



Maynilad Water Services Treats Wastewater into Clean, Potable Water for More than a Quarter of a Million Residents

Using Bentley's OpenFlows™, Maynilad Water Designed a Distribution Network That Provides 10 Million Liters of Potable Water Per Day

TURNING WASTEWATER INTO CLEAN WATER FOR 270,000 PEOPLE

Due to the impacts of climate change, communities in the city of Parañaque in the Philippines did not have consistent access to clean water. The region needed far more than a stop-gap solution; the water system required a complete overhaul, supported by technology that could withstand the growing challenges that the region will face in the years and decades to come.

Therefore, Maynilad Water Services sought to design and engineer a new water distribution system in Parañaque that would take wastewater and treat it so that it could be used as potable water for the community. The USD 2.21 million project used first-of-its-kind technology in Asia and required the installation of new 300-millimeter PVC pipelines to create a distribution network that serves a population of approximately 270,000 people. The system would be expected to supply 10 million liters of water per day, ensuring a reliable and sustainable water source for the community.

Maynilad Water knew the stakes were high on this project, but if they succeeded, they would have a replicable model for greater water resilience across the country.

MEETING THE URGENCY OF THE MOMENT

The project faced and overcame several significant obstacles throughout its development and implementation. The biggest challenge, however, was the tight schedule. The community faced a dire water shortage and could not afford to wait. As such, the project needed to be designed and executed in a short timeline. When projects need

to be completed as quickly as this, stakeholders face additional pressure to efficiently collaborate, as any errors can lead to significant delays.

Site constraints also posed difficulties, particularly in integrating the new pipeline with the existing water network and ensuring it could handle the additional supply demands. The team needed to account for pressure requirements and varying site conditions, necessitating precise planning and adjustments during construction.

DELIVERING EXPERTISE THROUGHOUT THE PROJECT LIFECYCLE

Maynilad Water selected Bentley for its extensive experience and technological capabilities to ensure the completion of this project. Specifically, the team employed OpenFlows Water to keep up with the water distribution network's evolving requirements. By precisely measuring and modeling the size of tanks, pipes, and pumps, OpenFlows Water provided multiple scenarios using alternative data sets, resulting in more robust system analyses and design. Also, engineers collected data from the field to calibrate the network model in OpenFlows Water, which, in turn, provided projected changes in pressure and supply conditions after the project had been finished.

By replicating the network in its current conditions, and adding scenarios based on the new source of water supply from the water reuse plant, Maynilad Water was assured that the new network can meet the service requirements for customers. Bentley was able to comprehensively support the project throughout its lifecycle—from design to construction to its ongoing operation.

PROJECT SUMMARY ORGANIZATION

Maynilad Water Services, Inc.

SOLUTION

Water and Wastewater

LOCATION

Parañaque, Philippines

PROJECT OBJECTIVES

- ◆ To develop a potable reuse water treatment plant for a community of 270,000.
- ◆ To design and build the project within a year.

PROJECT PLAYBOOK

OpenFlows

FAST FACTS

- ◆ Maynilad Water's project—the first of its kind in Asia—has garnered international recognition from peers in the water industry.
- ◆ The project in Parañaque combats the challenges of dwindling resources of fresh water due to climate change.
- ◆ The team used OpenFlows applications to design a distribution network that meets service requirements for customers.

ROI

- ◆ Using OpenFlows Water, Maynilad Water created a distribution network that provides 10 million liters of potable water per day to Parañaque's 270,000 residents.

“With ever-shifting requirements and site conditions, having a digital twin of the network and the proposed pipeline made it easy to create scenarios and explore possible solutions.”

– Glenn Matthew G. Manalese, Water Network Officer, Maynilad Water Services, Inc.



DELIVERING CLEAN WATER AND ECONOMIC BENEFITS TO THE COMMUNITY

Using OpenFlows Water, Maynilad Water created a distribution network that provides 10 million liters of potable water per day to Parañaque's 270,000 residents.

The project also delivered financial benefits, expected to generate an annual revenue of USD 2.21 million. This ensures the recovery of the project cost within its first year of operation, marking it as a financially viable and impactful endeavor.

Maynilad Water completed this project ahead of schedule. The network design, supported by OpenFlows Water, allowed for rapid deployment, with the project moving from initial brainstorming to operational status within just

a few months. This efficiency demonstrates OpenFlows Water's capability to streamline planning and execution processes.

Moreover, the use of a digital twin enabled improved collaboration across the project team. It provided a dynamic and flexible platform to test scenarios, adjust designs, and ensure that the network could meet the required pressure and supply conditions.

In an impressively short time span, Bentley's digital twin technology enabled Maynilad Water to deliver critical services to a large community in need. Inspired by the project's success, Maynilad Water is conducting education drives to boost awareness and public acceptance of this technology to improve water systems throughout the country.



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