



## **Daily water demand forecast modeling**

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Urban water demand forecasts are required in order to develop and manage cost effective and efficient water supply infrastructure systems. This study compared multiple linear regression, time series analysis and artificial neural networks as techniques for peak daily water demand forecast modeling. Numerical analysis was performed on ten years of peak daily water demand data for the City of Ottawa (Canada) and meteorological variables (maximum daily temperature and daily rainfall). Only the summer months were analyzed and the data was divided into training and testing data sets. It was determined that the ANN models outperformed both the multiple linear regression and time series models developed in this study. Highly accurate peak daily water demand ANN forecast models can be used to optimize the operation, management and expansion of a water supply system, thereby rendering it more reliable and sustainable.