



Otorita Ibu Kota
NUSANTARA

Session 1:
Smart City Implementation: Role of Policy Makers and Planners

Nusantara

Indonesia's Smart and Sustainable Forest City

Nusantara Capital Authority

International Training Workshop on Smart Cities in Asia and the Pacific
“Building safe, resilient, inclusive, livable, and sustainable cities and communities”

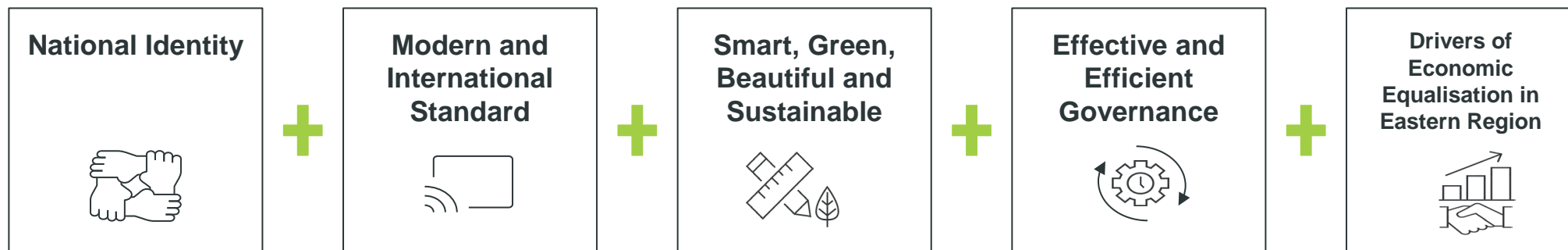
13th May 2025

Moving The **New Capital** to Kalimantan

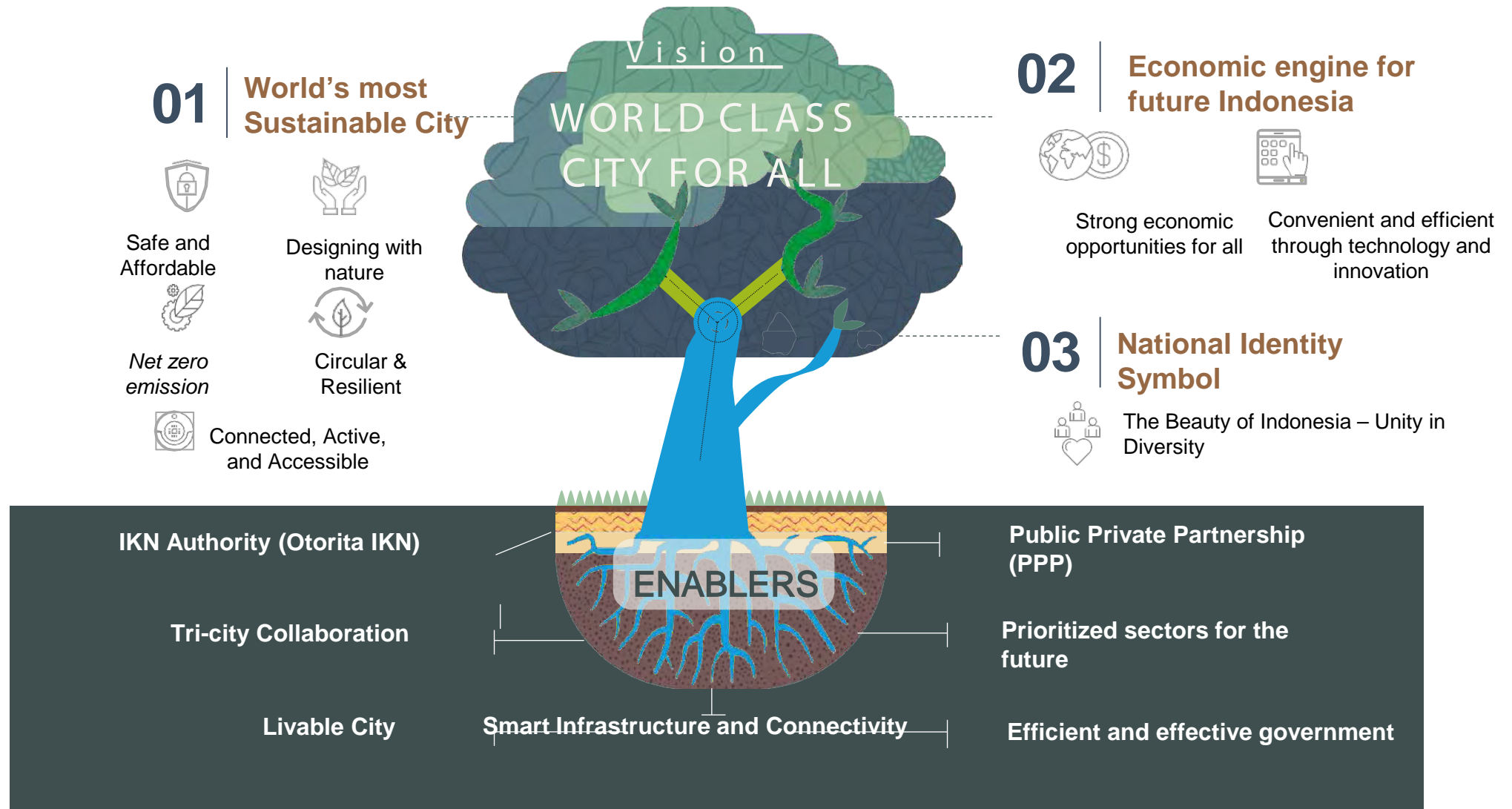
- ❑ The relocation of the National Capital City to Kalimantan is in line with efforts to realize more inclusive and equitable economic growth, namely by moving the center of gravity outside Java
- ❑ The new capital city is planned and built with new higher standards, quality, adaptive, innovative, gender-equal and inclusive, equitable, sustainable, and dignified
- ❑ The relocation of the National Capital to Kalimantan Island is based on several considerations, such as equitable development and reducing the burden on Jakarta as one of the centers of national economic activity.



Key Characteristic of National Capital Cities



Nusantara's Vision and Goals



Principles and KPIs in the Masterplan



1. Designing with Nature	2. Unity in diversity	3. Connected, Active and Accessible	4. Net Zero Emission IKN	5. Circular and Resilient	6. Safe & Affordable	7. Convenience and efficiency through technology	8. Robust economic opportunity for all
1.1 >75% of the 252.660 Ha area for green space (65% protected area and 10% food production) 1.2 100% of residents can access recreational green space in 10 minutes 1.3 100% green replacement of building footprint > 4 stories (institutional, commercial, and residential building)	2.1 100% integration of all communities 2.2 100% of residents can access to social/ community services within 10 minutes 2.3 100% public spaces designed using universal access, local wisdom and inclusive design principles	3.1 80% of all trips made by public transport or active mobility 3.2 10 minutes to key amenities and public transport nodes 3.3 <50 minutes Express transit connection from KIPP to strategic airport by 2030	4.1 The installation of renewable energy capacity will meet 100% of the Nation's Capital Energy Needs. 4.2 60% energy savings for energy conservation in buildings 4.3 Net zero emission for IKN for 2045 at 252.660 Ha	5.1 >10% of 252.660 Ha is available for food production 5.2 60% recycling solid waste generation by 2045 5.3 100% of wastewater will be treated through the treatment system by 2035	6.1 Ranking in the top 10 most livable cities in the world by 2045 6.2 Settlements in the 252.660 Ha area will have access to critical infrastructure by 2045 6.3 Decent, safe, and affordable housing that meets a balanced occupancy ratio	7.1 Very high ranking in the E-Government Development Index (EGDI) by the United Nations. 7.2 100% digital and ICT connectivity for all residents and businesses 7.3 >75% Business Satisfaction with Digital Services rating	8.1 0% poverty in the IKN population by 2035 8.2 GRDP per capita of high income country 8.3 Lowest regional GINI ratio in Indonesia by 2045

Source: Law 21 of 2023 concerning Amendments to Law 3 of 2022 concerning National Capital

11, 15	1,3,5, 6,7,9,11, 12,16	11	11,13	2,6,11, 12,14	9,11, 16,17	9,17	1,8,9,10,11, 12,14,16,17
Relevance to Sustainable Development Goals							

Nusantara as a Forest City

A city dominated by a forest landscape structure, with an integrated landscape to live in harmony with nature.

PRINSIP

Zero deforestation

Biodiversity conservation

Sustainable forest management

Carbon stock enhancement

Indigenous & local community engagement

Improved governance & land use

75% green area of IKN (65% forest & 10% green coverage)

50% green area of KIKN & KIPP

Forest City as a Nature-Based Solution

Economy

- Creating jobs (green jobs)
- Reduce energy costs
- Increase property value
- Attract tourists
- Reduces disaster costs
- Reduce health costs
- Gain financing opportunities from forest-based carbon trading

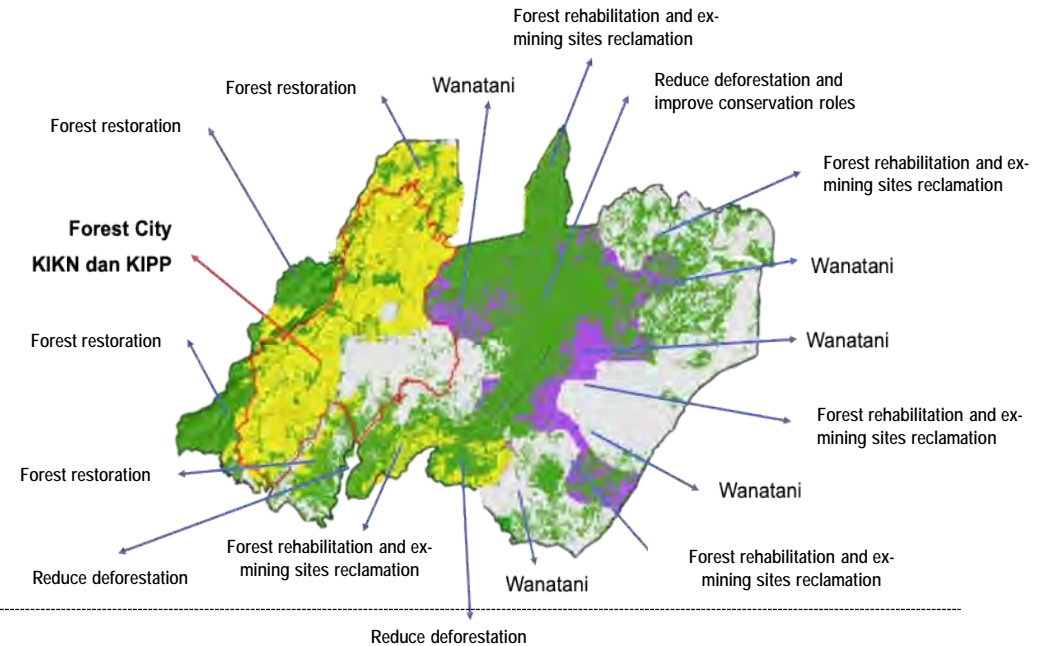
Social

- Strengthen unity
- Encourages outdoor activities
- Reduces disease
- Boosts immunity
- Reduces depression with forest bathing/healing

Environment

- Mitigating climate change
- Increase biodiversity
- Maintain city microclimate
- Reduce air pollution

STRATEGY



Nusantara as a Sponge City

- A circular water system that combines architecture, urban design, infrastructure, and sustainability principles.
- The planning area acts like a sponge that absorbs rainwater, filters it through natural processes and releases the water into dams, waterways and aquifers.

SPONGE CITY DEVELOPMENT PRINCIPLES



Archipelago City

Green & blue open spaces are the foundation of the city's shaping structure. Both spaces connect the city with nature, integrated with urban design to preserve biodiversity.



Absorbent City

Green & blue open spaces at the district scale will capture rainfall runoff that is channeled into urban parks, so that aquifers are replenished & the water cycle is maintained.



Integrated City

Elements at the neighborhood scale are integrated to slow & retain water flow, harvest rainwater, & increase rainwater absorption into the soil.

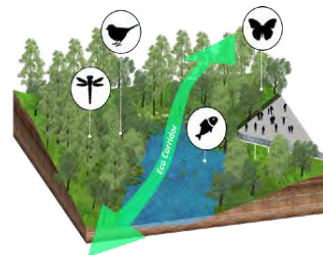
SPONGE CITY DEVELOPMENT STRATEGY

Minimize surface runoff



Direct rainwater runoff from adjacent roads and development to open space planters to filter runoff and improve water efficiency

Maximize rainwater infiltration



Built-up areas must be able to absorb rainwater into the ground to the maximum extent. This is done by establishing green open spaces, vegetation gardens, and riparian spaces.

Rainwater harvesting

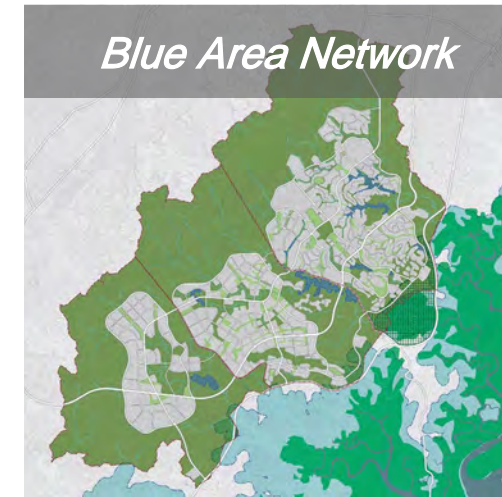


Rainwater harvesting in the form of green and blue open spaces. Implementations include ditches/creeks, river channels, situ, lakes, ponds, and retention ponds.

Green Area Network



Blue Area Network



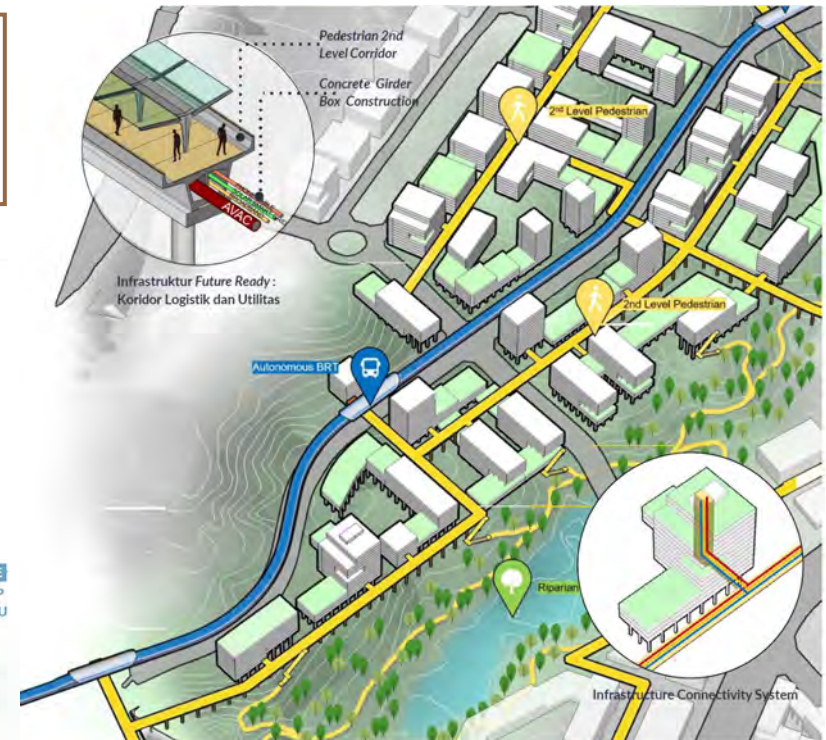
Nusantara as a Smart City

A city fully powered by renewable energy, optimized by smart grids and meters

IoT-based Water Quality Monitoring and Control System

Natural Disaster Early Warning System

Forest Management System: Fire and Climate Censors, Hotspot Monitoring, Firebreak System



Implementation of Integrated Urban Water Management (IUWM).

Integrated Command and Control Center for Smart and Future Ready City

Biodiversity and Carbon Stock Monitoring System

Implementation of Sustainable & Smart Nexus system on sanitation system



S
Sustainable



M
Measureable



A
Affordable



R
Resilient



T
Timely Based

Nusantara as a “10-minute city” (1/2)



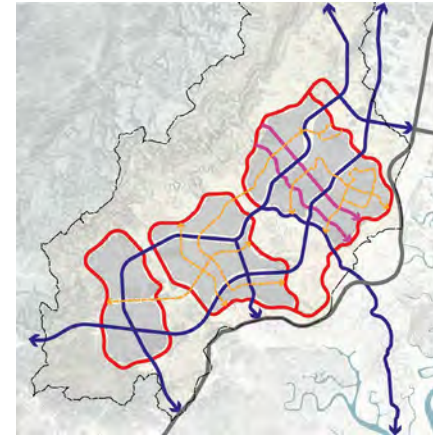
Appreciation for Natural Land Morphology

KIPP's spatial structure plan responds existing natural topography as well as identifies hill and valley with various slope.



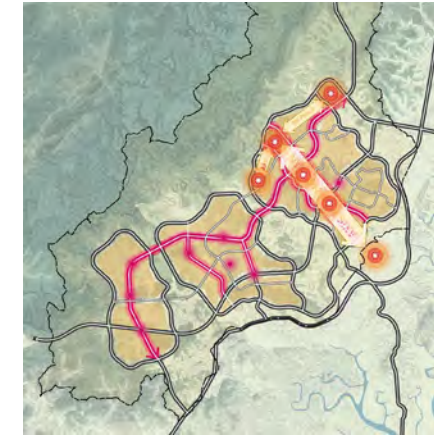
Green Fingers Connectivity

Spatial structure of the city were formed to maximize natural landscape as the green finger, which acts as an ecological and recreational function.



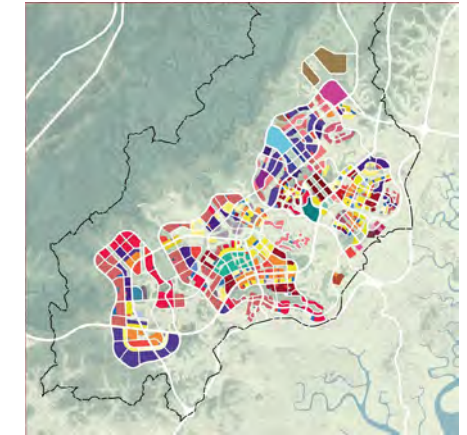
Connectivity System of The Area

The mobility corridor formed in a loop system that facilitate mobility to the entire area as well as a respond to the existing natural condition.



Axis and Visual Corridor

The axis represents the philosophical value and forms the main corridor, which includes Kebangsaan Axis (North-South) and Tripraja Axis (West-East).



Zoning and City's Blocks

Land use zoning have certain function that influenced by topography, land carrying capacity, and the main axis.

Source: Urban Design Development Document, Indonesia Ministry of Housing and Public Works (PUPR), 2023

Nusantara as a “10-minute city” (2/2)

Public Space
Permeability



Collaborative Space



Flexible Social Area



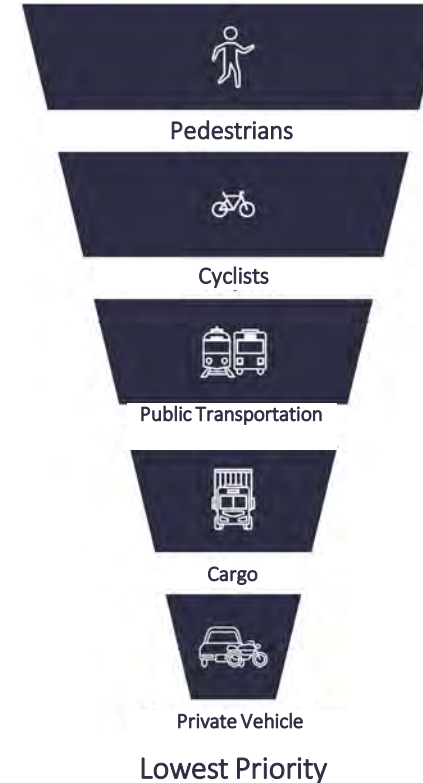
Connected to Internet



10 minutes to Social Facilities, Public Facilities, and Transit Hub

Each district consists of several interconnected vertical buildings and have collaborative spaces aimed at increasing social interactions

Highest Priority



Nusantara’s sustainable mobility concept prioritize non-motorized and public transportation .

“Settlement Transformation” focused on the development of inclusive, smart, collaborative, compact, based on the 10 minutes city concept .



<10 minutes

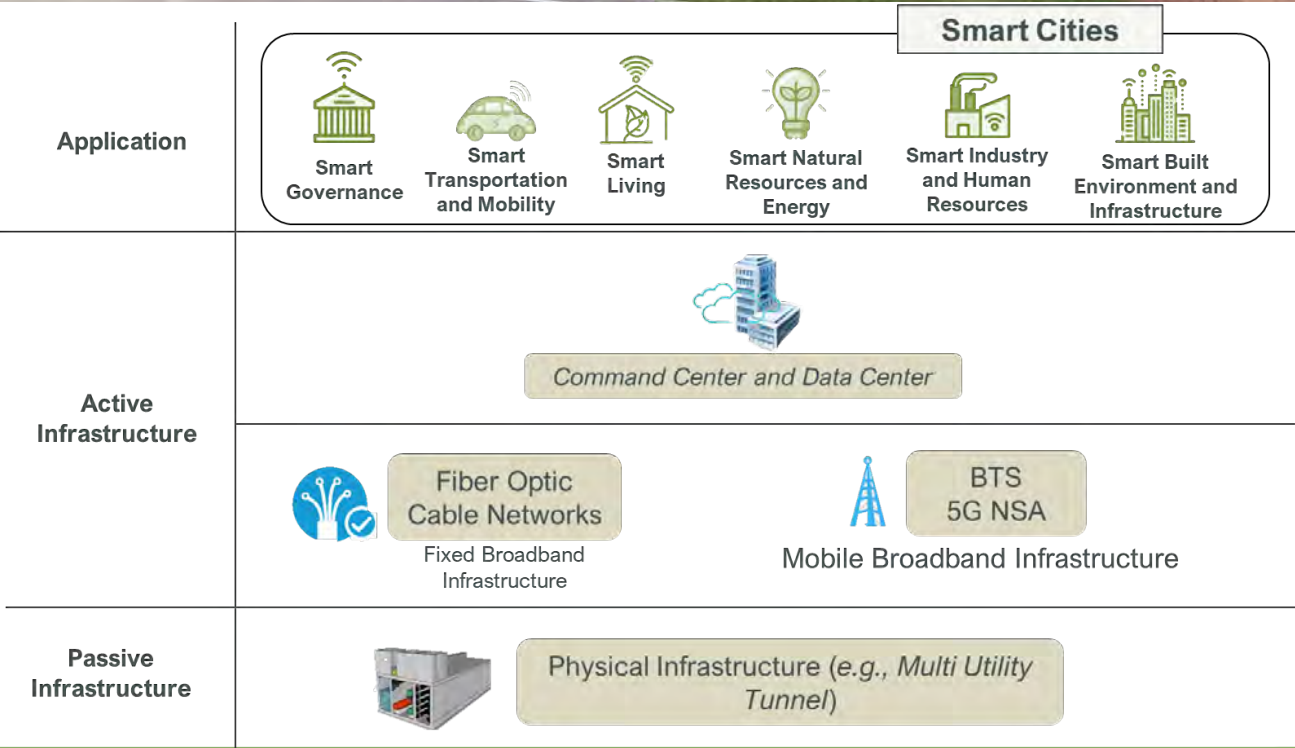
Residents can reach Public Transportation Nodes and Public Facilities .

Regulatory Framework for Smart City Implementation:

The Smart City Blueprint for Nusantara

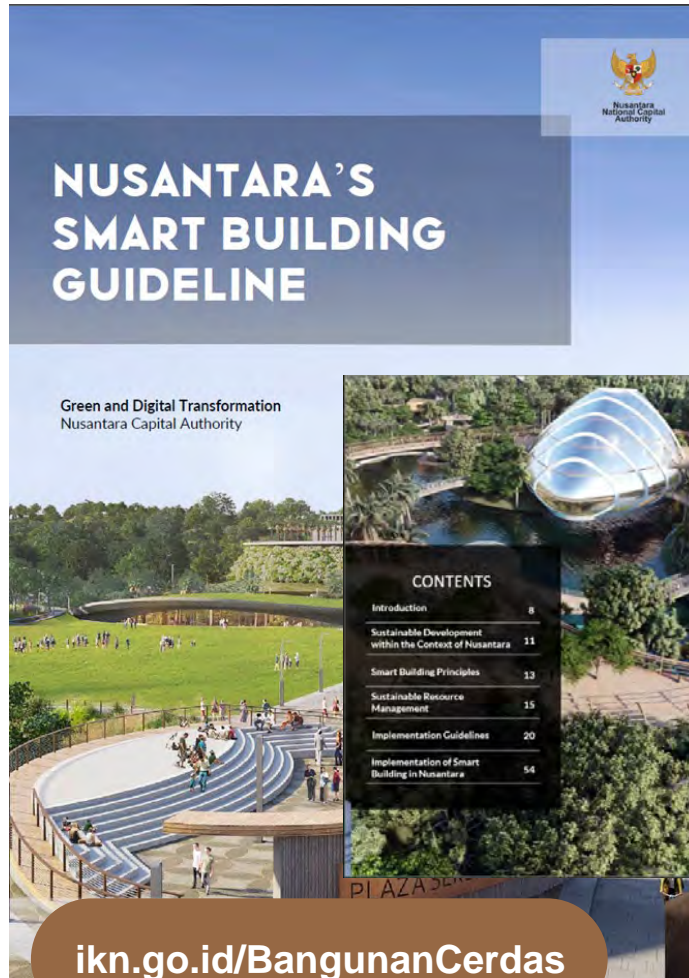


[Circular Letter of NCA Chairman]
The Smart City Blueprint for Nusantara



Regulatory Framework for Smart City Implementation:

Guidelines for Smart Building Development in the Nusantara Capital



[Circular Letter of NCA Chairman]
Guidelines for Smart Building Development
in the Nusantara Capital



Principles of Smart Buildings

Automation

Interactivity

Adaptability

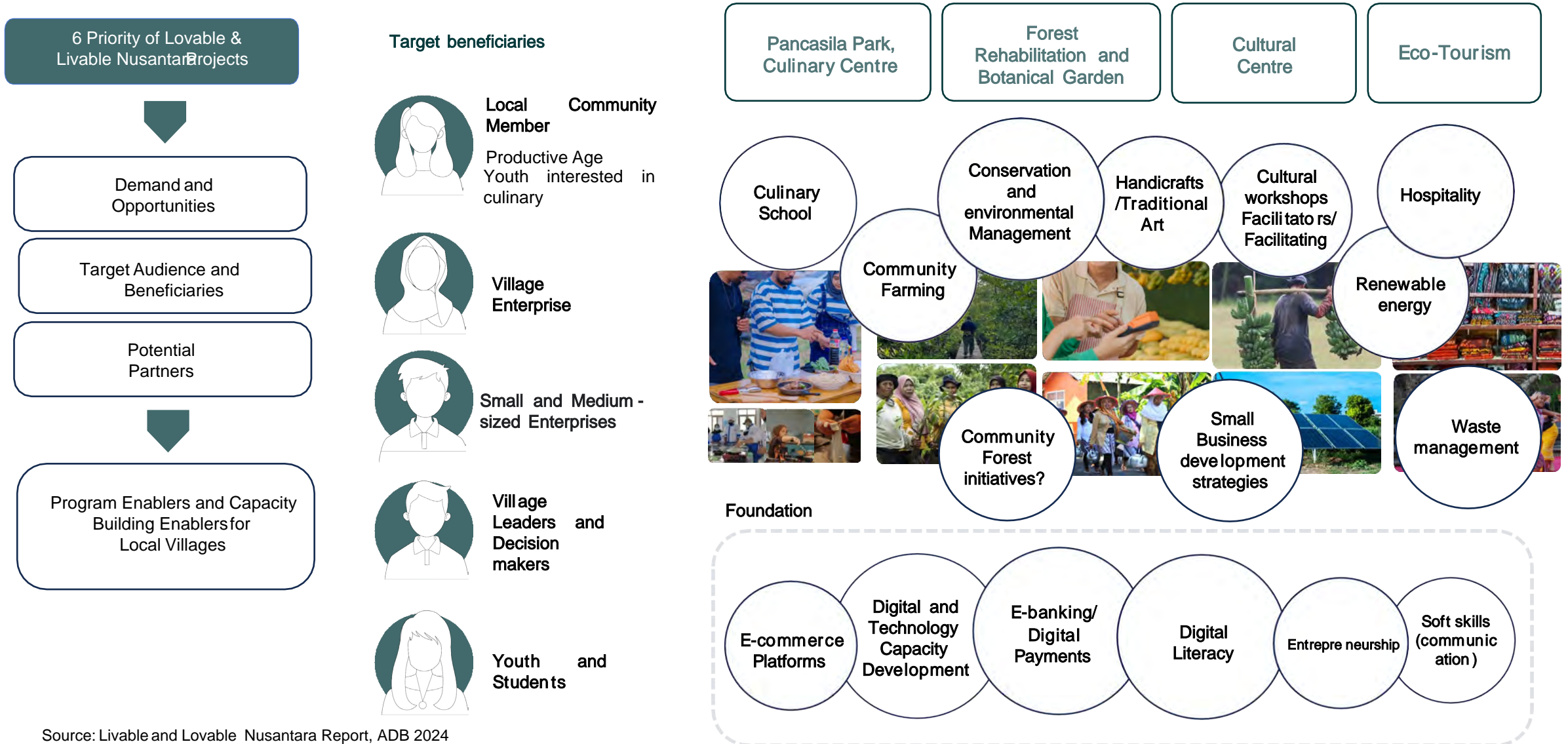
**Green
Building**

Multi-functionality

Efficiency

Inclusivity

Smart Villages Network Initiatives



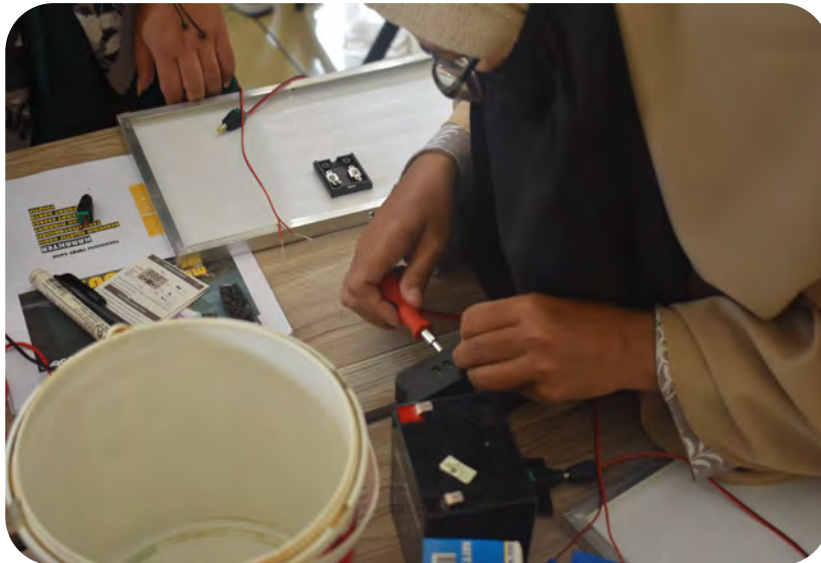
Source: Livable and Lovable Nusantara Report, ADB 2024

Engaging Communities for Inclusive Smart Cities

"Empowering Women through Technology & Green Energy"

The **Coding Mom** and **Solar Mom** programs, launched by the Nusantara Capital Authority in 2023, empower women in Ibu Kota Nusantara through digital capacity building and clean energy training. These initiatives advance green transformation, gender inclusion, and local economic resilience, having trained over 150 participants across four batches.

Coding Mom is a digital literacy program that equips women, especially mothers, with skills in digital ethics, design thinking, social media marketing, and website development. Through mentoring, workshops, entrepreneurship training, and a final project, participants build both practical knowledge and a supportive local community.

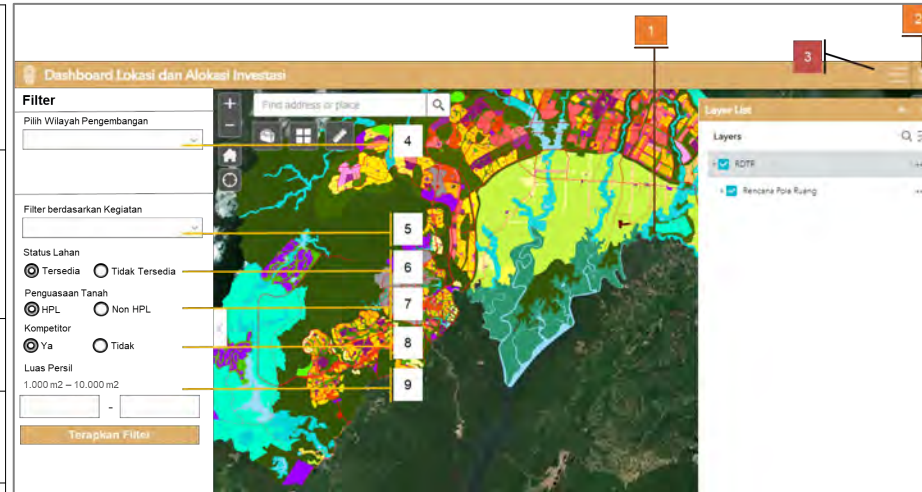


Solar Mom empowers women—especially mothers—with hands-on training in solar energy, teaching them to assemble, use, and maintain solar-powered tools. The program promotes environmental awareness by reducing CO₂ emissions and reliance on fossil fuels, supporting a shift toward clean, green energy.

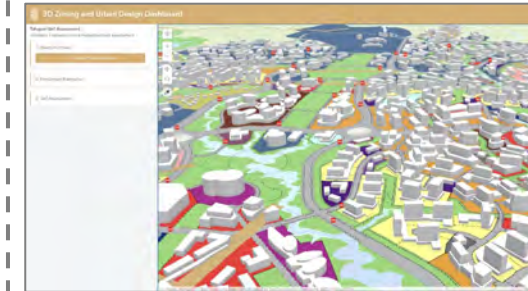
Smart Planning System: OneMap Nusantara

Development progress of Dashboard #1: Location Intelligent for Investment Location Identification

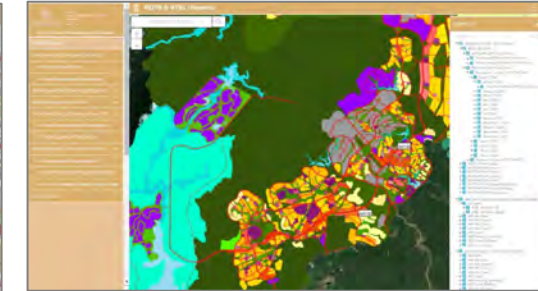
1	Maps	<ol style="list-style-type: none"> 1. Display basemap data 2. Display RDTR spatial pattern data on the map 3. Display RPK data 4. Feature for zoom in and out
2	Layer List	<ol style="list-style-type: none"> 1. Displays the layer list including: <ul style="list-style-type: none"> – Detailed Spatial Plan (RDTR) layer – Urban Design Guidelines (UDGL/RPK) Layer 2. Can activate and deactivate layers. 3. Displays the default layer.
3	Legend	Displays a legend of colours and their descriptions
4	Filter by Development Area (Wilayah Pengembangan)	Display parcels according to the selected development area
5	Filter by Type of Activities (Jenis Kegiatan)	<ol style="list-style-type: none"> 1. Displays data on parcels that are allowed based on the Standard Classification of Indonesian Business Field (KBLI) and the Detailed Spatial Plan (RDTR). 2. Activity types can be searched by searching by KBLI code and or activity name (Autocomplete). 3. Activity types can be searched by selecting the activity from the dropdown menu. 4. Activity type and/or KBLI is selected.



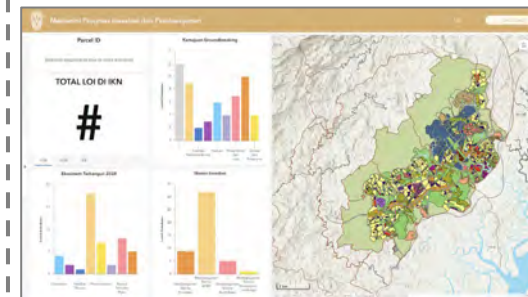
6	Filter by Land Status	Displays parcels by land status: <ul style="list-style-type: none"> • Available: no interest/intent yet. • Not Available: there is already an interest/intent.
7	Filter by Land Tenure Ket:	Displaying parcels based on land tenure: <ul style="list-style-type: none"> • HPL • Non-HPL
8	Filter by Competitors Ket:	Displays parcels that already have investment enthusiasts similar to the type of activity you want to search for.
9	Filter by Parcel Area	<ol style="list-style-type: none"> 1. Displays parcels based on a specific coverage area. 2. Mark the selected parcel



Dashboard #2 : Location Intelligent for Land Parcel Management



Dashboard #4 : Location Intelligent for Spatial Plan Comparison



Dashboard #3 : Location Intelligent for Investment Progress and Realization Monitoring



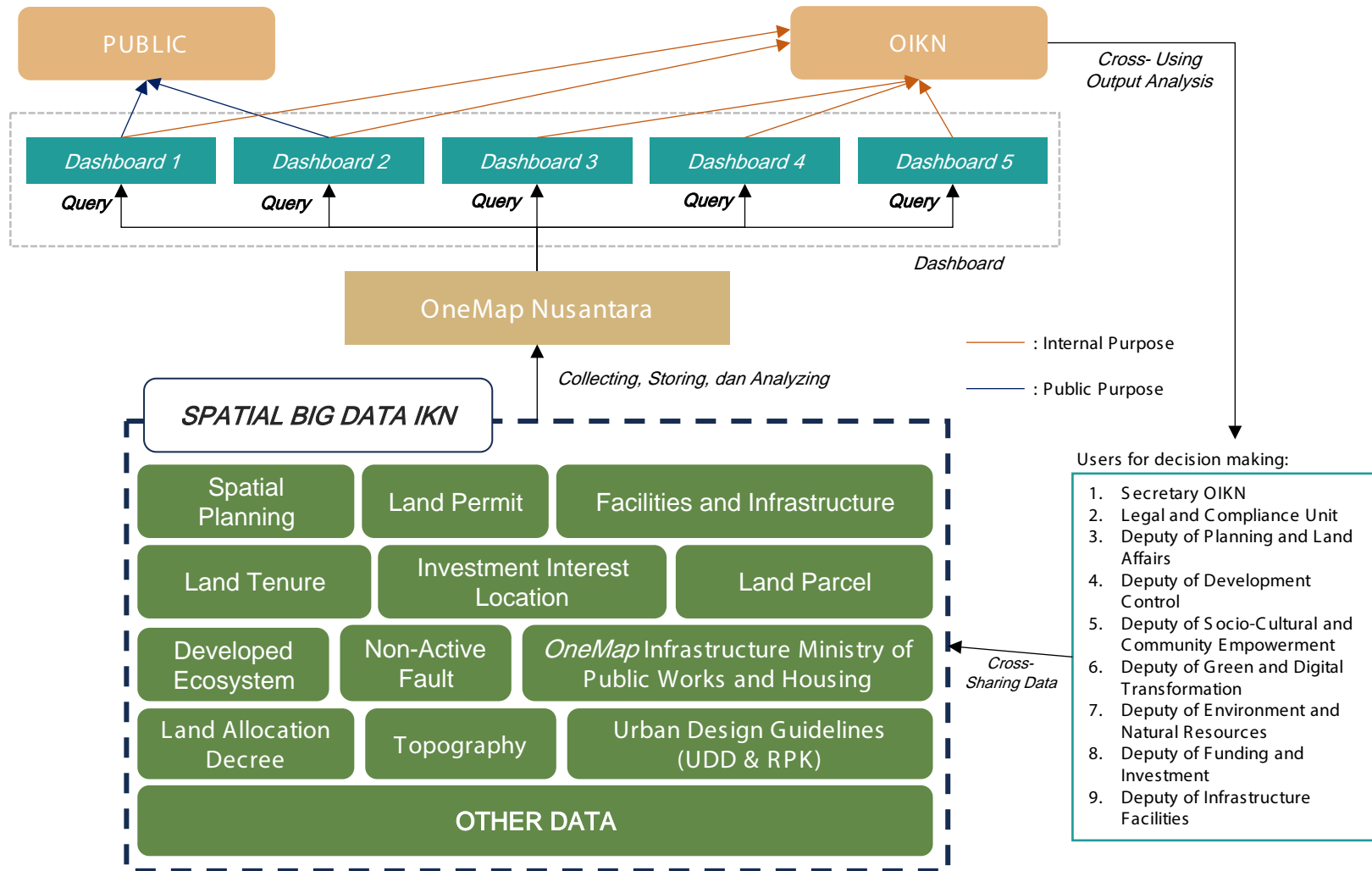
Dashboard #5 : Location Intelligent to Support Land Management Paradigm

- A. Dashboard #1: Location Intelligent for Investment Location Identification (Top Priority for Development May 2024)**
- ❖ Key Features for **OIKN**: assisting tasks and functions in the recommendation of land allocation for the best investment.
 - ❖ Key Features for the **Public**: provides information on effective land to investors according to investment criteria.
- B. Dashboard #2: Location Intelligent for Urban Design Guidelines & Assessment (3D Zoning & Urban Design)**
- ❖ Key Features For **OIKN**: assisting tasks and functions in socialisation & consultation, design assessment, and development permit support.
 - ❖ Key Features for the **Public**: providing land information packages to the public, Space Utilisation Intensity Conformity Assessment, and Building Code Assessment.

- C. Dashboard #3: Location Intelligent for Investment and Development Progress Monitoring and Evaluation (Master list)**
- ❖ Key Features for **OIKN**: assisting tasks & functions for monitoring & evaluation and providing feedback in the micro-level planning process.
- D. Dashboard #4: Location Intelligent for Planning Dynamics (Amendment)**
- ❖ Key Features for **OIKN**: assisting tasks and functions in periodic planning improvements and innovations.
- E. Dashboard #5: Location Intelligent for City Planning & Land Management**
- ❖ Key Features for **OIKN**: assisting the tasks and functions of coordination and database of planning products and their supporting products (Land, Existing Conditions, Biodiversity, etc.).

Smart Planning System: OneMap Nusantara

Process Flow Diagram



Targeted Benefits

Supporting the preparation and development of the Nusantara Capital City guided by the Nusantara Capital City Master Plan.

Summarizing the One Map, One Planning, and One Policy (1MPP) Handbook.

Assisting investment and development interests according to:

1. Detailed spatial zoning plan
2. Building and Developmental Planning Program
3. Type of land use
4. Land permit
5. Land carrying capacity & capability
6. Indication of the timing of infrastructure development
7. Buffer of similar services

Integration process in one geospatial platform:

1. Planning
2. Permit
3. Development across Deputy and Ministries

Sharing public information related to governance plans for:

1. increasing certainty and ease of investing in Nusantara
2. public participation in development control

Supporting the monitoring and evaluation of land use, investment, land permit, and development activities in Nusantara.



NUSANTARA

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