence (verbal explanation only)</p>	<p>Perumahan (Housing)</p>	<ul style="list-style-type: none"> - The first phase will accommodate 16,000 workers (within 2022), and the next phase will increase the capacity to 30,000 workers in total (up until May 2024). - In response to the supply and demand for workers' accommodation capacity, this type of temporary common facilities needs to be provided in a timely manner. - Perumahan explained by showing the basic design drawings, but the document has not yet been received by the JICA Consultant Team. - As of the PCM on 14 September 2022, there were preparations that had not been completed, such as obtaining the land use permit from the Ministry of Environment and Forestry, approval for trees removal, approval of the integrated Environmental Impact Assessment (AMDAL) and building permit (PBG). - The foundation is planned to be a raft foundation; thus, land grading is unavoidable to make a flat ground. It is a concern that the land grading would take time and delay the construction. - In the pre-construction meeting on 14 September 2022, the contractor explains about their consideration towards the site's topography, but not on the geology and land grading plan, dump or waste disposal site, utilities, and other considerations. Regarding the land grading plan, it is necessary to thoroughly plan for the prevention of erosion and landslide. - The perspective drawings below are shown during the PCM. <p style="text-align: center;">PHASE 1 DEVELOPMENT OF SITE 2 CONSTRUCTION</p> 

Explanation/ Document	Responsible Section of PUPR	Findings
<p>Basic Design of Minister Level Landed Housing (verbal explanation and PPT file provided)</p>	<p>Perumahan (Housing)</p>	<ul style="list-style-type: none"> - Total of 36 units in two locations, which are Lot 104 and 105. Design of each house differs according to the terrain.   <ul style="list-style-type: none"> - According to the basic design section drawings, it is observed that the land development design and facility site planning are carefully studied. - As of the PCM on 14 September 2022, there were preparations that had not been completed, such as obtaining the land use permit from the Ministry of Environment and Forestry, approval for the removal of trees, and approval of the integrated Environmental Impact Assessment (AMDAL) and building permit (PBG). - In the PCM on 14 September 2022, the consultant only explained general matters. It seemed that detailed considerations had not been made. - The perspective drawings below are shown during the PCM.

Explanation/ Document	Responsible Section of PUPR	Findings
		<p style="text-align: center;">BASIC DESIGN OF MINISTER LEVEL LANDED HOUSING</p> 

Source: JICA Consultant Team

Design criteria, standards, and other statements are outlined here as common items for the above projects.

(3) Procurement Plan (Contents and Terms of Bidding Document)

Table 5.25 shows the plan and progress of procurement of the abovementioned building projects. The plan is based on the information boards in "Titik Nol" as of 24 June 2022. The actual progress is based on the information on the electronic procurement services of PUPR accessed at the end of October 2022. Based on the discussion between PUPR on 25 July 2022 and PCM on the 14 of September 2022, all projects listed below are confirmed to be contracted under the design and build method.

Table 5.25: Procurement Plan and Progress as of October 2022

No	Project Name	Ceiling (Billion IDR)	Implementation Period (Plan)	Contract Type	Company	Contract Signing Date
10	Mosque Building and Area	897.16	2023/4-2024/4	Consultant Construction	TBD TBD	TBD TBD
21	Nusantara Terrace Building and Area	450.80	2023/1-2023/8	Consultant Construction	TBD TBD	TBD TBD
22	State Palace Building	96.16	2022/9-2024/8	Consultant Construction	TBD TBD	26 Oct. 2022 (Plan) 28 Oct. 2022 (Plan)
23	Presidential Office Building	1,364.00	2022/9-2024/8	Consultant Construction	TBD TBD	27 Oct. 2022 (Plan) 28 Oct. 2022 (Plan)
24	Presidential Secretariat Building	1,598.00	2022/9-2024/8	Consultant Construction	TBD TBD	3 Nov. 2022 (Plan) 28 Oct. 2022 (Plan)
25	Presidential Pavilion Building	1,139.00	2023/7-2025/1	Consultant Construction	TBD TBD	TBD TBD
26	Education and Presidential Executive Staff Office Building	1,088.00	2023/7-2025/1	Consultant Construction	TBD TBD	TBD TBD
27	State Guesthouse Building, Paspampres Mess,	714.09	2023/7-2025/1	Consultant Construction	TBD TBD	TBD TBD

No	Project Name	Ceiling (Billion IDR)	Implementation Period (Plan)	Contract Type	Company	Contract Signing Date
	and Guard Post					
28	Vice President Palace Building and Area	584.69	2023/1-2024/8	Consultant Construction	TBD TBD	TBD TBD
29	Coordinating Ministry Office Building and Area 1	2,247.00	2022/11-2024/8	Consultant Construction	TBD TBD	TBD TBD
30	Coordinating Ministry Office Building and Area 2	1,314.00	2022/11-2024/8	Consultant Construction	TBD TBD	TBD TBD
31	Ministry of Public Works and Housing Office Building and Area	1,442.00	2022/11-2024/8	Consultant Construction	TBD TBD	TBD TBD
32	Ministry of State Secretariat Office Building and Area	968.07	2022/11-2024/8	Consultant Construction	TBD TBD	TBD TBD
33	Minister Level Landed Housing	2,575.00	2022/12-2024/5	Consultant Construction	Yodya Karya-Indah Karya-Surya Perkasa Raya JV TBD	1 Sep. 2022 30 Nov. 2022 (Plan)
34	Construction Worker Residence	450.80	2022/8-2024/5	Consultant Construction	TBD WG-Adhi Karya JV	21 Nov. 2022 (Plan) 29 Aug. 2022

Source: JICA Consultant Team

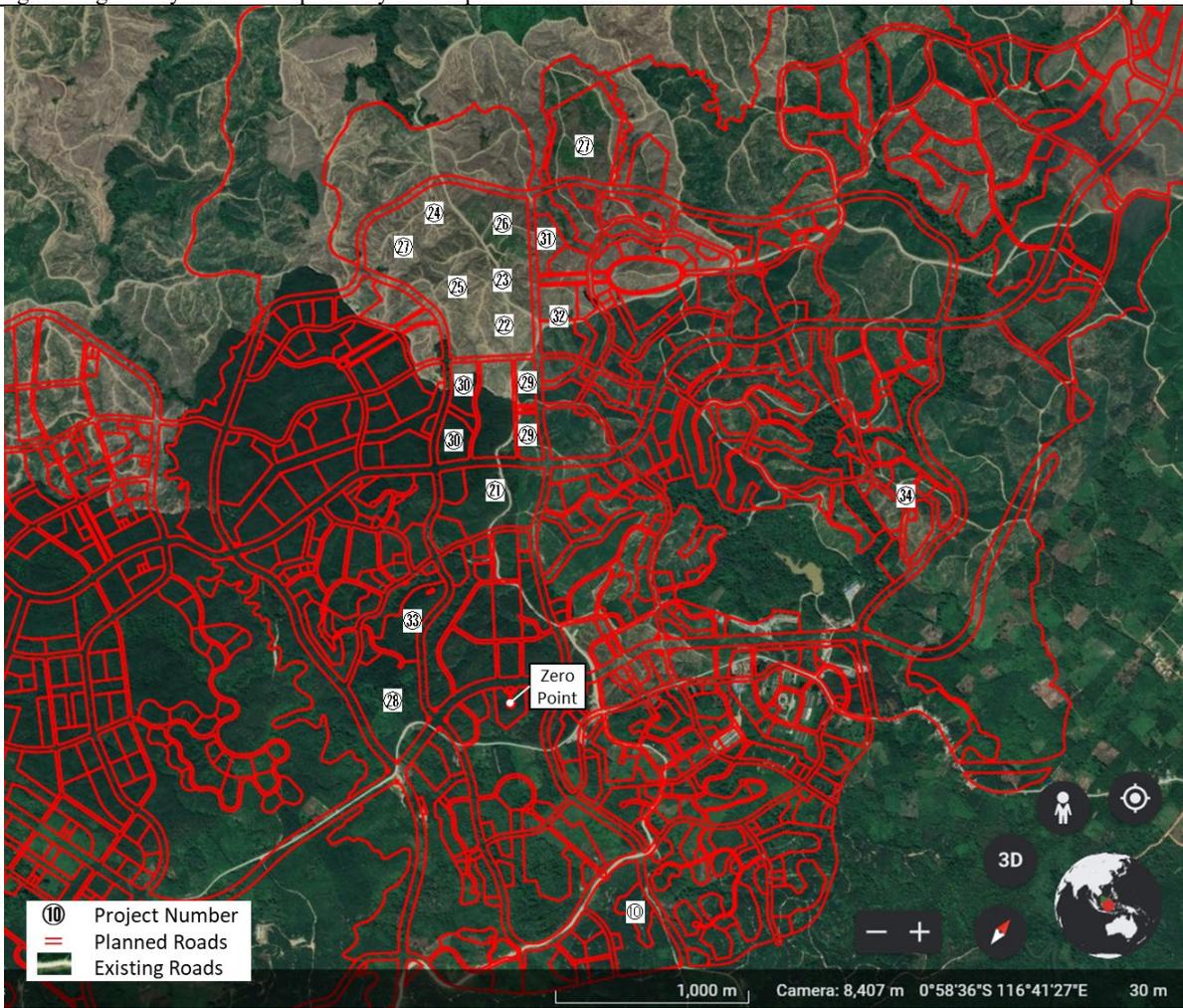
Although the contents of the bid documents for each construction contract were not disclosed, according to the PCM, each construction contract will comply with the following standards:

- Ministry of Public Works and National Housing Ordinance No. 10 of 2021: Construction Safety Management
- Ministry of Public Works and National Housing Ordinance No. 21 of 2021: Green Building

In addition, the Ministry of Public Works and National Housing is working on a guideline for smart buildings, which will be included as a requirement.

(4) Construction Organization and Implementation Plan

As of the JICA Consultant Team's site visit at the beginning of October 2022, road projects in KIPP (red lines in Figure 5.36) were not completed. Therefore, only existing roads can be used to access the building construction sites. However, based on Figure 5.36, some construction sites are inaccessible through the existing roads, and some existing roads are too narrow for construction vehicles to pass through. Accessibility of such sites needs to be confirmed.



Source: Google Earth and KIPP base map provided by PUPR

Figure 5.36: Map of Existing Roads and Planned Roads

Table 5.26: Implementation Plan of the Building Projects

No	Project Name	Responsible Section	Access Road Status as of October 2022
10	Mosque Building and Area	Cipta Karya (Building Section)	△
21	Nusantara Terrace Building and Area	Cipta Karya (Building Section)	○
22	State Palace Building	Cipta Karya (Building Section)	○
23	Presidential Office Building	Cipta Karya (Building Section)	○
24	Presidential Secretariat Building	Cipta Karya (Building Section)	○
25	Presidential Pavilion Building	Cipta Karya (Building Section)	△
26	Education and Presidential Executive Staff Office Building	Cipta Karya (Building Section)	○
27	State Guesthouse Building, Paspampres Mess, and Guard Post	Cipta Karya (Building Section)	△
28	Vice President Palace Building and Area	Cipta Karya (Building Section)	○
29	Coordinating Ministry Office Building and Area 1	Cipta Karya (Building Section)	○
30	Coordinating Ministry Office Building and Area 2	Cipta Karya (Building Section)	×
31	Ministry of Public Works and Housing Office Building and Area	Cipta Karya (Building Section)	△
32	Ministry of State Secretariat Office Building and Area	Cipta Karya (Building Section)	○
33	Minister Level Landed Housing	Perumahan	×
34	Construction Worker Residence	Perumahan	○

Note: ○: Accessible through existing road
 △: Might be accessible through small existing road
 ×: Accessibility needs to be confirmed

Source: JICA Consultant Team

(5) Construction Quality Management Plan

Construction quality management plan of each project is to be made by the contractor and the consultant. This has not been published.

(6) Summary of Major Concerns and Challenges

Based on the review of the existing related documents and site visit, the following challenges are found:

1. Although building constructions will run in parallel with road constructions, the construction period seems to be tight because it includes land development (with consideration of minimizing cut and fill as much as possible) and pile work. It is a challenge to construct safe and high-quality buildings while suppressing inflation increases within the construction schedule. In addition, the construction supervisor should manage the construction according to the plan (method statement and progress schedule) by recording and monitoring to ensure that the land development and pile foundation construction progress as scheduled.
2. Since the sites are in mountainous areas, it is necessary to thoroughly confirm the integration of the route and flow rate of rainwater and sewage drainage between sites and other areas. Land development information for all sites, including drainage box culvert locations and details of the soil cut-fill plan, shall be duly transferred to the investors and contractors of each site, so they could consider it during the design development and construction. This will not only be applied in KIPP but also in IKN, as proper implementation of this aspect will ensure the reliability of the site. In areas where PPP will be applied, investment activities will be facilitated smoothly.



Source: Photo- JICA Consultant Team, MAP-JICA Consultant Team prepared based on Land Use Map from PUPR

Figure 5.37: Land Development Location at Mountainous Area

3. Since the procurement methodology is design-build, in addition to construction requirement quality, it is also necessary to properly review the tenderer's proposal in terms of fulfillment in accordance with the client's requirements/criteria through the tender process. This is in addition to the confirmation of construction quality conditions. Moreover, it is necessary for MK and MK-Induk to establish and implement a monitoring system and procedures to confirm that contractors are fulfilling their design-build responsibilities, including confirmation that the proposals are properly constructed.
4. In the PCM on 14 September 2022 conducted by the Perumahan Section of PUPR, it seemed that there were detailed matters that needed to be discussed before construction could start. In addition, some permits had not been obtained and neither the contractor nor the consultant has been contracted yet. Therefore, even though the contractor or the consultant has been decided, the construction could not start just yet. The next project, the construction workers' dormitory, which was targeted for completion by the end of this year, was a particularly urgent project. Since the scope of responsibility of the client, consultant, and contractor is clear, progress should be monitored against the original schedule to catch up. In addition, ground-bearing capacity tests should be conducted promptly to steadily proceed with the reinforced-concrete (RC) substructure construction to support the prefabricated buildings.
5. As of October 2022, access roads to some of the construction sites have not been confirmed. PUPR explained that all sites could be accessed with the existing roads currently used by PT. IHM. However, all the existing roads pass through the site area, so these roads cannot be used in parallel with the building construction within the sites. Moreover, some existing roads seem to be too narrow for construction vehicles and some sites seem to have no access at all. In general, the owner's obligation under the contract is to provide access from the shared road and to make it available to the construction contractor. However, if this is not provided prior to the start of construction, it will likely be the subject of a complaint. In addition, the shared-use path should be wide enough to allow construction equipment to drive through it without difficulty before the contract is signed.

5.4 Review of Procurement and Construction Supervision

5.4.1 Priority Infrastructure Developments in KIPP

(1) Findings

Tender documents for each construction contract have not been obtained, but according to the PCM, each construction contract will comply with the following standards:

- PUPR Ministerial Decree No. 10 of 2021: Construction Work Safety Management
- PUPR Ministerial Decree No. 21 of 2021: Green Building

In order to collect information regarding the priority infrastructure development project plans and construction details in KIPP, and to understand major concerns and challenges that might potentially hinder the projects, meetings with PUPR and site visits were conducted.

The results of discussions and site visits are summarized in Table 5.27.

Table 5.27: Results of Meetings and Site Visits (Regarding Procurement and Construction Supervision Within KIPP)

Sector	Category	Findings	Date
General	Construction Plan	<ul style="list-style-type: none"> • Benchmark point at Zero Point is confirmed. • Access road to the sites of the State Palace Building and Presidential Office Building is confirmed. 	Site Visit 19 July 2022
	Schedule	<ul style="list-style-type: none"> • Among 23 KIPP projects, at least four projects are confirmed to be rescheduled as of now. • Collector access roads (under Cipta Karya's scope of work) are not started yet. • All packages are with design-build procurement method. 	Meeting with Cipta Karya 25 July 2022
	Construction Plan	<ul style="list-style-type: none"> • There are seven potential locations of borrow pits (G1 to G7) with a total of 6.8 million m³ of soil can be obtained. • Regarding roadside/ slope protection, Cipta Karya is considering reinforcement with Geogrid, but the final finishing has not been decided yet. 	Meeting with Cipta Karya 1 August 2022
Road and Bridges	Construction Plan	<ul style="list-style-type: none"> • Construction of Sepaku Ring Road Segment I to III started in May 2022 and is expected to finish in September 2022. • Box culvert, gabion wall, and temporary bridges (16 units) are under preparation in the valley area. 	Site Visit 20 July 2022
	Procurement Plan	<ul style="list-style-type: none"> • 3,000 m³ of crusher run has already been procured from the neighboring island of Sulawesi for the ongoing road projects. Cement, sand, and crushed stone for the road projects are procured from Sulawesi. Admixture is Sika brand. 	Site Visit 20 July 2022
	Quality Control Plan	<ul style="list-style-type: none"> • The compressive strength test machine at the batching plant of the ready-mixed concrete for the ongoing road projects is old, but a calibration test is conducted annually. 	Site Visit 20 July 2022
	Construction Plan	<ul style="list-style-type: none"> • Regarding collector roads, Cipta Karya's responsibility includes road sub-base and rainwater drainage ditches. Bina Marga oversees MUT construction and road finishing. • A total of about 50 bridges are planned inside KIPP. Bina Marga oversees constructing all the bridges. The width and length of the bridges have already been planned. 	Meeting with Cipta Karya 1 August 2022

Sector	Category	Findings	Date
Buildings	Construction Plan	<ul style="list-style-type: none"> Access road to the site of the Construction Worker Residence is currently under construction. 	Site Visit 20 July 2022
	Manpower Plan	<ul style="list-style-type: none"> The first phase of the Construction Worker Residence will accommodate 16,000 workers. The next phase will accommodate up to 30,000 workers. Construction is with prefabricated construction method and the housings will be four stories. Land development has not been started. 	Site Visit 20 July 2022
	Construction Plan	<ul style="list-style-type: none"> Regarding Construction Worker Residence (Phase 1). Construction period: August 2022 to December 2022 (five months). Designs will consider natural topographic features. There is pile construction (on site RC bored pile). There are two companies who do prefabricated construction method and design-build procurement method. The residence complex includes religious facilities, clinic, canteen, sports facilities, etc. Collector roads and buildings are included in one package. Regarding the Minister Level Landed Housing. Construction period: December 2022 to May 2024 Designs will consider natural topographic features. There will be 36 units, each with one basement and two stories, and smart home features. There is an elevation gap of 5 m between the building site and the surrounding road. 	Meeting with Perumahan 25 July 2022
	Schedule	<ul style="list-style-type: none"> Regarding Construction of Presidential Buildings (Stage 1) State Palace Building, Presidential Office Building, Presidential Secretariat Office, Nusantara Terrace Building and supporting buildings June to August 2022: Tender (ongoing) September 2022: Contract signing September 2022 to November 2022: Detailed Design (three months) December 2022 to August 2024: Construction (21 months) Actual progress is already late by one month from the original plan Regarding Construction of Presidential Buildings (Stage 2) Presidential Pavilion Building, Education and Presidential Executive Staff Office Building, and State Guesthouse Building July 2023 to January 2025: Detailed Design and Construction (19 months) Construction of Ministry Buildings August 2022 to October 2022: Tender November 2022: Contract signing November 2022 to January 2023: Detailed Design (three months) February 2023 to August 2024: Construction (19 	Meeting with Cipta Karya 25 July 2022

Sector	Category	Findings	Date
		months)	
Land Grading and Land Use	Construction Plan	<ul style="list-style-type: none"> The elevation of Zero Point will be raised by 8 m, according to Cipta Karya's MP. 	Meeting with Bina Marga 22 July 2022
	Schedule	<ul style="list-style-type: none"> KIPP Land Development Phase 1: Tender is completed, construction will start in August 2022. The total implementation period is 9 months, which is one month shorter than the original plan. The groundbreaking is planned on the Independence Day on 17 August 2022. KIPP Land Development Phase 2: Tender is ongoing, construction will start in September 2022. The total implementation period is nine months, which is one month shorter than the original plan. 	Meeting with Cipta Karya 1 August 2022

Source: JICA Consultant Team

(2) Summary of Major Concerns and Challenges of Infrastructure Development in KIPP

Based on the review of the existing related documents, discussions with PUPR, and site visits, the following challenges of infrastructure development in KIPP are found:

1. Transportation of materials from the ports/ suppliers to the storage area, mobilization of workers between the worker residence and the construction sites, and transportation of waste materials from the construction sites to the disposal sites need to be planned carefully to avoid traffic congestion. Each project's contractor should prepare a construction plan, specifying the details of the quantity of materials to be transported, the worker stacking chart, the quantity of soil to be removed, and the quantity of construction waste, and set up a schedule. Based on the schedules from all contractors, MK Induk and MK should prepare the overall traffic plan and take the best measures to avoid congestion.
2. Regarding temporary facilities, IKN project sites are in a mountainous area and the plan is to minimize deforestation and land grading as much as possible; therefore, it is difficult to set up plants, material storage areas, and workshops within the construction sites. It is necessary to plan the locations of these facilities outside but close (within 30 minutes) to the construction sites, on flat ground. PUPR should determine an area for temporary facilities and allocate the required flat land for each contractor. The area of each temporary facility will be approximately 5,000 m². The temporary facilities include a concrete batching plant, asphalt plant, reinforcing bar storage/processing plant, formwork material storage/processing plant and storage for other materials. To maintain and improve quality control, PUPR should select suppliers for concrete batching plants and asphalt plants and require the contractors to purchase only from them.
3. According to the representative of Cipta Karya, the total length of collector roads and MUT under Cipta Karya's responsibility is approximately 21 km. In terms of schedule and considering the large amount of construction work, MUT construction is critical work. To complete the work within the target construction period, the contractor should make a construction plan including the cyclic operation based on the targeted daily progress amount. They also need to consider the proper construction method (precast method, system formwork, etc.) to follow the completion schedule target. In addition, waterproofing work is necessary to prevent water leakage into the MUT.
4. The sites are in a forest, therefore there is a risk of fire disaster in all the projects. To prevent forest fires,

it is necessary to plan fire safety measures in cooperation with the fire department. Such a safety plan has not been discussed as of now. It is important to clarify who is responsible for fire prevention and discuss the implementation of fire prevention measures as soon as possible. Temporary fire stations, fire trucks, and fire tanks should also be placed within IKN. Regular fire drills should be conducted for construction workers.

5. Due to the tight schedule, the construction work will run 24 hours a day. Therefore, lighting shall be considered for the common temporary roads. Such a plan has not been discussed as of now. MK Induk should coordinate with each contractor and clarify which contractor shall be responsible for the night lighting of which roads.
6. By the end of Phase 1, 16,000 workers hired by multiple contractors from different regions will live together in the worker's residence. Consideration and efforts are necessary to avoid social and sanitary issues. In addition, since the construction work will be carried out 24 hours a day, a living environment that ensures the health of the workers is necessary. To improve the well-being of the workers, safety and health measures in the living environment of the worker's residence should be maintained.

5.4.2 Priority Infrastructure Developments Outside KIPP

(1) Findings

To collect information regarding the priority infrastructure development project plans and construction details in KIPP, and to understand major concerns and challenges that might potentially hinder the projects, meetings with PUPR and site visits were conducted. The results of discussions and site visits are summarized in Table 5.28.

Table 5.28: Results of Discussions and Site Visits (Procurement and Construction Supervision Outside KIPP)

Sector	Category	Findings	Date
General	Procurement Plan	There is an existing port owned by PT. IHM for loading wood. A new port will be constructed nearby for bringing in construction materials for IKN projects. There will be two delivery routes for construction materials from national roads, and three routes for sea transportation.	Site Visit 19 July 2022
	Procurement Plan	There is currently no particular plan for maintenance of national roads used for land transportation for IKN projects.	Meeting with Bina Marga 22 July 2022
	Construction Plan	Only 5% of soil excavated from the borrow pits can be used for backfilling. For the time being, dump soil will be placed at the side of the road. Afterwards, it will be transported to the soil disposal site, but the locations have not been decided. Quantitative analysis for soil cut and fill has been completed.	Meeting with Cipta Karya 1 August 2022
Water Supply, Sewerage and Solid Waste	Construction Plan	Sepaku Semoi Dam construction is ongoing.	Site Visit 19 July 2022

Source: JICA Consultant Team

(2) Summary of Major Concerns and Challenges of Infrastructure Development Outside KIPP

Based on review of the existing related documents, discussions with PUPR and site visits, the following challenges of infrastructure development outside KIPP are found:

1. Currently, Balikpapan and Samarinda have ports with gantry cranes installed. Building finishing materials are generally transported in containers (40 feet). Therefore, there is a concern that a huge amount of finishing materials cannot be handled only by land transportation and existing ports alone. It needs to be considered whether the capacity of the existing ports is adequate to handle the materials required for the projects. If it is concluded that a new port is required, its capacity and construction schedule will need to be calculated to match the construction plan and schedule. It is also necessary to consider the maintenance of asphalt pavements on national or provincial roads used for land transportation.
2. Currently, the locations of the dumping sites for waste materials and excavated unsuitable soil have not been designated. It is necessary to properly plan dumping sites and temporary dumping locations according to the types of construction soil and waste. Ideally, the dumping locations should be within one hour of the construction site. In addition, it is necessary to be able to monitor where the waste is dumped by tracing the waste and requiring the contractors to report it. In the end, the dumping sites should generally be backfilled with fertile soil and turned into a green area.

5.4.3 Summary of Major Concerns and Challenges of Infrastructure Development in IKN

Below is the summary of the challenges of infrastructure development in and outside KIPP.

1. Traffic plan in and outside KIPP needs to be made and implemented properly to avoid congestion and accidents especially during nighttime.
2. To protect the surrounding environment, it is necessary to plan fire safety measures, designate dumping locations of material waste and unsuitable soil, and plan the locations of temporary facilities.
3. To ensure smooth transportation of construction materials to the construction projects, land transportation and sea transportation routes need to be planned thoroughly.
4. To prevent delays in the latter construction works, critical work such as the construction of collector roads and MUT needs to be completed in a timely manner.

5.5 Major Challenges in Construction Projects in Indonesia

5.5.1 Issues in Past Projects in Indonesia

(1) Result of Hearing Surveys to Japanese Contractors and Consultants

From 25 July 2022 to 10 November 2022, interview surveys with a total of 6 Japanese contractors and consultants were conducted. The main purpose of the survey was to understand the common challenges in development projects in Indonesia by understanding the capabilities of local contractors, in terms of construction, quality, safety, schedule management, etc.

Table 5.29 shows the summary of opinions of the Japanese contractors who have had experiences working with local contractors.

Table 5.29: Opinions of Japanese Contractors Regarding Local Contractors

Topic	Result
Quality control	<p>Generally, top state-owned contractors have adequate technical capabilities.</p> <p>For civil engineering, local contractors can construct most civil works, except for subways, tunnels, and submerged tunnels.</p> <p>For building construction, local contractors can construct most buildings, including skyscrapers. However, poor workmanship of buildings and finishing results in poor appearance. In terms of quality and safety, they need assistance.</p> <p>Top state-owned contractors are ISO-certified, but the quality of work depends on the quality of the person assigned to the project.</p> <p>Local contractors do not highly prioritize quality. One of the reasons is that the client often accepts work that does not fulfill the required specifications.</p> <p>Otherwise instructed by the client, contractors usually do not follow the consultant's directions.</p> <p>The quality of materials depends on the plant and the operator, even in Jakarta. The quality of main construction materials such as concrete, rebar, cement, and concrete aggregate varies. The calibration of the testing machine is poor.</p> <p>Contracts, specifications, method statements, and other documents are mostly in Bahasa Indonesia, which makes it difficult for foreign consultants to review them.</p>
Project management	<p><u>Safety management</u></p> <p>Safety management has significantly improved over the last ten years.</p> <p>Some of the local contractors implement their safety plans properly. However, some other local contractors do not take sufficient safety measures.</p> <p>There is no awareness that quality will be affected if safety cannot be assured.</p> <p>If instructed by the consultant, local contractors will follow detailed safety measures such as installing scaffolding baseboards and handrails.</p> <p><u>Scheduled management</u></p> <p>Local contractors generally are not concerned with completing the work according to the implementation schedule, because there is no penalty for delays.</p> <p>The implementation schedule is made tightly without room for any flexibility, therefore there are many delays. There are delays which are caused by the circumstances of the consultant and/or the client.</p> <p>Except for special circumstances, the schedule is generally flexible and negotiable.</p> <p>State-owned contractors do not receive timely payments, which causes poor cash flow. Even though there is a contract with prices and the consultant has approved the contractor's bill, BPKP (Financial and Development Supervisory Agency) would review the rates as the official auditor. They could freely cut the rates. These financial issues could cause delays to the construction work.</p>
Human resource management	<p>For construction in remote areas out of Java Island, it is important to note that it is difficult to hire enough skilled workers.</p> <p>The performance of the local contractors depends on the quality of the person assigned for the project.</p> <p>Local contractors often assign many young impressive engineers, but most have little experience, especially for mechanical and electrical works.</p>

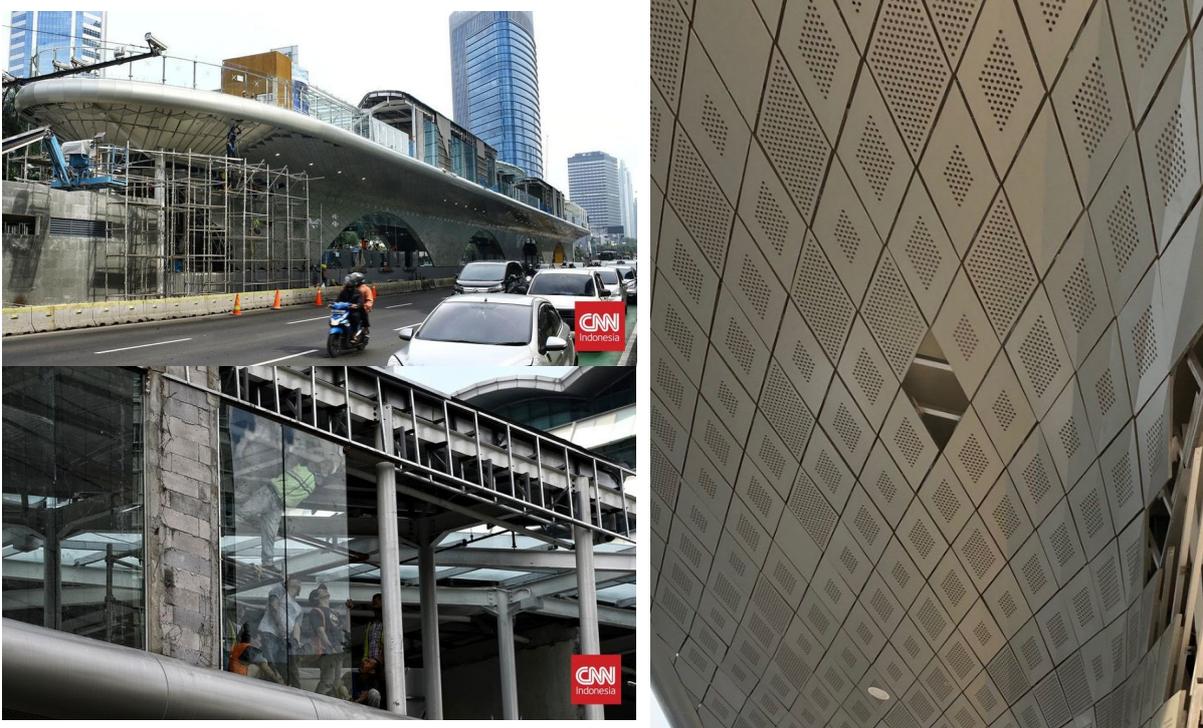
Source: JICA Consultant Team

Regarding the involvement of Japanese contractors in IKN projects, they are generally interested. However, the projects are now only open for local contractors, so it is difficult for them to get involved unless offered by the local contractors to form a consortium, which seems unlikely now.

(2) Result of Observations of Ongoing Constructions in Jakarta

To understand the capabilities of local contractors in terms of construction, quality control, safety control, process control, and the like, in addition to the above hearing survey, the JICA Consultant Team observed some ongoing construction works in Jakarta.

The Tosari Bus Station facility on Sudirman Road, Central Jakarta is under revitalization work and is scheduled to be completed by the end of the year. Regarding safety, some workers do not wear safety helmets and vests, and the scaffolding is not equipped with handrails at the top level and lifting equipment. As for quality, parts of the ceiling tiles arrangement look untidy.



Source: CNN Indonesia (accessed on 7 November 2022, <https://www.cnnindonesia.com/nasional/20221107162607-22-870622/foto-halte-tosari-kejar-target-rampung-akhir-tahun-2022>)

Source: JICA Consultant Team (taken on 5 November 2022)

Figure 5.38: Revitalization Work of Tosari Bus Station, Central Jakarta

In the construction work next to Sudirman Station in Central Jakarta, the latest formwork system has been introduced, but it seems that the safety nets and protective shelves to prevent materials from falling are missing in some parts.



Source: JICA Consultant Team (taken on 5 November 2022)

Figure 5.39: Construction Work of a Building Next to Sudirman Station, Central Jakarta

5.5.2 Potential Challenges in KIPP and their Countermeasures

Based on the common challenges experienced by the Japanese contractors and consultants above, and as observed in the construction works in Jakarta, the challenges that can possibly occur in IKN together with their countermeasures are summarized below.

(1) Quality Control

- It is a concern whether construction materials with proper quality can be procured in IKN. Therefore, in IKN, it is necessary to standardize and stabilize the quality of construction materials. There should be a testing laboratory where each contractor can conduct concrete compression tests, reinforcing bar strength tests, and the like.
- It is a concern that the expected quality cannot be achieved unless the client, the consultant, and the contractor strictly follow the specifications. The consultant should conduct daily site inspections and guide the contractor so that the construction proceeds according to the specifications. The client should instruct the contractor to follow the consultant's instructions and should conduct a thorough inspection before handing over.

(2) Project Management

- The development of IKN is a special project that strictly requires timely completion. Since there are concerns that quality and safety are likely to be sacrificed by such hasty construction, weekly and monthly monitoring should be conducted. During routine monitoring, if a possibility of delay is found, it is necessary to make a countermeasure plan immediately (by increasing the number of workers or equipment in order to catch up with the schedule).

- As late payments to the contractors will affect the timeliness and quality of the works, MK and MK Induk should appropriately assist the contractors in receiving timely payments.
- In order to ensure safety, the client and the consultant need to strictly instruct and supervise the contractor to develop a safety plan and implement it properly. In Japan, accidents are categorized as (1) falls, (2) traffic accidents, (3) being caught in between, and (4) collapses. In Indonesia, accidents are categorized as (1) overturning of mobile cranes, (2) toxic gas in septic tanks, (3) collapsing ceilings, (4) fires caused by cigarettes, and (5) collapse of elevated support. It is important to take measures against these accidents by ensuring the safety of temporary scaffolding, the safety of the heavy machinery used, the safety of the working environment for workers, the organization and tidiness of the site, and the prohibition of smoking on site. MK and MK Induk should ensure that safety plans are in place and conduct regular safety patrols and safety meetings.

(3) Human Resource Management

It is a concern that there is difficulty in hiring enough skilled workers for projects in IKN. Therefore, enough skilled workers shall be secured from other regions, commonly from Java Island. Each contractor should specify the name of the subcontractor, the number of skilled workers required, and the list of skilled workers in the work instructions for each work. MK should ensure that its work instructions are true and appropriate, and MK Induk should ensure that there is no contradiction in the list of workers of each contractor.

Chapter 6 Review of Other Donors' Cooperations towards IKN

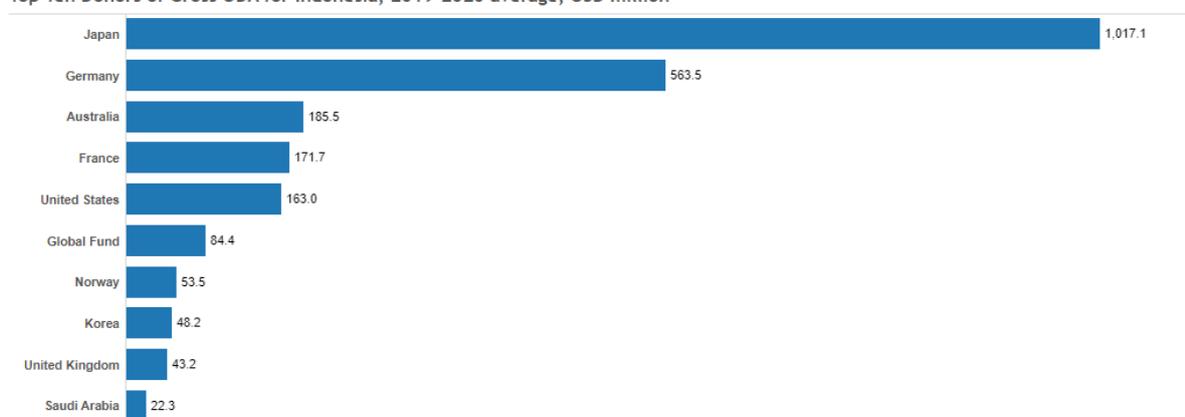
Organize the cooperation of other donors for the relocation of the capital.

6.1 Overview of Donor Assistance to Indonesia

Indonesia is classified as a lower middle-income country in the 2023 World Bank income strata. It has a gross national income (GNI) level that is close to the line between lower middle-income countries and upper middle-income countries and was classified as an upper middle-income country for only one year in FY2019. Depending on the year, GNI per capita is USD 4,255 in FY2023, and the lower and upper categories are divided. Indonesia's GNI per capita in FY2021 is USD 4,140.

Japan has a high presence in assistance due to ODA funds being granted to Indonesia. Other countries with a high presence between the two countries include Germany, Australia, France, and the United States. Figure 6.1 shows the most recent average of the top ten ODA expenditures for 2019-2020.

Top Ten Donors of Gross ODA for Indonesia, 2019-2020 average, USD million



Unit: USD million

Source: OECD/DAC statistics website

https://public.tableau.com/views/OECD/DAC/Aidatag glancebyrecipient_new/Recipients?:embed=y&:display_count=yes&:showTabs=y&:toolbar=no?&:showVizHome=no

Figure 6.1: Top 10 ODA Contributors to Indonesia (2019-2020 average, total expenditure basis)

Table 6.1: Government External Debt Balance by Country/Institution shows outstanding debt by country/institution. This shows that Japan has aided with a high presence in Indonesia.

Table 6.1: Government External Debt Balance by Country/Institution

Country	2015	2016	2017	2018	2019	2020	2021
Bilateral	21,556	20,847	20,827	21,192	19,921	22,825	20,234
Japan	14,589	13,945	13,426	12,535	11,833	12,307	10,645
Germany	1,523	1,831	2,056	2,893	2,682	3,962	3,607
France	1,841	1,780	2,103	2,210	1,979	2,147	1,922
Others	1,060	1,051	1,130	1,794	1,921	1,927	1,816
Australia	212	210	224	198	193	1,351	1,209
Korea	277	319	358	343	337	351	363
Austria	390	327	313	244	211	210	266
Spain	267	239	229	209	188	177	150
America	706	602	502	398	296	199	131
Saudi Arabia Fund	25	37	38	42	50	46	43
Canada	78	73	70	57	52	45	39
Netherlands	222	140	125	88	58	37	19
England	240	195	168	123	84	42	14

Country	2015	2016	2017	2018	2019	2020	2021
Belgium	67	56	51	37	25	16	7
Finland	2	2	1	1	5	3	2
Switzerland	16	12	9	5	2	2	1
Denmark	15	13	11	8	1	1	0
Italy	9	7	6	4	2	1	-
Kuwait	15	10	7	3	1	-	-
New Zealand	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-
Multilateral	28,841	30,153	30,932	29,383	30,442	32,911	32,726
International Bank for Reconstruction and Development	14,380	15,812	16,563	17,080	17,762	18,453	18,604
Asian Development Bank	9,194	9,311	9,013	9,779	10,149	10,948	10,548
Inter-American Development Bank	643	701	909	1,055	1,224	1,306	1,354
Asian Infrastructure Investment Bank	-	-	27	74	117	1,168	1,342
International Development Association	1,677	1,474	1,390	1,194	997	833	655
International Fund for Agricultural Development	155	166	188	181	179	196	215
Nordic Investment Bank	17	12	11	10	9	9	8
International Finance Corporation	2,747	2,654	2,814	-	-	-	-
European Investment Bank	28	22	16	10	3	-	-
Multilateral Investment Guarantee Agency	-	-	-	-	-	-	-
Total	50,397	51,000	51,759	50,575	50,364	55,736	52,960

Note: Listed in descending order of 2021 values for bilateral and multilateral sources

Source: JICA Consultant team based on Central Bank Indonesia statistics

6.2 Utilization Policy of Donor Assistance for Capital Relocation

As shown in Section 2.1.4, Government Regulation (hereinafter GR) No. 17/2022 stipulates cooperation funds from international donors as part of the financial scheme to be used for capital relocation. Article 65, paragraph 2 of the Decree stipulates that grant and loan aid from bilateral or multilateral international organizations are included as financial cooperation schemes. There are no specified standards for specific amounts and ratios of donor aid utilization.

It has been confirmed that the Ministry of Public Works and Housing (hereinafter PUPR) does not have a policy of using loans from donors for the basic infrastructure that it aims to develop by August 2024. On the other hand, there is room for the utilization of technical cooperation related to capacity building and the input of grant aid.

In Indonesia, projects that utilize or plan to utilize donor funds are listed in “List of Planned Priority External Loans 2022 (commonly known as Green Book)” and “List of Medium-Term Planned External Loans 2020-2024 (2021 Revision) (commonly known as Blue Book)”, and “List of Planned Grant Projects 2022”, etc. The latest edition to be published as of the end of November 2022 does not include any projects related to the new capital. It has already been confirmed with BAPPENAS that, in the future, projects that utilize donor assistance will be included in these documents in accordance with the progress of the project.

6.3 Cooperation Policies of Other Donors for the New Capital

The JICA Consultant Team will review the currently known cooperation policies of other donors for the new capital by country and organization. The team will focus on the two countries, South Korea and Australia, which have projects promoting basic infrastructure development with PUPR.

6.3.1 Korea

As of November 2022, the Ministry of Environment of Korea will provide technical advice on the water supply system, including the construction of a 300 L/sec water treatment plant. After approval, the two countries will aim to reach an agreement by the end of 2022 on a schedule to start the detailed design in the first quarter of 2023 and then start construction. The total project period is more than 60 months, and it is a grant-aid project. This project will be implemented by the Korea Water Resources Corporation (K-Water), a semi-market corporation in South Korea, in collaboration with the South Korean Ministry of Environment. Table 6.2: Schedule of Water Supply System Project Funded by Korea (provisional version) shows the provisional schedule for this water supply project. And according to press information as of March 2023, the water treatment plant will be conducted as per the above advisory from Korea in the Sepak Semoi dam area.

Table 6.2: Schedule of Water Supply System Project Funded by Korea (provisional version)

Activities	2023				2024				2025				2026				2027			
	1Q	2Q	3Q	4Q																
Basic & Detailed Design Stage																				
Data collection & survey																				
Basic & detailed design																				
Preparation of procurement packages																				
Procurement and Construction Stage																				
Procurement of equipment																				
Construction and installation works																				
Operation Stage																				
Stabilization of operation																				
Transfer of technical expertise (O&M)																				
Category Building Program																				

Source: Prepared by the JICA Consultant team based on materials from the Ministry of Public Works and Housing

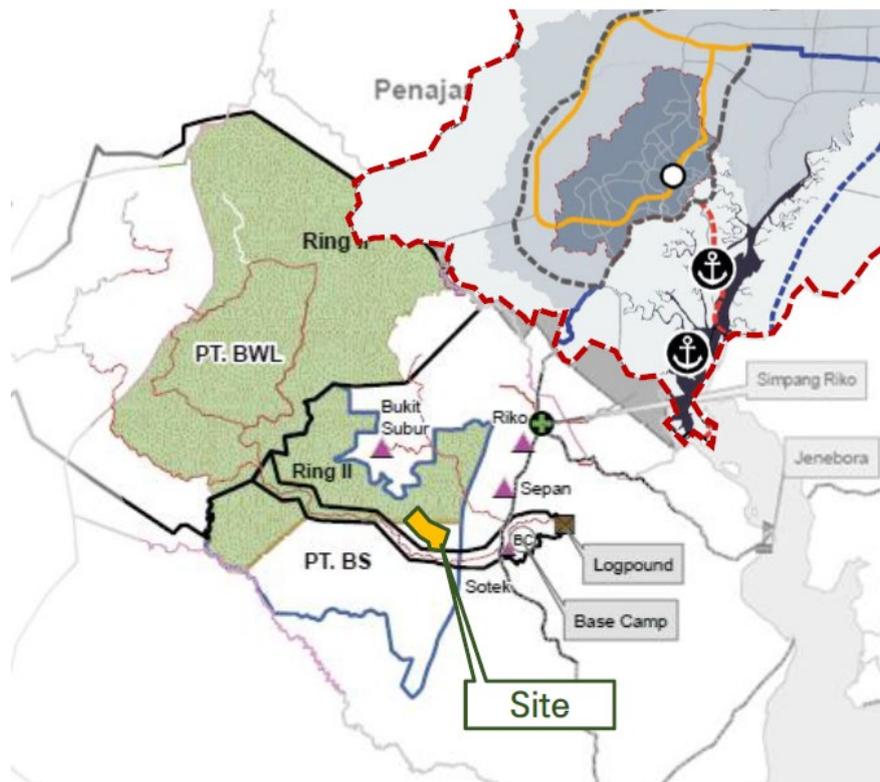
South Korea's Ministry of Land, Infrastructure and Transport has signed a Memorandum of Understanding (MoU) with the Ministry of Public Works and Housing since 2019. The main purpose of this MoU is to transfer knowledge in the fields of smart cities, expressway transportation systems (hereinafter referred to as ITS), and public housing development; it does not directly refer to support for the development of the new capital. As a program related to this Smart Forest City, 25 officials from the Ministry of Public Works and Housing were trained on the above theme for about one month in July 2022 in South Korea. The MoU will expire in November 2022.

In addition to the above, the South Korean government is collaborating with PUPR to implement a FS (2022) for an immersed tunnel extending from Tung Padang across Balikpapan Bay to the government core area. Based on the FS, it is said that detailed design will be carried out after 2023. The length of the submerged tunnel is about 1

km and is estimated at IDR 3 billion.

In addition, the construction of a liquid waste treatment facility and a smart village of about 100 units has been confirmed by the news base.

Korea International Infrastructure and Urban Development Corporation (KIND) is conducting a survey of interests and requests to support industrial park development led by Hyundai Engineering and Korindo (Indonesia). This industrial park will be called the New Capital Support Industrial Park (NCSIP) and will be located 20km south of the new capital. To provide the services necessary for the new capital city (hereinafter IKN) construction, the team now focuses on targeting the construction industry, construction material manufacturers (cement, steel products, lumber, etc.), general manufacturers, logistics and distributors, and providing housing and commercial facilities. It is said that an industrial complex will be developed that includes support facilities such as medical and religious facilities. The scale is 300 ha, consisting of 100ha in Phase 1 and 200 ha in Phase 2. The construction is scheduled to start in 2024, but it is subject to change depending on the construction status of the new capital. Figure 6.2 shows the planned construction site for NCSIP.



Source: KIND Materials

Figure 6.2: NCSIP Location Map

6.3.2 Australia

The Australian Agency for International Development (hereinafter referred to as AUSAid) plans to provide technical cooperation in the areas of basic infrastructure construction management, especially schedule management and KPI management. According to the Department of Public Works and Housing, the amount of support is about 250 million yen, and it will be implemented in about 24 months based on the Partnership for Infrastructure (hereinafter referred to as P4I) by the Australian government. This study supports the implementation of the Department of Public Works and Housing Task Force to implement the following project management support activities: 1) target management; 2) implementation action plan by the Ministry of Public Works and Housing; 3) schedule management and communication setting; 4) program interface management; and 5) procurement plan support. The tasks written in the contract are very general, and the actual support is building information modeling (hereinafter referred to as BIM) and a geographical information system (BIM) for monitoring the work of contractors in the new capital. This is referred to as assistance related to the establishment of a GIS dashboard.

In addition, in October 2022, a project to create a Kalimantan Toll Road MP was announced with funding from the Australian government. Bidding is open until 25 November 2022. The scope of this project is to update the Kalimantan Toll Road Master Plan, considering the construction of the new capital.

6.3.3 Asian Development Bank (ADB)

The ADB, a multinational donor, has announced support for the development of the new capital in March 2022 by aiding for urban design, environmental and social impact studies, and financing schemes involving public and private investment. OIKN Director Bambang also served as ADB's Vice President for Knowledge Management and Sustainable Development from 2015 to 2022, and there is an ongoing dialogue between ADB and OIKN. However, in an interview with ADB in October 2022, it was revealed that although the policy is to support the development of the new capital in the medium to long term, no specific short-term projects have been decided at this time.

On 8 November 2022, at the COP27 event, ADB announced its support for the new capital city in achieving carbon neutrality. Technical cooperation is being implemented by ADB and will be funded by Australia's DFAT. This will last until June 2023.

6.3.4 Other Donor Assistance

In November 2022, the United States Agency for International Development (USAID), in partnership with OIKN, announced that it will provide project management support and technical cooperation for the development of the new capital, with a particular focus on "smart cities" and "forest cities." Specific projects are unknown currently.

In addition, the PUPR announced on 24 November 2022⁴, that it will begin to study cooperation with the Finnish government on the development of a new capital city. Discussions were held especially in the areas of wastewater management and smart cities, accompanied by Finnish construction companies and companies in the green sector. The form of cooperation will be decided after further discussions.

Furthermore, although formal involvement as a country has not been confirmed, former British Prime Minister Tony Blair is listed on the steering committee for the capital relocation. There was a statement that it seems to be considering indirect support for the new capital city development.

In countries not included in the OECD Development Assistance Committee (DAC), the UAE's Crown Prince Mohammed of Abu Dhabi is participating in the steering committee of the new capital development project, and in May 2022, the Indonesian Investment Corporation (INA) was reportedly considering a USD 20 billion investment for the development of the new capital.

⁴ <https://pu.go.id/berita/pertemuan-bilateral-dengan-finlandia-menteri-basuki-bahas-peluang-kerja-sama-pembangunan-ikn>

Chapter 7 Result of Seminar for Introduction of Indonesia New Capital City

7.1 Outline of the Seminar

Table 7.1 shows the outline of the seminar.

Table 7.1: Outline of the Seminar

Name of Seminar	Seminar for Introduction of Indonesia New Capital City			
Date	16 March 2023, Thursday, 4:30 PM-6:00 PM (JST)			
Place	Online			
Sponsor	JICA			
Co-sponsor	Embassy of Japan in Indonesia JETRO JJC BKPM			
Number of Participants	374			
Speaker	Speaker's Name	Position	Title of Seminar	
	Mr. Masakazu Takahashi Mr. Takehiro Yasui	JETRO Indonesia Office	Opening	
	Ms. Kumiko Homma	Ministry of Investment / Indonesia Investment Coordinating Board (BKPM), Investment Promotion Policy Advisor/JICA Expert	Outline of New Capital City and Related Laws and Regulations	
	Mr. Kento Ozaki	JICA Consultant Team	Current Situations and Future Development Flow of New Capital City	
	Mr. Akihisa Matsuda Mr. Shigeo Honzu Mr. Naotaka Goto	JETRO Indonesia Office JICA Indonesia Office JBIC Jakarta Office	Introduction of the Scheme for Support Scheme for Overseas Expansion of Private Sector	
	Mr. Kouji Yamashita	NEXI Regional Representation for Asia and Oceania		
	Mr. Chihiro Fukuda	JICA Southeast Asia and Pacific Department Southeast Asia Division 1	Closing	
	Seminar Structure	Time (JST)	Contents	
		4:30-4:40 PM	Opening	
4:40-5:05 PM		Outline of New Capital City and Related Laws and Regulations		
5:05-5:30 PM		Current Situations and Future Development Flow of New Capital City		
5:30-5:45 PM		Introduction of the Scheme for Support Scheme for Overseas Expansion of Private Sector		
5:45-6:00 PM		Closing		

Source: JICA Consultant Team

Please refer to the attached documents for presentation material.

7.2 Pre-Questionnaire

In conjunction with the seminar, the pre-questionnaire was conducted to determine the trends and status of participants on the New Capital City: Ibu Kota Negara (IKN).

Table 7.2 shows a summary of the questionnaire and questions asked.

Table 7.2: Outline of Questionnaire Before the Seminar

Date	21 February 2023 – 10 March 2023
Number of Respondents	427
Way of Respondents	Online

Source: JICA Consultant Team

Table 7.3: Contents of the Pre-questionnaire

	Question	Choice
Q1	Name	-
Q2	Organization	-
Q3	Position	1. Management level / executive level 2. Manager class 3. Section manager class 4. Assistant manager / manager class 5. General employee class 6. Other professionals, special positions, etc.
Q4	E-mail address	-
Q5	E-mail address (for confirmation)	-
Q6	Please select your company's industry	1. Construction 2. Automobile and transportation equipment 3. Machinery, electronic, and optical products 4. Rubber and plastic products 5. Chemical and pharmaceutical products 6. Other manufacturing 7. Electric power, gas, and water supply 8. Non-metallic mineral products 9. Transportation, warehousing, and communications 10. Mining and mineral resources 11. Forestry and timber 12. Fishing industry 13. Textiles 14. Paper manufacturing and printing 15. Food, Plantation, Livestock 16. Hide goods and shoes 17. Foodstuffs 18. Commercial 19. Real estate, industrial parks, office buildings 20. Hotels and Restaurants 21. Financial

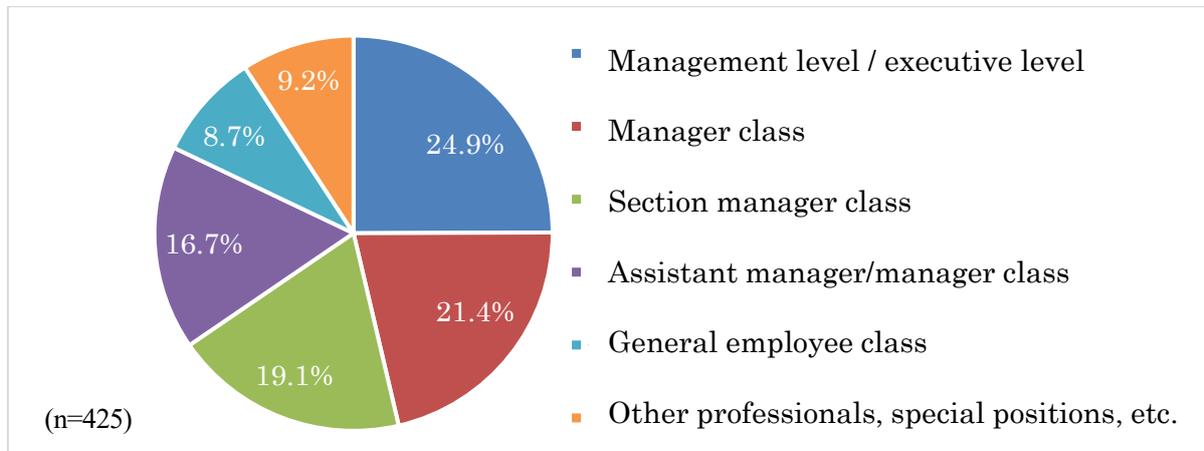
	Question	Choice
		22. Consulting services 23. Other service industry
Q7	Please tell us about your company's business expansion in Indonesia.	1. Has a local subsidiary (PT) in Indonesia 2. Has a representative office (Rep Office) in Indonesia 3. Has both a local subsidiary and a representative office in Indonesia 4. Have not established a presence in Indonesia
Q8	Please tell us about your company's business development in the new capital city or cities surrounding the new capital city.	1. Currently seeking business development opportunities or gathering information 2. Not planning to develop business in the region 3. Under consideration for a specific project or business 4. Other
Q9	If you answered "Other" in Q8, please tell us about the specific area(s) you are considering.	1. IKN area 2. Surrounding City (Balikpapan, Samarinda) 3. Surrounding City (including all of Kalimantan Island) 4. Wide area including the IKN and the above-mentioned surrounding cities
Q10	If you were interested in investing in a new capital city, what types of businesses would you be interested in?	1. Infrastructure development (roads, water, sewerage, railways, etc.) 2. Energy (renewable energy, etc.) 3. Automotive (four-wheeled vehicles, two-wheeled vehicles, EVs, batteries, etc.) 4. Smart city development 5. Agricultural and fishery products 6. food and beverage, service industry 7. Real estate and hotel industry 8. Resource-related (gas, oil, etc.) 9. Logistics (shipping, land transportation, etc.) 10. Finance (bank, insurance, etc.) 11. Other
Q11	Please indicate the areas in which you are interested in the new capital city trend.	1. Policy trends related to investment regulations and preferential measures 2. Infrastructure development trends 3. Trends in local and third-country companies 4. Trends in the Japanese government 5. Support schemes of the Japanese government or government agencies
Q12	Please indicate any special questions you would like to ask at this seminar.	-

Source: JICA Consultant Team

7.2.1 Results of the Survey

Below are the results of the questionnaire.

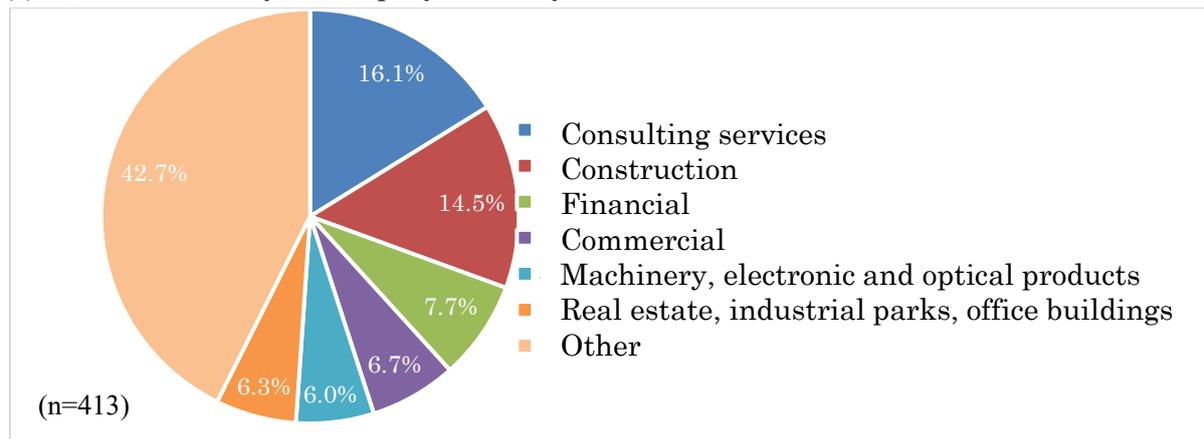
(1) Q3: Position



Source: JICA Consultant Team

Figure 7.1: Participants' Position

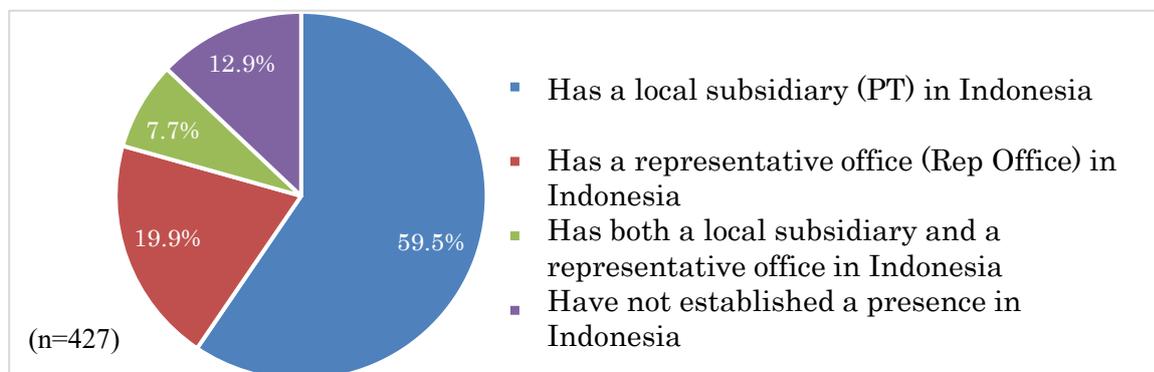
(2) Q6: Please select your company's industry.



Source: JICA Consultant Team

Figure 7.2: Participants by Industry

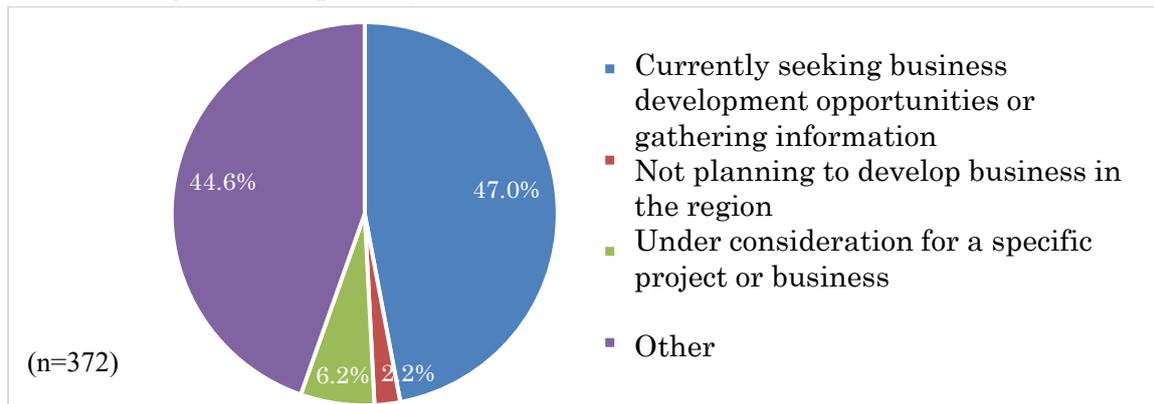
(3) Q7: Please tell us about your company's business expansion in Indonesia.



Source: JICA Consultant Team

Figure 7.3: Participants' Company's Status of Expansion into Indonesia

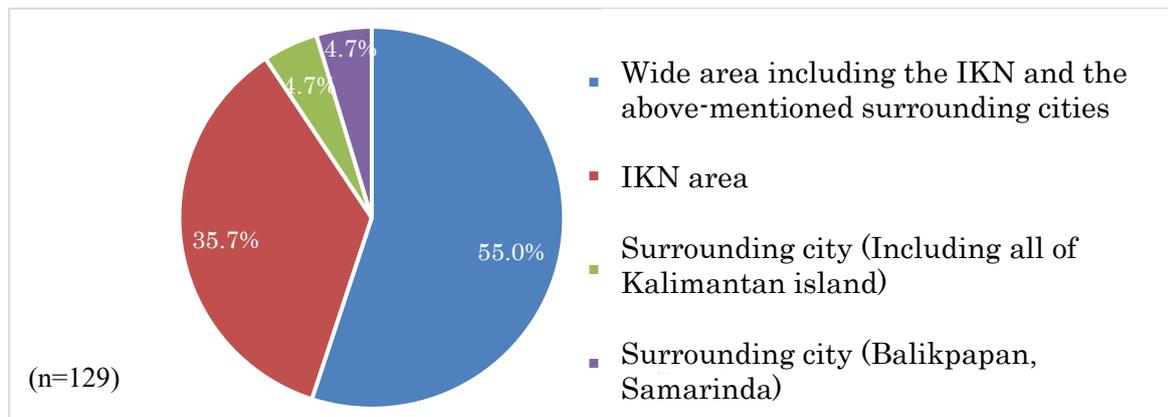
(4) Q8: Please tell us about your company's business development in the new capital city or cities surrounding the new capital city.



Source: JICA Consultant Team

Figure 7.4: Participants' companies considering business expansion to the IKN or cities surrounding the IKN

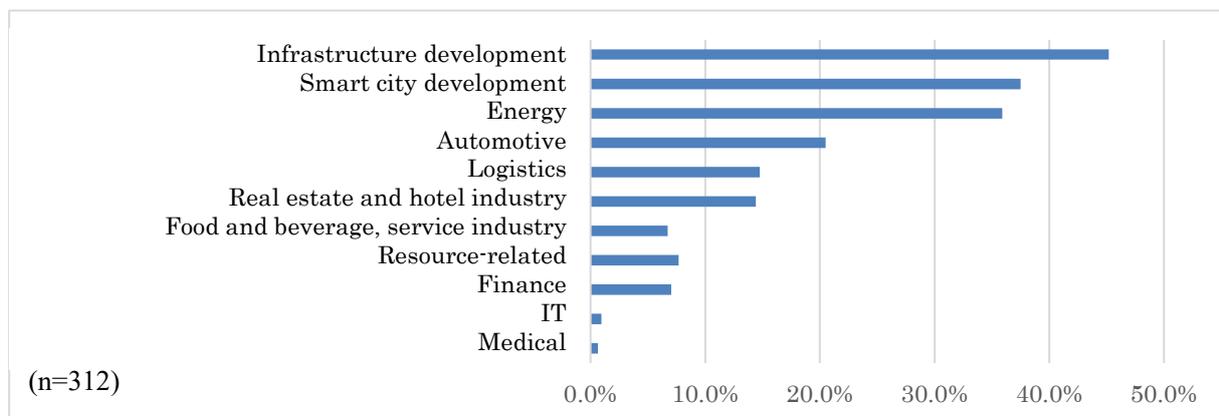
(5) Q9: If you answered "Other" in Q8, please tell us about the specific area(s) you are considering.



Source: JICA Consultant Team

Figure 7.5: Specific Areas Under Consideration for the Companies that Answered "Under Consideration" in Q8

(6) Q10: If you were interested in investing in a new capital city, what types of businesses would you be interested in?



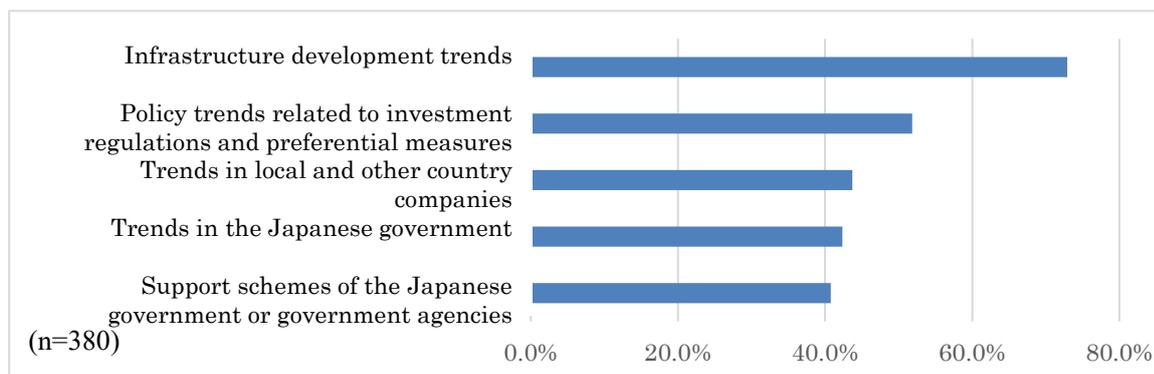
Source: JICA Consultant Team

Figure 7.6: Degree of Interest of Participants in Investing in the IKN

Below shows other responses.

• Fitness facility	• Data center	• Waste
• Building	• Music class	• Water-related housing equipment
• Shopping mall	• Security business	• Human resources business in general
• Machine parts sales and maintenance	• Gathering information on business development of Japanese companies	• Combination of several businesses (small to medium scale)

(7) Q11: Please indicate the areas in which you are interested in the new capital city trend.



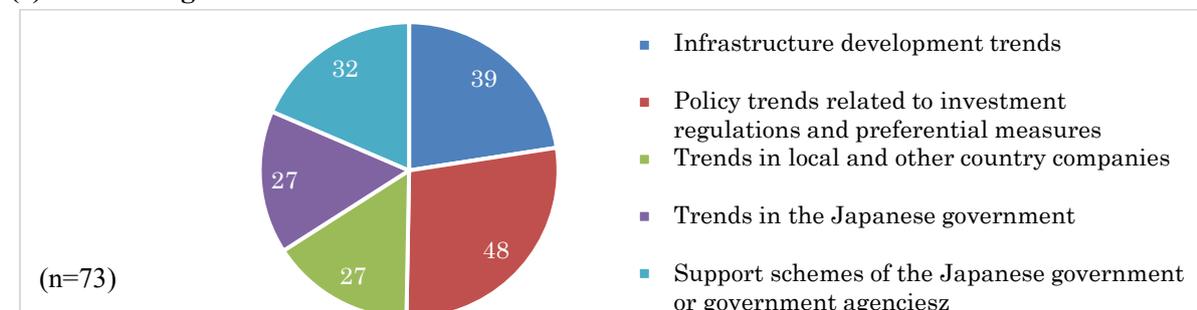
Source: JICA Consultant Team

Figure 7.7: Areas of Interest in the IKN Trend of the Participants

7.2.2 Cross-Tabulation of the Results

“Q11: Areas of interest in the new capital city trend” was cross tabulated for each “Q6: companies’ industry”.

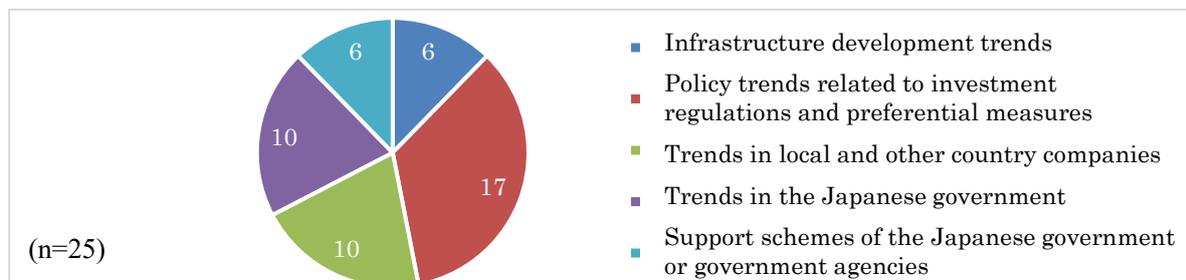
(1) Consulting Service



Source: JICA Consultant Team

Figure 7.8: Fields of Interest in IKN Trends among Consulting Service Companies

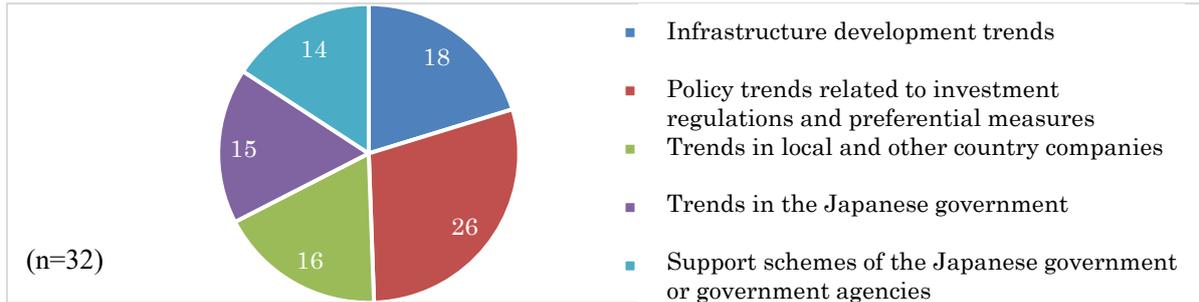
(2) Machinery, Electronics, and Optical Products



Source: JICA Consultant Team

Figure 7.9: Fields of Interest in IKN Trends among Machinery, Electronic, and Optical Product Companies

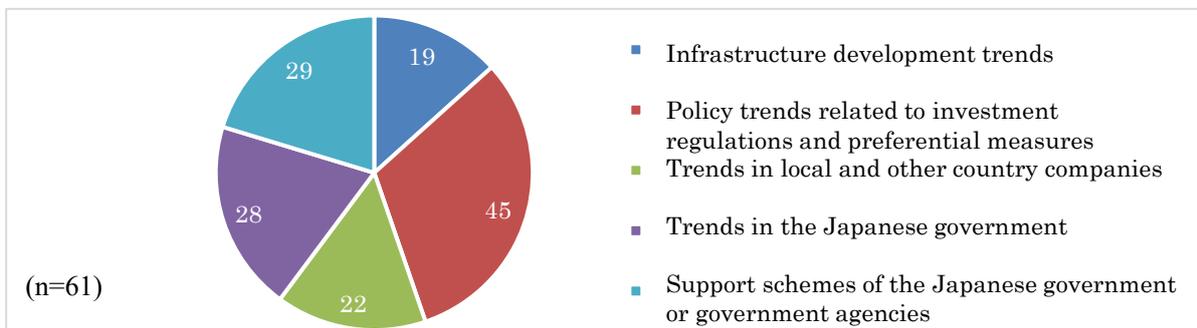
(3) Finance



Source: JICA Consultant Team

Figure 7.10: Fields of Interest in IKN Trends among Finance Service Companies

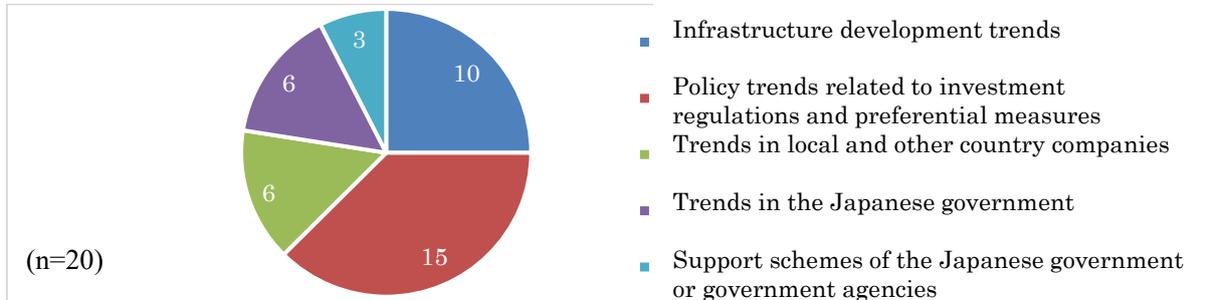
(4) Construction



Source: JICA Consultant Team

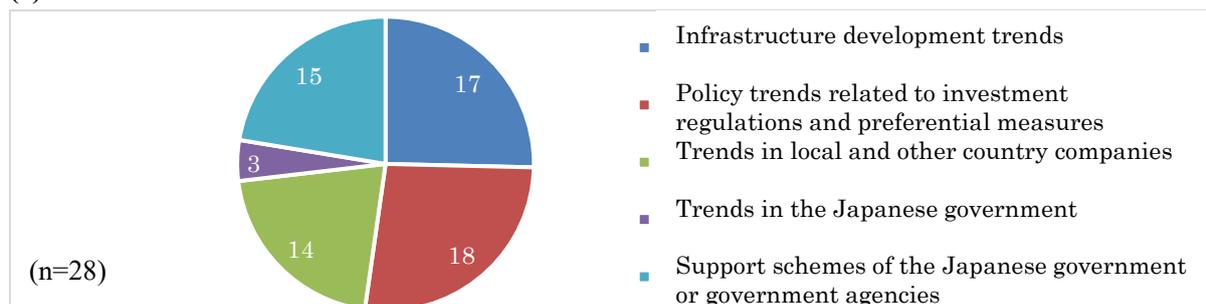
Figure 7.11: Fields of Interest in IKN Trends among Construction Companies

(5) Automobiles and Transportation Equipment



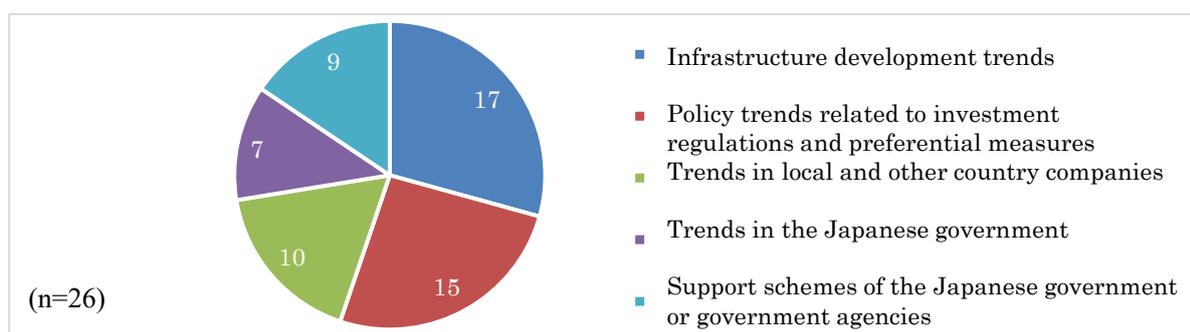
Source: JICA Consultant Team

Figure 7.12: Fields of Interest in IKN Trends among Automobiles and Transportation Equipment Companies

(6) Commercial

Source: JICA Consultant Team

Figure 7.13: Fields of Interest in IKN Trends among Commercial Companies

(7) Real Estate, Industrial Parks, Office Buildings

Source: JICA Consultant Team

Figure 7.14: Fields of Interest in IKN Trends among Real Estate, Industrial Parks and Office Buildings Companies

7.2.3 Others

The following is a summary of the inquiries and responses received in response to "Q12".

(1) Infrastructure and development status of the IKN (n=10)

Table 7.4: Q&A for Infrastructure and Development Status of the IKN

No.	Question	Answer
1-1	What is the ratio of private to government projects related to the relocation of the capital?	The Indonesian government expects 20% government projects and 80% private projects in terms of budget.
1-2	Funding plan for project promotion and its progress	The Indonesian government expects 20% for government projects and 80% for private projects in terms of budget. The first phase of the project will be implemented with government expenditure, and PUPR reported that about 40% of it has already been disbursed.
1-3	Latest relocation schedule and government policy, etc.	See presentation (presentation materials).
1-4	Urban planning, relocation schedule, industrial park development plan, etc.	Please refer to the presentation material.
1-5	Are there any plans for the construction of a special medical zone?	There is no concrete plan or design for a special medical zone, but the Indonesian government is welcoming proposals as an operator and investor. The New Capital Agency, OIKN, will be the contact for consultation.
1-6	Procedures for participating in bidding, etc. Information on successful bidders	Refer to the lecture (presentation materials).
1-7	Road construction plans and progress in the new capital and surrounding areas	Refer to the lecture (presentation material).

No.	Question	Answer
1-8	Trends in asphalt manufacturing plants	Local companies, including concrete companies, have already responded to the procurement situation of each contractor.
1-9	Specific names and construction trends of housing and hotel projects in the new capital	Kindly refer to the lecture (presentation materials).
1-10	Access (roads, etc.) from Balikpapan and Samarinda airports	Kindly refer to the lecture (presentation material).

Source: JICA Consultant Team

(2) Trends as a country (n=2)

Table 7.5: Q&A for Trends as a Country

No.	Question	Answer
2-1	What is the impact of the relocation of the capital on the business community, whether or not the embassies will be relocated, and whether or not the ASEAN Secretariat will be relocated?	At this point in time, land for the relocation of embassies and other facilities has been identified in the land use plan, but the relocation itself is not a "MUST". We expect that a "definitive" law regarding the relocation of the capital itself will be enacted, and that the relocation of government-related facilities, including international organizations, will be specifically considered in accordance with the progress of development and relocation.
2-2	Regarding preferential measures that differentiate Japan from other regions	Kindly see the lecture (presentation material).

Source: JICA Consultant Team

(3) About Jakarta after relocation (n=3)

Table 7.6: Q&A for Jakarta after Relocation

No.	Question	Answer
3-1	Operation and management of the former capital (Jakarta)	Relocation of the central government and ministries is planned. Other than that, the current situation is basically the same, but some companies are expected to be relocated depending on civil judgments.
3-2	If the relocation is realized, it will be mainly government agencies that will relocate, but business will continue to be Jakarta-centric. Is that correct?	Yes, as you understand, Jakarta will remain the center of the economy.
3-3	Effective utilization (including sale) of existing facilities in Jakarta after relocation of government facilities	Currently, the Ministry of Finance is requesting each ministry and agency to submit a list of real estate (asset) in Jakarta, and we are told that they will consider the asset utilization plan after that. No specific plan has yet been announced at this time.

Source: JICA Consultant Team

(4) Trends in companies entering the market and support programs (n=3)

Table 7.7: Q&A for Trends in Companies Entering the Market and Support Programs

No.	Question	Answer
4-1	Trends of Indonesian local companies and foreign companies, including Japanese companies, entering the new capital (number of expected companies, etc.)	Kindly refer to the seminar (presentation materials).
4-2	Trends in the relocation of major Japanese and local companies to the capital	Kindly refer to the presentation.

No.	Question	Answer
4-3	Compared to China and Korea, I have the impression that Japan is reluctant to participate in this project.	Japan has been supporting the Indonesian government by providing advice to PUPR on basic infrastructure development work at the new capital site. On the other hand, it is our understanding that many other countries have only expressed their interest through EoI or appealed for support that is not directly related to the new capital project.
4-4	Specific business involvement of Japanese companies. *Because we felt that there was a lot of media coverage related to local and Korean companies in the new capital development.	Kindly refer to the seminar (presentation materials).
4-5	Trends of Japanese, European, and American companies regarding the relocation of the capital.	Kindly refer to the seminar (presentation materials).
4-6	I would like to know about the developments of the Japanese government and the support scheme of the Japanese government.	Kindly refer to the seminar (presentation materials).

Source: JICA Consultant Team

(5) Operational structure of the relocation (n=1)

Table 7.8: Q&A for Operational Structure of the Relocation

No.	Question	Answer
5-1	Who is the main department in charge of the said relocation project within the Indonesian government? Who is the head of that department? What kind of profile?	Kindly refer to the lecture (presentation material).

Source: JICA Consultant Team

7.3 Post-Questionnaire

In conjunction with the seminar, the post-questionnaire was conducted to determine the current trends and status of participants for the IKN.

Below shows the outline of the questionnaire and the contents of the questionnaire.

Table 7.9: Outline of Questionnaire After the Seminar

Date	16 March 2023 – 23 March 2023
Number of Respondents	265
Way of Respondents	Online

Source: JICA Consultant Team

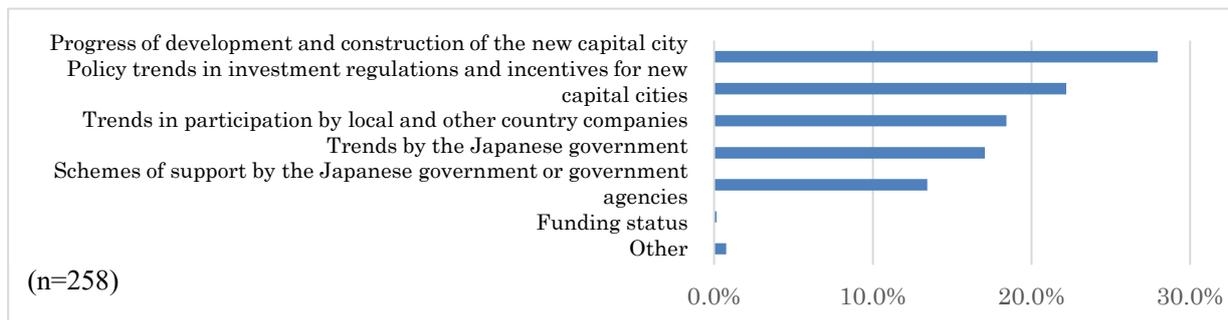
Table 7.10: Contents of Questionnaire

	Question	Choice
Q1	Name	-
Q2	E-mail address	-
Q3	Please provide any further matters of interest and any questions you may have.	<ol style="list-style-type: none"> 1. Policy trends in investment regulations and incentives for new capital cities 2. Progress of development and construction of the new capital 3. Trends in participation by local and other country companies 4. Trends by the Japanese government 5. Schemes of support by the Japanese government or government agencies 6. Other
Q4	Please tell us about any specific interests or questions you have regarding your answers to Q3.	-
Q5	Please tell us if your interest in expanding your business to the new capital city and surrounding cities has changed because of your participation in the seminar.	<ol style="list-style-type: none"> 1. I would like to consider a specific project or business. 2. I would like to consider relocation or establishment of an office 3. I would like to consider using the office as a development base or experimental site for new technology. 4. I would like to explore opportunities for business development. 5. No particular change. 6. Other
Q6	Please tell us about the specific areas you would like to consider in Q5.	<ol style="list-style-type: none"> 1. New capital city 2. Surrounding cities (Balikpapan and Samarinda) 3. Surrounding cities (including all of Kalimantan Island) 4. Wide area including the new capital city and the above-mentioned surrounding cities
Q7	Do you have any questions or comments regarding the relocation of the capital in general or the content of today's seminar?	-
Q8	Please tell us about any significant issues you would like to discuss when considering business development in the new capital city and surrounding cities. Depending on your answers to these questions, the secretariat may contact you later.	<ol style="list-style-type: none"> 1. Periodically information sharing on the progress of the project 2. Preferential investment treatment by the Indonesian government 3. Matching with promising local partners 4. Securing land for the project 5. Japanese government support for individual projects (support for surveys and studies) 6. Japanese government support for individual projects (support for financing) 7. Japanese government support for individual projects (guarantee support) 8. Japanese government assistance for individual projects (business start-up support) 9. Other

Source: JICA Consultant Team

7.3.1 Result of the Questionnaire

(1) Q3: Please provide any further matters of interest and any questions you may have.



Source: JICA Consultant Team

Figure 7.15: Issues of Continuing Interest Following the Seminar

Below shows other responses.

- JKT government facility after relocation;
- The impact of the 2024 presidential election on this plan;
- Schedule for relocating capital city; and
- Various procedures for getting business, including on how to participate in tenders related to the development of the new capital city

(2) Q4: Please tell us about any specific interests or questions you have regarding your answers to Q3.

[Specific interests from questionnaire respondents]

Table 7.11: Specific Interests

Infrastructure Development	<p>【Infrastructure】</p> <ul style="list-style-type: none"> • Infrastructure Development • Support policy in infrastructure development • If there is a project where our technology/construction method can be utilized in infrastructure development, we would like to propose it from the planning stage • Basic infrastructure construction, general contractors, and process agents used • Infrastructure construction, especially road, bridge, and dam construction • Trends in new earthwork construction • To understand the status of construction of basic infrastructure development such as roads, power, water, and sewerage systems • Currently, infrastructure construction is mainly underway, but what factors may cause construction to stop in the future <p>【Road • traffic】</p> <ul style="list-style-type: none"> • Construction orders for access roads to the new capital and the possibility of demonstrating new technologies • Road construction and asphalt laying status • Logistics-related infrastructure • Airport and other infrastructure • Future vision for airport and other transportation infrastructure • Status of railways infrastructure projects <p>【Electricity and energy】</p> <ul style="list-style-type: none"> • Plans for power supply development in the new metropolitan area • Development and construction in the field of power infrastructure • Development of energy infrastructure • Energy saving and energy creation needs for new capital city buildings <p>【Waste】</p> <ul style="list-style-type: none"> • Trends in waste treatment and recycling business as infrastructure (including laws and regulations) <p>【Building and Urban Development】</p> <ul style="list-style-type: none"> • Timing of when building construction will start and details of local government support schemes • Urban development plans, developer information • Examples of specific solutions sought related to Smart City (digital transformation) • Detailed information and trends on residential, hotel, hospital, and other building projects <p>【Other】</p> <ul style="list-style-type: none"> • KIPP/Non KIPP development (construction work) seems to be out of sync, interested in the coordination function by the new Capital Development Authority and PUPR in October 2024
Investment Opportunity	<ul style="list-style-type: none"> • Investment opportunities through Decree No. 12 of 2023 and its bylaws, which provide for investment incentives • We are particularly interested in the development of environmental business. • I am very interested in preferential treatment, incentives, and related legislation for companies entering the market • Tax incentives for investment in new capital city • Regulations for internal combustion engines and preferential policies for EVs in the new capital city • Interested in improving the investment environment in special economic zones and industrial development zones • Still interested in preferential treatment, incentives, and related laws and regulations for companies entering the country • Investment areas and priority ranking of investment desired by Indonesian side • Preferential treatment for Japanese small and medium-sized enterprises (SMEs) entering the country • Participation of Japanese capital and insurance arrangements • Incentives to attract foreign companies for relocation

Relocation of Capital City	<ul style="list-style-type: none"> • The order and timing of government agencies to be relocated to the new capital • We are interested in knowing when the government agencies will be relocated • Order and timing of government agencies to be relocated in the new capital city • Regarding JKT facilities after the relocation of the capital city
Trends by Other Countries	<ul style="list-style-type: none"> • We are interested in information on the process of how and when expressions of interest from companies from various countries will be evaluated and a decision made • We are particularly interested in the trends of Chinese and Korean companies. As we are in the international shipping business, we are very interested in the trends of companies not only in Japan but also in third countries • Participation trends of Indonesia and other country companies with which we cooperate or compete
Trends by Japan	<ul style="list-style-type: none"> • We are interested in the trend of oil-Japan, and we expect the friendly relationship with Indonesia and the presence of Japan in the future • We are concerned about the extent to which the Japanese government is considering financial support, including yen loans. Since the implementation of yen loans will directly benefit Japanese companies, we believe that this will have a significant impact on the participation of Japanese companies • Formation of ODA projects • First, infrastructure development is probably the top priority, but we would like to see the government's future policy toward the industrial sector, where many Japanese-affiliated companies have established operations • We are interested in the trends of Japanese-affiliated companies
Trends by Indonesia	<ul style="list-style-type: none"> • We are interested in the forecast of the economic situation in Jakarta after the relocation of the capital • Changes in economic activities in Jakarta and West Java after the relocation of the capital to Nusantara • Impact on the relocation of the capital when President Joko retires, as his term is set to expire in 24 years • Impact of President Joko's departure from office
Others	<ul style="list-style-type: none"> • We would like to narrow down our business targets by first gathering a broad range of information • We would like to narrow down our business targets by first gathering a wide range of information

Source: JICA Consultant Team

[Question]

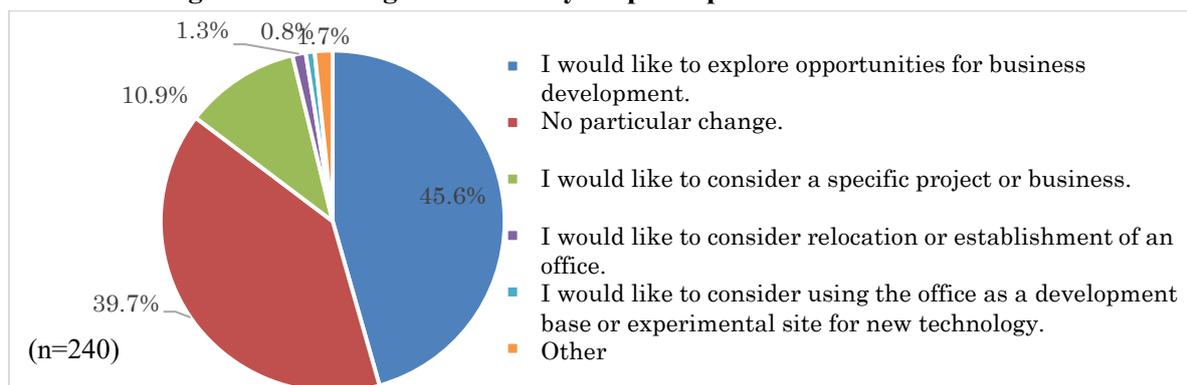
Table 7.12: Questions from Participants regarding their Interests

Infrastructure	<p>(Q) I understand it is under investigation, but how many buildings and how much land are being paid off? How many buildings and how much land will be paid off?</p> <p>(A) As reported the local Kompas newspaper on 17 March 2023, the land being prepared for PPP is being presented and offered from within KIPP in priority development areas on a phased basis according to need. The number of buildings and building specifications are not disclosed. As for the term of the usufruct, Peraturan Pemerintah (PP) No. 12/2023 provides for an initial term of 35 years, a first extension for an additional 25 years, and a final second extension for an additional 35 years, for a maximum of 95 years. Furthermore, a maximum of 190 years as commercial specification rights and 160 years as construction rights were established as preferential treatment.</p> <p>(A) As for public land outside of KIPP, private companies will be accommodated and developed individually. There is no clarity yet regarding use and floor area and building-to-land ratio, because detailed land use has not been formulated at this time.</p> <p>(Q) What types of business entities are expected to be attracted to the area? We would like to know specifics about the current plans for the construction of an industrial park where various types of manufacturing entities will be concentrated.</p> <p>(A) The following are existing industrial parks in East Kalimantan. However, all of them are located outside the New Capital Region.</p> <ul style="list-style-type: none"> ✓ Kaltim Industrial Park (area: 246 ha, tenant companies: petrochemicals, electricity, food) ✓ Kaliangau Industrial Park (area: 640 ha, occupied by: coal processing, oil and natural gas, palm oil crude, food, fishing, coffee, wood processing, chemical)
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	<p>products)</p> <ul style="list-style-type: none"> ✓ Malloy International Port and Industrial Park (area: 557.34 ha, occupied by: palm oil processing, wood processing, energy industry (minerals, gas, coal), logistics, oleochemicals) ✓ New industrial park developments reportedly include. ✓ 2,500 ha of development land for food estate (developer to be determined) <p>(Q) I would like to know about policies and measures for domestic waste disposal.</p> <p>(A) The PUPR waste manager is said to be procuring the construction of a zero-emission incinerator, but no detailed waste management plan has been confirmed. We understand that they are proceeding with the construction under the vague keyword of "environmentally friendly" currently.</p> <p>(Q) Please let us know if there will be any Japanese government-supported construction work (ODA).</p> <p>(A) At present, the Indonesian government's policy for the development of the new capital is to utilize its own funds and PPP, and it does not plan (or request) infrastructure development funding through ODA, including Japanese ODA.</p>
Investment Opportunity	<p>(Q) In developing the new capital city, from the perspective of "decarbonization" as stated in the SDGs, are you considering the selection of different materials from conventional carbon-based plastics?</p> <p>(A) The SDGs have not yet penetrated the selection of materials for the development projects currently being promoted by the local government (PUPR), so materials that are generally used in the country are being used.</p> <p>(Q) We would appreciate it if you could tell us about preferential investment policies for each investment project.</p> <p>(A) Preferential policies for individual projects are not disclosed. Basically, they are decided through negotiations for each project.</p> <p>(Q) I was not able to listen during the process, so you may have explained it to us. How to approach the contact person specifically, how to participate in bidding, and how to participate in a project.</p> <p>(A) For projects implemented by the Government of Indonesia (PUPR), the bidding is done through local competitive bidding (LCB), and the companies shortlisted according to the specifications of the Government of Indonesia are awarded the contract.</p> <p>(A) For participation in other business opportunities, the Nusantara Capital City Authority (OIKN) is the contact point for individual projects.</p>
Trends by Japanese	<p>(Q) What are some of the infrastructure and public facility development projects that the Japanese side may be involved in? In your announcement, you also proposed the development of the metropolitan area (collaboration of three cities), but what is the intention of the Indonesian side?</p> <p>(A) At this point, the Indonesian government's policy for the development of the new capital is to utilize its own funds and PPP, and it has no plans (or requests for assistance) for infrastructure development through ODA, including from Japan.</p> <p>On the other hand, no specific policy has been decided on the development of the metropolitan area, except for the new capital, and a representative of the National Development Planning Agency (BAPPENAS) has mentioned the need for coordination with ODA, including Japanese ODA.</p>

Source: JICA Consultant Team

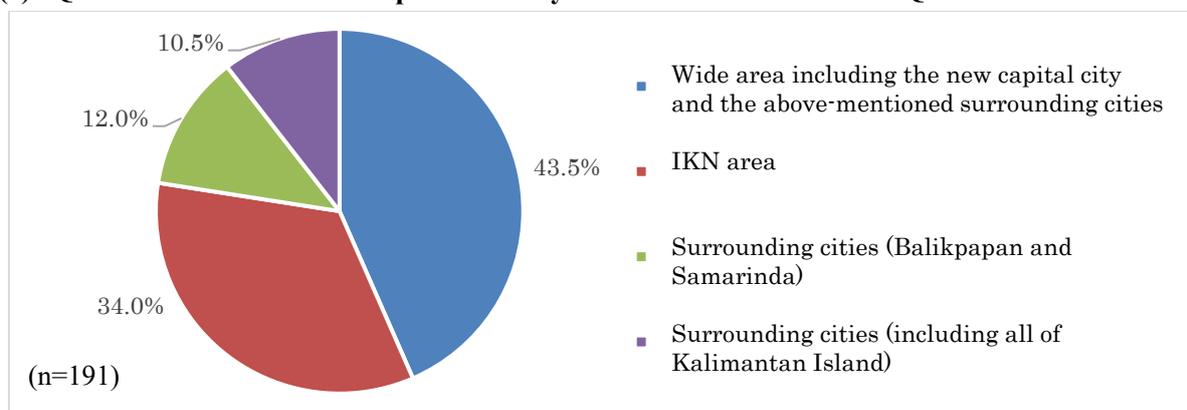
(3) Q5: Please tell us if your interest in expanding your business to the new capital city and surrounding cities has changed because of your participation in the seminar.



Source: JICA Consultant Team

Figure 7.16: Changes in interest in business development in the IKN and surrounding IKN as a result of participation in the seminar

(4) Q6: Please tell us about the specific areas you would like to consider in Q5.



Source: JICA Consultant Team

Figure 7.17: Specific Areas to Consider for Business Development

(5) Q7: Do you have any questions or comments regarding the relocation of the capital in general or the content of today's seminar? (n=61)

[Comments]

Table 7.13: Comments on Capital Relocation in General and on the Content of the Seminar

Related to IKN Development	<ul style="list-style-type: none"> To hear a little more about the proposed plan and progress of the development. Knowing that the Indonesian government only bear 20% of the total budget, and having doubts about whether the burden is enough to attract private investment, in addition to the budget contribution capability first.
Private Participation	<ul style="list-style-type: none"> Appreciate if could continue to provide this kind of information in the future. With some people saying that most of the northern part of Jakarta will be under water by 2050, I think we are not the only local companies that are concerned about not only the future relocation of capital functions, but also whether economic functions will be able to stay in Jakarta. Japan is rather insensitive, so we are particularly concerned about the trends of third-country companies. In the future, subcontractors of manufacturers such as us will be asked to decide whether we will follow them or withdraw from the market if they decide to relocate their entire factories or move half of their factories closer to the capital. Although many people may think that this is a very far-future scenario, I believe that sea level rise will occur at a faster pace than expected. It was explained to me that the complete relocation of the capital functions is in the phase of 2040, but it is quite possible that it will be brought forward.

Japanese Trend	<ul style="list-style-type: none"> ▪ Could not find any specific projects that the Japanese government is pushing for. ▪ Most Japanese companies are static. I think the issue at hand is whether Japanese companies can continue to survive in Indonesia rather than Nusantara. I think the reason why Chinese and Korean companies are aggressive now is because they were slow to expand into Indonesia. What is the best chance of relocating to the new capital?
Attendants Prospects	<ul style="list-style-type: none"> ▪ Since we are in the shipping business (container shipping company), it is difficult to make direct investments, but the volume of goods will increase with urban development and growth, so we would like to specifically consider port calls by container ships. ▪ We are considering what we can do to discover our business/partnerships, so this seminar was very useful. ▪ We have an elevator parts factory in Karawang and have achieved 40% TKDN for some elevator models. We will actively try to participate in the IKN project to contribute to the national policy (utilization of domestic products) that promotes the development of domestic industry. We would be happy to continue to share the progress of the project with you at seminars and other events.
Related to seminar	<ul style="list-style-type: none"> ▪ Wanted to know the difference between the stance of other governments (China, Korea, etc.) and the Japanese government on the new capital, etc. ▪ Continuous information gathering is necessary. ▪ The players from the Japanese government side were all present to explain the situation and felt reassured that comprehensive support could be expected. ▪ If possible, it would be great if could organize a seminar specifically for the infrastructure, especially the power sector. ▪ Included new information. Listened to the seminar with great interest, especially wanted to know more about support measures for private companies on the part of the Japanese government. ▪ The externalization of the state-run telecommunications up to now was well organized. ▪ It was very useful for me to hear about not only the government's intentions and progress, but also the financing aspect of the project, which I will need to consider when I consider the project. ▪ Hopes will continue to hold regular progress sharing meetings. ▪ It would be great if could hold seminars on a regular basis so that can understand the status of planning and execution. ▪ Taught a lot in a short time and lack of understanding. Please share the materials for detailed review. ▪ Very useful to understand the progress regarding the relocation of the capital and the trend of companies that have expressed interest.

Source: JICA Consultant Team

※The comments that are listed only as “Thank you” or “it was helpful” are omitted.

[Questions]

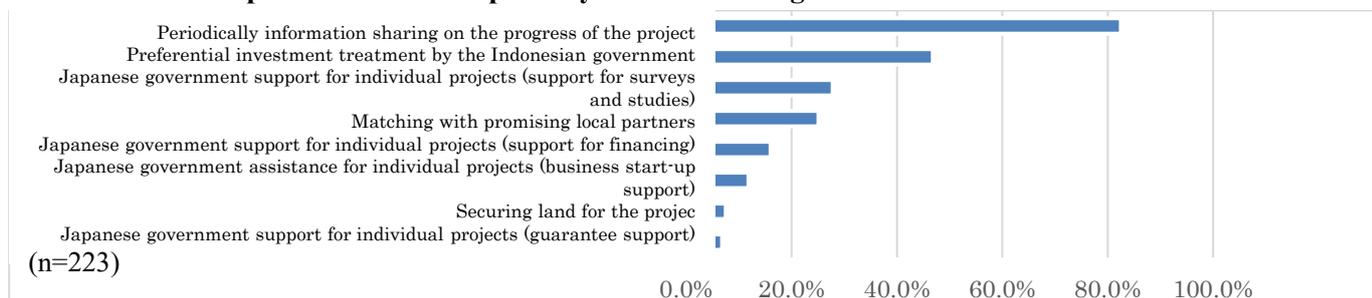
Table 7.14: Questions on Capital Relocation in General and on the Content of the Seminar

Related to IKN Development	<p>(Q) Will there be only private investment and no governmental loans for the development for the new capital city development?</p> <p>(A) The Indonesian government's current policy for the development of the new capital city using own funds and PPP, and there are no plans (or requests for assistance) for infrastructure development by ODA, including from Japan.</p> <p>(Q) You mentioned the initiatives as a demonstration city. Is there a mechanism to organize and coordinate the various initiatives in concrete terms?</p> <p>(A) It seems that OIKN serves as a contact point for negotiations, especially for matters proposed by companies from third countries.</p> <p>(Q) While I understand that this is a measure to disperse the population concentration in Jakarta and Java, there are still doubts as to whether the new capital will function to that extent. I would be happy to hear what the national government intends to do with a population of less than two million.</p> <p>(A) Unfortunately, the basis for the population of two million set in the master plan is not clear. However, given that approximately 70% of the land is forested and green space, it assumed that the population was presented as the population that can be held by the area to be developed.</p> <p>(Q) Are there any projects that have already been finalized and closed for private financing?</p> <p>(A) The financing status of each announced project is not disclosed. On the other hand, as of the end of February 2023, we have not found any projects that have started construction as private projects.</p> <p>(Q) There was no explanation of trends and plans for power infrastructure.</p>
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	<p>(A) Based on information reported by MediaIndonesia on June 9, 2022, it is reported that the electricity for the new capital city will be handled by PT. PLN.</p> <p>Currently, Kalimantan's power consumption is reported to be only 1,305 MW compared to 1,729 MW of generation, leaving a surplus of 424 MW. In addition, Mobile Sub-Stations have already been installed in the new capital, with plans to add more as needed.</p> <p>Finally, it was announced that 50 MW of solar PV and 70 MW of wind power will be built in the future to make the new capital's power sources all renewable.</p>
Private participation	<p>(Q) Have any logistics companies already expressed participation?</p> <p>(A) Pos Indonesia and Carsome of Malaysia have expressed interest in the digital logistics sector.</p> <p>(Q) Is obtaining the Domestic Component Level (TKDN: Tingkat Komponen Dalam Negeri) a prerequisite to participate in bidding for projects involving the new capital?</p> <p>(A) The PUPR clearly states that the TKDN is a valid condition at the time of bidding.</p>
Japanese Trend	<p>(Q) Is there any English text in the development plan of the destination government (English version of Mr. Honma's original document)?</p> <p>(A) Basically, all the documents are in the local Indonesian language.</p> <p>(Q) The official publicity in English is at the following website.</p> <p>(A) Ibu Kota Negara (IKN)</p> <p>(Q) Assuming that the population around 2040 will be less than two million. Will that level of population movement have an impact on Jakarta's economic activities?</p> <p>(A) The total population of Jakarta at present is said to be about 11 million, so the population will decrease by less than 20%, mainly due to civil servants. Although not expect a large-scale impact on economic activities due to the decrease in population, there may be an impact on business procedures, including applications, etc., if all ministry functions are moved to the new location.</p>

Source: JICA Consultant Team

(6) Q8: Please tell us about any significant issues you would like to discuss when considering business development in the new capital city and surrounding cities.



Source: JICA Consultant Team

Figure 7.18: Significant Issues for Business Development in the IKN and Surrounding Cities

7.4 Conclusion for this Seminar

The seminar was attended by approximately 370 people, more than 70% of whom were corporate managers, who expressed interest in investment incentives and matching with local partner companies in their comments in pre- and post-questionnaire, indicating a growing interest in projects related to the relocation of the new capitals, including those in neighboring cities. Infrastructure development was the top sector of interest cited by respondents from a wide range of business sectors. Involvement in this sector is expected in various phases, from service provision to investment, and further confirmation of the individual needs of Japanese companies is required.

On the other hand, questions about how to approach the Indonesian government and interest in Japanese government support for individual projects suggest uncertainty about the procedures for proposal-based project formation, including public-private partnerships, and concern on the part of companies about business risks.

Therefore, it is important to dispel these concerns when Japanese companies participate in future projects.

Chapter 8 Review of Private Investment Trends

This section summarizes the existence of business development plans by private companies (mainly Japanese companies) in the new capital city and their levels of interest. The Government of Indonesia intends to employ more than 80% of funds from public-private partnerships (PPP) and private investment, and the availability of private investment will be a very important key to the realization of the relocation of the capital. The Indonesian government is conducting various activities to attract foreign investment, aiming to use the development of the new capital city as an opportunity to acquire foreign investment.

8.1 Outline of Investment Promotion Activities for the New Capital City

Currently, the National Coordination Ministry and Investments Affairs: Menteri Koordinator Bidang Kemaritiman dan Investasi (MENKO-MARVES) and the newly established the Nusantara Capital City Authority: Otorita Ibu Kota Negara (hereinafter OIKN) are the two main agencies in charge of investment promotion activities in the new capital.

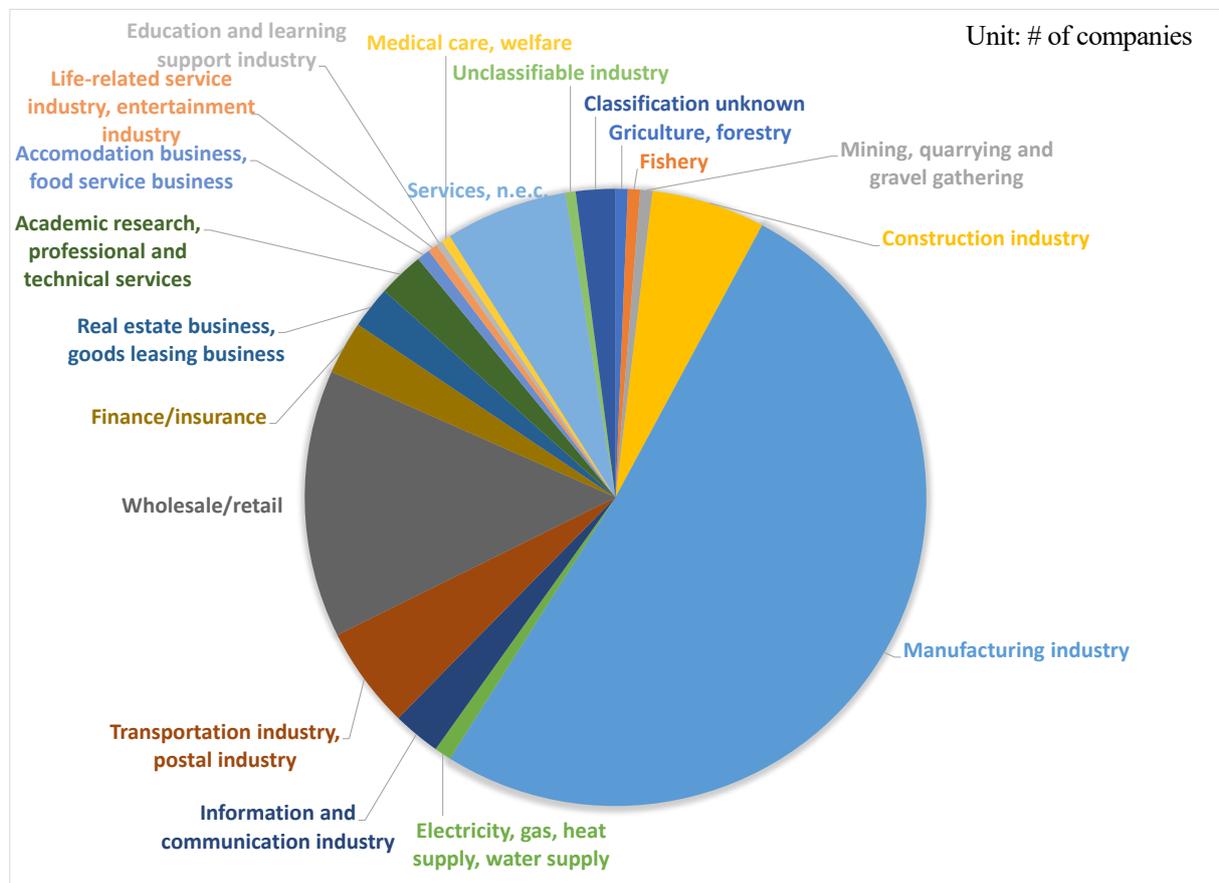
MENKO-MARVES is tasked in promoting the country's priority development projects described in the country's Medium-term Development Plan (2020-2024), including the development of the new capital city project. Members of the Steering Committee include former British Prime Minister Tony Blair and Crown Prince Muhammad of Abu Dhabi of the United Arab Emirates. Masayoshi Son of Japan's SoftBank Group was also a member of the steering committee, but he has announced that he has decided not to invest in the development of the new capital city. In a meeting with President Joko in January 2020, the SoftBank Group said, "We have not yet negotiated a specific investment amount, but we are interested in supporting a new smart city using artificial intelligence (AI), the latest technology, and a clean city" but in March 2022, they announced that they would not be seeing the project through. MENKO-MARVES Coordinating Minister for Maritime Affairs and Investment Luhut visited Japan in July 2022 with President Joko to call for investment in the development of a new capital city.

OIKN, a new organization with a Chairman and Deputy Chairman appointed in March 2022, co-hosted a market sounding (market survey) with the Indonesian Chamber of Commerce and Industry (hereinafter "KADIN") on October 18, 2022. Approximately 400 participants attended, many of whom were expected to be local KADIN member companies. Among the speakers on the day were President Joko, OIKN Chairman, OIKN Deputy Chairman, MENKO-MARVES Minister, KADIN President, Minister of Finance, Minister of Investment, Minister of State Enterprise, and the former British Prime Minister Tony Blair. OIKN Chairman Bambang visited Japan after the meeting and is actively working to attract investment. On October 21, 2022, discussions were held with several Japanese companies at the Indonesian Embassy in Tokyo, and on February 28, 2023, Deputy Speaker of the National Assembly Rachmat Gobel and the Ministry of Public Works and Housing: Kementerian Pekerjaan Umum dan Perumahan Rakyat (PUPR) Basuki Hadimuljono gave a speech to Japanese companies at the Keidanren Kaikan on the current status, progress, and prospects of the New Capital

City: Ibu Kota Negara (IKN) and the possibility of Japanese companies' participation in the project. They are actively engaged in activities to attract investment.

8.2 Trends of Japanese Companies in Indonesia

As of October 1, 2021, 2,046 Japanese companies are operating in Indonesia (Source: Ministry of Foreign Affairs of Japan, "Survey on the Number of Japanese Companies Operating Overseas, 2021 Results"). Indonesia ranks sixth in the world after China, the U.S., Thailand, India, and Vietnam, indicating that the economic ties between Japan and Indonesia are extremely strong. Most of these companies are in Jakarta and West Java. Figure 8.1 shows the industry classification of the companies that have set up operations in Indonesia. The manufacturing industry accounts for about half of the total, followed by wholesale and retail at around 14%, and construction at around 6%.

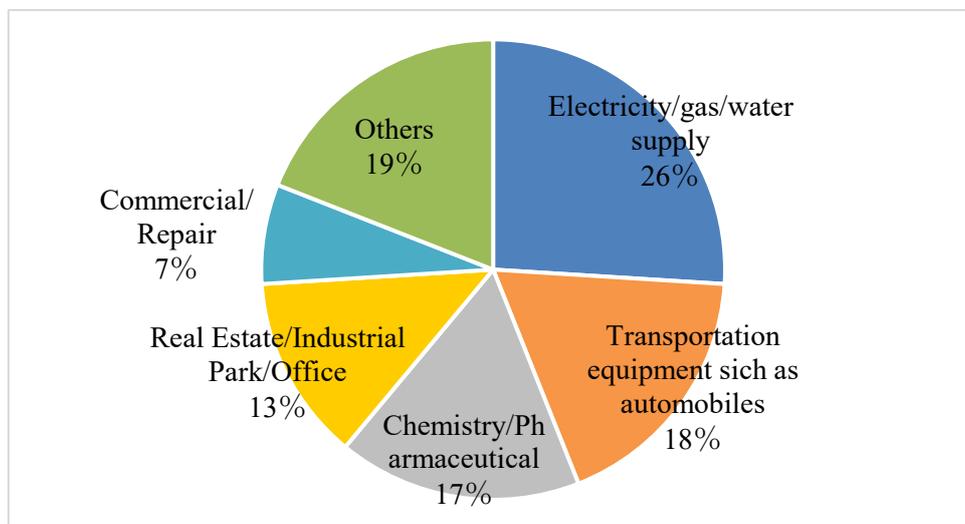


Source: JICA Consultant Team based on the Ministry of Foreign Affairs of Japan's "Survey on the Number of Japanese Companies Operating Overseas, 2021"

Figure 8.1: Industry Classification of Companies Already Operating in Indonesia

Major Japanese companies that have advanced into the region include Toyota Motor Corporation, Daihatsu Motor, Mitsubishi Motors, Honda Motor, Suzuki, Yamaha, Panasonic, Sharp, Epson, Toray, Mandom, Unicharm, Lion, Kao, Ajinomoto, Yakult, Nissin Foods, Asahi Glass, Kumon, and others. While the expansion of vehicle and other transportation equipment-related activities expanded in the early 2010s, there has been a trend toward diversification into investments in infrastructure and urban development, consumer

goods and services, and other sectors in recent years. This is in line with the current population and income growth in the Jakarta metropolitan area. Figure 8.2 shows the breakdown of investments by Japanese companies in 2021, with electricity, gas, and water supply in first place, with a realized investment of approximately IDR 600 million. Investment in real estate, industrial parks, and offices ranks fourth. Many Japanese developers in Indonesia are implementing development projects jointly with local partner developers. For example, MC has partnered with Sinar Mas Land for the BSD project in Tangerang and is undertaking a large-scale areal development project. Sojitz Corporation has also established a joint venture with Sinar Mas Land for the Delta Mas project in Bekasi.



Source: JICA Consultant Team based on the Survey Team based on Data from the Investment Agency (BKPM)

Figure 8.2: Breakdown of Investment by Japanese Companies (Actual in 2021)

Challenges related to investment (expansion) include increasing labor costs, complicated tax procedures, unclear policy management by the government (industrial policy, energy policy, foreign investment regulations, etc.), underdeveloped legal systems, and unstable political and social conditions (Source: Japan External Trade Organization (hereinafter "JETRO"), "Survey of Japanese Companies Making Inroads into Overseas Countries in 2021 (Asia and Oceania)" (December 2021)). (Source: JETRO "FY2021 Survey of Japanese Companies Operating Overseas (Asia and Oceania) (December 2021)"). Fluctuations in the exchange rate of the local currency against the USD were also cited as part of the most recent management challenges. On the other hand, the advantages of doing business in Indonesia include market size/growth potential, low labor costs, and ease of hiring employees, and the country's population size, the largest in the ASEAN, is particularly valued.

8.3 Expected Industries and Economic Activities in the New Capital City

In the new capital city, the MPs have identified the emergence of six industrial clusters as stated below. Overall, the direction of the MP is to focus on attracting and developing innovative industries with high-added value. The policy is to move away from labor-intensive industries and upgrade to capital- and knowledge-intensive industries.

1. Clean Technology Industry Cluster

Manufacture of environmentally friendly transportation equipment and processed goods, including solar power production and electric motorcycles.

2. Integrated Pharmaceutical Cluster

A manufacturing center for cost-effective, high-quality pharmaceuticals, contributing to the improvement of the health of the nation's population.

3. Sustainable Agriculture Industry Cluster

Production of innovative processed agricultural products such as plant-based nutritional foods with high added value that contribute to improved health and wellness.

4. Inclusive Ecotourism Cluster

Attraction of tourists through MICE facilities and health facilities as a world-class eco-tourism destination.

5. Chemical and Chemical Derivative Products Cluster

Cluster of petrochemicals and oleochemical products utilizing the natural resources of East Kalimantan.

6. Low Carbon Energy Cluster

Shift from East Kalimantan's traditional energy industry to low-carbon energy industry utilizing new energy sources such as biofuels, synthetic fuels, and coal gasification.

The industrial clustering policy of the new capital city is focused on a different sector from the automobile manufacturing and other sectors in which Japanese companies have mainly operated in Indonesia. The strategy of developing industrial parks and attracting Japanese tenant companies as clusters, which Japanese companies have developed as a winning pattern in Indonesia, is different from the industrial growth strategy of the new capital city. The MP also described that these economic activities will be developed targeting the period after 2025, which is Phase 2 of the development. Currently, the city is still in the basic infrastructure development stage, and there is no indication that specific activities for the formation of clusters are underway.

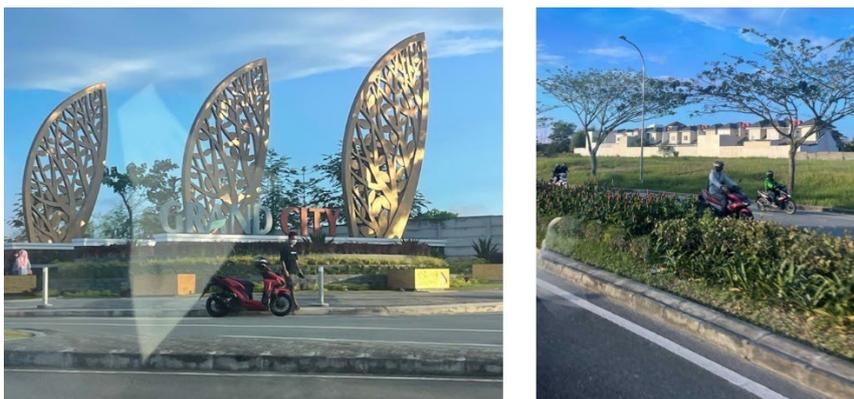
8.4 Short-term Industry Expansion Forecasts for the New Capital City

The success of attracting the new industrial clusters will depend on the trends in infrastructure development required to support an industry, as well as on government measures such as provision of incentives. On the other hand, assuming that the basic infrastructure development that is currently underway is carried out as scheduled, the short-term industrial expansion forecast is as follows.

LKPP Regulation No. 5/2022 (promulgated on May 18, 2022), which stipulates the regulations for government procurement of the new capital city development, is the first step in the process of the new capital city infrastructure development. It stipulates the employment of Kalimantan residents and the active use of materials. In particular, the economic activities in Balikpapan City and Samarinda City, the established urban areas near the proposed new capital city, are expected to be stimulated, and a large temporary inflow of funds is anticipated.

In conjunction with the economic revitalization of the existing urban areas, the food and beverage industry and lifestyle-related service industry (wholesale, retail, etc.) for construction workers and existing residents are expected to expand. In addition, demand for hotel and lodging services for business trips and short-term stays from Jakarta is expected to increase.

However, there is still room for expansion of development projects around the existing urban areas, and for the time being, development is expected to continue mainly in the urban area of Balikpapan. Major Indonesian urban developers have been developing several hundred hectares of land in Balikpapan since before the development of the new capital city, and at a hearing in July 2022, they expressed caution about forming private urban development projects on the new capital city, saying they will continue to focus on government trends.



Source: JICA Consultant Team

Figure 8.3: Balikpapan Urban Development by Indonesia Major Developer, Photographed by the JICA Consultant Team on July 19, 2022.

8.5 Investment Incentives

On March 6, 2023, GR on Investment Incentives for IKN (GR No. 12/2023) was promulgated. For more information about the GR, refer to Section 2.1.4(11).

While the overall direction of the incentive scheme is identified, the specific areas of the partner regions and details such as tax reduction rates will be stipulated in the detailed regulations such as OIKN Director General's decree or the Minister of Finance's decree; however, the details of the investment facilitation measures are not yet clear.

8.6 Perceptions of Japanese Companies Regarding the Relocation of the New Capital City

In late June 2022, a seminar on the new capital city was held for Japanese companies, with speakers including PUPR's Planning Task Force leader and BKPM. The seminar was attended by 25 Japanese companies and officials from the Embassy of Japan in Indonesia, JETRO, and the Jakarta Japan Club (hereinafter JJC). Some of these companies also made site visits to the planned construction site of the new capital city. The companies that participated in the seminar and site visit raised concerns about the realization of the development, securing the infrastructure on which the development is based, and disclosing information regarding the profitability of the project.

8.7 Challenges for Investment by Japanese Companies

It is difficult to gauge the level of interest of Japanese companies in investing in the new capital city development at the time of Phase 1. This is when the local government budget is being utilized and basic capital city infrastructure development is underway with local companies as contractors. To formulate concrete investment intentions in the future, the following issues need to be recognized and new information should be disclosed as appropriate to build momentum for investment.

1. Infrastructure development projects to be implemented through local competitive bidding (LCB)

Phase 1 basic infrastructure development projects to be undertaken within the framework of the government budget will be carried out in the form of LCB bidding. However, most of the Phase 1 basic infrastructure projects are carried out in the form of LCB bidding under the government budget framework. Even if some of the projects are carried out through international competitive bidding (ICB), it is difficult for Japanese companies to participate in these projects under the environment of intensifying price competition.

2. Concerns about progress and completion of basic infrastructure development

Since the expansion of private-sector economic activities is positioned as a Phase 2 or later stage in the MP, all sectors and companies are watching the development trends in Phase 1 with a wait-and-see attitude. While the completion of basic infrastructure development is a priority, it is necessary to disclose the status of steady implementation of steps toward the realization of the new capital city infrastructure development, while

sharing information on the progress of the development as appropriate.

3. Concerns about urban growth

If basic infrastructure development and the relocation of the government offices in Phase 1 are realized, the expected population inflow is less than 500,000; the total population of the city is approximately 1.9 million if development is carried out in accordance with the MP until 2045. This is a small market compared to the current population of Jakarta (over ten million), which is the center of concentration of Japanese companies. It is necessary to focus on whether the city can grow as a city where Japanese companies are allowed to establish operations, including the securing of human resources for employment, the transportation environment for materials, and the living environment for expatriates.

4. Concerns about increased burden on the private sector

It has been indicated that PPPs and private-sector funds will be used for infrastructure development in Phase 2 and beyond. There is a concern that the private sector will bear a larger portion of the burden because there is a limit to the amount of the Indonesian government budget that can be invested. In the hearing with the Ministry of Spatial Planning and National Land Agency: Kementerian Agraria Dan Tata Ruang Badan Pertanahan Nasional (ATR/BPN), there was already a comment that private funds are expected to be used for land acquisition for the project site, and there is a concern that it will be difficult to form a profitable project.

5. Incentives for private participation are undecided

To address the concerns, it is necessary to clarify the details of investment incentives schemes. GR No.12/2023, promulgated on March 6, 2023, provides the overall direction of the incentives scheme. However, the details need to be stipulated in further detailed regulations. Private companies are hesitated to make strong actions before clarifying the details of incentive schemes. As noted above, it is necessary to carefully assess the extent to which the incentive schemes will be attractive to private companies, including PPP-IKN. In addition, the utilization of government assets in the center of the Special Capital Region of Jakarta: Daerah Khusus Ibukota (DKI) Jakarta may be an attractive investment for the private sector and could be combined with the development of the new capital city to stimulate investment.

6. Use of loans

Large-scale infrastructure development, such as railways, is planned for Phase 2 and beyond. To promote the participation of Japanese companies in these infrastructure developments, it is necessary to survey whether or not the use of yen loans is allowed. There are many feasibility and institutional issues in placing orders from local governments or structuring projects as PPP projects, and measures to reduce risk as much as possible should be introduced.

7. Formation of urban development projects

Japanese firms are also involved in multiple urban development projects in Indonesia. Japanese companies have been involved in several urban development projects in Indonesia. Most of these Japanese companies are in collaboration with local developers. Japanese companies are watching local trends with caution, as local developers are cautious about investing in urban development projects in the new capital city. It is necessary to pay attention to the trends of local developers as master developers and disclose information as appropriate.

8.8 Investment Trends of Private Companies Other Than Japanese Companies

There are many news stories about investment to the new capital city from local and foreign companies. Table 8.1 summarizes the countries and companies that have reportedly expressed interest in contributing to the development of the new capital city.

Table 8.1: News Reports Related to the Cooperation and Investment in IKN

Country	Agency/Firm	News
Indonesia	Sinar Mas Land (Bumi Serpong Damai (BSD))	(Sep. 2021) Interested in urban development in East Kalimantan and the land (500 ha+) is reserved. (Jan. 2022) Developing the Grand City Balikpapan in East Kalimantan. (Mar. 2022) The former managing director of the President Office in Sinarmas Land, Dhony Rahajoe, is appointed as the Vice Chairman of OIKN.
	Ciputra Development	(Jan. 2022) Planning and developing “Citra Land City Samarinda” and “Citra Grand Senyur City Samarinda” in East Kalimantan. (Jan. 2022) Reserves the total of 870 ha of land in East Kalimantan.
	Pembangunan Perumahan	(Oct. 2021) Interested in urban development in East Kalimantan and the land is reserved.
	Agung Podomoro Land	(Jan. 2022) Developing “Borneo Bay City (8 ha)” in Balikpapan.
	Pos Indonesia	(Jul. 2022) Will invest in digitalized warehouses in IKN. Digitalized logistics will be provided with the collaboration with other state-owned enterprises such as Pelabuhan Indonesia (port), Angkasa Pura (airport), Pelayaran Nasional Indonesia (shipping), and Damri (land transport).
	PT Hutama Karya (Persero)	(Sep. 2022) Won the bid for the Karangjoang-KKT Kariangau Toll Road project in Balikpapan, East Kalimantan, which is access to the new capital city. This toll road project has a package ceiling of IDR 3.47 trillion, with Hutama Karya's bid price at IDR 3.33 trillion.
	PT Pembangunan Perumahan	(Sep. 2022) State-owned company PT Pembangunan Perumahan (Persero) Tbk (PTPP) has participated in the tender for the IDR 10 trillion Ibu Kota Negara (IKN) Nusantara project and won IDR 1.5 trillion of them. There were four IKN projects for which PTPP had obtained contracts, including: (1) KKT Kariangau-Sp.Tempadung segment of the IKN toll road project, carried out with JV worth IDR 1.9 trillion, (2) Sp.Tempadung-Jembatan Pulau Balang segment of the IKN toll road with the same JV worth IDR 2.1 trillion, (3) the project to prepare the core area of the government center phase I worth IDR 92 billion.
	Telecom Indonesia	(Nov. 2022) The company announced the completion of its data center, which was developed in the new capital. The data center was established in the Sepaku District of the new capital. It is the seventh of the company's cluster of data centers scattered across the country.
State Owned Construction Companies	(Dec. 2022) The total value of orders received by state-owned construction companies reached approximately IDR 10 trillion (approximately 872 billion yen) by the fourth quarter (October-December) of 2022. Pumbangunan Perumahan (PP) is the largest state-owned construction	

Country	Agency/Firm	News
		company listed on the Indonesia Stock Exchange (IDX) in terms of total orders with IDR 2.9 trillion. Waskita Karya followed with IDR 2.5 trillion, Wijaya Karya with IDR 2.3 trillion, Adi Karya with IDR 1.8 trillion, and Wijaya Karya Bangunan Gudung, a subsidiary of Wijaya Karya, with IDR 306 billion.
	PT Summarecon Agung	(Jan. 2023) PUPR granted a basic approval for the development of housing in the new capital city to local real estate developer Summarecon Agung. The investment amount is IDR 1.67 trillion.
Japan	SoftBank	(Jan. 2020) Interested in funding the construction of Indonesia's new capital city in East Kalimantan. The value of the investment reportedly reaches USD 40 billion. (Mar. 2022) Withdrawn from the investment in East Kalimantan.
	Government	(Nov. 2019) MoU on Technical Cooperation on New Capital City Relocation and Development Indonesia and South Korea was signed. (Jul. 2022) MoU was signed between PUPR and Ministry of Environment of South Korea in 2022-2025 on Water Resources. Other projects are sending 25 trainees to study smart cities in South Korea, a photovoltaic or solar panel pilot project in a dam, and the Net-Zero Water Supply Infrastructure project at IKN. (Aug. 2022) Korea agreed to four cooperation agreements; 1) grant aid for the construction of a water purification plant; 2) construction of a wastewater treatment facility; 3) development of a smart village (100 households); and 4) an undersea tunnel to be built using the submerged tunnel method.
	K-water	(Jul. 2022) Installation of 300 liters per second will be built by the Indonesian government itself, while the other 300 liters per second will be built by the South Korean government through K-Water as a grant to support IKN development
	POSCO	(Jul. 2022) Minister of Investment told that the POSCO is interested in the investment in IKN.
Korea	Hyundai, LG	(Jul. 2022) Minister of Investment told that there are already three companies that have expressed interest in entering IKN, namely POSCO, Hyundai, and LG.
	LG CNS	(Oct. 2022) The company has officially partnered with PT PP (Persero) Tbk, an Indonesian state-owned enterprise (SOE), to develop a smart city in the new capital city.
	Hyundai Motor	(Nov. 2022) South Korea's Hyundai Motor announced that it will build an ecosystem for next-generation air mobility, represented by "flying cars" that travel through the air, in the planned new capital city of East Kalimantan, Indonesia. An MoU for cooperation was signed with the OIKN. Hyundai Motor Company will create a concept and roadmap for integrating land and air transportation and will also conduct a demonstration test of next-generation air mobility.
	Samsung Electronics	(Dec.2022) Deputy Mr. Ali of OIKN revealed that Samsung Electronics of South Korea has expressed interest in the smart city project for the development of the new capital city.
	Korea Land and Housing Corporation (KLHC)	(Jan. 2023) PUPR granted a basic approval for the development of housing in the new capital city to Korea Land and Housing Corporation (KLHC). The investment amount is IDR 8.65 trillion.
USA	Google, Microsoft, Amazon, Honeywell International, IBM	(Dec. 2022) Deputy Mr. Ali explained that U.S. companies, Google, Microsoft, and Amazon.com, have expressed interest in the data center project of the new capital city development. Honeywell International and IBM have also expressed interest in the smart city project.
	Huawei	(Mar. 2022) The Government of Indonesia is looking to collaborate with Huawei for the introduction of 5G system in IKN.
China	China Construction First Group (CCFG) and Lisjadson Bransfield Nusantara under the Chinese state-owned China State Construction Engineering Corporation (CSCEC)	(Jan. 2023) PUPR granted a basic approval for the development of housing in the new capital city to a consortium consisting of the China Construction First Group (CCFG) and Lisjadson Bransfield Nusantara under the Chinese state-owned China State Construction Engineering Corporation (CSCEC). The investment amount is IDR 30.8 trillion.

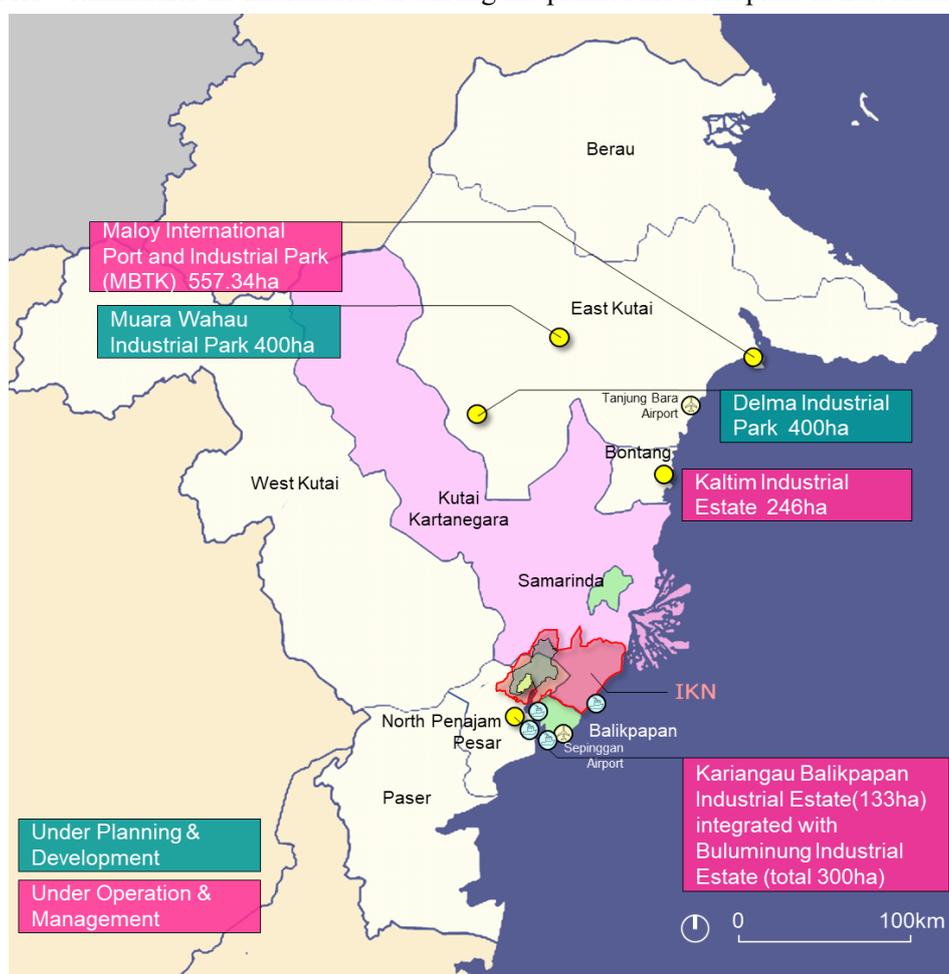
Country	Agency/Firm	News
Taiwan	Foxconn Technology Group	(Jun. 2022) Interest in investing in the smart city sector with electric buses and the use of the Internet of Things (IoT) in IKN.
Malaysia	—	(Dec. 2022) A forum on the development of the new capital city was held. The forum was attended by 183 local businesspeople, who expressed interest in investing in areas such as housing, hospitals, educational institutions, startups, and energy.
Germany	Siemens Energy	(Mar. 2022) Interested in investing in renewable energy in IKN with the cooperation in the fields of smart grids, energy storage, hydrogen development technology, and electric vehicles (EVs).
Finland	-	(Nov. 2022) Cooperation with Finland is being considered in the areas of wastewater treatment and smart cities in the new capital. The Finnish government and the country’s construction companies and companies in the green sector are in discussions with PUPR.

Source: JICA Consultant Team

8.9 Existing and Planned Industrial Parks in the New Capital and East Kalimantan Province

8.9.1 Existing and Planned Industrial Parks in the New Capital and East Kalimantan Province

Figure 8.4 below summarizes the information on existing and planned industrial parks in East Kalimantan.



Source: JICA Consultant Team

Figure 8.4: Existing and Planned Industrial Parks in East Kalimantan

(1) Existing Industrial Parks

1) Kaltim Industrial Estate (KIE)

Located in the North Bontang area of Bontang City, this industrial park is operated by PT Kaltim Industrial Estate, a subsidiary of PT. Pupuk Kaltim. It is occupied by petrochemical companies, mainly in the oil and natural gas industry, such as ammonia, methanol, ammonium nitrate, and many others. Other tenants include companies in the electric power service and food industries.

- Location: Bontang City (Bontang)
- Nearby Airports: Bontang Airport (in the city) or Sepinggan International Airport (about 230 km)
- Nearby port: Pupuk Kaltim Bontang Special Port (in the city) or Kariangau Port (about 230 km)
- Area: 246 ha
- Main industries: Petrochemical feedstock (condensate), oil and natural gas

2) Kariangau Industrial Park

Located in the integrated economic zone (2,189.93 ha) of Kariangau Industrial Zone (KIK), the industrial park has a development site area of 640.30 ha and is classified into small, medium, and large industrial areas. Public and social facilities (housing, education, places of worship, etc.), housing, forest area, port facilities, warehouses are 32.47 ha, and a power plant is planned to be developed; operation and management will be carried out by PT Kawasan Industri Kariangau.

- Location: Balikpapan City
- Nearby Airport: Sepinggan International Airport (approx. 30 km)
- Nearby Ports: Balikpapan Port, Kariangau Container Terminal (TPK Kariangau)
- Area: Total 640 ha (including 55 ha of development area)
- Major industries: Coal processing, oil and natural gas, crude palm oil, food, fishing, coffee, wood processing, chemical products



Source: Balikpapan City Website
(URL: <http://investasi.balikipapan.go.id/halaman/detail/kawasan-industri-kariangau>)

Figure 8.5: Situation of Kariangau Industrial Area

3) Maloy International Port and Industrial Park: Maloy Batuta Trans Kalimantan (MBTK)

The operation and management are being implemented by PT Maloy Batuta Trans Kalimantan. According to the website of the Special Economic Zone Commission of the Republic of Indonesia, the Indonesian government initiated the development in 2014 and plans to make industry, logistics, and export processing the main industries. Figure 8.6 shows the current situation and planned land use.

- Location: East Kutai Province
- Nearby airport: Maloy Heliport
- Nearby port: Maloy International CPO Port
- Area: 557.34 ha
- Major Industries: Palm oil processing, wood processing, energy industry (minerals, gas, coal), logistics, oleochemicals



Source: *Special Economic Zone Commission of the Republic of Indonesia Website*
 (URL: <https://kek.go.id/kawasan/KEK-Maloy-Batuta-Trans-Kalimantan>)

Figure 8.6: Maloy International Port and Industrial Park Plan

(2) Potential Industrial Parks

Planned Industrial Parks in East Kalimantan are listed below.

1) Delma Industrial Park

The following information was confirmed only for the development location and main development industry sectors.

- Location: East Kutai Regency
- Nearby airports: Tanjung Bara Airport (approx. 210 km)
- Nearby port: Kariangau Port (approx. 380 km)
- Area: 400 ha
- Major industry: unknown

2) Muara Wahau Industrial Park

The following information regarding the development location and main development industry sectors were confirmed.

- Location: East Kutai Province

- Nearby airports: Tanjung Bara Airport (120 km)
- Nearby port: Lubuk Tutun Special Port (110 km)
- Area: 400 ha
- Main Industry: Coal (PT Bhakti Energi Persada)

3) Plans to Develop Industrial Parks Inside and Outside of IKN

In Chapter 6 of PR No.63/2022, among the directions for the spatial utilization of industrial and economic centers after 2025, the following activities and schedule related to the development of industrial parks are mainly described. Since some of the targets are already in operation such as industrial parks, it is assumed that those that are in operation are engaged in activities related to expansion and the like.

Table 8.2: Activities and Schedule Related to the Development of Industrial Parks

Activity	Year	Target
Area masterplan and site plan update	2025	K-IKN, North Penajam Paser Regency, Kariangau Industrial Park, Samarinda City, Maloy International Port and Industrial Park, etc.
Conduct feasibility study	2025	
Preparation and update of environmental permits	2025	
Renewal and preparation of land permits	2025	
Regional development	2027	K-IKN, North Penajam Paser Regency, Kariangau Industrial Park, Maloy International Port and Industrial Park, etc.
Land procurement for industrial parks and site location decisions	2027	
Development of basic infrastructure within the development area (water supply, roads, drainage, and sewerage systems, energy, electricity, telecommunications, etc.)	2027	

Source: PR No.63/2022 Chapter 6

8.9.2 Trends in Interest of Japanese, Local, and Foreign Companies

Based on the information on planned industrial parks to be developed in the new capital described in the previous section, interviews were conducted with local Japanese companies that are implementing industrial park development projects and development project management in Indonesia.

Table 8.3: Outline of Interview

Company	Title of PIC or Department in Charge	Main Contents of Interview and Discussion	Implementation Date
Local private company (Japanese) and industrial park management company (Japanese)	- President of the Board of Directors - Industrial Park management company vice president, two managers	• Interest in the development of the new capital city	July 13, 2022

Source: JICA Consultant Team

Local Japanese companies raised concerns mainly on the following:

- Progress in the development of the legal system and its binding power under the next administration

-
- Organizational structure of the Nusantara Capital Authority (OIKN) and the authority of each of the ministries
 - Basic infrastructure development plans of the Ministry of Public Works and Public Housing
 - Land ownership in the new capital development site

Through the interviews, it was confirmed that local Japanese companies and major local private developers who are collaborating in the development and management of the new capital are interested in the development of the new capital but are cautious about it.

Chapter 9 Preliminary Advice and Recommendation to the Priority Infrastructure Development Projects

Based on the findings of Chapters 1 through 6, Section 1 of this chapter summarizes information related to challenges, policies for handling these challenges, and general ideas for the implementation of projects related to the relocation of the capital. Specific recommendations for resolving the challenges are summarized in Section 2 of this chapter.

9.1 Organize Various Issues and Policies to Address them Based on the Survey Results

The various challenges, policies for handling, and ideas for project implementation in general are summarized in Table 9.1. Chapter 1 is the Project Overview, Chapter 3 is a Review of Laws and Regulations, and Chapter 6 is a Review of Other Donors' Cooperation towards the new capital city (hereinafter IKN), so these are not mentioned in the compilation of findings and draft recommendations to the Ministry of Public Works and Housing (hereinafter PUPR)-Task Force.

Table 9.1: Summary of Challenges and Policies for Handling based on the Survey Results

Chapter	Survey Contents	Challenges	Policies for Handling	Ideas for the General Implementation of the Project
2.2	Review of Master Plan (hereinafter MP)	The planning items related to traffic, smart, etc. described in the MP are not reflected in the design and construction in the IKN. Challenges in the implementation system related to the confirmation of the above issues could not be avoided. Specific implementation and development of the smart city concept, considering future scalability and the possibility of introducing services ahead of time.	-	Strengthening the implementation system (8.2.5) Ensure future scalability related to urban transportation and ICT (8.2.3)
4.1-4.5	Status Review of Plans and Projects of Relevant Ministries and Agencies	MP is undisclosed and unconfirmed.	-	-
5.3	Gather information on All Aspects of KIPP Infrastructure Development.	Concerns related to the occurrence of natural disasters due to differences in information between blueprints and construction drawings Ensure adequate road width for the installation of utilities/infrastructure under the road. Prevention of interference by various infrastructures at intersections Survey DD for the installation of joint ditches	Integration of information on site conditions and drainage plans for development Review and coordination of design and construction	Integration of information related to design and construction (8.2.1, 8.2.2)

Chapter	Survey Contents	Challenges	Policies for Handling	Ideas for the General Implementation of the Project
		Logistics congestion during construction	-	Arrangements and coordination during construction (8.2.4)
5.5	Construction Supervision	Local contractors in Indonesia are inexperienced in subway, tunnel, and submerged tunnel construction. Variation in the quality of construction materials Local contractors do not value quality and are not fully aware of the need to meet contractual deadlines because they accept quality that does not meet the specifications.	-	Confirmation and strict adherence to specifications between the contractor, consultant, and contractor Ensure the availability of skilled workers. Directing and monitoring the preparation and implementation of safety plans during construction (8.2.5)
		Coordination among urban development projects to ensure quality and schedule of construction	-	Implementation of the project management implementation system (work by the project director (MK-Induk) and by MK-Induk) (8.2.5)

Source: JICA Consultant Team

9.2 Summary of Proposals for Project Implementation in General and Recommendations for Solving Specific Challenges

9.2.1 Integration of Information Related to Basic Conditions of Development

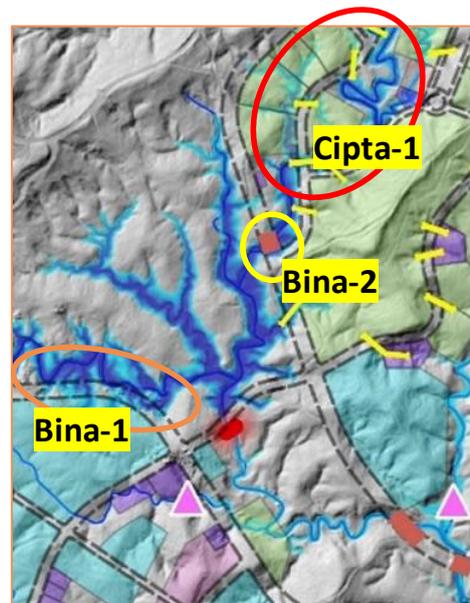
In this survey, it was found that there were discrepancies between the design drawings and the construction drawings. To prevent natural disasters, the basic conditions of development, namely site conditions and drainage plans, need to be integrated.

(1) Infrastructure development based on existing topographical and geological conditions for development planning and design.

It is necessary to establish a permanent benchmark on the site that can be used by all the projects since the “Zero Point” will be buried. It is necessary to confirm the geological and geotechnical conditions before conducting the earth work plan.

(2) Land development and all infrastructure plans must refer to the drainage plan to secure the development from flood disaster.

- a) Cipta Karya-1: At the plot which the water way passing inside, the building must keep the distance from water body to avoid reduction of the drain capacity as well as to secure from the flood.
- b) Bina Marga-1: Not to affect and reduce the capacity of the river and water-retaining body by detouring the route plan or constructing an elevated road.
- c) Bina Marga-2: It is necessary to follow the minimum height of the structure (e.g., bridge) and not disturb the river dimension at the river crossing points.
- d) Both Cipta Karya and Bina Marga: To discharge the drainage at the “outfall” which was determined by the Directorate General of Water Resources (SDA).



Source: JICA Consultant Team based on a document from PUPR

Figure 9.1: Drainage Planning

(3) IKN Dashboard

Integrate, confirm, and coordinate all project information related to IKN development, avoid, and reduce conflicts, and ensure project schedule and quality. The items that need to be dealt with are shown below.

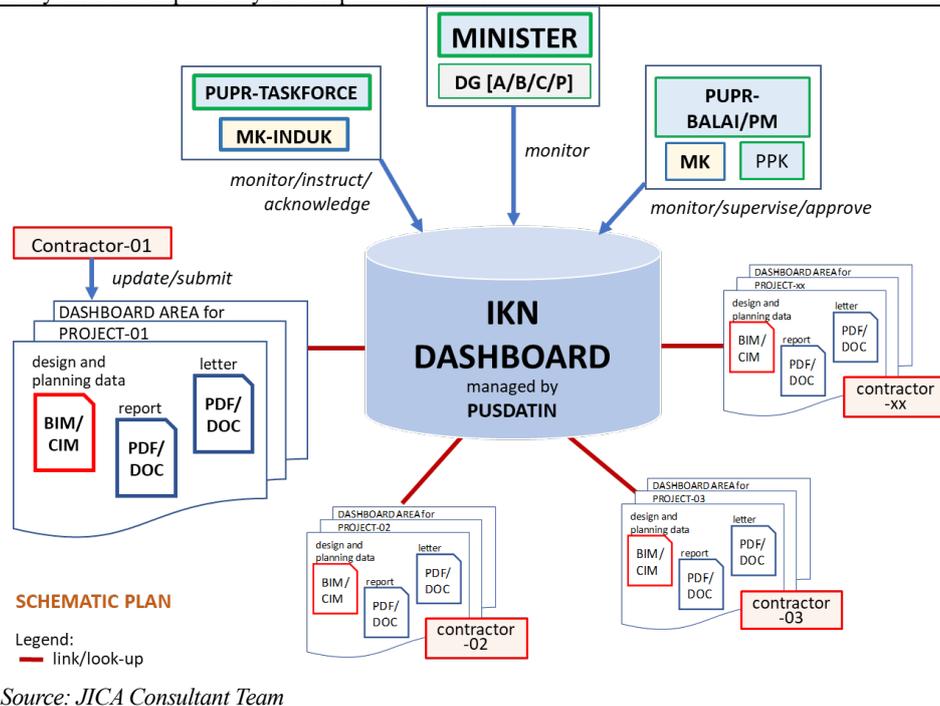


Figure 9.2: IKN Dashboard (draft)

- The IKN Dashboard is developed and maintained by PUDATIN. The data and information uploaded to the Dashboard will be monitored by all relevant Department of Public Works and Housing members.
- Daily work progress on the construction site is reported, and contractors update data within each dashboard area. The data consists of 1) design/plan, 2) report, and 3) letter (for approval/announcement, etc.). All construction should be designed using BIM/CIM; construction progress will be monitored according to BIM/CIM design; and daily work progress will be updated through BIM/CIM design. Each contractor prepares an execution plan using BIM.
- A supervisory consultant (MK, MK-Induk) will be assigned to confirm and verify the consistency of updated data and related facts through site inspections. Report to MK-Induk and make necessary adjustments to ensure schedule and quality based on the terms of the contract.
- Application of software that conflicts with licenses or copyright laws in project activities is not allowed.
- Software related to CAD/BIM/CIM must be capable of creating IFC files (International Foundation Class; files using the IFC file format are BIM (Building Information Modeling) files).
- Reports and letters are to be created using any PDF or Microsoft product.
- PUDATIN provides a main server for real-time backup along with a document management platform such as BIM360.

9.2.2 Coordination of Underground Structure Design and Road Construction

(1) Ensure Adequate Road Width for Installation of Utilities/Infrastructure in Road Basements

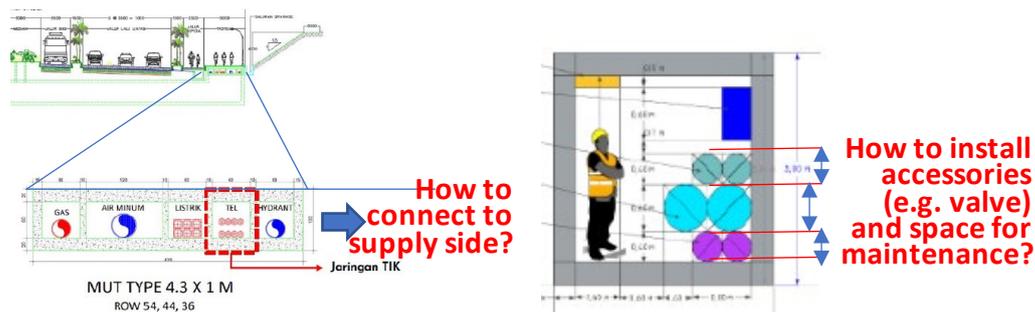
In the installation of various utilities/infrastructure in the road basement, chambers and manholes require sufficient space compared with gutters, pipes, and cables (based on the review of Chapter 2, Section 2, and the MP). In addition, interference with various utilities at intersections must be avoided, so minimum space should be provided for manholes and other structures in the road basement when they are installed.

(2) Prevention of Interference with Various Infrastructures at the Intersections

During the basic design phase prior to intersection construction, it is necessary to identify the size, invert level, and other conditions for various utilities/infrastructure at the required intersection locations.

(3) Survey for “Multi Utility Tunnel” Require Consideration

Drainage, ventilation, and lighting facilities for operation and maintenance will be installed. In addition, the invert level within the intersection shall be installed with pipes and culverts crossing deeper than the ground surface. Gravity flow drainage and sewage drainage, such as storm and sanitary sewer drainage, are prioritized.



Source: JICA Consultant Team based on a document from PUPR

Figure 9.3: Multi Utility Tunnel

(4) General Considerations

- a) Without a specific plan/basic design, the utility corridor is not sufficient to be installed. This is since it may not be useful due to connectivity (branch, valve, accessories, etc.), size, construction time, and cost (construction and maintenance).
- b) As a basis, the name of the river and road should be determined and used in the same way by all relevant authorities. This is to avoid a lack/missing and duplication of the work.

9.2.3 Ensure Future Scalability for Urban Transportation and ICT

It is necessary to consider future expandability and the possibility of installing advanced services, as expected below:

1. Land for public transportation, such as a lamp and station
2. Common structure (e.g., streetlight type for the sensor, such as CCTV for ICT and public security, electric charger for EV)
3. Other items stated in the development concept (e.g., clean energy, green building, and climate change adaptation)

1) Urban Transportation

At present, major arterial roads have a minimum road width of 50 meters. Other roads need to be surveyed for road widening to secure public transportation (lanes, stops, mode junctions), bicycle lanes, and pedestrian paths to realize the 10-minute City, and PUPR needs to coordinate with the Ministry of Transportation.

2) Information and Communication Technology (ICT)

The PUPR needs to coordinate with the Ministry of Communications and Information Technology (MICT) to ensure that there is sufficient space for the development of facilities, electric power capacity, and telecommunications capacity necessary to realize the smart city concept.



Source: JICA Consultant Team

Figure 9.4: Road Expandability

9.2.4 Arrangements and Coordination During the Construction Period

A total of 34 projects for construction will be implemented within the Government Core Area (hereinafter KIPP) until the year 2024. The total inflow of workers is estimated at a maximum of 200,000, which is equivalent to 23% of Balikpapan city's population, with an area of 503.3 km². Therefore, congestion due to the construction work can be easily envisioned.

(1) Site Access

To ensure access to the IKN construction area in a safe, controlled, and monitored manner by managing temporary construction for each project and providing common temporary construction to ensure safety due to traffic congestion associated with access.

(2) Securing Water Resources

Since there is limited water available, measures shall be implemented to prevent destruction of the natural



Source: JICA Team

Figure 9.5: Location of Port and IKN

environment and disruption of the livelihood of existing residents.

(3) Workers' Residence

To ensure workers' health and to assist their workability and sustainable performance, the living environment for workers, including water, waste, sanitation, fire prevention measures, health, and gender measures, shall be improved to ensure their workability.

(4) Transportation and Logistics

To ensure procurement of construction materials in terms of both quality and time management by coordinating logistics between projects and developing shared facilities such as concrete batch plants, testing facilities, and water supply facilities to reduce road congestion, ensure safety, and ensure construction schedule accuracy.

(5) Waste Management in Construction Projects

To naturally reduce adverse impacts and utilize limited resources, waste management will be implemented for the natural and social environment, especially construction waste and domestic waste.

9.2.5 Implementation Organization for Project Management

Since 34 projects will be implemented at the same time within KIPP, ordinary supervision and management work conducted by the Project Supervisor (MK) will not be enough, and coordination among the projects by the Project Management Consultant (PMC; MK-Induk) will play an important role in securing the construction quality and schedule. The implementation organization for project management is proposed below:

(1) Task of Level-1 Work by Project Supervisor (MK)

Construction supervision for physical quality based on the design and specification, schedule, and safety of the individual project. Payment approval will be based on the above result and acknowledgment from MK-Induk.

(2) Task of Level-2 Work by MK-Induk

Coordination among projects for conflicts on (1) design, and (2) construction. Payment acknowledgement based on the above result and confirmation on the connectivity/joint part(s). The detailed tasks are listed below:

1) For Design Work

Coordination works more at the design level for the following contents:

- Integration of design-related data and information by utilizing BIM/CIM software
- Confirmation on the duplication(s) and lack(s) in the design, including component/section and connection/joint part, and make a recommendation on the necessary adjustment/modification to MK

and to the contractor through MK

- Confirmation and suggestion to the contract condition related to the design and specification during the negotiation period, from the viewpoint of connectivity, harmonization as a function, and/or fatal technical issue(s), if any
- Confirmation and suggestion to the submitted draft design and specification by Design & Build Contractor, from the viewpoint of connectivity with other relevant project(s) and/or fatal technical issue(s), if any

2) For Construction Work

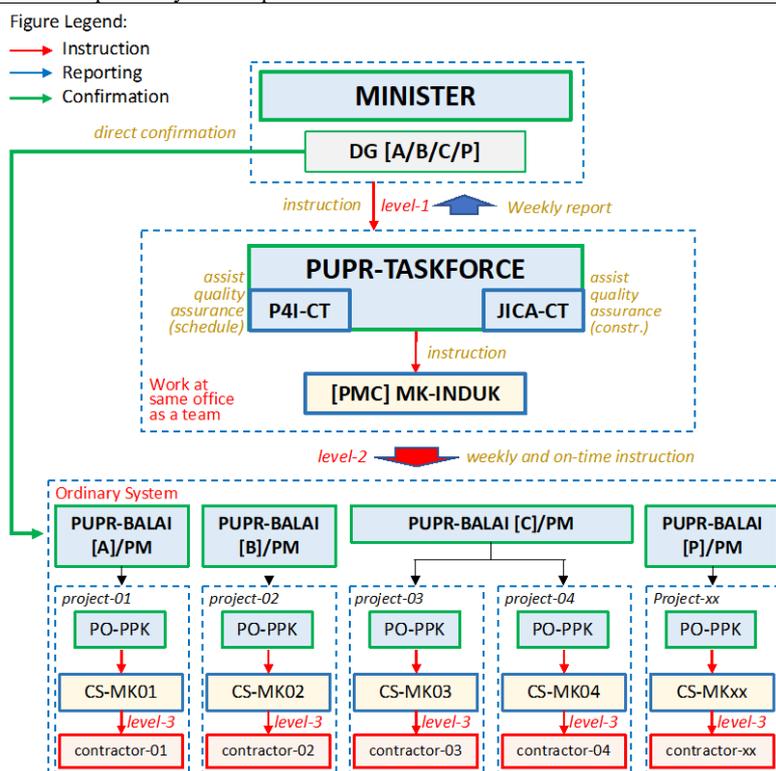
The following items will be coordinated at the construction/implementation level:

- Integrate construction plan-related data and information using leading software such as Primavera and MS-Project. Through the following activities, the JICA Consultant Team will consider and decide on an “integrated provisional plan” that covers all projects, avoids conflicts, and ensures smooth implementation.
 - Location and size of workshops and worker facilities (including necessary functions such as clinics and shops) for each project.
 - Rules for material procurement, especially logistics, water supply, and waste management (solid and liquid).
 - Determination of common temporary works that need to be prepared outside the scope of individual projects.
 - Assist MK in coordinating and negotiating with contractors regarding the items stated above.
1. Confirmation and proposal of connectivity, functional adjustment, and critical technical issues, if any, regarding contract conditions related to construction plans (including temporary construction) during the negotiation period.
 2. Confirm and propose the submitted construction plan to ensure that there are no discrepancies with other related projects.
 3. Cooperate in checking the progress of changes in construction plans and making necessary adjustments.

(3) For Level-3 Work (Project Mechanism)

The following technical decisions are made by the project:

1. Obligation to report to the task force, biweekly progress and quality checks, and on-time confirmation of issues.
2. Responsible for responding to decisions related to project implementation coordination.



Source: JICA Consultant Team

Figure 9.6: Project management implementation system chart

9.3 Assistance on Quality Assurance for Construction Works

Following the request from the PUPR, assistance on quality assurance for the construction works conducted by PUPR for Phase-1 development of KIPP was implemented eight times, as follows:

Table 9.2: Site Visit for the Assistance Works

Visit	Period
First	5 to 12 December 2022
Second	10 to 25 January 2023
Third	15 to 26 February 2023
Fourth	26 March to 6 April 2023
Fifth	8 to 20 May 2023
Sixth	3 to 19 July 2023
Seventh	18 September to 4 October 2023
Eighth	30 October to 15 November 2023

Source: JICA Consultant Team

About the quality of the construction work, the JICA Consultant Team compiled the remarks, issues, and necessary improvement matters identified on site during each visit. The result was explained based on the prepared material to the PUPR, and inspection was provided to improve the quality of the construction work.

Chapter 10 Recommendations for JICA's Cooperation towards IKN

Based on the information in chapters 1 to 8, this chapter proposes recommendations for JICA's cooperation towards the new capital city (hereinafter IKN) development in Indonesia.

10.1 Information and Conditions to be Acknowledged

(1) The Role of Each Organization in the development of the new capital

Until 2024, before the construction of the Government Core Area (hereinafter KIPP), each ministry and agency will carry out work such as legal development, planning and design formulation, and construction under their respective roles to promote the capital relocation project. After 2024, the Nusantara Capital City Authority: Otorita Ibu Kota Negara (hereinafter OIKN) will take over all IKN development projects and promote other developments, including the operation of KIPP, which will be supported and subsidized by relevant ministries and agencies.

(2) Development Funds

About 20% of the total development cost of IKN is planned to come from the national budget, and the remaining 80% is from private projects, including PPPs. The government plans to develop KIPP only with its own budget and without using external loans.

(3) Request from the Ministry of Public Works and Housing (hereinafter PUPR)

At present, PUPR is the only ministry specifically involved in the development of the new capital city, and all development costs for KIPP in Phase 1 are assumed to be funded by the national budget. The goal period for development is set for August 2024, which is shorter than the construction period for conventional infrastructure and building projects, including the preparation period for survey and design work. Under the circumstances, the Ministry has requested support for quality assurance.

(4) Status of OIKN

OIKN, which will be the organization of the new capital city after 2024, is currently in the process of organizing and taking over operations with the support of the relevant ministries and public corporations.

(5) Status of BAPPENAS

BAPPENAS is currently working on a draft of the PPP-IKN regulations and a regional master plan for Balikpapan, IKN, and Samarinda (Tri-City) to create an environment for private sector parti

icipation in the development of the new capital city. In addition, concepts such as Smart Forest City and 10-minute City have been clearly stated in the MP, but no detailed plans for their implementation have been announced.

(6) Status of Other Ministries and Agencies

Ministries and agencies are responsible for preparing a plan for each sector of the IKN, but no specific activities have been announced publicly.

(7) Timeline of New Capital Development Project

The IKN development project has five stages, as shown in the Appendix (Phase 1: 2022-2024, Phase 2: 2025-2029, Phase 3: 2030-2034, Phase 4: 2035-2039, and Phase 5: 2040-2045), to implement the development project. Based on this, we organized an overview of the timeline for each business attribute.

Issues, countermeasures, and project plans for each organization for the New Capital City Development Project are shown in Table 10.1. Issues and requests are extracted from the results of the interviews with each ministry and agency. The list of planned projects and the timeline of the New Capital City Development Project are shown in the Appendix. The advantages of Japanese assistance were considered in terms of Japanese technology, opportunities for participation by Japanese companies, the advantages of Japanese assistance (public benefit), and the adaptability of the Japanese ODA assistance scheme.

To identify the final projects to be supported, the table is summarized by work stage, including issues, so that they will lead to more concrete proposals.

Table 10.1: Roles of Relevant Ministries and Organizations by Attribute, Issues/Countermeasures/Proposed Projects

Work Plan	Roles of Relevant Ministries and Organizations								Issues	Countermeasure	Advantages of Japan's Assistance	Project Proposal
	OIKN	BAPPENAS	PUPR	KomInfo	MoT	Ministry of Environment and Forestry	ATR/BPN	East Kalimantan Province				
Plan	●	●	●	●	●	●	●	●	Long-term industrial (commerce/industrial), residential (infrastructure), and environmental development, including the surrounding municipalities of IKN, are necessary. There are concerns about future disorderly sprawl development in the suburbs of Balikpapan City, including disaster prevention plans.	Formulation of a development plan in collaboration with the existing neighboring cities of Balikpapan and Samarinda Renewal of MP, renewal of land use plan, investigation of disaster risk areas and reflection in MP	The most extensive and long-standing Japanese support scheme (development study). By conducting upstream planning, it is possible to speculate on future business development, including in the private sector.	[PJT-1] Tri-City Master Plan (Support for planning appropriate land use in the new capital and surrounding municipalities)
	Responsible for IKN MP updates (every 5 years), KIPP Spatial Planning Regulation development, and Building and Neighborhood Planning (RTBL) legal basis	MP, fading plan formulation	Formulation of maintenance and implementation plans for various infrastructures and public facilities	Smart city measures and policies	Transportation administration, IKN area grand design creation, IKN transportation plan creation, railway, LRT, BRT, bus, and self-driving car planning (until delivery to OIKN)	Development of an implementation plan for Forest City		Review of regional and urban plans in accordance with the IKN Development Plan	Improvement of construction supervision quality for KIPP's development projects is practical and urgent, as requested by the Minister of Public Works and National Housing and the head of the Implementation Task Force. Other state-run data centers have already been developed with ODA from Korea and France; IKN's data center development trend is not clear. K-IKN has no citywide development plan, although the MP is to discharge to a treatment plant after decentralized treatment.	Dispatch of experts through technical cooperation projects. Study on the development of information infrastructure and the feasibility of introducing Japanese technology for the realization of smart infrastructure. Examination of the feasibility of introducing Japanese technology for the installation of septic tanks and community plants.	There is no matching support scheme because continuous support in a wide range of fields is required.	
Design/Construction/Operation/Management	●		●	●			●	Development of regional infrastructure (public transportation, waste, etc.) in cooperation with OIKN (including related ministries and agencies)	The toll collection and maintenance system for IKN's water and sewage facilities is not being considered currently.	Study the dispatch of experts through technical cooperation projects.	Although not specific to new capitals, experts have already been dispatched to PUPR.	
	Coordinating, monitoring, and supervising the development process		Construction management, construction supervision (construction of basic infrastructure by 2024), provision of IKN base data, TOD development, implementation of EIA (until OIKN is completed), public works, development of public housing	Implementation of ITC and being smart at the provincial and national level (design, construction, operation, and maintenance)					The PUPR Task Force has limited knowledge of incinerators and has no experience introducing zero-emission incinerators and Waste To Energy in Nguni.	Hardware: Assistance in the development of waste-related facilities and equipment. Soft field: Support for strengthening organizations and systems, including enactment of ordinances, application of business forms, including PPP, securing financial resources, including fee collection, and introduction and establishment of the 3R's based on source separation, including the spread of waste banks.	Contribute to solving problems faced by existing neighboring cities in the field of waste management, an area in which Japan has technological expertise.	[PJT-2] Survey Project for Comprehensive Regional Waste Management Plan
									Support is needed for infrastructure development in transportation to support urban and economic activities.	Consideration of support for the participation of Japanese companies using the PPP framework for wide-area transportation MP, preparatory studies for railway development cooperation, yen loan projects, OM support projects, and TOD	Contribute to the improvement of traffic congestion in the wider area (Balikpapan, Nusanantara, and Samarinda), which will further worsen in the future, by using TOD and public transportation planning, which are Japan's strong points.	[PJT-3] Survey Project for Comprehensive Transportation Development Plan
									Support for the development and operation of public transportation within IKN and between IKN and neighboring cities is needed, as well as support for attracting and selecting operators.	Consideration of dispatching experts through technical cooperation projects	Since OIKN is not yet ready to receive support as an organization (no department in charge has been established), the implementation of the support is premature.	
									Support for the introduction and operation of a traffic control system is needed.	Consideration of dispatching experts through technical cooperation projects		
Investment Promotion	●			●	●	●	●	●	Functional enhancement of the Nusanantara Metropolitan Government, which is immature as an organization, is necessary for the realization of the new capital. Since the policy is to develop 80% of the new capital development through PPP, the response of the National Development Planning Agency, which is the current point of contact, will become complicated in the future.	Consider dispatching experts through technical cooperation projects. Consider dispatching experts through technical cooperation projects.	The implementation of the assistance is premature as OIKN is not ready to receive assistance as an organization. ADB has publicly announced a consultant procurement in January 2023.	
	Implementation of EIA, IKN environmental and social considerations, operation and management of infrastructure, implementation, operation and management of transportation development, introduction of e-Gov, implementation of land management (IKN land acquisition and land management, land acquisition plan (DPPT))			Responsible for the national data center, secure network, super application, e-Gov, command center, coordination with ministries and agencies, and implementation period	Support for issuing permissions to IKN (after handover to OIKN)	IKN's SEA/EIA approval, implementation of forest development procedures, cooperative support for PUPR's response to environmental and social considerations (until the establishment of OIKN), nursery management		Responsible for land acquisition paperwork, supporting OIKN for land acquisition, building and neighborhood planning (RTBL), and forest development paperwork.				
Environment	●	●							Development with scientific backing for environmental conservation toward the realization of Smart Forest City is required. The private sector is expected to enter the energy sector, and support through private sector collaboration projects led by private businesses is necessary.	Consider dispatching experts through technical cooperation projects. Consideration of support through private-sector partnership projects or cooperation preparatory surveys (overseas investment loans)	National agencies have already been approached for similar efforts by Japanese forestry companies. The implementation of the assistance is premature as OIKN is not ready to receive assistance as an organization.	
	Preparing and responding to PPP projects, and making investment decisions	PPP regulation formulation, PPP-IKN legal/system research, PPP project promotion, PPP-IKN market sounding, business procedures for individual PPP projects, annual publication of the PPP book, inter-ministerial coordination, medium-term planning, and long-term planning										
Traffic									Assistance is needed for infrastructure development in the transportation sector that supports urban and economic activities. It is necessary to implement public transportation development and operational support within the new capital and between the new capital and surrounding cities, as well as to attract businesses and support their selection. It is necessary to introduce and operate a traffic control system.	Wide area transport master plan, railway development cooperation preparatory survey, ODA loan project, OM support project, consideration of support for Japanese companies to enter the market using the PPP framework for TOD Consider dispatching experts through technical cooperation projects. Consider dispatching experts through technical cooperation projects.	ADB has publicly announced a consultant procurement in January 2023. Nunnery agencies have already been approached for similar efforts by Japanese forestry companies.	[PJT-4] Support for study on the introduction of clean energy in IKN (private sector collaboration project)
Others									In terms of development, to promote private development investment, it is necessary to support tourism initiatives that integrate environmental conservation and investment development and appeal both domestically and internationally. It is necessary to support the rise of the industrial sector, that underpins the economic activities of the new capital. Support is needed to promote the establishment of tertiary-care general hospitals and highly specialized hospitals in appropriate locations.	Consider dispatching experts through technical cooperation projects. Consider dispatching experts through technical cooperation projects. Consider dispatching experts through technical cooperation projects.	As for nature-based tourism, it will be greatly affected by the specific implementation plans of Forest City, and as for urban tourism, it is too early to tell because commercial development has not yet been implemented. Industrial (manufacturing) development plans for the region, including logistics, are uncertain. OIKN has already approached a major private medical institution to enter the area.	

Source: JICA Consultant Team

10.2 Priority Project Proposals

Based on the issues, the following three projects were selected as priority project proposals from a long list of 17 projects:

- Project -1: Tri-City Master Plan Project
- Project -2: Survey Project for Comprehensive Regional Waste Management Plan
- Project -3: Survey Project for Comprehensive Transportation Development Plan

(1) [Project-1] Tri-City Master Plan Project

1) Counterpart Organization

[Main] BAPPENAS, [Others] OIKN, Balikpapan City, Samarinda City

2) Project Outline

The new capital, IKN, cannot be developed suddenly as a city with all urban functions, but it will start with the functions of the national government and proceed with its development as a city in stages. Therefore, in the development of IKN, there is a demand for collaboration with the existing neighboring cities of Balikpapan and Samarinda.

Based on the above, this project will support the formulation of a development master plan for the three cities of IKN, Balikpapan, and Samarinda from the perspectives of industry (commercial/manufacturing), residence (including infrastructure), and the environment.

3) Assumed Cooperation Scheme

Technical Cooperation for Development Planning

4) Reason or Necessity

In the IKN Master Plan, the promotion of the new capital development emphasizes cooperation with Balikpapan City, and Samarinda City and is taken up as a Tri-City. On the other hand, the specific relationship and the details of the cooperation system based on the time axis have not yet been examined. The head of the department in charge (Planning Region-II) spoke at the JICA expert mission meeting in December 2022.

5) Remarks

Many of the similar assistance projects are implemented over a period of about two years but considering the speed of IKN development of the Indonesian side, a short-term implementation is proposed. In addition, since it is necessary for each city to revise its own master plan using this master plan, it may be possible to consider including support for the revision of the master plan for both cities Balikpapan and Samarinda in this work.

(2) [Project -2] Survey Project for Comprehensive Regional Waste Management Plan

1) Counterpart Organization

PUPR / Cipta Karya

2) Project Outline

This is a development survey-type technical cooperation project related to the formulation of an Integrated Solid Waste Management Master Plan (ISWM M/P) for municipal solid waste. By targeting the wide area of East Kalimantan, including IKN, Balikpapan, and Samarinda, an appropriate management system can be developed for IKN where the amount of waste generation is limited, and other cities where the independent operation of incinerator is economically premature, is considered and proposed.

1) Household waste, 2) storage/discharge, collection/transportation, intermediate treatment/recycling, final disposal, organization/system, economy/finance, database, and enlightenment/education for similar household waste will be considered in the MP formulation. In addition to the hard aspects such as the development of waste-related facilities and equipment, the strengthening of organizations and systems, including the establishment of ordinances, the application of business forms, including PPP, the securing of financial resources, including fee collection, and the sources of waste, including the spread of waste banks, will be included. The JICA Consultant Team will provide support in the software field, such as the introduction and establishment of the 3Rs on the premise of sorting. Priority projects will continue as a feasibility study (F/S), and a yen loan or PPP project will be considered.

- Candidates for priority projects
- Waste incineration power plant (processing capacity: 200-300 t/d)
- Intermediate treatment facility, including composting facility (treatment capacity: 50-100 t/d)
- Transit facility
- Recycling Center/Environmental Education Center
- Final disposal site/sanitary landfill disposal site (Landfill capacity: 10 to 15 years)

3) Assumed Cooperation Scheme

Technical Cooperation for Development Planning

4) Reason or Necessity

Since it will take a certain period to generate waste in the new capital, this support plan will benefit the existing residents of Balikpapan and Samarinda. It will be a planning survey for medium- to long-term ODA loan projects or PPP project formulation.

Regarding waste management, the Ministry of Public Works and Housing requested assistance from South

Korea in September 2022, but PUPR task force members said that as of November, they had not received a positive response. The JICA Consultant Team also received consultations because they lacked knowledge about incinerators and because Indonesia had no experience introducing zero-emission incinerators and waste-to-energy facilities.

(3) [Project -3] Survey Project for Comprehensive Transportation Development Plan

1) Counterpart Organization

[Main] Ministry of Transportation, [Others] OIKN, Balikpapan City, Samarinda City

2) Project Outline

This is a development study type technical cooperation project for the formulation of a Comprehensive Transportation Development Master Plan, which covers logistics and human flow. The project will assist in the formulation of a development plan for the total area, which is Nusantara, Balikpapan, and Samarinda, including the short-, medium-, and long-term ideals of inter-city logistics and public transportation.

The introduction of TOD, which will contribute to the realization of the "10-minute City" concept outlined in the New Capital City Development Master Plan, will also be considered, and assistance will be provided for the formulation of feasibility studies (F/S) for priority projects.

3) Assumed Cooperation Scheme

Development Plan Study Type Technical Cooperation Project

4) Reason or Necessity

Since logistics and intercity transportation are highly dependent on Tri-City's development plan, this project will be implemented after the development plan is formulated. This project proposes to introduce public transportation and TOD in Balikpapan and Samarinda, which have traffic congestion problems during rush hour, and is expected to improve the current situation.

Appendix

Appendix 1

“Timeline of New Capital Development Project (Summary)”

Appendix 2

“Timeline of New Capital Development Project (detailed version)”

Appendix 1 Timeline of New Capital Development Project (Summary)

Business Field	Development Phase				
	1 (2022-2024)	2 (2025-2029)	3 (2030-2034)	4 (2035-2039)	5 (2040-2045)
Infrastructure	[Water Resources] Dams, Intakes, Reservoir, [Water Supply] Water Treatment Plant, Water Supply Pipe Networks, [Sewerage] Sewage Pipe Networks, [Electricity] Distribution Networks, Transmission/Distribution Networks (underground)	[Electricity] Floating Solar Panels, [ICT] National Government Data Centers	[Water Resources] Intakes, Reservoir	[Water Supply] Water Treatment Plant	
				[Water Resources] Reservoir	
			[ICT] Data Center		
	[Rainwater/Disaster Prevention] Drainage/Flood Control Facilities/Sediment Management Facilities, Rainwater Utilization/Infiltration Facilities, [Water Supply] Piping Network, [Sewerage] Centralized Sewer Management System, [ICT] Broadband Base Station, [Gas] City Gas Network, [Waste] Waste-related Facilities (Compost/Recycle Facilities, landfill Sites, Energy Conversion Facilities, PWCS), [Electricity] Outdoor Solar Panels, Substations, Transmission and Distribution Networks, Smart Meters, Energy Backup Facilities, Solar Farms, Electric Buses and Charging Facilities.				
Traffic-Road	Pedestrian and Bicycle Facilities, KIPP Road Infrastructure (Internal Road), Road Infrastructure (between Balikpapan City and KIPP), Updating of existing KIPP Access Roads, Bus Network (Balikpapan Airport-KIPP)			Road Network (between KP-IKN and Municipalities)	
		Railway Network (Balikpapan Airport - KIPP)		Railway network (IKN and surrounding areas)	
	Transit Oriented Development				
	Bus network, Access Roads for Industrial Areas				
Government Facility	Presidential Palace				
	Presidential Palace Facilities, Housing for Government Employees				
Housing	housing for construction workers, housing development for general user, renewal of existing Housing at Residential Area		Coordination for Low and Middle-Income Housing and Residents		
		Development of existing settlements			
Environment-Agriculture	Parks (Botanical gardens, etc.)	Urban Landscape Park		Urban Agriculture	
	Forest Management center, Forest Protection, Forest Fire Control, Smart System for Environmental Quality Monitoring				
	Comprehensive Animal Rescue Center, Nursery Wild Animals Protection				
Industries	Basic Infrastructure for Industrial Areas (Phase 1-3: Water Resources, Roads, Drainage, Energy, Electricity, ICT, etc.), (Phase 2-5: Digital Centers, Infrastructure, Education Centers, Vocational Schools, Universities, etc.), Palm Plantations etc.				
				Capacity Development for Industrial Production	
Disaster Prevention	Smart Early Warning System for Disasters				
	Reservoirs/Multipurpose Retention Ponds				
Harbor/Airport		Assist for Development of Harbour Industrial Area			
	Development of AP T Planoto Airport	Development of Kariangau Harbour, Semayan Harbour, and Balikpapan Airport			

Source: JICA Consultant Team based on Presidential Decree No. 63

Appendix 2 Timeline of New Capital Development Project (detailed version)

No	Development/Relocation Project	Field	Development Phase				
			1	2	3	4	5
1	Presidential Palace	Government					
2	Vice President's Mansion	Government					
3	Facilities related to the Presidential Palace	Government					
4	Ministry of State Secretariat	Government					
5	Chief Cabinet Secretary Office	Government					
6	National Higher Institutions Shared Offices (People's Council, etc.), Supreme Audit Office, Supreme Court, Constitutional Court, Judicial Commission	Government					
7	State Institutions with Regulatory Obligations Based in Metropolitan Offices (Bank Indonesia, Social Insurance Agency, etc.)	Government					
8	Shared Office for Relocating Ministries	Government					
9	National/Government Civil Servant House (with land)	Government					
11	Government Special Facilities	Government					
12	Distribution Network, Substation Facilities	Electric Power					
13	Solar Panel Outside	Electric Power					
14	Floating Solar Panel	Electric Power					
15	Solar Farm	Electric Power					
16	Energy Backup/Storage Facilities	Electric Power					
17	Gas Insulated Substation (GIS) 150kV	Electric Power					
18	Substation 150kV	Electric Power					
19	Substation 500kV	Electric Power					
20	Distribution Substation 20kV	Electric Power					
21	Underground Cable (UGC) Transmission and Distribution Network	Electric Power					
22	Transmission/Distribution Network	Electric Power					
23	Smart Meter (Electric Power)	Electric Power					
24	City Gas Network	Gas					
25	Compost Facility	Waste					
26	Recycling Facility	Waste					
27	Waste to Energy / Waste to Product Facility	Waste					
28	Waste Landfill	Waste					
29	Hazardous Waste Treatment Facility	Waste					
30	Hazardous Waste Dedicated Landfill	Waste					
31	Hazardous Medical Waste Disposal Facility	Waste					
32	Pneumatic Waste Collection System (PWCS)	Waste					
33	PWCS Collection Station	Waste					
34	Waste Collection and Transportation Facility	Waste					
35	Integrated Management System for Household Wastewater (SPALD-T)	Sewage Drainage					
36	Domestic Wastewater Pipe Network	Sewage Drainage					
37	Sepak Water Intake	Water Resources					
38	Sepak Semoi Dum	Water Resources					
39	Other Water Intake Facilities	Water Resources					
40	Water Treatment Plant (KP-IKN)	Water Resources					
41	Water Treatment Plant 2x300 l/s (KIPP)	Water Resources					
42	Water Treatment Plant 1x300 l/s	Water Resources					
43	Piping Network for Water Storage Facility	Water Resources					
44	Main Reservoir for Drinking Water	Water Resources					
45	Reservoir for Drinking Water	Water Resources					

No	Development/Relocation Project	Field	Development Phase				
			1	2	3	4	5
		urces					
46	Drinking Water Supply Pipe Network	Water Resources					
47	Rainwater Drainage, Flood Control Infrastructure, Sediment Management Facilities	Rainwater Drainage and Disaster Prevention					
48	Rainwater Utilization and Infiltration Facilities in Government Buildings and Structures	Rainwater Drainage					
49	Update of Existing House and Residential District	Housing					
50	New Housing Development for General Use	Housing					
51	House for Construction Workers	Housing					
52	Coordination with House for Low- and Middle-Income and Residents	Housing					
53	Development for Existing Settlements	Housing					
54	Government Data Center	Communication					
55	Edge Data Center	Communication					
56	Fixed Broadband	Communication					
57	Mobile Broadband Base Station	Communication					
58	Bus Networks and Bus Stops/Shelters	Traffic/Road					
59	TOD System Development	Traffic/Road					
60	Facilities for Pedestrian and Bicycle	Traffic/Road					
61	KIPP Road Infrastructure (Less than Main Road)	Traffic/Road					
62	Road Infrastructure (between Balikpapan City and KIPP)	Traffic/Road					
63	Update of Existing KIPP Access Road	Traffic/Road					
64	Bus Network (Balikpapan Airport - KIPP)	Traffic/Road					
65	Railway Network (Balikpapan Airport - KIPP)	Traffic/Road					
66	Railway Network (IKN and Surrounding Areas)	Traffic/Road					
67	Road Network (between KP-IKN and Surrounding Local Government)	Traffic/Road					
68	Electric Bus/Charging Facility	Traffic/Road					
69	Access Road in Industrial Area	Traffic/Road					
70	Forest Protection Infrastructure and Facilities	Environment					
71	Forest Fire Control Infrastructure and Facilities	Environment					
72	Protection of Artificial Animal Corridors (Bridges, Tunnels, etc.)	Environment					
73	Field Work for Biodiversity Conservation	Environment					
74	Comprehensive Animal Rescue Center	Environment					
75	Theme parks (botanical gardens, urban jungles, mangrove eco-parks, arboretu ms, etc.)	Environment					
76	Forest City Management Center	Environment					
77	Large Scale Seedbed	Environment					
78	Water Supply to the Seedbed	Environment					
79	Green Open Spaces (Urban Jungles, Parks, etc.)	Environment					
80	Smart System for Environmental Quality Monitoring	Environment					
81	Reservoirs/Multipurpose Reservoirs	Disaster Prevention					
82	Smart Early Warning System for Disasters	Disaster Prevention					
83	K-IKN Infrastructure and Facility Development	Infrastructure					
84	Basic infrastructure for Industrial Areas (Water Resources, Roads, Drainage, Energy, Electricity, Communications, etc.)	Industries					
85	Improving Industrial Production Capacity	Industries					
86	Infrastructure Development in Industrial Areas (Digital Centers, Infrastructure, Education Centers, Vocational Schools, Universities, etc.)	Industries					
87	Reclamation Business, Mining Business, Utilization of Palm Plantation	Industries					
88	Urban Farming	Industries					
89	Supporting Port for Industrial Areas	Port					
90	Supporting Railway for Industrial Areas	Railways					
91	Development of Kariangau Port, Semayang Port and Balikpapan Airport	Port					
92	Development of APT Planoto Airport	Airport					
93	Connection Infrastructure to Industrial Areas	Infrastructure					

Source: JICA Consultant Team