

- Smart City supported by Japan ASEAN Mutual Partnership -

## Smart JAMP

### APPLICATION FORM for Smart City Project Formulation Study

#### 1. Project digest

(1) Project Title: Project for Master Plan on Smart Wastewater Management in Siem Reap City

(2) Name of the city: Siem Reap, Cambodia

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

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

A) Masterplan (M/P) study

To formulate a masterplan for an entire smart city or a partial area of the target city, including the direction, comprehensive plan, and individual projects.

B) Pre-feasibility study

To determine priority among several alternatives on a particular field or part of an entire smart city project.

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

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

Siem Reap city is the second economic center of Cambodia and has to cope with increasing tourist pressure, causing a fast-moving extension of the city. Sanitation and sewerage system have not kept the pace of this rapid development.

Siem Reap is currently served by a sewerage network of 21.7km of sewer pipes covering four communes (out of 13 communes). The network is connected to a wastewater treatment plant (WWTP by Wastewater Stabilization Ponds), constructed in 2010 with treatment capacity of 8,000m<sup>3</sup>/day. The function of the existing sewerage system is not fulfilled due to lack of proper maintenance. Conventional septic tanks only for a black water are installed at each household and business facility in other nine communes, but a gray water is discharged to a drainage directly without a proper treatment. These have led to the deterioration of water environment in Siem Reap. The Feasibility Study on Smart City Project in Siem Reap has been implemented by JICA Survey



Team since 2020 to formulate the vision and potential project for improvement of urban environment.

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

- i) The wastewater master plan in Siem Reap was prepared by AFD project in 2010. According to the master plan, the central and surrounding area will be covered by the expanded sewerage network which will be connected to the existing and newly constructed WWTP.
- ii) According to the presentation in the 2nd ASEAN-Japan Smart Cities Network High Level Meeting, Siem Reap Provincial Government will provide Government budget to Siem Reap to make the river water environment clean and beautiful. Siem Reap Provincial Government will also set the goal to improve citizen's quality of life and to ensure the environmental and social consolidations.

- Outline of the Study:

Formulate a master plan, implement a capacity building and a demonstration experiment for the effective and sustainable sewerage management with Smart technologies and solutions in Siem Reap

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

Formulate a master plan for a sewerage system with IoT remote monitoring which leads to a contactless, efficient and proper maintenance

Improve the capacity for proper maintenance of existing sewerage system using digital devices through a training and a demonstration experiment

Explore a potential linkage with smart urban management

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

The project will contribute to achieve the SDGs 6 (Clean Water and Sanitation) and the SDGs 11 (Sustainable Cities and Communities) for Siem Reap. The water environment will be improved and conserved and prevent against epidemic such as covid-19 through the effective and sustainable sewerage management system with Smart technologies and solutions.

- Other relevant projects, if any.

- i) Project for Construction of Wastewater Collection Network, Rehabilitation of the Sewage Pumping Stations, and Improvement of Wastewater Treatment Plant in Siem Reap City (World Bank, start from quarter 2 of 2021)
- ii) Pre-Feasibility Study for Wastewater Management in Siem Reap City (Japan Sewage Works Agency (JS), 2021)
- iii) Project for Construction of Interceptor Sewer in Siem Reap City (ADB)
- iv) Siem Reap/Angkor Urban development project (AFD, 2006 to 2012)
- v) Feasibility Study on Smart City Project in Siem Reap (JICA, 2020 to 2021)

- vi) Study on Integrated Master Plan for Sustainable Development of Siem Reap/Angkor Town in the Kingdom of Cambodia (JICA, 2004 to 2006)