

Study on Practice of Improving Water Quality in Urban Rivers by Diverting Clean Water

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Abstract : With rapid development of industrialization and urbanization, water environmental deterioration is widespread in majority of urban rivers, which seriously affects city image and life satisfaction of residents. As an emergency measure to improve water quality, clean water diversion is introduced for water environmental management. Lubao River and Southwest River, two urban rivers in typical plain tidal river network, are identified as technically and economically feasible for the application of clean water diversion. One-dimensional hydrodynamic-water quality model is developed to simulate temporal and spatial variations of water level and water quality, with satisfactory accuracy. The mathematical model after calibration is applied to investigate hydrodynamic and water quality variations in rivers as well as determine the optimum operation scheme of water diversion. Assessment system is developed for evaluation of positive and negative effects of water diversion, demonstrating the effectiveness of clean water diversion and the necessity of pollution reduction.

Keywords : assessment system, clean water diversion, hydrodynamic-water quality model, tidal river network, urban rivers, water environment improvement

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