

## **ABSTRACT**

*The study is to assess the landscape performance of a wetland park planning in China by comparing and quantifying eight key metrics with three planning proposals. A Landscape Performance Distribution Map (LPDM) method was introduced to interpret the relationship between sustainability and landscape performance. The method of the research was to apply a Multi Scenario Analysis (MSA) by using GIS and quantified landscape performance assessment (LPA). The case study focused on three phases: metrics selection, LPA and LPDM application. For the first phase, decision makers proposed to define eight metrics to assess the environmental, social and economic benefits. Then, based on the storm water analysis of the past decades precipitation and upstream storm water volume data, flood storage capacities (20-year, 50-year and 100-year) were calculated by inputting the three planning proposals using spatial GIS methods. Eight different metrics including the flood storage capacity were calculated and compared. The study proved the feasibility to apply LPA in landscape planning stage and provided LPDM as a potential method to bridge sustainability and LPA from environmental, economic and social aspects. The visualized results of LPDM improved the understanding how the tradeoffs could happen between economic, environmental and social aspects.*