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Research paper

An efficient wastewater collection model for groundwater resource protection in smart cities

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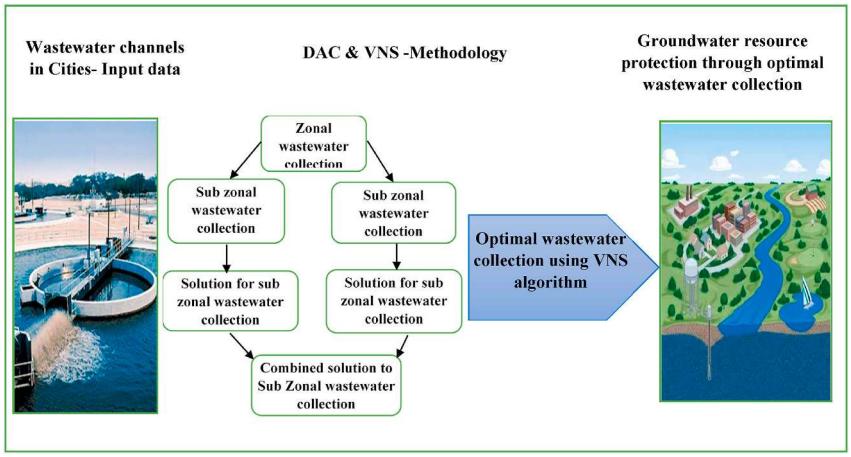
HIGHLIGHTS

- Smart city groundwater and wastewater collection formulated on optimization techniques.
- Variable Neighbor Search technique fine tunes the Zonal wastewater collections.
- The work focuses on effective wastewater transport and reducing energy consumption.
- Adaptable groundwater-wastewater solution in smart cities for enhanced robustness.

GRAPHICAL ABSTRACT



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ABSTRACT

Efficient wastewater collection is a critical concern in the development of smart cities, where sustainable urban infrastructure is paramount. In the context of smart city wastewater optimization, this study highlights the need for a comprehensive approach that considers both surface water and groundwater dynamics. Existing methods often fall short in addressing groundwater-related concerns, with limitations in accounting for potential contamination and aquifer vulnerability. The proposed method integrates a nuanced understanding of groundwater aspects, providing a more robust and sustainable solution for urban water resource management. This

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