

## **An integrated water resources management strategy for Al-Ain City, United Arab Emirates**

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**Abstract** Al-Ain is the second largest city in the Emirate of Abu Dhabi and the third in the UAE. Currently, desalination plants are the only source of drinking water in the city with an average daily supply of 170 MIG. Recently, Abu Dhabi Urban Planning Council (UPC) released Al-Ain 2030 Plan. Projects suggested in this plan, over and above the expected natural population growth, will certainly put additional stress on the water resources in the city. Therefore, Al-Ain city seems to be in urgent need for an integrated water resources management strategy towards achieving sustainable development. This strategy will contain three main components; namely, a Water Demand Forecasting Model (WDFM), a Water Budget Model (WBM), and a Water Resources Optimization Model (WROM). The main aim of this paper is to present the WBM that estimates all inflows and outflows to assess water resources sustainability in the city.

**Key words** integrated water resources; management; water budget; United Arab Emirates