

Guidelines for the Submission of a Conceptual Plan for  
the Design of Infrastructure for  
Sustainable Water Resources Management and  
Flood Prevention for the Kingdom of Thailand

Water and Flood Management Commission

The Prime Minister's Office

Ministry of Science and Technology



The government applies the 7 principles of sustainable water resources management as advised and recommended by His Majesty the King as the core for the master plan as follows:

- Creating a balance between conservation and development.
- Considering interrelationship of forest, soil and water.
- Harmonizing the social landscape.
- Maintaining water security.
- Creating room for water.
- Coordinating water drainage and water storage .
- Fostering development based on Thailand's existing background.

This master plan for sustainable water resource management is separated into two component plans, the plan to manage primary basins and the plan to manage secondary basins. The primary basins plan is further divided into the plan to manage the Chao Phraya River Basin and the plan to manage peripheral river basins.

1.4. The Chao Phraya River Basin management plan is considered the highest priority because the basin is flooded on a regular basis and was the most affected by the flooding in 2011. The Chao Phraya River Basin is composed of the Ping, Wang, Yom, Nan, Chao Phraya Sakae Krang, Pa Sak and Tar Jeen rivers, encompassing 157,925 square kilometers. The area has a population of approximately 25 million people and experiences an average rainfall of 1,300 mm per year, translating into an average volume of water of 33,132 million cubic meters per year. The important rivers in this area are the Ping, Wang, Yom, Nan, Mae Krong, Pa Sak, Sakae Krang and Tar Jeen. The basin's upper region is capable of retaining 25,773 million cubic meters while the lower region is able to retain 2,124 million cubic meters. The lower Chao Phraya River Basin has the capacity to accommodate approximately 3,500 cubic meters per second of water without overflowing the riverbanks. The plan to manage the Chao Phraya River Basin is comprised of 8 operational plans. They are:

- Restoration and conservation of the ecological system.
- Annual water management plan for large reservoirs and dams.
- Restoration and efficiency improvement of current infrastructure.
- Development of a data warehouse, forecasting and warning system.

- Area-based emergency plan.
- Designated retention areas and remedial measures.
- Improvement and capacity-building of all water management agencies.
- Creation of understanding, acceptance and participation in the management for large-scale flooding amelioration from all sectors.

The details of the Chao Phraya River Basin management plan can be found in appendix 1 while the main projects, investment estimation and project functional areas can be found in appendix 2

1.5. The peripheral river basin management plan will be implemented in 17 watershed areas in the north, north east, central and south regions and will be comprised of 6 operational plans. They are:

- Restoration and conservation of forest and land.
- Construction of reservoirs in watershed areas.
- Land use plan.
- Improvement of main rivers and riverbanks.
- Improvement of the data warehouse, forecasting and warning system.
- Management and remedial action plan.

The details of the peripheral river basin management plan can be found in appendix 3.

1.6. To ensure that the sustainable water resources management would be according to the master plan, the Thai government invites internationally recognized capable people with knowledge, experience and past work in water resources management to submit a Conceptual Plan for the Design of Infrastructure for Sustainable Water Resources Management and Flood Prevention for the Kingdom of Thailand. The plan is intended to be appropriately used by the Thai government as a guide to the details of sustainable management of water resources and solutions to the problem of the flooding of the country.

## 2. Qualifications for proposal submission

2.1. Must be a legal entity or a group of legal entities in a consortium or joint venture to be able to submit the proposal under the following conditions:

- If the entity was established under foreign law, the entity must present a proof of status from their embassy.

- For a group of entities in a consortium or joint venture, at least one entity must be a legal entity under Thai law.

2.2. The entity must have worked in the design of large water resource development or the design or construction of large dams or reservoirs or the design or construction of flood or drought prevention systems with a construction value of at least 30,000 million baht in Thailand or in a foreign country during the years 2002-2012. If the proposal is from a legal entity in a Consortium or Joint Venture, the construction value can be an integrated value altogether, with each of them being at least 2,000 million baht. The work must be certified by the Embassy of the entity's nationality and presented. If the entity is established under Thai law, the entity must have their projects' employer certify their work.

2.3. The entity must have permanent staff working in an interdisciplinary manner with expertise and experience regarding water resources management, science, engineering, architecture, forestry, geology, hydrology, meteorology, disaster warning, prevention, solving and remedy of natural disasters. Expertise and experience of the staff must be listed and presented.

2.4. The entity is responsible for all of the expense in the preparation, handling, travelling and processing of the Conceptual Plan and to provide additional information or clarification requested by the Thai government agency or officer that is assigned by the government. The entity must waive the right to protest about the proposal.

2.5. The entity can propose both the Chao Phraya River Basin management plan (section 1.4) and the peripheral river basin management plan (section 1.5) or only one of them or any specific area in section 1.4 or section 1.5. However, the Thai government will give higher priority to the proposal that provides for management of each plan as a whole.

### 3. Details of the proposal

The proposal must be submitted in Thai with the minimum following details:

### 3.1.Executive Summary

3.2.A main report that shows the conceptual plan for the design of sustainable water management and flood prevention for Thailand. The framework must be consistent with the master plan provided by the Thai government. The proposal must include the analysis of risk factors of flooding that result from rising sea levels and coastal erosion caused by global warming and must include strategies for possible mitigation. The conceptual plan must include the following:

- Necessary mathematical model that is appropriate for Thailand's condition and situation to be able to analyze, track, evaluate and operate various plans and projects in every possible situation.
- Detailed projects for sustainable and effective water resources management including both primary and secondary basins in an integrated style from the upstream to the downstream. The project must clearly show the role, ability and efficiency for water storage, water retention and water drainage with the linkage to other projects as well as their cost estimation under the existing legal framework.
- Guidelines and procedures for integrating the development and improvement of water management for water retention, water distribution and water drainage as well as an investment plan, operational procedures, effective management system and cost estimation for the plan or project operation under the existing legal framework.
- Plan or project to increase water storage in various sizes to enhance the security of water resources as well as the development and recent and future expansion of the irrigation system to cover every potential area during the next 20 years including a cost estimation for the plan or project operation under the existing legal framework.
- Methods to increase water supply by Trans-Basin Diversion with evaluation of economic and environmental impact and cost estimation for the plan or project operation under the existing legal framework.
- Plans or projects to manage, provide information and warning of floods, drought, windstorms and landslides that are quick and accurate at the "Tambon" (district) level. The system must be able to

access and provide a warning alarm to as many people as possible in the public, including the disabled and the elderly.. Cost estimation for the plan or project operation must be provided under the existing legal framework or necessary new regulations or legal framework.

- Plan or project to quickly and effectively aid and provide relief for flood, drought, windstorm and landslide victims and cost estimation for the plan or project operation under the existing legal framework or necessary new regulations or legal framework.
- A comprehensive managing system for water resources management, prevention and mitigation of floods, drought, windstorms and landslides (Single Command Unit) and cost estimation for the plan or project operation under the existing legal framework or necessary new regulation or legal framework.
- Plans to create understanding, acceptance and participation in management for large scale flooding from all sectors and cost estimation for the plan or project operation under the existing legal framework.
- Estimated total cost of the proposed plans or projects, taking into account the expense estimation shown in the Thai government master plan.
- In addition, more detailed or additional conceptual plans apart from the Concept Plan that is consistent with the Thai government master plan may also be presented and submitted. However, the additional content must be clearly presented with explanation and conceptually as well as how it would be funded (source of funding) and how funding costs would be repaid (must include appropriate supporting evidence).
- Appendices

#### 4. Procedures for submission

The eligible entity (according to section 2), may submit the final proposal version (according to section 3) by means of the following within the time that would subsequently be announced.

#### 4.1. Registered mail to (use address in Thai)

Secretary of the Water and Flood Management Commission  
Office of the National Water and Flood Management  
Red Building 1, Government House, Bangkok 10300

4.2. Direct submission by an authorized person (with authorization letter) at the address in section 4.1 during 8:30am to 4:30pm.

#### 5. Proposal consideration and approval

5.1. The Thai government will consider every submitted proposal.

5.2. Under section 2.4, upon request, the entity must present an authorized person to present or verbally explain the technical content to the Thai government agencies or officials assigned by the Thai government for this proposal on a date, time and place designated. The Thai government reserves the right to invite, as appropriate, a person(s) and/or other participated entity to join the event (listen, clarify or provide additional information).

5.3. When the authorized person according to section 5.2 has provided the additional information, the entity must provide a written document of the content discussed to the Secretary of the Water and Flood Management Commission by the procedure in section 4 no later than 30 days from the event. If the Secretary of the Water and Flood Management Commission did not receive the document within the time limit, the Thai government will not consider such a proposal.

5.4. The consideration of whether the proposed Conceptual Plan complies with the Thai government's sustainable water resource management master plan will follow the Thai government's principles and standards.

#### 6. Decision Announcement

6.1. The Thai government will select the Conceptual Plan for the Design of Infrastructure for Sustainable Water Resources Management and Flood



Prevention for the Kingdom of Thailand that is most consistent with the Thai government's sustainable water resource management master plan and will publicly declare the selected proposal at the end of the selection process.

- 6.2. The Thai Government reserves the right to use the selected Conceptual Plan as the government sees fit for the country's benefit. The entity that provides the selected conceptual design can not negotiate nor make any further conditions, obligations or claims with the Thai government.