

Cost Optimization Model for Water Supply Networks

The cost analysis of water supply network projects is an evaluation of various alternatives. It can be used to identify the feasible alternative as per economic criterion to estimate the sensitivity of the project outputs. Cost analysis is intended to guide the decisions on the use of water resources and economical conditions and to provide alternatives for ranking different water development and management policies. In this paper, we presented an optimization model to minimize the costs for obtaining water needs of various users. The proposed model takes into account the costs to obtain water depending on the source and the user. Model constraints include demands, limitations in the capacity of the various water sources and legal and structural specifications that must be followed in the water allocation. For illustration purposes, the model is applied to a simple case study. However, since our model is generic it can be applied to any water supply network.

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