



## **Incorporating Ecosystem Services into the Holistic Framework for Selection and Design of Multifunctional Green Infrastructure for Flood Resilience**

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### **ABSTRACT**

This paper describes the holistic framework which incorporates ecosystems services (flood protection, education, art/culture, recreation and tourism) for selection and design of multifunctional measures for flood resilience. The framework is based on active stakeholder participation and it includes four main components: 1) site selection of detention facilities, 2) evaluation and selection of the most effective flood mitigation measures through hydrodynamic simulations of 1D/2D models, 3) identification of multifunctional detention facilities, and 4) conceptual landscape design. Application of the framework in the case study of Ayutthaya Island, (Thailand) proves that a holistic perspective based on ecosystem services values and marshalled through active stakeholder participation can capacity be fully gained for successful design and implementation of multifunctional green infrastructure in areas with mixed land-use.

**KEY WORDS:** Green infrastructure, ecosystem services, holistic framework, flood resilience.