



RESOURCE

Strategic Water Utility Management and Financial Planning Using a New System Dynamics Tool

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Description / Abstract

This study demonstrates how to implement a novel system dynamics (SD) strategic water utility management and financial planning tool. Using data from several local water utilities in Ontario, Canada, the tool is run to simulate 20 years to investigate: (1) long-term fee-hike rates required for system financial sustainability; (2) service and financial performance metrics for pay-as-you-go, borrowing, and capital reserving strategies; and (3) consumer affordability as a result of water use charges. For the case study, reserving cash and allowing water fees to increase by up to 7% per year are found to be the best financing strategy to eliminate infrastructure backlog/deficit. The study demonstrates the benefits of an SD model for developing and preparing strategic and tactical asset management, water conservation, and financial plans. The SD model parameterization and implementation for the demonstration case study can be helpful to other utilities in adapting the model to their own specific circumstances.

Publication year

2015

Country

Canada

Region

Americas

Publisher

American Water Works Association Journal

Keywords

System Dynamics Water Utilities

Thematic Tagging

Private Sector Urban Water services

Language English

View resource

Source <https://beta.toolbox.venthic.com/resource/strategic-water-utility-management-and-financial-planning-using-new-system-dynamics-tool>
URL: