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Modeling of Hydraulic Networking of Water Supply Subsystem Case of Addis Ababa

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Abstract : Water is one of the most important substances in human life that can give a human liberality with its cost and availability. Water comes from rainfall and runoff and reaches the ground as runoff that is stored in a river, ponds, and big water bodies, including sea and ocean and the remaining water portion is infiltrated into the ground to store in the aquifer. Water can serve human beings in various ways, including irrigation, water supply, hydropower and soon. Water supply is the main pillar of the water service to the human being. Water supply distribution in Addis Ababa arises from Legedadi, Akakai, and Gefersa. The objective of the study is to measure the performance of the water supply distribution in Addis Ababa city. The water supply distribution model is developed by computer-aided design software. The model can analyze the operational change, loss of water, and performance of the network. The two design criteria that have been employed to analyze the network system are velocity and pressure. The result shows that the customers are using the water at high pressure with low demand. The water distribution system is older than the expected service life with more leakage. Hence the study recommended that fixing Pressure valves and new distribution facilities can resolve the performance of the water supply system

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