

Replacement of house service connections and NRW assessment (pilot) for achieving continuous (24x7) water supply



Country: India

City/region where project is based: New Delhi

Population (of area where the project is based): City population 257,803 (2011). Floating population per day 1.5 million

Key organisations /stakeholders involved in the project: New Delhi Municipal Council (NDMC), New Delhi

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Water challenge

Despite having sufficient sources of treated water, NDMC is facing problems related to intermittent water supply arrangements, high level of water supply per capita, high Non Revenue Water (NRW), Unaccounted for Water (UFW) and lack of proper quantification of the water supplied because of non-metered distribution system. Water accounting and auditing is not in practice.

Project approach

The project is planned as a transformation of the entire water supply system in two phases (i) replacement of all service connections with Automated Meter Reading (AMR) meters and a pilot District Metering Area (DMA) for NRW assessment (ii) converting the entire city onto a continuous (24x7) water supply system

Total metering of the water flow in the distribution and at the point of service delivery to the consumers will facilitate the availability of the water flow measurements at service connections and DMA. Additional information, such as pressure and quality parameters, will help close monitoring of the distribution system through proactive water management practices. These practices, which use Geographic Information Systems (GIS), advanced data communication and analytical tools, are integrated on a single platform.

The flow measurement data will be used to prepare daily water balances and water accounts. The analytical reports will provide support to make decisions and address issues including accountability in reducing the water losses, tariff fixing, achieving equity, and behaviour change to reduce excess daily water consumption through awareness programs.

Phase 1

The project to transform the city water supply system from an intermittent to continuous (24x7) water supply system is conceptualised. The strategic infrastructure planning is done and has been approved by the NDMC authority. The selection of the contractor to implement the first phase of the project is currently in process where the bids are invited from leading infrastructure companies. The project implementation work shall commence from October 2018.



SWM adoption

We have adopted AMR and Automated Metering Infrastructure (AMI) ultrasonic and Electro Magnetic Flow (EMF) water meters to measure water flow, as well as sensors to measure pressure, turbidity, chlorine and temperature in the distribution system. The data will be transferred automatically to the server where the distribution network will be linked to GIS maps through advanced water management software. The daily water supply operations will be controlled and monitored using this information to achieve efficiency in water distribution by reducing water losses below 15% and ensuring water supply for at least 18 hours/day.

SWM technology will provide real-time data to support monitoring of water flow-quantity and pressure in the distribution network as well at various important points along the water supply system. This will enable the management team to identify the leakages quickly and to take preventive measures in time to control water losses.

Capacity building for handling this new information communication technology (ICT) based system may be a bit challenging. However, overall, the experienced team is capable of adopting SWM to gain these benefits after sufficient training. Water accounting and auditing is a new area, requiring modular design to introduce step by step in practice.

The project managers are also open to the use of other SWM tools and techniques, as they become available.