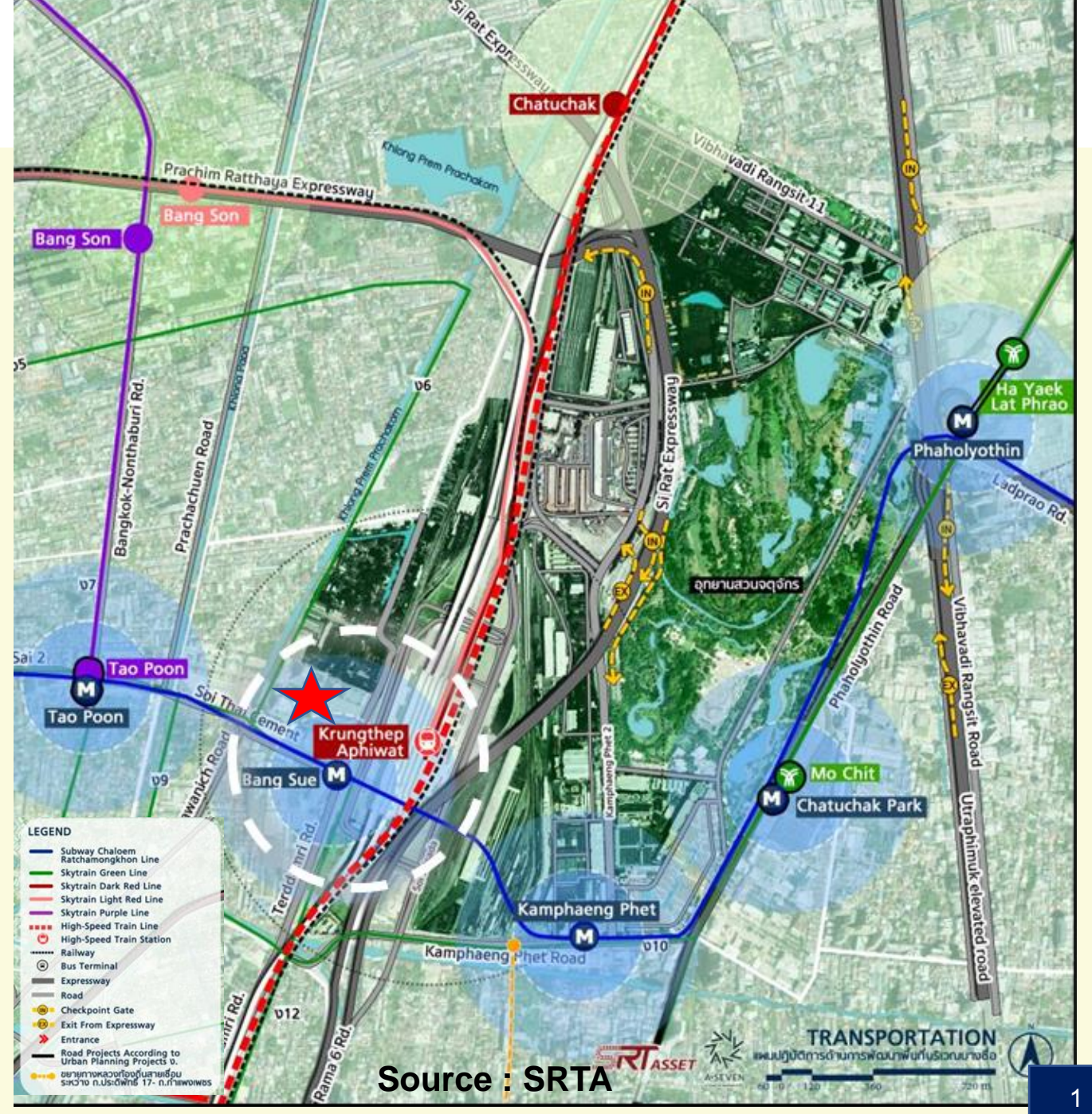


The Smart City Projects for Bangkok/ the Smart City Projects for Cities in Thailand



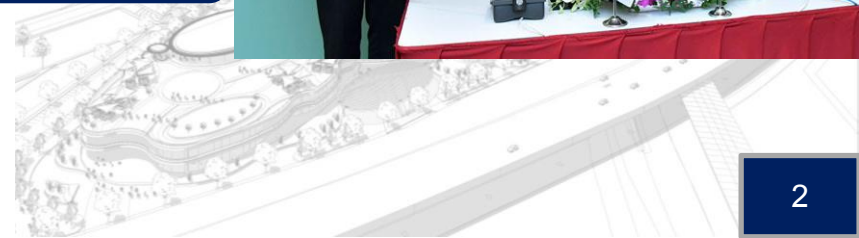
**[Dr. Punya Chupanit]
Director-General Office of Transport and Traffic Policy
and Planning
[Thailand / Bangkok's CSCO]**

the 6th ASEAN-Japan Smart Cities Network High Level Meeting
29 - 30 October 2024, in Koto City, Tokyo, Japan





The Timeline of Bang Sue Smart City Development





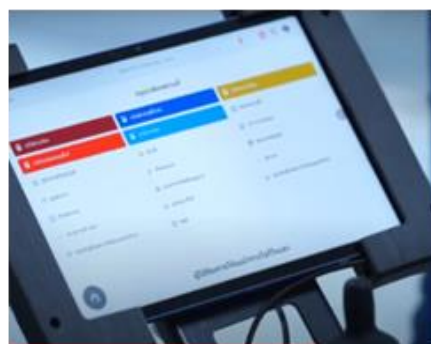
Krung Thep Aphiwat Central Terminal Station (Bang Sue Grand Station)



The Ministry of Transport aims to develop this central station as the first 5G smart station in Thailand.

Examples of 5G technology used inside the station are:

- The Operation Control Center (OCC) is responsible for managing operation of the trains.
- Automated Navigation is responsible for providing passenger assistance and travel information services.
- Automatic wheelchair for the disabled and the elderly



Bang Sue Smart City Project

9 Zones



Land Area **582.73 Acres**



- Zone A : Smart Business Complex Area 20.16 **Acres**
- Zone B : Bang Sue Business Hub Area 79.68 **Acres**
- Zone C : MICE Super Arena Area 54.15 **Acres**
- Zone D : Traditional Culture Area 72.49 **Acres**
- Zone E : Smart City Complex Area 55.99 **Acres**
- Zone F : Future District Area 29.78 **Acres**
- Zone G : Global Business Area 169.8 **Acres**
- Zone H : International Culture Area 54.08 **Acres**
- Zone I : Smart Complex & Residence Area 46.64 **Acres**

Source : SRTA

(Unit : 1 Acres = 2.5 Rai)



Activities Plan

ZONE A
Smart Business Complex
 A1 State Railway of Thailand: SRT
 A2 Bus Terminal

ZONE B
Bang Sue Business Hub
 B1 Business Hub
 B2 Business Hub
 B3 Business Hub
 B4 Blue in Green Corridor & Inner Road 35m.

ZONE C
MICE Super Arena
 C1 Plaza
 C2 Bangkok Live

ZONE D
Traditional Culture
 D1 Medical Complex
 D2 Traditional Culture
 D3 Traditional Culture

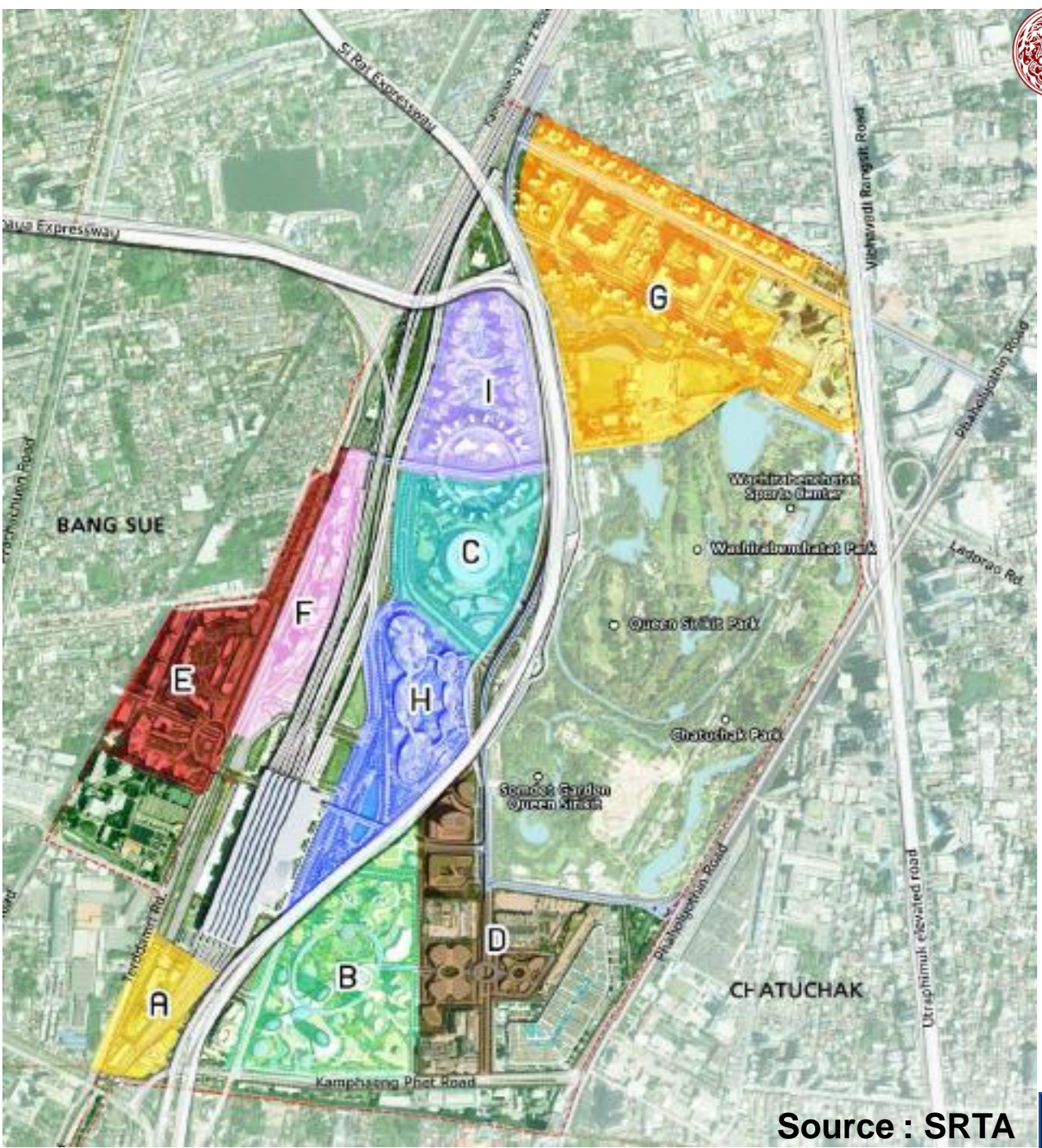
ZONE E
Smart City Complex
 E1 The MOT กระทรวงคมนาคม
 E2 The Park
 E3 The Garden
 E4 CUP 1
 E5 SRT Residence
 E6 Road และ พื้นที่อื่น ๆ

ZONE F
Future District
 F1 Future District

ZONE G
Global Business
 G1 Premium Residence
 G2 Premium Residence
 G3 Global Business
 G4 Global Business and Residence
 G5 High Quality Residence
 G6 Road
 G7, G8 Mobility Park
 G9 Global Business

ZONE H
International Culture
 H1 International Culture

ZONE I
Smart Complex & Residence
 I1 Smart Complex
 I2 Smart Quality Residence
 I3 Smart Green Residence



LIVABLE CITY DESIGN GUIDELINES

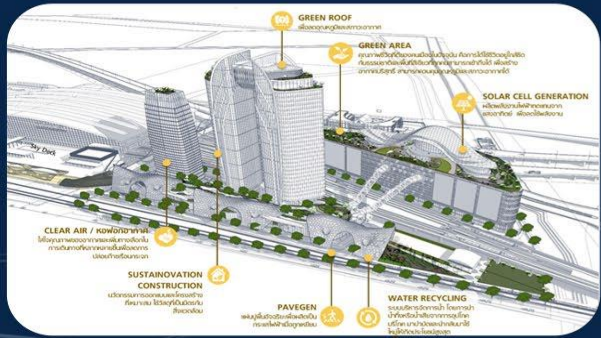


1. SUSTAINABILITY DEVELOPMENT DESIGN GUIDELINES

Design Guidelines: Climate-friendly design and environmental protection

2. BUILDING LAYOUT DESIGN

Design Guidelines: the building layout design is to be easily accessible and flexible, as a space for social gatherings, and the design will face public spaces, as well as be designed to have sufficient lighting and protection from weather hazards.



Relaxation Outside



Water Management



Green Area

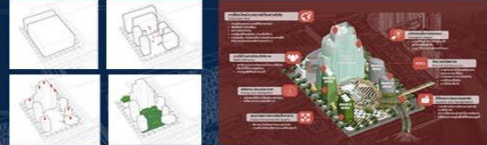
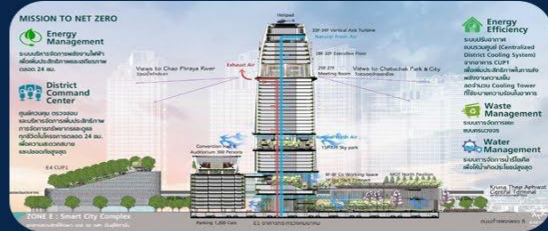
3. LAND SCAPE ARCHITECTURE

Design Guidelines: Landscape architecture design will help integrate the space, including gardens, trees, vegetation, flowers, and water bodies. These natural elements create a relaxing atmosphere and reduce stiffness in other parts.



4. GREEN BUILDING ARCHITECTURE

Design Guidelines: Eco-friendly design through careful construction and thought processes.



5. LOCAL NATURAL MATERIALS

Design Guidelines: The use of local natural materials in architectural design should align with the ecological system and suit the environment. The environment focus on materials that are easily available locally that affect human.



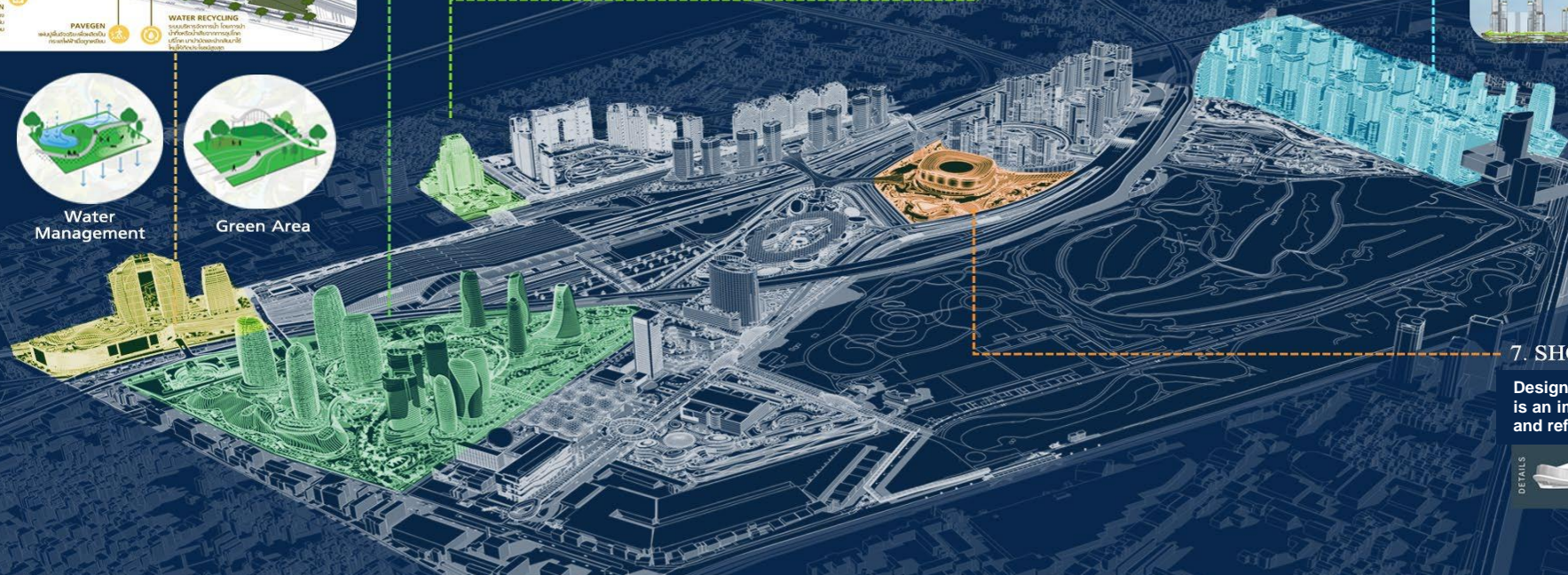
6. BUILDING DESIGN GUIDELINES

Design Guidelines: Determining the appropriate size of the building in the vicinity of each road with a different width, or in each neighborhood with different uses, is crucial to maintain physical consistency and ensure the building is not overly large in relation to pedestrians. Particularly, this applies to roads that prioritize pedestrian paths.



7. SHOPFRONTS & FACADE GUIDELINES

Design Guidelines: Shopfronts and Facade of the building is an important factor in determining the identity of the city and reflects the concept of urban development.





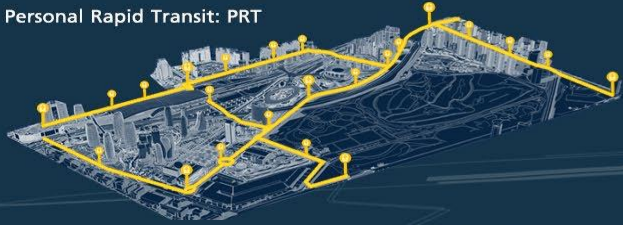
TRANSIT ORIENTED DEVELOPMENT: TOD DESIGN GUIDELINES

Non-Motorized Transportation (NMT) & Cycle

Design Guidelines: Supporting the use of bicycles in daily life, which is one of the physical activities that has received attention and is promoted around the world. By creating an appropriate environment for the use of bicycles in Thailand to make it more conducive to use. Moreover, the development of the Bang Sue area provides additional non-motorized transportation options, including personal rapid transit (PRT), BRT, and electric vehicles (EVs).



Personal Rapid Transit: PRT



BRT



Development of community that support walkability

The design guidelines aim to construct a pedestrian network that not only enhances physical activity and improves people's health in daily life, but also distributes income to foster economic development at the district level and promotes equality and horizontal relations among people in society.

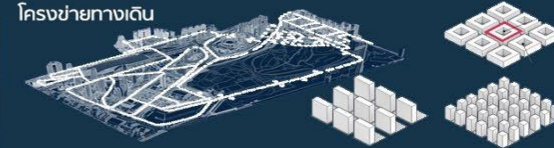


Pedestrian Network



Construction of road and pedestrian networks

Design Guidelines: Create a network of roads and pedestrians that are used efficiently. It can be linked as a transfer area to achieve a balance between traffic.

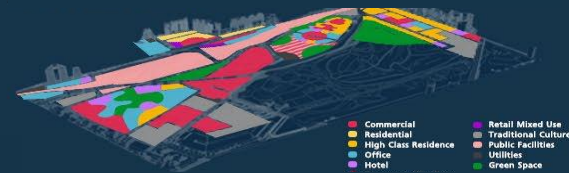


Development of areas near high-quality public transportation.

Design Guidelines: The development of areas near high-quality public transportation increases accessibility and increases the length of service.



Planning for Mixed Land Use



Increasing the efficiency of public transportation capacity and density.

Design Guidelines: Enhancing the efficiency of public transportation capacity and density in the vicinity of the station will depend on land use elements, as well as design and development in accordance with TOD criteria. The primary goal is to promote public transportation, which is regarded as a high-efficiency transportation system.

Compact City



Shift Mode Transportation



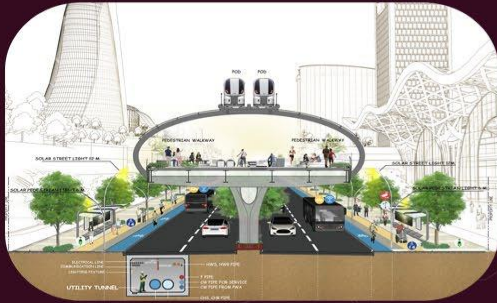
1 kilometer radius from Bang Sue Central Station



SMART CITY DESIGN GUIDELINES

SMART MOBILITY

- Street Design
- Sky Deck Network Design
- Mobility Information System
- Mobility Cashless Society
- Real Time (Parking Lot for Traffic Management)



- WALKABLE NETWORK
- BICYCLE NETWORK
- SKY DECK NETWORK
- PRT NETWORK
- BRT NETWORK
- AUTOMATED TRAFFIC MANAGEMENT
- TRAFFIC MONITORING AND CONTROL CENTER
- EV CHARGING STATION

SMART ENERGY

Renewable Energy

- Solar Energy
- Wind Turbine

Energy storage

- BESS Energy Storage



Energy Distribution

- Central Utility Plant: CUP



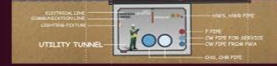
CUP CENTRAL UTILITY PLANT: CUP

SMART ENVIRONMENT

Automatic Waste Collection System

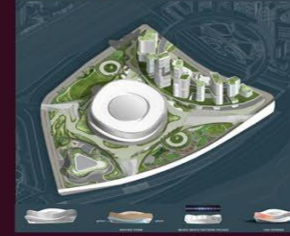


Utility Tunnel



- OPEN SPACE & GREEN AREA
- DISTRICT COOLING SYSTEM: DCS
- WASTE TRANSFER TERMINAL
- COMPOSITE PIPING NETWORK
- WATER PRODUCTION STATION
- CENTRAL WASTEWATER TREATMENT SYSTEM
- AIR QUALITY MONITORING STATION

SMART LIVING



- NURSERY CENTER
- KINDERGARTEN
- HEALTH SERVICE CENTER
- MEDICAL COMPLEX
- PUBLIC PARK
- SPORTS STADIUM
- POLICE BOOTHS
- FIRE AND DISASTER RELIEF STATIONS
- BUS TERMINAL
- REMOTE MEDICAL CARE TECHNOLOGY
- SMART POLE FOR SECURITY WITH SURVEILLANCE CAMERA
- SMART TRAFFIC
- TMCC
- WIRELESS CCTV CAMERA

SMART PEOPLE

- SATELLITE UNIVERSITY
- CENTER FOR LIFELONG LEARNING AND INTERCULTURAL EXCHANGE
- BANG SUE PUBLIC LIBRARY
- BANG SUE ART MUSEUM
- BANG SUE OPERA HOUSE
- LIVING LAB
- INNOVATION SPACE/ CREATIVE ZONE

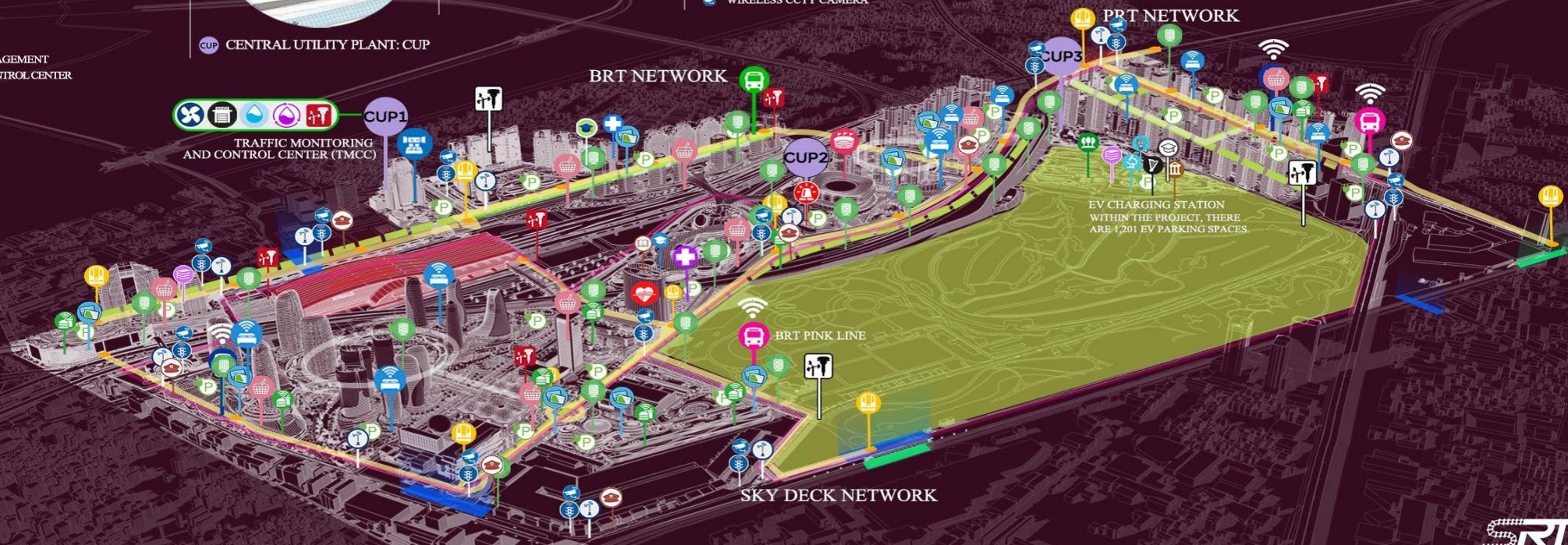
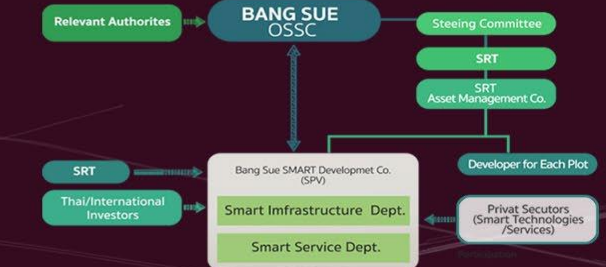


SMART ECONOMY



- CO-WORKING SPACE
- SUPPORT THE IC CARDS
- DIGITAL SIGNAGE
- BANG SUE MARKET
- BANG SUE ROOM
- DELICIOUS AT BANG SUE
- DATA CENTER

SMART GOVERNANCE



- Subway Blue Line Station
- Skytrain Green Line Station
- Skytrain Red Line Station
- High-Speed Train Station

เอกสารสงวนสิทธิ์ให้เฉพาะ: อส. และ สพท. เป็นผู้จัดทำ

Source : SRTA



Smart Mobility



Sky Deck Network



Street Network Development



Personal Rapid Transit

**Reduce Private Car 20-30%
by
Smart Mobility
Development Plan**



**Establish Traffic Monitoring
and Control Center**



**Restriction of
Vehicle Inflow**

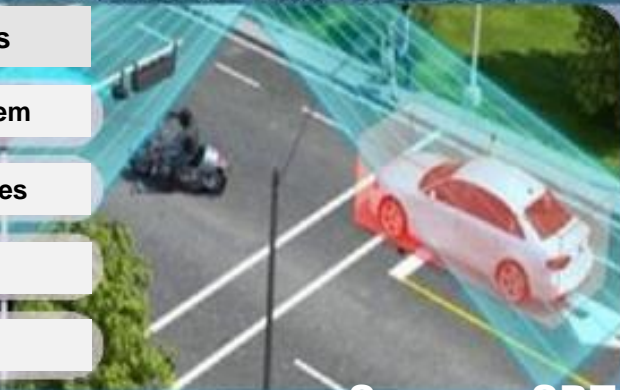
Other Smart Mobility Related Measures

Transport Information Management System

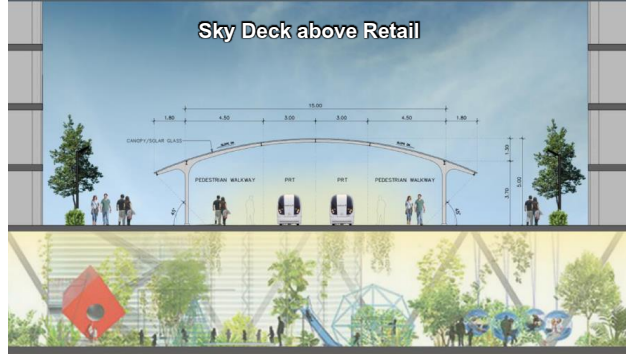
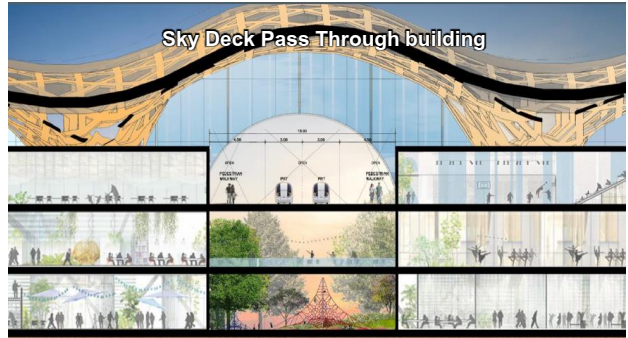
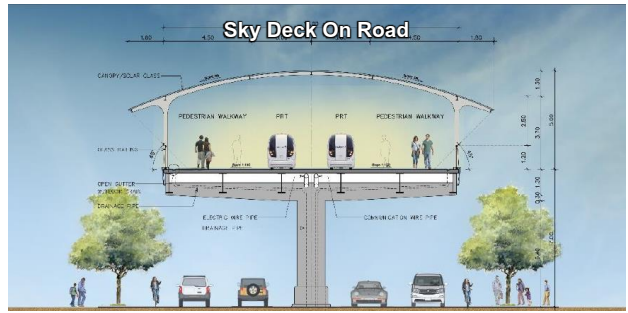
Bicycle Lanes and Personal Mobility Lanes

Car Sharing and Ride Share

Bike Sharing



Source : SRTA





Development Road Plan

Road Extension - 35M.

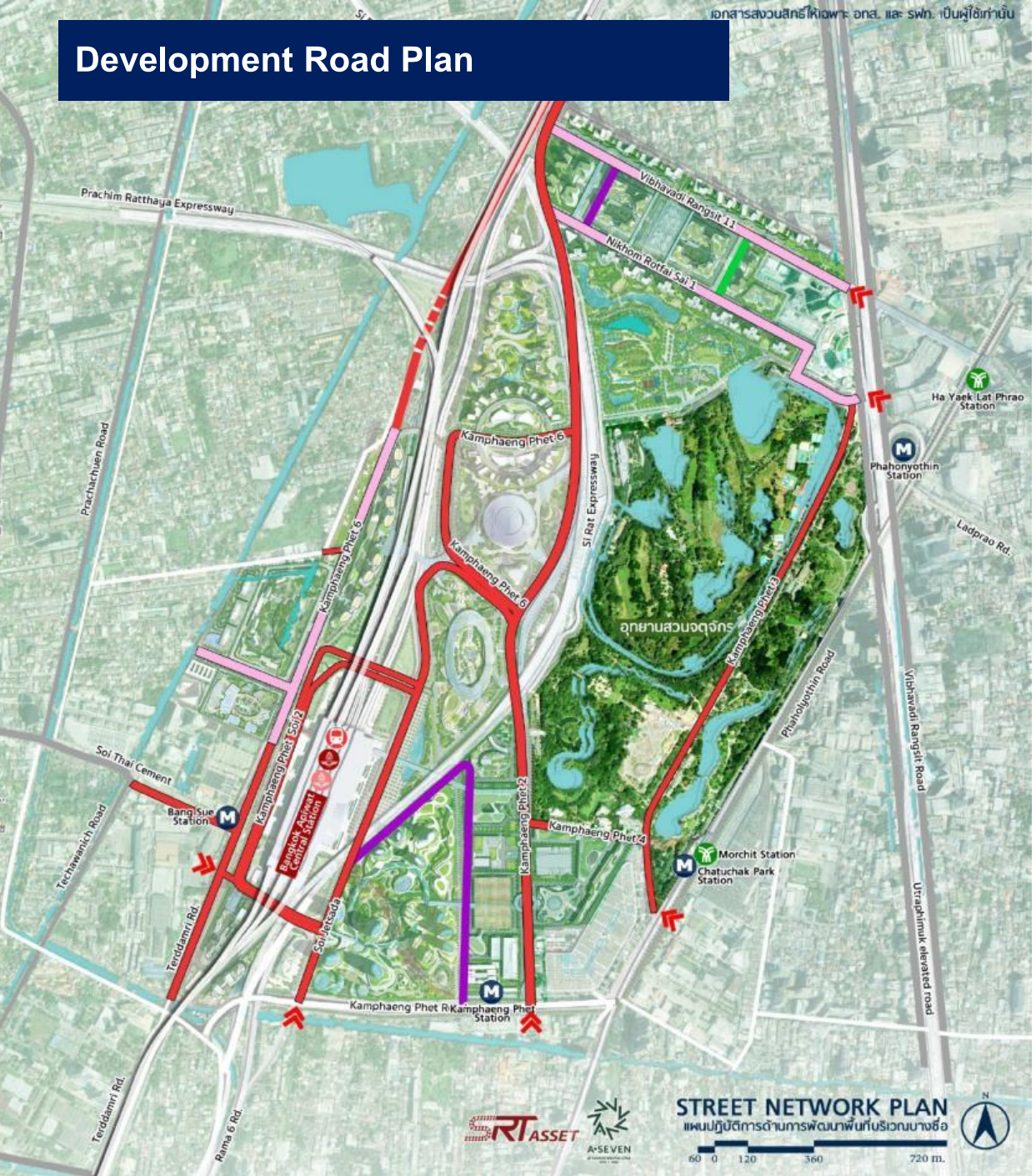
New Road - 35M.

New Road - 35M. with BRT Stop

LEGEND

- █ Existing Road
- █ Road Extension - 35 M.
- █ New Road - 35 M.
- █ New Road - 35M. with BRT Stop
- Entrance
- Smart Street Lighting
- Smart Sureillance
- Free Wifi
- Smart Car
- Smart Waste Management

Source : SRTA





Bus Rapid Transit (BRT)

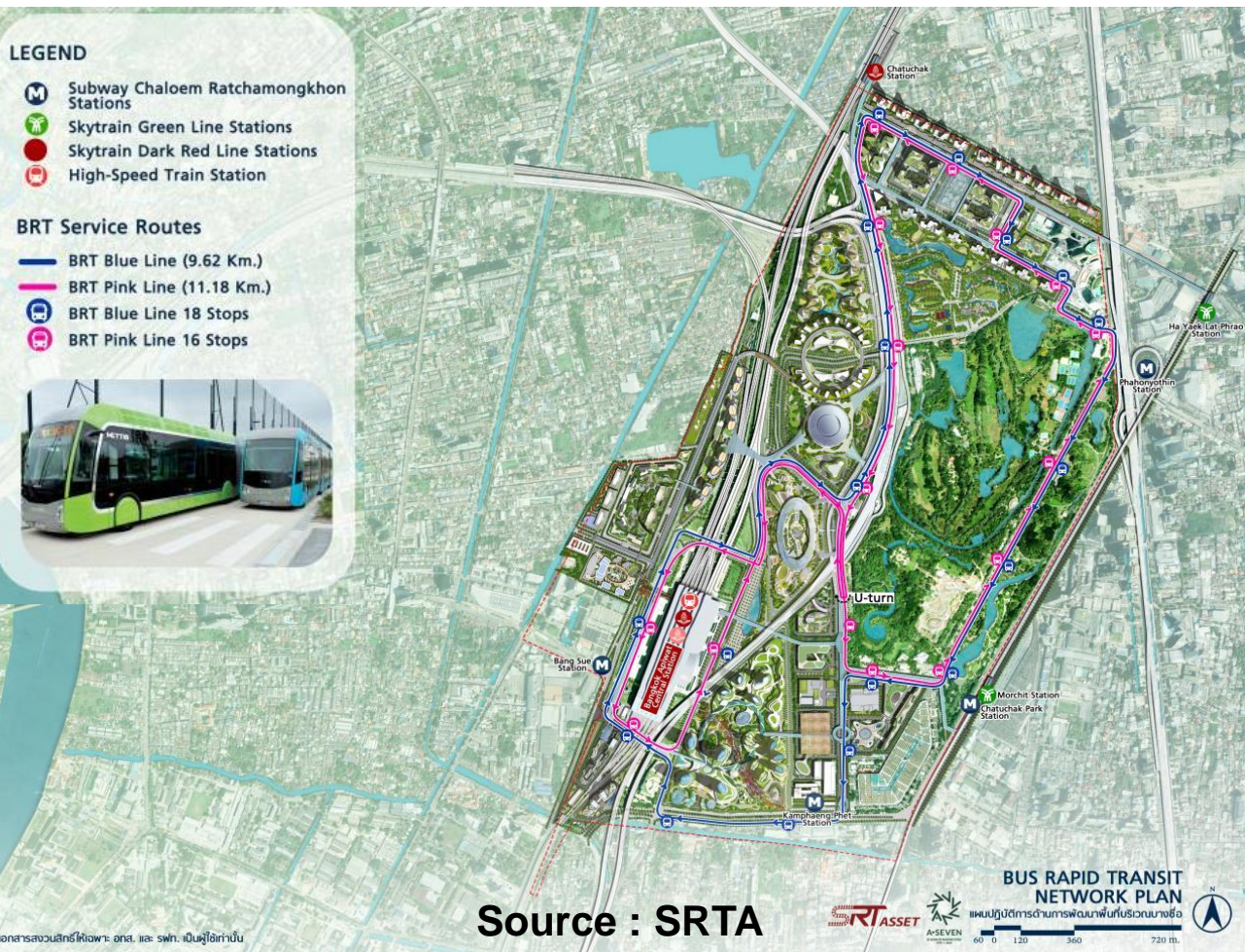
Network Plan

LEGEND

- Subway Chaloem Ratchamongkhon Stations
- Skytrain Green Line Stations
- Skytrain Dark Red Line Stations
- High-Speed Train Station

BRT Service Routes

- BRT Blue Line (9.62 Km.)
- BRT Pink Line (11.18 Km.)
- BRT Blue Line 18 Stops
- BRT Pink Line 16 Stops



Source : SRTA

BRT (At-grade) will support various modes of public transportation in the area responding to all travel demands. It will serve activity area, parking lots, and various public transportation stations around Bang Sue, including BTS or MRT.

BRT Network Plan in the area has a total distance (round-trip) of 20.8 kilometers and a total of 34 passenger pick-up stations (round-trip).





Goal : Low Carbon City absorb CO₂ around 15.27 tonCO₂/Day





Goal : Electric Power Less Than 553 MVA in 2037



01

Smart Energy
Network



02

District Cooling
System



03

Microgrid

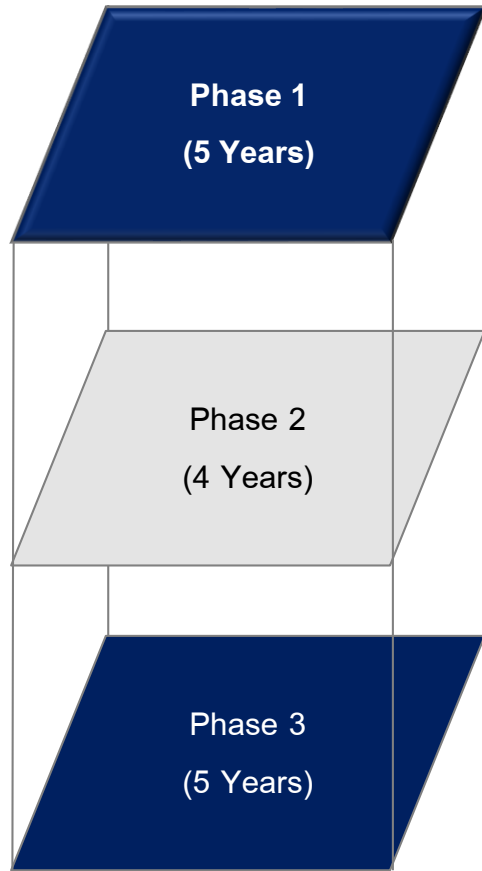


04

Reliable Supply



★ Leading Project



★ Zone A : Smart Business Complex

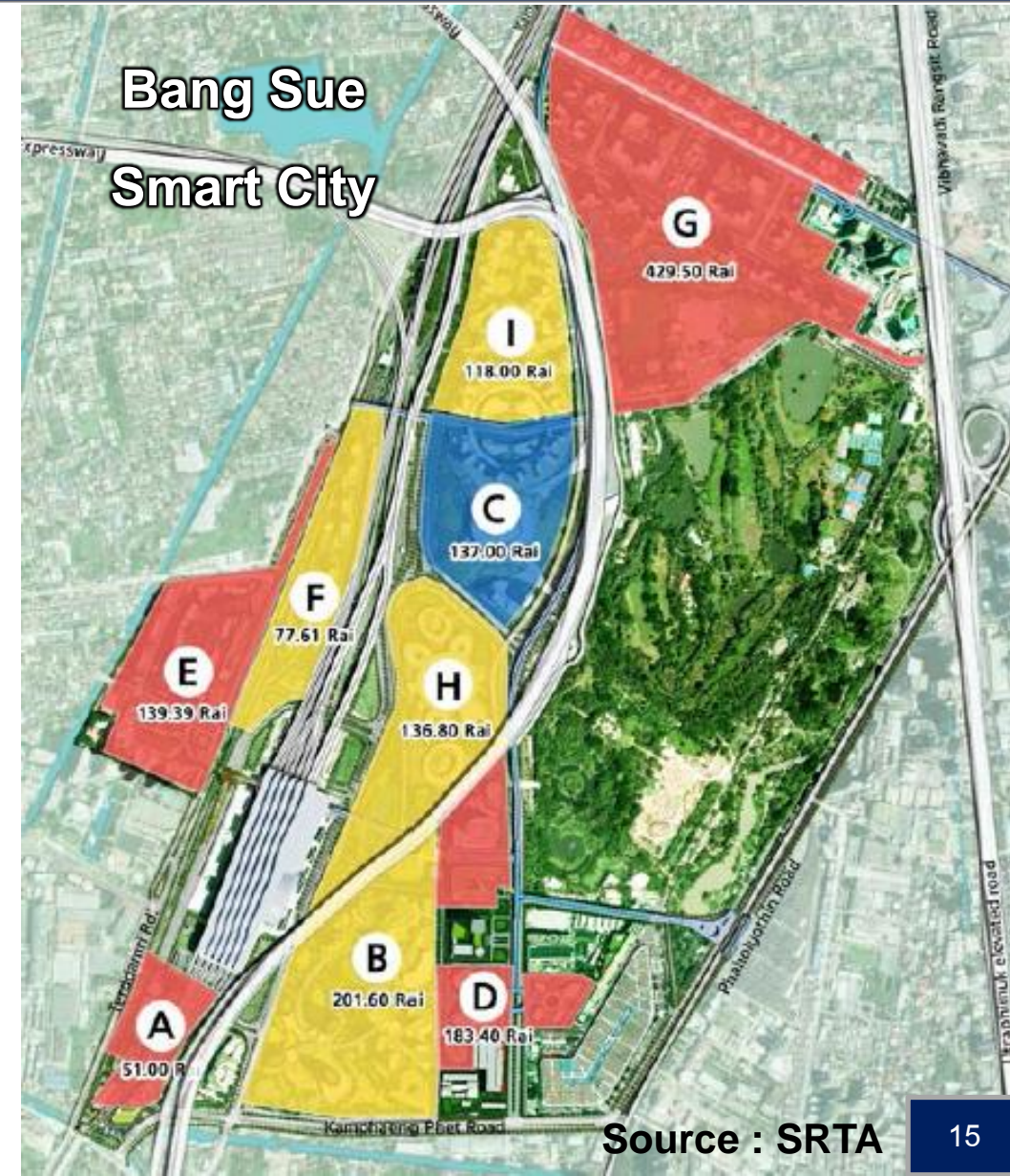
- Zone D : Traditional Culture

★ Zone E : Smart City Complex

★ Zone G : Global Business

- Zone C :
MICE Super Arena

- Zone B : Bang Sue Business Hub
- Zone F : Future District
- Zone H : International Culture
- Zone I : Smart Complex & Residence





Project Investment Plan



Government Investment

\$ 305.40 million

Accounting for **4.55%**
of total investment.

Infrastructure and public utilities in the Bang Sue area, such as:

- Residents' compensation,
- Building Demolition Fee,
- Sky Deck Network,
- Utility Tunnels, Roads,
- Smart City Centers
- public transportation,
- Digital system, and
- Intelligent Management System

\$ 6,705.83 million



Public



Came into a collaboration



Private

Public and Private Sectors Joint Investment

\$ 328.20 million

Accounting for **4.89%**
of total investment.

The construction cost of the Personal Mass Transit (PRT) system and the Central Public Utility Center (CUP) in the Bang Sue area, such as:

- Urban public transportation,
- Water and water supply systems,
- Wastewater treatment systems,
- Recycled water production systems.
- Waste management system,
- Electrical system,



Private Investment

\$ 6,072.23 million

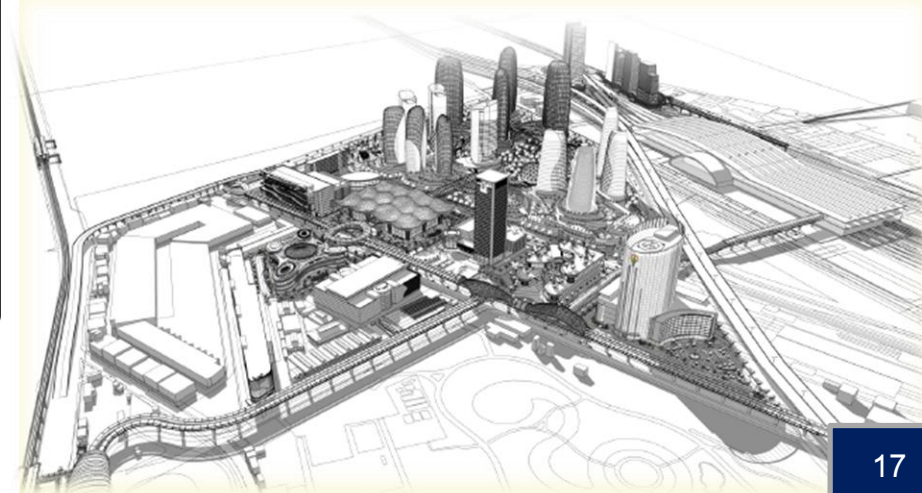
Accounting for **90.56%**
of total investment.

Construction and development of commercial real estate in A – I zones

Note:

1 THB = 0.03025 USD

1 USD = 33.29 THB



Thank you

[Dr. Punya Chupanit]

Director-General Office of Transport and Traffic Policy and Planning

[Thailand / Bangkok's CSCO]

