

- Smart City supported by Japan ASEAN Mutual Partnership –

Smart JAMP

APPLICATION FORM for Smart City Project Formulation Study

1. Project Digest

(1) **Project Title:** CLEAN RIVER MANAGEMENT SYSTEM

(2) **Name of the city:** Kg Ayer, Bandar Seri Begawan, Brunei Darussalam

(3) **Category of the study:** C, D and E

*Choose one (or more, if item D and/or E included) from below

C) Feasibility study To examine the feasibility or concrete details of an individual project composing the smart city project.

D) Capacity building program To build the capacity of the stakeholders including government officials or municipal staff through training programs or seminars (may be done online).

E) Experimental implementation To confirm applicability of a particular solution or technology for the smart city project in cooperation with Japanese solution provider(s).

(4) Justification of the Project *Provide detailed information of the project regarding the items below.

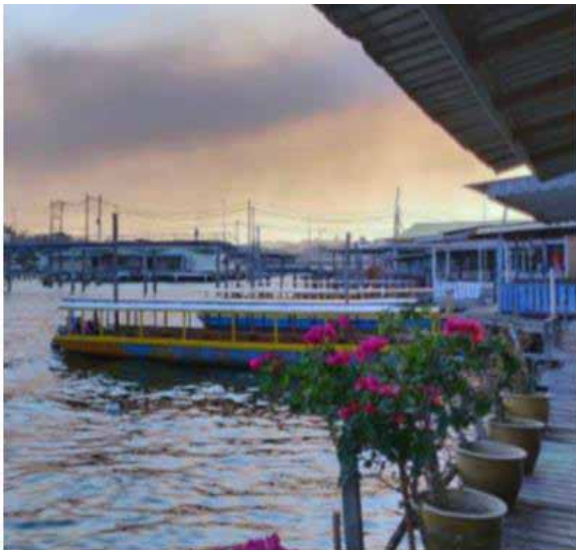
- Present condition of the smart city project in the target city:

Kampong Ayer or 'water village' is a historic settlement area in Bandar Seri Begawan, the capital of Brunei Darussalam. Kampong Ayer consists of a cluster of traditional stilt villages built on the Brunei River, mainly in the vicinity of the City Centre.



More than 20,000 people inhabit Kampong Ayer, the largest water settlement in Southeast Asia, and travel about by boat or the extensive network of wooden walkways, footbridges, and boardwalks. Kampong Ayer's 4,200 structures include homes, mosques, restaurants, shops, schools, and a even a hospital. People have been living here for more than 1,300 year. Many of the traditional lifestyles of its inhabitants; fishermen, traders, and artisans; have remained unchanged. Visitors can experience this heritage by taking one of the many water taxis in front of the Yayasan Sultan Haji Hassanal Bolkiah in Bandar Seri Begawan.

- Sectoral development policy of the local government / municipality on the smart city project in the target city:



CLEAN RIVER MANAGEMENT

SUNGAI BRUNEI CLEAN UP, an initiative carried out by the Ministry of Development through the Department of Environment, Parks & Recreation under clean river management.

This initiative consist of three (3) projects:

- House to House Waste Collection
- Collection of Floating Waste
- Collection of Waste in Bakut (Underneath the Houses)



HOUSE TO HOUSE WASTE COLLECTION

Daily house to house collection of domestic household waste from all Mukims and Village in Kampong Ayer



FLOATING WASTE

A continuous daily clearing and collecting of every waste floating along Sungai Brunei and its tributaries, trapped in floating booms and accumulated around jetties and pontoons



UNDERNEATH HOUSE (BAKUT)

Brunei River Clean Up, an initiative carried out by the Ministry of Development through the Department of Environment, Parks & Recreation under clean river management

Since April 2018, approximately 4,800 metric tonnes of waste have been collected from the 3 initiatives above. The existing on-going clean river management showed limited Smart Innovative and sustainable measures as initiative mainly utilize conventional (human) approach.

- Outline of the Study:

What if these wastes have increases over time that can further endanger and become hazardous to boat rides that are the only form of transportation for people living in Kampong Ayer? Such issues and problems will require serious attention before it leads to pollution and contamination of the river water that will further lead to other implications of its cycle.

A Smart Clean River Management System will tackle cross cutting city environmental and urban challenges by improving the quality of life not just within the Kampong Ayer but the entire capital city. With the use of emerging technologies like Robotics, Big Data, IoT and Drones, the approach of cleaning the river can be deployed more efficient, effective, sustainable and cost effective.

- Purpose (short-term objective) of the Study:

- Improve the river quality and cleanliness by scheduling automated collections and disposal of waste within the river vicinity
- Monitoring river water quality through digital sensors
- Improve citizens safety and water transportation
- Better resources allocation
- Efficient and effective river waste management system
- Intelligent command centre that can be integrated with other city sensors of Smart Cities

The implementation of the said initiatives will further assist the municipal to digitally transform the way it operates and gain insightful data and information to supports its business decisions.

- Goal (long-term objective) of the Study or entire project:

- Open data sharing within G2G and G2B (Industry)
- Insightful data for better decision making and planning for city centers
- Sustainable Smart City with nationwide deployment of sensors creating new job opportunities, new market and innovative applications/services.
- Smart sustainable infrastructure and facilities for a better livelihood in Kampong Ayer, increasing quality of life and attracting both local and tourist with its rich cultural heritage and offerings.

- Other relevant projects, if any.

Implementation of Clean river management system or concept have been proven a huge success in Japan with plenty of successful use-cases with its wide arrays of solutions offered for this purpose.

A feasibility study may be required on Brunei Kampong Ayer to fully understand the scope and range of issues and problems not just on the river but on the entire value chain or ecosystem on Kampong Ayer.