ASEAN SINGAPORE 2018 RESILIENT AND INNOVATIVE

ASEAN SMART CITIES NETWORK

SMART CITY ACTION PLANS

(as of 8 July 2018)

Covering Note

1 The pilot ASEAN Smart Cities Network (ASCN) cities participated actively in the Smart Cities Governance Workshop, which took place in Singapore from 22 to 25 May 2018. Key outcomes of the workshop include the development of Smart City Action Plans (SCAPs) as well as priority projects specific to each of the cities. Each SCAP consists of the following four components:

- **Vision:** The city's overall vision for smart city development by 2025;
- **Focus Areas:** The areas the city has chosen, out of 6 broad categories listed in the *ASEAN Smart Cities Framework*, to focus on for its smart city development;
- **Strategic Targets:** The specific, measurable, action-oriented, realistic, and time-bound targets which the city has set for itself within its chosen focus areas; and
- **Priority Projects:** An overview of the two priority projects identified by the respective city.

2 The SCAP charts the direction that each ASCN city has committed to undertake towards becoming a smart city. The cities will continue to develop project proposals based on their SCAPs, and work with ASEAN's external partners towards implementing these projects. The cities will submit their project proposals and the status of implementation to the ASEAN Secretariat (ASEC) annually. ASEC will collate the responses, assist in reaching out to external partners to support the projects, and produce a consolidated report that will be submitted to the ASEAN Leaders annually.[1]

3 The SCAPs will be treated as living documents that can be updated annually, as (i) technological disruptions due to the ongoing digital revolution will continue to offer new opportunities; and (ii) cities' priorities may accordingly need to be tweaked. As the ASCN will expand in years to come to include more ASEAN cities, these additional cities would need to craft their action plans as well. The updated set of SCAPs will be included in ASEC's consolidated annual report on the ASCN.

[1] ASEC will prepare and submit the annual consolidated report to the ASEAN Smart Cities Network Meeting, which will then submit it to the ASEAN Leaders (through the Joint Consultative Meeting and the ASEAN Coordinating Council).

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Bandar Seri Begawan

About the City

Total Land Area	100.4 km^2
Population	64,409
Density	641 / km^2
Chief Smart City Officer	

Name: Mr Haji Ali Matyassin
Designation: Chairman of Bandar Seri Begawan Municipal Department
Email: ali.matyassin@bandaran-bsb.gov.bn

Smart City Action Plan

VISION

To develop Kampong Ayer as the Jewel of Bruneian Heritage and facilitate its growth as part of Bandar Seri Begawan's smart city development plan.

FOCUS AREAS

- **Civic and Social**
  - Kampong Ayer as part of Bandar Seri Begawan as the main tourist destination with its own unique characteristics such as its culture, treasures and historical heritage which create community identity and cohesion

- **Industry and Innovation**
  - Kampong Ayer as a center for opportunities for commercial development to create employment and spin offs for other SMEs businesses and liveable social activities

- **Health and Well-being**
  - Provision of better utilities and services and requirements for community facilities and recreational areas which are necessary for the promotion of vibrant social and cultural life in Kampong Ayer

STRATEGIC TARGETS

- **High Quality of Life**
  - Improve access to community services, expand health and recreational services

- **Increase Economic Competitiveness**
  - Increase entrepreneurial competitiveness and nurture growth of the local tourism industry. Facilitate growth of a tourism cluster- supported by sound economic policies and innovative product offerings

- **Sustainable Environment**
    - Conserve Kampong Ayer's biodiversity and natural habitat and maintain the quality of local environment

Smart City Project 1
Revitalise Kampong Ayer (Water Village)

OVERVIEW

Located to the South of Bandar Seri Begawan, the village of Kampong Ayer has been identified as an integral part of Bandar Seri Begawan's sustainable and smart city development plan. Kampong Ayer will be redeveloped into a liveable city with a sustainable environment and a diverse economy with a distinct Bruneian identity.

SUPPORT REQUIRED

- **Industry and project partners with capabilities and interests in developing Kampong Ayer**
    - Identify pilot projects through public private partnerships (PPP) and other instruments
    - Raise investments in the tourism and other growth sectors of Kampong Ayer

- **Implementation support**
    - Advisory support for urban design services, so as to ensure that Kampong Ayer's redevelopment is aligned with international urban design standards and contemporary trends.

Smart City Project 2
Clean River Management Projects

OVERVIEW

To overcome the challenges related to waste generation, waste collection and disposal, Bandar Seri Begawan is determined to put in place an institutional framework that promotes sustainable waste management practices. Specifically, the city seeks to restore the quality of the Brunei River. Brunei's move towards being a smart and sustainable city involves strengthening regulatory and enforcement measures related to effluent discharges into the River and management of waste through latest technological interventions.

SUPPORT REQUIRED

- **Advisory Assistance**
    - Carry out a feasibility study of Bandar Seri Begawan's river system and the pollution issues, to develop a waste management plan.

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Battambang

About the City

Total Land Area	115 km²
Population	161,030
Density	1,395/km²

Chief Smart City Officer

Name: Mr Soeum Bunrith
Designation: Deputy Governor of Battambang Province
Email: lim.ymeng@gmail.com

Smart City Action Plan

VISION

To achieve a socially responsible, environmentally friendly and economically successful city whilst retaining Battambang's unique character.

FOCUS AREAS

- **Civic and Social**
  - Informal settlement
  - Informal street vendors
  - Low-cost housing
  - Skills development for youth

- **Quality Environment**
  - Drainage system
  - Sewage system
  - Raising public awareness on waste management issues
  - Wastewater treatment plants

- **Built Infrastructure**
  - Building a night market and defining places for street vendors
  - Road improvements

STRATEGIC TARGETS

- By 2025: At least 2800 youth would have received specific job skills
- By 2025: 50% of street vendors transition to formal retail stores, market
- By 2025: At least three informal settlements be rehabilitated in formal housing
- By 2025: Develop city-wide drainage systems

- By 2025: Build two wastewater treatment plants
- By 2025: 85% of the city's settlements be covered with sewage systems
- The total asphalted road in the city be increased from 17% in 2016 to 30% in 2022 and to 40% in 2025

Smart City Project 1
Urban Street and Public Space Management

OVERVIEW

In order to improve liveability, Battambang plans to upgrade public street and space design, organise street vendors, and better the infrastructure for informal settlers. This will be done through development of market, low-cost housing and skills upgrading.

SUPPORT REQUIRED

- Technical support
- Advisory support for planning, design, and monitoring of public spaces
- Financial support to build low-cost housing with amenities for informal settlements

Smart City Project 2
Solid and Liquid Waste Management

OVERVIEW

Battambang aspires to become a green and healthy city. To this end, Battambang will move away from river-based natural waste management to sewage and wastewater management systems. Works on drainage systems are being carried out by the Battambang provincial authority and Chinese partners supported by the Asian Development Bank. However, the city needs to develop additional drain and sewage infrastructure.

SUPPORT REQUIRED

- Financial support
- Technical support

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Phnom Penh

About the City

Total Land Area	693 km^2
Population	2.8 million
Population Density	4040.4 / km^2

Chief Smart City Officer

Name: Mr Seng Vannak
Designation: Chief Administration
Email: vannak.seng@gmail.com

Smart City Action Plan

VISION

To improve the urban environment to enhance citizen's quality of life.

FOCUS AREAS

- Build efficient and green infrastructure for current and future growth
- Adopt best practices in public space design to create a healthy environment and boost economic growth
- Develop a civic engagement through social media or applications to crowd source suggestions for the improvement of public space and public transport

STRATEGIC TARGETS

- Improve pedestrianisation with repurposed walkable paths
- Redesign public spaces for enhanced public accessibility by people and businesses
- Improve the efficiency of Phnom Penh Public Bus Services by 50% modal share

Smart City Project 1
11 Sidewalks Rejuvenation Project

OVERVIEW

Phnom Penh aims to increase pedestrianisation through the rejuvenation, restoration and repurposing of the sidewalks for 11 boulevards. The project is expected to deliver traffic de-congestion and public space benefits by managing unlicensed street vendors and illegal parking.

Urban planners in Phnom Penh requires consultation support to identify and address their root traffic problems as there is currently limited data on traffic conditions. Funding is needed to incentivize street vendors to relocate away from their existing site which creates traffic pressures. Hence, a myriad of key stakeholders – Ministry of Finance, Transport Authority, Local Authorities, local community and shared mobility providers – needs to be actively involved in this project.

SUPPORT REQUIRED

- Consultation support to understand the root causes of urban challenges and determine the universal standard design considerations that can aid to improve quality of life and safety in the city and facilitate efficient implementation of urban planning decisions.
- Integrate new technology for better use of public space.
- Funding, including to incentivise street vendors to relocate.
- Stakeholder engagement management, including with all key stakeholders- Ministry of Finance, Transport Authority, Local Authorities, local community and shared mobility providers

Smart City Project 2
Improving efficiency of Phnom Penh's Public Transport Services

OVERVIEW

Fully funded by and under the supervision of the Phnom Penh City Administration, the bus service provider in Phnom Penh City (City Bus Autonomous) has more than 100 buses currently, serving 8 routes in the city center and sub-urban areas with an average of 20,000 passengers daily.
The Administration and the City Bus Autonomous (CBA) have been working together to develop a public transport service that is user-friendly, environment friendly, innovative and efficient.

With plans to broaden the forms of public transportation to include river boat, Automated Guideway Transit, taxis, and ride hailing services, the Phnom Penh City Administration is currently focusing on enhancing and modernizing the bus service with smart technology. The smart technology includes cash-less payment system and GPS tracking system that could improve the quality of bus-supporting infrastructures and customer services.

Adhering to the City Master Plan of Public Transportation 2035, CBA needs to build strong relations with all partners. The CBA needs to strengthen its readiness in order to strategically plan and execute its operations to move to a Combined Authority model in the future. The Combined Authority will be responsible for strategic decision making for transport, economic development and skills matters.

SUPPORT REQUIRED

- Funding support for CBA to strengthen its operation capacity
- Technical support for urban mobility from private specialized companies

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Siem Reap

About the City

Total Land Area	424.7 km^2
Population	268,380
Density	631.8 /km^2

Chief Smart City Officer

Name: Mr Ly Samreth
Designation: Deputy Governor of Siem Reap Province
E-mail: lysamreth@yahoo.com; soplatong168@gmail.com

Smart City Action Plan

VISION

Siem Reap as a beautiful, unique and ideal tourist destination, characterised by the harmony of Khmer history, arts and nature.

FOCUS AREAS

- **Civic and Social**:
  - Culture, heritage and tourist (Tourist Centre, improved Services)

- **Security**:
  - Personal Safety and security (CCTV, road traffic sensors, pedestrian traffic sensors)

- **Quality Environment**:
  - Clean environment and resource management (garbage collection and disposal for households and general public; drainage sensor to measure water levels; environmental management awareness and training etc.)

STRATEGIC TARGETS

- Develop integrated data system linking waste management with drainage, pedestrian, vehicle traffic, and security data by 2025.
- Develop smart garbage disposal and clearing by 2021
- Set CCTV in place at key tourist and traffic spots by 2021
- Implement and operationalize drainage/flood control sensors by 2021

Smart City Project 1
Smart Tourist Management System

OVERVIEW

Siem Reap's vision is to be a liveable, smart, clean, safe and sustainable city for both local residents and tourists alike, through the use of security enhancement systems such as CCTVs and traffic sensors.

SUPPORT REQUIRED

- Collaborate with external partners and corporations
- Public and Private sector's support to develop infrastructure

Smart City Project 2
Solid Waste and Wastewater Management

OVERVIEW

This project seeks to develop infrastructure for solid waste and wastewater management, to ensure a high-quality environment. This can be done by capitalising on technology and data management systems, which would allow for feedback loops to improve planning and implementation.

SUPPORT REQUIRED

- Funding support from external partners and other agencies
- Infrastructural support from multilateral banks and private corporations

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Makassar

About the City

Total Land Area	199.3 km^2
Population	1.77 million
Density	7,400 / km^2

Chief Smart City Officer

Name: Mr Ismail Hajiali
Designation: Head of Communication and Information, Makassar City Government
Email: hajiali.ismail2@gmail.com, jusman.global@gmail.com

Smart City Action Plan

VISION

Makassar city is at the center of rapid socio-economic growth, backed by a growing population, good geography and a thriving service industry. The city's vision is "*To Create Makassar as Liveable World Class City for All"*

FOCUS AREAS

- **Health and Well-being**:
  - Deliver healthcare services to citizens
  - Integrate existing healthcare systems

- **Public Services**:
  - Increase the revenue of Makassar city through an integrate e-tax system

STRATEGIC TARGETS

- **Health and Well-being**:
  - Inventory of health care data, system and services
  - Integrate health system through a single healthcare platform

- **Public Services**:
  - Integrate tax services by developing a central repository of taxation data

Smart City Project 1
Improved Health Care

OVERVIEW

Provide citizens with improved and well integrated health care services. Makassar seeks to ensure that all citizens have easy and direct access to health care services. The city plans to develop a healthcare ecosystem that connects various healthcare entities and enables easy exchange of data. Access to health care services will also be made seamless such that people can access these at any place, any time.

SUPPORT REQUIRED

- Collaboration between the public and private sector for designing, implementation and maintenance
- Telecommunication services providers to provide mobile broadband services essential for imaging applications with high resolutions

Smart City Project 2
Integration of Online Tax Services

OVERVIEW

Makassar plans to increase the city's revenues through improved tax collection via an integrated e-tax system. Through personal mobile applications and one-time submission platforms, citizens and businesses will be encouraged to file taxes. Taxes including building and land tax, parking tax, local revenue tax, advertisement tax, will be brought under an integrated tax filing and payment platform.

SUPPORT REQUIRED

- Technical assistance from the technology sector

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Banyuwangi

About the City

Total Land Area	5,782.5 km^2
Population	1.6 million
Density	277 / km^2

Chief Smart City Officer

Name: Mr Budi Santoso
Designation: Head of Informatics, Communication and Encryption Department of Banyuwangi Government

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Smart City Action Plan

VISION

Banyuwangi intends to develop an integrative system of government through institutionalization of innovation and bureaucratic reform in business processes at all levels of government, accelerate development through the optimization of information technology and build an early warning result-oriented control system, build a reliable generation through guaranteed access to basic services and the development of vocational education oriented to the potential of the region, accelerate the development of basic infrastructure supporting the economy through development financing partnerships and the creation of inclusive economic growth through tourism-based development

FOCUS AREAS

- **Industry and Innovation**
  - Increase foreign and domestic investment
  - Diversify local economy with an expanded knowledge sector
  - Increase use of information systems

- **Tourism and Well-being**
  - Develop potential tourist destinations
  - Increase employment rate
  - Reduce regional disparities
  - Decrease poverty

STRATEGIC TARGETS

- **Widen the network and coverage market of Small and Medium Enterprises with Information and Communication Technologies.**
  - From year to year (2017 – 2020) the target is increasing approximately 2 – 3%. In 2018, the target is 15%.

- **Increase equal and quality education and innovation to reduce the disparity among residents.**
    - For example: literacy rates for population age 15 years old and upward, year by year (2017 – 2020) is increasing approximately 0.4 – 1.2%. In 2018 the target is 98.7%.

- **Integrate health service for villagers for fast and high-quality service.**
    - For example: the percentage of village able to detect effectively their residents who is sick or need any health assistance. Year by year (2017 – 2020) it is increasing around 2%. In 2018 the target is 30%.

Smart City Project 1
Spearing Industrial Growth through Education

OVERVIEW

Banyuwangi is on its journey to break physical boundaries with technology. The physical constraints of its villagers in trading goods will be addressed through upskilling the youth and the residents with digital entrepreneurial skills.

Banyuwangi seeks to collaborate with private entities to impart knowledge on e-commerce and online trading through inclusion of customised IT modules in the skills curriculum. All the 24 sub-districts will be covered under the digital-based learning programme for students.

SUPPORT REQUIRED

- Mentoring from sector experts
- Funding support to roll out the programme in 24 sub-districts.

Smart City Project 2
Creating Inclusive Economic Growth Through Tourism-Based Development

OVERVIEW

Harnessing the community-wide benefits of eco-tourism, Banyuwangi is working towards developing its local tourism industry, with collaboration and support of strategic partners. To ensure overall development, Banyuwangi plans to improve citizen's access to public amenities, and information services.

SUPPORT REQUIRED

- Mentoring from sector experts
- Funding assistance

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DKI Jakarta

About the City

Total Land Area	662.3 km^2
Population	10.1 million
Density	15,367 / km^2

Chief Smart City Officer

Name: Mrs Dian Ekowati
Designation: Head of Communication and Infomatics Office
Email: dianekowati@jakarta.go.id

Smart City Action Plan

VISION

Jakarta – a city leading forward towards happy citizens

FOCUS AREAS

- **Industry and Innovation**
  - Availability and implementation of information system by 2020
  - New jobs through small and medium entrepreneurship linked to information system by 2022 (200,000 small and medium entrepreneurships by 2022)
  - Smart card for students to access books, clothes, public transport, food (meat and milk)

- **Built Infrastructure**
  - Introduction of cashless public transportation system by 2020 (OK Otrip)
  - Integration of all public transport payments to a cashless, seamless card by 2020

- **Health and Well-being**
  - Develop data collection apps and connecting to big data system by 2020
  - Analysis and information products for decision-makers by 2021
  - Use of the data to design and deliver social and health programs by 2022

STRATEGIC TARGETS

- Information able to accommodate the process of creating new job opportunities through Small and Medium Entrepreneurships. Targeted success rate of participants is 25%.

- Integrate cashless mode of payment among various modes of transportations. Target is to integrate all transport modes with cashless payment system.
- Develop a reliable and efficient (cheap) transport service so that the living cost of Jakarta people can be reduced, especially in the transportation sector

Smart City Project 1
Job Creation Through Linking Research Institutes And Potential Entrepreneurs

OVERVIEW

This project aims to create new jobs by providing platforms for innovations arising from research institutions to evolve into business ideas. It would require an information sharing system to encourage synergies between research institutions and potential entrepreneurs.

SUPPORT REQUIRED

- Technical support in data analytics and BI platform providers
- Collaboration with data-source owners and other key stakeholders
- Data Exchange based on Blockchain

Smart City Project 2
OK OTrip Integrated Transit Cashless Payment

OVERVIEW

To integrate all Jakarta transit payment systems into one cashless system to improve urban mobility, enhance modal share and reduce travel time, while keeping travel affordable.

SUPPORT REQUIRED

- New cashless systems provider - existing vendor contract to expire soon
- Information systems that integrate cashless payment systems and bus operators
- Expertise on public transportation policy and transportation business
- Expertise on ITS (Intelligent Transport System)
- Program promotion strategy

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Luang Prabang

About the City

Total Land Area	16,875 km^2 (Province)
Population	97,760
Chief Smart City Officer	

Name: Mr Soukan Bounnyong
Designation: Mayor
Email: yenghervacha@hotmail.com

Smart City Action Plan

VISION

A city of tourism centre and regional connection, Luang Prabang envisions to be a clean, green, liveable environment and smart city with the world heritage in the core by 2025.

FOCUS AREAS

- **Quality Environment**
  - Develop solid waste and wastewater management systems
  - Develop public parks and green spaces

- **Built infrastructure**
  - Upgrade roads, alleyways, footpaths
  - Improve street lighting

- **Civil and Social**
  - Preserve the UNESCO World heritage site

STRATEGIC TARGETS

- Implement a replicable urban waste management and sewage solution on a PPP mode.
- Develop proper solid waste treatment systems.
- Restore all wetlands in the city and preserve natural spaces along the Mekong River and Namkhan River.
- Accommodate the expected growth in tourism industry while preserving the values of the world heritage site.

Smart City Project 1
Heritage Wetland Restoration for City Green Spaces and Habitats

OVERVIEW

Located in the northern Laos, Luang Prabang has 183 ancient wetlands and small ponds previously used by surrounding households for food production and local drainage. As part of the Luang Prabang Urban Development and Management Project, 22 wetlands were rehabilitated, while the associated drainage systems and tourism infrastructures were constructed. Unrestored wetlands, however, are biologically degraded and polluted with increasing urban development pressure, detracting the inherent heritage values of the city.

Restoring these wetlands and small ponds to their original values provide opportunities to improve the lives of citizens through – improved green spaces, enhanced eco-tourism and ecological diversity, new tourism enterprises for those living around the wetlands, wastewater treatment storm water retention to prevent floods, and restoration of heritage values of the city.

SUPPORT REQUIRED

- Technical advice on wetland restoration, wetland waste-water treatment and management
- Investment and financing support

Smart City Project 2
Construction of Concrete Alleyways and Footpaths

OVERVIEW

Famous for its numerous Buddhist temples and monasteries, Luang Prabang aims to complete the upgrading of 44 paths within 5 years in order to encourage pedestrianisation and to reduce dependency on polluting vehicles. Registered as an UNESCO World Heritage Site in 1995, Luang Prang's tourism industry has been fundamental for the city's economic growth. As part of this project, Luang Prabang seeks to upgrade existing footpaths, improve amenities in order to improve visitor experience.

SUPPORT REQUIRED

- Funding support
- Knowledge sharing from multiple key stakeholders

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Vientiane

About the City

Land Area	130 km^2
Population	821,000
Density	6315 / km^2
Chief Smart City Officer	

Name: Mr Bounchan Keosithamma
Designation: Deputy Director of Public Works and Transport Department of Vientiane Capital
Email: bkeosith1@hotmail.com

Smart City Action Plan

VISION

Vientiane Capital is the centre of economic, industrial and cultural activities with natural environment. The administration of Vientiane Capital envisages the importance of environmental friendly urban development by declaring the development vision based on six indicators: peace, clean, green, light, charm and prosperity.

Vientiane Capital's smart city action plan involves organizing E-governance such as Government Cloud+Internet, Smart government+Smart Talent, Smart Tourism, Smart Transportation, Smart Campus, and GIS+Land Management, and improving green transport, security, quality environment, built infrastructure, Industry & Innovation with high technology solutions. In overall, the project is aiming at improving quality of people's lives in Vientiane Capital for their future.

FOCUS AREAS

- **Health and Well-being**
  - Vientiane aspires to improve the lives of the people by developing Vientiane as a liveable city based on the balance of multiple indicators namely; peace, clean, green, light, charm and prosperity
  - A focus on fields such as education, public health, good transport, housing, public security and happiness are also crucial in developing Vientiane as a liveable city

- **Quality Environment**
  - In addition to ensuring abundance of water and greenery in developing a liveable city, there is a need to focus on environmental health, in particular, waste management to ensure a clean city with fresh air and clean water
  - The function of disaster prevention is also important. It is necessary to prepare the city prepared for disasters including fire and water damage by flood

- **Built infrastructure**
    - Built infrastructure is one of priority projects in Vientiane Capital to promote economic growth
    - Urban expansion and built infrastructure are essential as it needs to cater to the needs of increasing population
    - The guideline to build infrastructure in Vientiane is based on protecting environment, keeping green areas, uniformity in scenery, and bring public profits to people
    - Therefore, the basic principle of the guideline of Vientiane for building construction is to achieve a good balance between realization of the urban planning concept and realization of the investment environment in which investors can easily participate, by setting flexible regulations

STRATEGIC TARGETS

- Good public healthcare system
- Easy access to public services with e-government applications
- Affordable housing schemes
- Clean environment
- Urban resilience with fewer flooding incidents.

Smart City Project 1
Establishment of Drainage System

OVERVIEW

Incorporating drainage management systems into the city Master Plans and socio-economic development plans, Vientiane Capital aims to effectively improve the operation and maintenance of the drainage system. Each year, the city is flooded for at least 5 months. The existing master plan doesn't capture information on the drain infrastructure, resulting in data gap among government agencies. An upgraded drainage system can increase Vientiane Capital's urban resilience with fewer flooding incidents. Support in the form of funding for the operation and maintenance of drainage systems, and strong enforcement of development control is required.

SUPPORT REQUIRED

- Funding support
- Technical support on master planning

Smart City Project 2

Sustainable Transport Plan

OVERVIEW

Increasing population, poor road quality, and inadequate public transport systems have resulted in traffic congestion on Vientiane Capital's streets. Vientiane Capital needs to synchronise its Sustainable Transport Plan with its Master Plan to ensure better landuse and transport integration. The city seeks to collaborate with key stakeholders such as private transport corporations and local transport department to identify underlying transport issues and develop a strategic roadmap specifying the short-term and long-term action plans.

SUPPORT REQUIRED

- Consulting support to identify underlying issues
- Development of a strategic roadmap consisting of transport-focused action plans

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Johor Bahru

About the City

Total Land Area	220 km^2
Population	1.5 million
Density	6,909 /km^2

Chief Smart City Officer

Name: Ms Maimunah Jaffar
Designation: Head, Planning & Compliance
Email: maimunah@irda.com.my

Smart City Action Plan

VISION

To develop Johor Bahru smart city into a strong and sustainable metropolis of international standing.

FOCUS AREAS

- **Good Governance**
  - Improve decision-making in planning
  - Improve government transparencies in tracking development progress, policies and targets

- **Quality Environment**
  - Reduce consumption of energy which include electricity, gas and water (resource access & management)

STRATEGIC TARGETS

- By 2022: To increase the number of planning approvals using smart data assessment tools by 50%
- Increase water reserves by 15% - 20%

Smart City Project 1
Iskandar Malaysia Urban Observatory (IMUO) Tool For Decision Making, Stocktaking And Measurement

OVERVIEW

To ease decision-making in planning and to improve government transparencies in tracking development, policies and targets, Johor Bahru aims to improve its planning approval process via informed decision-making. Johor Bahru plans to develop a Central Data Centre, the Iskandar Malaysia Urban Observatory (IMUO) to collate, update, analyse, manage and disseminate data. IMUO will also function as a Knowledge Hub to improve regional urban knowledge, and as a Monitoring and Assessment Centre to monitor development progress. IMUO could also provide technical services that aid programme monitoring and capacity building for policy implementation at the city and regional level.

SUPPORT REQUIRED

- Funding support
- Technical Advisory Services and Advanced Analytics
- Enhanced Big Data Centre capabilities

Smart City Project 2
Management of Water Resources and Distribution

OVERVIEW

In 2018, Johor Bahru's water reserves could only meet 8% of the water demand, and is expected to decline to 5% in 2019. Through an Integrated Urban Water Management blueprint, Johor Bahru is determined to improve water sustainability practices to increase water reserves by 20% all year round and to source for new water sources through innovation and technology. Johor Bahru plans to upgrade existing water plants with advanced technology and smart water management systems.

SUPPORT REQUIRED

- Political support from the Federal and State water agencies to establish a framework on water resource management

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Kuala Lumpur

About the City

Total Land Area	243 km^2
Population	1.8 million
Density	7,377 / km^2

Chief Smart City Officer

Name: Datuk Najib bin Mohamad
Designation: Executive Director (Planning)
Email: tkpr@dbkl.gov.my

Smart City Action Plan

VISION

Kuala Lumpur envisions to be A World Class Sustainable city by 2020.

FOCUS AREAS

- **Built Infrastructure**
  - Provision of a world-class built infrastructure that can raise the city competitive edge. Priority is on the comfort and safety in major physical improvements

- **Industry and Innovation**
  - Modernising the industrial sector for economic growth and wealth creation that creates opportunities for innovation and knowledge economy

- **Quality Environment**
  - Quality environment relates to quality living whereby environmental sustainability is the top priority

STRATEGIC TARGETS

- Green Growth targets: increase share of green employment to 4%
- Green Mobility targets: increase to public transport: private transport modal share ratio to 60: 40
- Sustainable Energy System: increase share of renewable energy sources to 27%
- Enhanced community engagement and green lifestyle targets: 100 schools actively participating in green school programmes
- Sustainable Solid Waste Management targets: increase the recycle rate by 30%

- Low Carbon Green Building: increase share of green buildings to 60% by 2030
- Green and Blue Network: increase green area ratio per capita to 20m^2 per person
- Sustainable Water Management targets: increase gross grey water recycling rate to 20% by 2030
- Achieve Energy Efficient Spatial Structure
- Achieve "70 by 30" Green Urban Governance goals within the elements of economy, social and environment

Smart City Project 1
KL Urban Observatory

OVERVIEW

In line with the Master Plan, the KL Urban Observatory is a Central Data Repository to collate, update and disseminate social, economic and physical data for planning purposes. This is a collaborative effort by the local authorities, residential associations and government agencies. Coordination is needed for more effective planning to improve the liveability of Kuala Lumpur.

SUPPORT REQUIRED

- Political support
- Support from the citizens

Smart City Project 2
Kuala Lumpur Pedestrian and Bicycle Lane

OVERVIEW

In line with the Kuala Lumpur Pedestrian and Bicycle Master Plan 2019-2028, Kuala Lumpur aims to be a world-class liveable city through promoting a healthier lifestyle among city folks and allowing for a convenient and safe commute for pedestrian and cyclists. The project has started in the city centre area where Kuala Lumpur has built an 11km dedicated bicycle lane.

SUPPORT REQUIRED

- Political support
- Support from the citizens

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Kota Kinabalu

About the City

Total Land Area	366.03 km²
Population	452,940
Density	1,290 / km²
Chief Smart City Officer	

Name: Mr Stanley Chong Hon Chung
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Name: Ms Tantinny Fung Chew Li
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Smart City Action Plan

VISION

Transforming Kota Kinabalu into a Clean, Green and Liveable City.

FOCUS AREAS

- **Built Infrastructure**
  - Proposed Integrated Bus Rapid Transit (BRT), Light Rail Transit (LRT) and Bus Lanes Project in the Greater Kota Kinabalu to improve and enhance accessibility and networking for a better and systematic public transportation

- **Quality Environment**
  - Integrated waste management, from collection to processing that will reduce littering, toxic emissions from the landfill, and generate income for citizens and the government

STRATEGIC TARGETS

- BRT, LRT and Bus Lanes will be integrated by 2030 with following objectives:
- Adequate space for public transport infrastructures development
- Consistent travelling time / schedules from one destination to the next destination
- Cost effective project implementation
- High level accessibility and end user friendly
- By year 2023:
- Approximately 60% of daily waste collected could be reduced through waste segregation and recycling activities.
- Quantity of waste collected and processed, profit from processed waste sold.
- Additional years of landfill use, income generated per capita, government funding generated, money saved on waste removal, increased in tourist positive reviews upon visiting the city, number of jobs generated

Smart City Project 1
Integrated Public Transport System

OVERVIEW

This project aims to create a seamless and quality public transport travel experience to attain sustainable transport plans by 2030. This project includes an Integrated Bus Rapid Transit (BRT), Light Rail Transit (LRT), and Bus Lanes Project.

SUPPORT REQUIRED

- Political Will
- Experts specializing in consulting and implementing the project
- Funding by private investors

Smart City Project 2
Integrated Solid Waste Management

OVERVIEW

This project aims to develop efficient and effective governance and transform the city into a clean, green and liveable city with sustainable waste management. It will encompass comprehensive action plans for effective waste collection and waste processing in order to reduce the generation of waste and toxic emissions from the landfill.

SUPPORT REQUIRED

- Political Will
- Experts specializing in consulting and implementing the project
- Funding by private investors

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Kuching

About the City

Total Land Area	2,031 km^2
Population	680,000
Density	336 / km^2

Chief Smart City Officer

Name: Mr Julin Alen
Designation: Principal Assistant Director, State Planning Unit, Chief Minister Department, Sarawak, Malaysia
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Smart City Action Plan

VISION

Kuching envisions to improve the quality of life and achieve smart city status through digital transformation.

FOCUS AREAS

- **Mobility**
  - As Kuching city develops, traffic congestion has become one of the major challenges facing the city. Kuching city is known for car-dependent city. The study shows that in 1% growth of the population there is 2% growth in vehicle registration. The government is embarking on plan to improve the public transport system and ensure efficient mobility of the people.

- **Urban Resilience**
  - Kuching city is a riverfront city, located in a low lying area. Kuching experienced occasional serious flooding problem especially during the rainy season. The government has implemented several flood mitigation projects to ensure fast flushing of overflow water to the sea.

STRATEGIC TARGETS

- To reduce commuting time by 15% to 30%
- To increase the number of digitally connected and managed traffic lights from 32 to 140 junctions.
- To Integrate smart technologies into flood management system
- To align Kuching's competitiveness with national and international agendas
- To provide a collaborative space between the stakeholders and strategic planners

- To improve the international standing of Kuching
- To enable stakeholders to address the urbanization issues through the smart city components developed, which thereby improves the well-being and quality of life

Smart City Project 1
Smart Mobility - Integrated Smart Traffic Light System

OVERVIEW

This project aims to ease the traffic congestion in Kuching city through smart management of the traffic flow using digital technology. Out of the 140 signalised junctions, only 32 have been digitally connected and managed as the pilot projects only cover 4 major routes. The government plans to expand the project to cover all major urban roads and signalised junctions in Kuching City so as to coordinate the traffic flow with better synchronised traffic lights and provide 'real time' traffic information.

SUPPORT REQUIRED

- Technical support
- Funding

Smart City Project 2
Integrated Flood Management and Response System

OVERVIEW

This project aims to better alert the response team or the Disaster Committee, to flooding events to ensure safety of the people and property. An efficient monitoring and response system will reduce the occurrence of flash floods and waterlogging in flood prone areas.

SUPPORT REQUIRED

- Technical support
- Funding

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Nay Pyi Taw

About the City

Total Land Area	7,054.37 km^2
Population	924,608
Density	131 / km^2
Chief Smart City Officer	

Name: Mr Myo Aung
Designation: Permanent Secretary of Nay Pyi Taw Development Committee
Email: myoaung.dda@gmail.com

Smart City Action Plan

VISION

To be a green and liveable city that is environmentally sustainable, Nay Pyi Taw is a city that also envisions itself to be the centre of knowledge hub. An aspiring climate change resilient city, Nay Pyi Taw aims to be an international aviation transit, cargo and logistics hub serving the global market. Nay Pyi Taw's main objective is to promote itself as a city that provides core infrastructure and high quality of life to its citizens.In addition, it aims to provide a clean and sustainable environment and apply smart solutions in providing key infrastructures such as water, power, telecommunication and waste management. It is also meant to set examples or role model that can be replicated in other cities in Myanmar.

FOCUS AREAS

- **Housing and Social Infrastructure**
  - Identify new greenfield sites for affordable housing projects and an international education hub

- **Quality Environment**
  - Use technology driven solutions to upgrade infrastructure

- **Built infrastructure**
  - Use smart city data for master-planning
  - Explore an area-based development approach for planned transformation. Use of smart data city's infrastructure needs and facilitate efficient provision of services

STRATEGIC TARGETS

- From 2018 to 2025:
  - Nay Pyi Taw will draft an Area Based Strategic Planning for an area of 33.298 acres near the planned Diplomatic enclave.

- An area of 33.298 acres is earmarked to start construction of Affordable Housing of 2620 units and will also introduce new housing projects with private sector initiatives. The role of the private Banking sector will also play a major role in providing housing to private citizens as well.

- A total area of 160 acres will be planned and existing infrastructures will be upgraded to meet the new technology. Depending on the existing level of infrastructure services, it is expected that more infrastructure service levels and a smart application will be put into place in the designated new area.

Smart City Project 1
Affordable Housing and Low-cost Housing Project

OVERVIEW

The project involves the construction of medium-rise low-cost affordable housing for retired government employees. The old townships of Pyinmana, Lewe, Tatkone and their semi-urban areas will be need to be developed with infrastructure amenities to support new affordable housing projects.

SUPPORT REQUIRED

- A competent smart city planning team from partner countries or multilateral funding agencies
- Foreign investment in infrastructure development projects
- Support as a service provider

Smart City Project 2
International Comprehensive University

OVERVIEW

Proposed as an Education Hub, the first International University in Myanmar includes an Engineering School, Business School, Medical School, and Art and Design School. Collaborating with Korea, Nay Pyi Taw's Comprehensive University is to be constructed on a 250 acre-wide land near the Diplomatic Zone, where the Smart City Initiative Project is partially implemented. While the Hotel Zone has been completed, funding assistance is required for the rest of the development.

SUPPORT REQUIRED

- Infrastructural support
- Funding support

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Mandalay

About the City

Total Land Area	285 km^2
Population	1.23 million
Density	4300 / km^2

Chief Smart City Officer

Name: Mr Ye Myat Thu
Designation: Committee Member of Mandalay City Development
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Smart City Action Plan

VISION

Mandalay aspires to be a city with safe and smooth mobility.

FOCUS AREAS

- **Traffic Management**
  - Develop a Central Control Real Time Traffic System or Intelligent Traffic System or Integrated Traffic System to reduce city traffic congestion and conduct traffic data analysis for future planning

- **Road Safety**
  - Install Number Plate Reader CCTVs and checkpoints for road area security
  - Install Radio Frequency Identification tab on all vehicles to facilitate central control, payment, log and big data analysis
  - Install Guard Rails, Road Signs, Warning Signs and Crossing Signs, one-way streets to prevent traffic congestion
  - Indicate street markings with thermoplastic paints

- **Public Transport**
  - Reduce the number of private vehicles via the improvement of public transport and the promotion of public transport as the ideal mode
  - Plan for 4 proposed Bus Rapid Transit lines

- **Parking and Walkway Management**
  - Improve walkways around the moat
  - Construct user-friendly pavements in the city area
  - Increase parking fees in the downtown areas
  - Develop laws and legislations for multi-storeyed car parking to ensure sufficient parking areas in new buildings, hospitals and supermarkets

- **Good Management of Solid Waste and Waste Water, Water Supply, and Public Transportation**

STRATEGIC TARGETS

- Reduce the increase of motorcycle by instilling regulation within 2 years
- Install Smart Traffic Light Controls by 50% within 2 years
- Install over 100 checkpoints and city brain control stations in the city within 2 years
- By 2020: Reduce road accidents by at least 60% with better traffic data
- Increase road safety standards
- Improve parking conditions in public spaces

Smart City Project 1
Traffic Congestion Management

OVERVIEW

In light of the increasing vehicle ownerships that results from population growth and the ease of import laws, the number of motorcycles and private car ownership peaked at 2016, resulting in traffic challenges. Reliable and up-to-date traffic data, and strategic management of road conditions by road infrastructures such as traffic lights, guard grails and road signs could address the traffic congestions in Mandalay, thereby improving road safety.

SUPPORT REQUIRED

- Technical assistance on road traffic data analytics and management
- Funding support

Smart City Project 2
Solid Waste and Waste Water Treatment

OVERVIEW

Good solid waste and waste water management, to ensure quality water supply.

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Yangon

About the City

Total Land Area	576 km^2
Population	5.21 million
Density	9,045.1 / km^2
Chief Smart City Officer	

Name: Ms Tin Tin Kyi
Designation: Director of Urban Planning Division and representative from Yangon City Development Committee
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Smart City Action Plan

VISION

An Attractive International Port and Logistics Hub – A city of Blue, Green and Gold.

FOCUS AREAS

- **Civic and Social**
  - Preserve and conserve the culture and heritage of Yangon's Downtown area. By doing so Yangon can attract tourists and promote tourism.

- **Health and Well-being**
  - Provide health promoting home and environment.

- **Built Infrastructure**
  - Improve utilities and integrate them with green buildings and good transport services.

STRATEGIC TARGETS

- By 2025: The ratio of urban population living in informal settlement to be reduced by 5%.
- By 2025: Improve streetscape in Downtown Area by 100%.
- Government to supply 60% clean water.
- Develop the central sewer system by 13.2%.

Smart City Project 1
Conservation of Yangon City Downtown Area

OVERVIEW

Yangon, a city with unique heritage features and identity, aspires to transform into a well-developed and sustainable economic hub where its people can live and work peacefully. Conservation of its heritage and buildings could boost Yangon's attractiveness as a tourist destination. Towards transforming its heritage areas, Yangon has planned a Downtown Area Conservation project. Under this plan, the streetscape, infrastructure and amenities at Pandosan Street will be improved, and the heritage buildings lying vacant will be repurposed for sustainable and compatible uses such as Food & Beverage outlets, bookstores, and offices. Traffic conditions in this area will also be eased. To facilitate efficient planning in this area, Yangon will need to define its zoning regulations.

SUPPORT REQUIRED

- Financial and technical assistance.

Smart City Project 2
Low Cost Rental Housing and Transit Oriented Development

OVERVIEW

Western Yangon has nearly 30,000 workers employed in its industries. Due to inadequate housing options in the industrial zone, these workers commute long distances to get to work every day. In order to improve the city's public rental housing system and the socio-economic status of its workers, the Yangon City Development Committee has planned to develop the Hlaing Tharyar Township as a sustainable development, anchored around principles of Transit-Oriented-Development. This township will house low-cost rental housing, with Smart City elements (traffic management, environmental protection, and security) such that workers can reside in the Industrial Zone safely. A highway bus terminal will be built between Yangon and Ayeyarawaddy division, for smooth transit.

SUPPORT REQUIRED

- Collaboration between the public and private sector for funding support.
- Technical assistance.

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Cebu City

About the City

Total Land Area	315 km^2
Population	923,000
Density	2,930 / km^2
Chief Smart City Officer	

Name: Mr Nigel Paul C. Villarete
Designation: City Administrator
Email: paul@villarete.com

Smart City Action Plan

VISION

Cebu City aims to improve urban growth through use of efficient technologies in realms of urban mobility, personal security and safety. Public transport and mobility will be upgraded through Bus Rapid Transit (BRT) systems. In addition, higher resolution CCTV cameras are planned to be deployed in more crowded areas and especially at road intersections to assist with efficient crowd planning, increased capability to detect violations and crimes and deter security issues in the urban environment. Cebu City's aims for an improved and inclusive mobility by 2025 to serve more citizens with greater efficiency, effectiveness, speed, comfort and affordable public transportation.

FOCUS AREAS

- **Personal safety and security**
  - As the city grows and gets congested, there is also the added threat to personal safety and security of its citizens. Smart cities should be able to address this and accord its citizens with better safety measures so that everyone will feel secured and can thus do their part to contribution of city-building without fear or apprehension

- **Mobility**
  - Mobility in Cebu City is severely hampered by the worsening traffic congestion level, resulting in long commute hours. Mobility is not just about easing traffic conditions, but providing citizens with quick access for daily living, regardless of economic and social conditions. Mobility ought to be inclusive.

STRATEGIC TARGETS

- Increase effectiveness and efficiency of public transportation
- Reduce commuting time
- By 2021: Start operations for the ongoing Bus Rapid Transit (BRT) System
- By 2025: Start operations for the proposed BRT Phase 2

- By 2019: Install surveillance camera system in 85 intersections
- By 2020: Install surveillance camera system in major corridors

Smart City Project 1
Automated Citywide Traffic Control Systems

OVERVIEW

Through the Automated Citywide Traffic Control Systems project, Cebu City aims to enhance traffic regulation and enforcement, and improve information collection and sharing. The operation of the intelligent traffic control system entails the installation of necessary sensors, equipment and infrastructure.

SUPPORT REQUIRED

- Technical assistance in terms of Feasibility Study and Transaction Advisory Services
- Support from state-of-the-art technology providers

Smart City Project 2
Bus Rapid Transit (BRT) System

OVERVIEW

As Cebu faces traffic congestion challenges, it has plans to establish, operate, maintain and substation a BRT to provide efficient intra-city mass transportation. Improvements to the current transportation system will help to reduce commuting time. Under this project, Cebu aspires to start operations of Phase 1 of BRT by 2021, and to further extend BRT Phase 1 by 15km in the Phase 2 in 2025.

SUPPORT REQUIRED

- Technical assistance in terms of Feasibility Study and Transaction Advisory Services
- Support from state-of-the-art technology providers

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Davao City

About the City

Total Land Area	2,444 km^2
Population	1.7 million
Density	699 / km^2
Chief Smart City Officer	

Name: Mr Mgen Benito Antonio T De Leon Afp (RET)
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Name: Ms Rowena Henedine Dominguez-Narajos
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Smart City Action Plan

VISION

Davao City envisions to create a community that harnesses digital connectivity and technological advancement in providing high-quality living and a safe and secured environment for the *Dabawenyos*. Taking advantage of modern information technology systems, the city aims to strengthen its safety and security measures, enhance public service delivery, and bolster domestic and international linkages and relations to drive economic growth and achieve sustainable development.

FOCUS AREAS

- **Security: ensuring public safety through:**
  - Intelligent surveillance
  - Intelligent collection and analysis
  - Multi-media critical communication
  -
- **Built Infrastructure for smart mobility through:**
  - Traffic control
  - Vehicle sensor
  - Bus and railway system

STRATEGIC TARGETS

- To ensure the public's safety and security with the aid of the modern information technology by reducing crime rate to 10% by 2022.
- To efficiently address current traffic conditions in the city with the aid of the modern technology by reducing travel time by 50% within city limits by year 2025.

Smart City Project 1
Converged Command and Control

OVERVIEW

Using intelligent surveillance and upgraded communication capabilities, Davao City will develop technological solutions that enable efficient inter-agency collaboration for improved public safety and planning. The Public Safety and Security Command Center (PSSCC) is specifically tasked to orchestrate all undertakings related to safety and security, and to lead multi-agency mechanisms for incidents beyond the purview of a single agency. A converge command & control solution will enable the PSSCC to link with agencies and gather near-time critical information. By 2021 Davao City plans to upgrade the capability of the PSSCC by increasing the coverage area of the CCTVs to cover all intersections and key facilities.

SUPPORT REQUIRED

- Technical expertise in Information and Communications Technology
- Solutions advisory support
- Funding support

Smart City Project 2
Intelligent Transport and Traffic Systems with Security

OVERVIEW

Davao City aims to use technology to address the growing transportation challenges. The city seeks to enhance traffic management capabilities by leveraging on latest technology and innovations. Under this project Davao City will install sensors, equipment and infrastructure that support the operation of an intelligent traffic control system and public safety initiatives. The solutions developed for improved traffic and transport management will also be integrated with other security management systems.

SUPPORT REQUIRED

- Technical expertise
- Solutions advisory support

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Manila

About the City

Total Land Area	39.0 km^2
Population	1.8 million
Density	45.7 / km^2
Chief Smart City Officer	

Name: Mr Mario Zapatos Oblefias
Designation: Head, Electronic Data Processing
Manila City Hall
Email: erapmail@gmail.com

Smart City Action Plan

VISION

Governance at the Palm of your Hands.

FOCUS AREAS

- Public Safety and Order, Public and Social Services, Environment and Disaster Response-Ability
- Technology enhanced Educational Delivery
- Integrated Health Care Management

STRATEGIC TARGETS

- Technology Upgrade for each above focus areas
- Enhancement of Standard Operating Protocols (S.O.Ps) in the above focus areas
- Enhancement of Educational Instruction and instructional tools
- Personnel re-orientation
- Instructional re-orientation
- Development of an Integrated database

Smart City Project 1
Command Centre Upgrade

OVERVIEW

Rehabilitation and Reorientation of our Command Centre to a cloud-based system, to be more responsive to concerns of Manila residents and visitors. This would include connecting Traffic/Peace

and Order/Disaster Monitoring into a Command / Administration and Supervision/Response-able Centre.

SUPPORT REQUIRED

- Funds for Hardware and Software Development for Command, Supervision, Monitoring and Constituent/Client application

Smart City Project 2
E-Education

OVERVIEW

Development of joint-instruction Tutorial Applications, based on Department of Education's (DepEd) curriculum, that can run on mobile phones which will allow students to practice study or review lessons with teacher supervision. These will be partly implemented with construction of Internet-ready classrooms, acquisition of computer and presentation equipment and distribution of tablets to all public elementary and high school teachers. It is part of an ongoing project of DICT and City of Manila in the installation of Free Wifi areas.

SUPPORT REQUIRED

- Funds for Hardware and Software Development

Smart City Project 3
E-Health

OVERVIEW

Integration of Medical Records and Medical Assistance/Monitoring (Hospital Data/MHS/MDSW) of the constituents of the City, including an Integrated Hospital and Patient Management System. The system should also allow operating room supervision with an international consultant, integration with i-Hospital system which allows for medical student training, and a Conference system for consultations and joint operation by experts abroad or in other Hospitals

SUPPORT REQUIRED

- Funds for Hardware and Software Development

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Singapore

About the City

Total Land Area	719.9 km^2
Population	5.61 million
Density	7,796 / km^2

Chief Smart City Officer

Name: Mr Tan Chee Hau
Designation: Director (Planning & Prioritisation Directorate), Smart Nation and Digital Government Office, Prime Minister's Office

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Smart City Action Plan

VISION

To transform Singapore through technology.

FOCUS AREAS

- **Digital Government**
  - Provide integrated and seamless Government services and use greater intelligence for more efficient policy-making and operations
- **Digital Economy**
  - Digitalise industries to increase business efficacy and create new jobs and opportunities
- **Digital Society**
  - Provide citizens access to technology so they can embrace it and utilise technology confidently and effectively to connect with the world around them

STRATEGIC TARGETS

- Develop next-generation digital infrastructure
- Maximise the value of data
- Build a digitally-ready workforce
- Build digitally-ready industries and a strong Info-communication sector
- Deepen investment in research and innovation
- Ramp up our cybersecurity efforts

Smart City Project 1
E-Payments

OVERVIEW

Providing seamless, secure, and integrated e-payment platforms, options for cashless payments, and integrating e-payments into business processes from end to end.

It will result in:

- Reduced business costs associated with handling cash and cheques
- Increased daily transactional convenience to consumers
- Potentially new and innovative services riding on e-payments platforms

We want to explore cross-border collaboration and linkages for e-payments systems.

Smart City Project 2
National Digital Identity

OVERVIEW

The National Digital Identity (NDI) will be a nationally-available means for an individual to prove his legal identity in the digital realm. It will be issued to all residents and can be used for seamless and secure transactions with both the public and private sector.

It is planned to be operational in 2020, with progressive trials for digital signatures to facilitate paperless transactions. We want to explore cross-border collaboration and recognition of digital signatures.

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Bangkok

About the City

Total Land Area	1,568.7 km^2
Population	8.28 million
Density	5,300 / km^2

Chief Smart City Officer

Name: Mr Chaiwat Thongkamkoon
Designation: Director-General of Office of Transport and Traffic Policy and Planning
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Smart City Action Plan

VISION

To be a Visitor-Friendly International Community with a New Central District filled with various attractions and infrastructures.

FOCUS AREAS

- Built infrastructure
- Quality Environment
- Industry and Innovation

STRATEGIC TARGETS

- Develop a New Central Business District (CBD)

Smart City Project 1
Transport Hub Development at Bang Sue Area

OVERVIEW

Serving as the main stop for the High-Speed Rail, the Bang Sue Central Railway will function as the hub of the new Commuter Rail System that provides new lines serving the areas near the city centre. The Transport Hub Development aims to overcome the existing infrastructural pressure on the existing terminal while simultaneously reducing commuting time.

SUPPORT REQUIRED

- Financial support
- International advisory support

Smart City Project 2

Smart City Plan

OVERVIEW

The Smart City Plan of Pahonyothin aims to be the ideal place for visitors with its strong international community, and the New Central District full of attractions. Coined as the Gateway to City of Angels, Pahonyothin is to consist of various transport systems such as pedestrianization, cycling, bus and metro.

SUPPORT REQUIRED

- Advisory on smart city development
- Urban design and development

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Chonburi

About the City

Total Land Area	43 km^2
Population	215,000
Density	5,000 / km^2

Chief Smart City Officer

Name: Mr Seksan Phunboonmee
Designation: Policy and Plan Analyst, Energy Policy and Planning Office, Ministry of Energy
Email: seksan@eppo.go.th

Smart City Action Plan

VISION

To be a self-reliant, energy-efficient city with renewable energy sources and sustainable environmental management

FOCUS AREAS

- **Built infrastructure**
  - Well-organised basic infrastructures
  - Smart infrastructures and digital technology to connect the zones within AMATA Smart City to all the targeted industries

- **Quality Environment**
  - Protect the environment through the use of technology and sustainable practices
  - Adopt the concept of zero-waste discharge

- **Industry and innovation**
  - Support 'Thailand 4.0' (an economic model that aims to unlock the country from several economic challenges resulting from past economic development models), and The Eastern Economic Corridor (EEC) by attracting Foreign Domestic Investments from targeted industries
  - Link top level education with innovation

- **Health and Well-being**
  - Improve quality of life
  - Create job opportunities for communities
  - Promote healthy lifestyle for all ages

STRATEGIC TARGETS

- By 2044: Attain 30% renewable energy and energy storage
- By 2044: Reduce energy consumption by 20%
- By 2044: Reduce CO_2 emission by 30%
- By 2044: Attain energy self-reliance
- By 2044: Develop Smart grid system

Smart City Project 1
Smart Grid Project

OVERVIEW

This project aims to move Chonburi forward to be a self-reliant, energy-efficient city with renewable energy sources and sustainable environmental management. It entails the management of electrical networks, generation systems, transmission systems and power distribution systems, with a systematic energy management and energy storage structure.

SUPPORT REQUIRED

- Technical assistance on managing electrical networks, generation systems, transmission systems, and power distribution system with energy management and storage system
- Local authorities: Provincial Electrical Authority, Electricity Generating Authority of Thailand, and Energy Regulatory Commission

Smart City Project 2
Waste to Energy plant

OVERVIEW

This project aims to address the waste treatment and management issues arising from the generated waste at Chonburi, and to source for renewable energy integration and regional smart micro-grids, which is aligned with the relevant National Plans on built infrastructure developments in Thailand.

SUPPORT REQUIRED

- Technical support during the proposal preparation process
- Waste-to-Energy technology expert

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Phuket

About the City

Total Land Area	543 km^2
Population	0.4 million
Density	719 / km^2

Chief Smart City Officer

Name: Dr. Passakon Prathombutr
Designation: SEVP, Digital Economy Promotion Agency
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Smart City Action Plan

VISION

With tourism accounting for 97% of its Gross Domestic Product, Phuket's smart city vision is to achieve sustainability in its tourism development.

FOCUS AREAS

- Civic and social aspects of tourism to prepare utility needs that cater to tourists
- Industry and innovation to promote trade and commerce activities
- Security
    - Using CCTV analytics to predict and prevent crime
    - Reduce crime by 50%

STRATEGIC TARGETS

- Improve public utilities management for environmental sustainability especially for water, waste and electricity
    - Reduce the operation cost by 25%
    - 80% of utilities to go online
- Increase tourist return rates to 50% of annual tourist arrival

Smart City Project 1
City Data Platform

OVERVIEW

Using real-time big data from sources such as free-WiFi and CCTVs, Phuket plans to build a City Data Platform that allows for better understanding of residents and tourists in Phuket. The City Data Platform functions to build big data that can aid the city administration in more efficient and accurate planning of infrastructure, public utilities, common amenities etc. The data will also provide valuable insights to businesses and start-ups in their analysis.

SUPPORT REQUIRED

- Technical support in data analytics and Business Intelligence platform providers
- Collaboration with data-source owners and other key stakeholders
- Data exchange based on Blockchain

Smart City Project 2
Phuket Eagle Eyes - Safe City based on Big Data Harvesting and Analytics CCTV Safe City

OVERVIEW

With the vision of making Phuket a safe city for all, Phuket aims to maximise the coverage area of CCTVs by inviting private firms and corporations to share their CCTV generated data with the government. While video analytics and CCTVs have been implemented and integrated since 2017, Phuket plans to expand the coverage of CCTVs. Phuket city government seeks to collaborate with Cloud companies to take this project forward.

SUPPORT REQUIRED

- Technical support in CCTV analytics for safety such as face recognition platforms

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Da Nang

About the City

Total Land Area	1,285 km^2
Population	1.0 million
Density	814 / km^2

Chief Smart City Officer

Name: Mr Nguyen Quang Thanh
Designation: Director of Da Nang Department of Information and Communication
Email: thanhnq@danang.gov.vn

Smart City Action Plan

VISION

Da Nang envisions itself to be a smart, liveable, and sustainable city by 2030. With a citizen-centric strategy, Da Nang aims to deliver high quality of life and sustainable environment for citizens while ensuring economic growth and competitiveness.

FOCUS AREAS

- **Smart Governance**
  - E-Government
  - Public services
  - Intelligent Operation Centre
  - Open Data
- **Smart Living**
  - Smart Education
  - Smart Healthcare
  - Food Hygiene and Safety
  - Security and Emergency Services
  - Disaster Prevention
- **Smart Mobility**
  - Intelligent Transportation System
- **Smart Environment**
  - Smart Energy
  - Smart Public Lighting
  - Smart Water Management
  - Smart Waste Management

- **Smart Citizen**

- **Smart Economy**
    - Smart Tourism
    - Smart Agriculture
    - Smart Commerce

STRATEGIC TARGETS

- By 2020: Ensure smart ICT infrastructure and key databases
- By 2025: Develop smart applications in 16 key domains
- By 2030: Develop an innovative ecosystem
- Apply ICT in all socio-economic fields in order to enhance city governance and address urban challenges, improve quality of life, ensure efficient use of resources and enhance economic competitiveness

Smart City Project 1
Intelligent Traffic Control System

OVERVIEW

To reduce traffic congestion and improve logistical efficiency, Da Nang plans to upgrade the existing traffic control system to effectively collect, manage and analyse comprehensive traffic information. This requires the installation of a CCTV network and associated software to detect traffic flow and violations. The desired outcomes include sharing real-time data and information on transport to be used by both the public and private sectors, reducing travelling time, enhancing public transport management, and improving control and supervision of traffic conditions.

SUPPORT REQUIRED

- Financial support to install and commission new cameras and traffic management systems
- Financial and technical support to install Wireless MAN network for data transfer.
- Technical support on the design and delivery of a transport management system, including Data Centre, Data Integration Platform and Data Analytic Applications
- Access to knowledge, information, and experience on smart city building

Smart City Project 2
Smart Water Management

OVERVIEW

In the context of rapid urbanization, climate change, and environmental degradation, efficient water resource utility is crucial to enhance quality of life while ensuring sustainability in Da Nang city. Da Nang aims to improve water supply, drainage, and wastewater treatment for higher water quality and reliability and lower operational costs.

SUPPORT REQUIRED

- **Financial and technical support:**
    - to upgrade pipes infrastructures and Supervisory Control and Data Acquisition (SCADA) system
    - design and building of the whole smart water management system
    - to develop data integration platform and model

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Hanoi

About the City

Total Land Area	3,358.9 km^2
Population	7.6 million
Density	2,280 / km^2
Chief Smart City Officer	

Name: Mr Nguyen Duc Chung
Designation: Chairman of Hanoi People Committee
Email: vanthu@hanoi.gov.vn

Smart City Action Plan

VISION

Hanoi aspires to be a *green, culturally-rich, civil and modern city with sustainable development to create a better life for the people by 2030.* As the national political centre, Hanoi places its economic, trade, investment, culture and social priorities at heart.

FOCUS AREAS

- **Intelligent Operations Centre (IOC)**
  - The establishment of a Smart Operations Center includes the following functional centers:
    - Center for the supervision of confidentiality and safety of information
    - Support Center for IT staff of the City
    - Center for Management of Press Information and Communication Information
    - Center for Traffic Supervision, Traffic Control and Prevention of Crimes in Public
    - Data Analysis Center
    - Q & A for people
    - Center for Management of Public Administrative Services
    - Center for reception and processing of emergency information, fire prevention, search and rescue, rescue, medical

- **Smart Transportation**
  - Integrated traffic information system of Hanoi
  - The system of supervision and handling of violations of road traffic order and safety with images

- Public security monitoring software
- Traffic control system intelligent traffic signal at some intersections
- Electronic traffic signage system
- Intelligent traffic monitoring and management software system integrated with Smart Center of Hanoi
- Software system for management and operation of public transport, fire prevention, rescue and rescue
- Electronic ticketing system used in the field of public passenger transport by bus
- The system charges the regulator, restricting the means of personal transportation

- **Smart Travel**
  - Hanoi Tourist Portal and Mobile Phone Application
  - Hanoi tourist map
  - Hanoi tourism data integration infrastructure
  - Access to information for tourists

- **Smart Education**
- **Smart Health**
- **Smart Environment**
- **Smart Energy**

STRATEGIC TARGETS

- By 2030: Improve quality of life
- By 2030: Streamline urban management
- By 2030: Improve traffic conditions
- By 2030: Facilitate sustainable tourism
- By 2030: Protect the environment
- By 2030: Improve economic competitiveness
- By 2030: Provide convenient public service
- By 2030: Ensure safety and security

Smart City Project 1
Intelligent Operations Centre (IOC)

OVERVIEW

With the current public transport systems not well integrated with city's geography, the inter-modal hub and spoke system has yet to evolve. The establishment of an Intelligent Operations Centre will enable Hanoi to manage information and resources across all sectors. This would aid leaders in decision-making and responding to emergencies. Hanoi's urgent need is to have a centralized management system for monitoring and controlling signals and sensors, and for capturing visual information to effectively coordinate transport management.

SUPPORT REQUIRED

- Technical support on the design and delivery of transport management system for Hanoi
- Access to knowledge, information and experience in Smart City development
- Human resource training in management and implementation

Smart City Project 2
Development of Intelligent Transportation

OVERVIEW

With a clear strategic focus to provide access to better-managed public transport, Hanoi aims to reduce congestion and improve logistical efficiency. Using technology platforms to generate and collect traffic data, Hanoi will improve transport services and communication with the people.

SUPPORT REQUIRED

- Technical support on the design and delivery of transport management system for Hanoi
- Access to knowledge, information and experience in Smart City development
- Human resource training: management and implementation

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Ho Chi Minh City

About the City

Total Land Area	2,095.6 km^2
Population	8.2 million
Density	3,924.4 / km^2

Chief Smart City Officer

Name: Mr Tran Vinh Tuyen
Designation: Vice Chairman of Ho Chi Minh City People's Committee

Email: tranvinhtuyen@tphcm.gov.vn

Smart City Action Plan

VISION

Ho Chi Minh City's vision by 2025 is to attain rapid and sustainable economic development through optimal resource utilization and citizen-centric governance.

FOCUS AREAS

- **Electronic Government**
  - E-government architecture framework
  - Online public services
  - Shared data warehouse

- **Transport**
  - Intelligent transportation system
  - Traffic forecast model
  - Electronic payment system
  - Traffic demand management

- **Flood Control**
  - Flood monitoring sensor system
  - Real-time sub-regional weather forecasting system

- **Environment**
  - Environmental quality monitoring network
  - Real-time analytical and forecasting application

- **Health and Food Security**
    - Electronic medical records
    - Smart emergency system
    - Solutions of food product traceability

- **Social Order and Security**
    - Integrated and unified Emergency Response Centre

- **Urban Upgrade**
    - The planning management and urban development system
    - The smart public lighting management

STRATEGIC TARGETS

- By 2025: Maintain economic growth by developing Ho Chi Minh City towards a knowledge-based and digital economy
- By 2025: Enhance urban management efficiency through forecasting
- By 2025: Improve the quality of living and working environment
- By 2025: Enhance the participation of citizens and organizations in city governance

Smart City Project 1
Integrated Operations Centre (IOC)

OVERVIEW

This project will be the 'brain' of the Smart City by integrating daily information and resources across all sectors in Ho Chi Minh City. Data and information will be collected and integrated from CCTV, sensors, and operation centres in all government sectors.

SUPPORT REQUIRED

- Financial support
- Technical assistance to define model and architecture of the IOC
- Access to knowledge, information, and experience on development and management of smart cities and IOC
- Enablers to make decisions pertaining to smart city development in accordance with Ho Chi Minh City's conditions

Smart City Project 2
Integrated and Unified Emergency Response Centre

OVERVIEW

Ho Chi Minh City plans to develop an integrated and unified emergency response centre for security and public order issues, fire-fighting and prevention, as well as medical services by 2020. The

response centre will include upgraded features such as automatic location and number identification, Computer Aided Design / Geographic Information Systems for resource management and operation, integrated video surveillance systems and IP Call Centre management software.

SUPPORT REQUIRED

- Financial support
- Technical consulting
- Access to knowledge, information and experience on building Smart Cities with a focus on enhancing public security

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