



Water SCADA, Bhopal Smart City Development Corporation Limited, Government of Madhya Pradesh

The objective of the Water SCADA (Supervisory Control and Data Acquisition) project is to develop a centralized system that enables real-time monitoring, control, and data management of water treatment plants, pump houses, and storage reservoirs, ensuring efficient water supply, accurate measurements, and effective energy management.

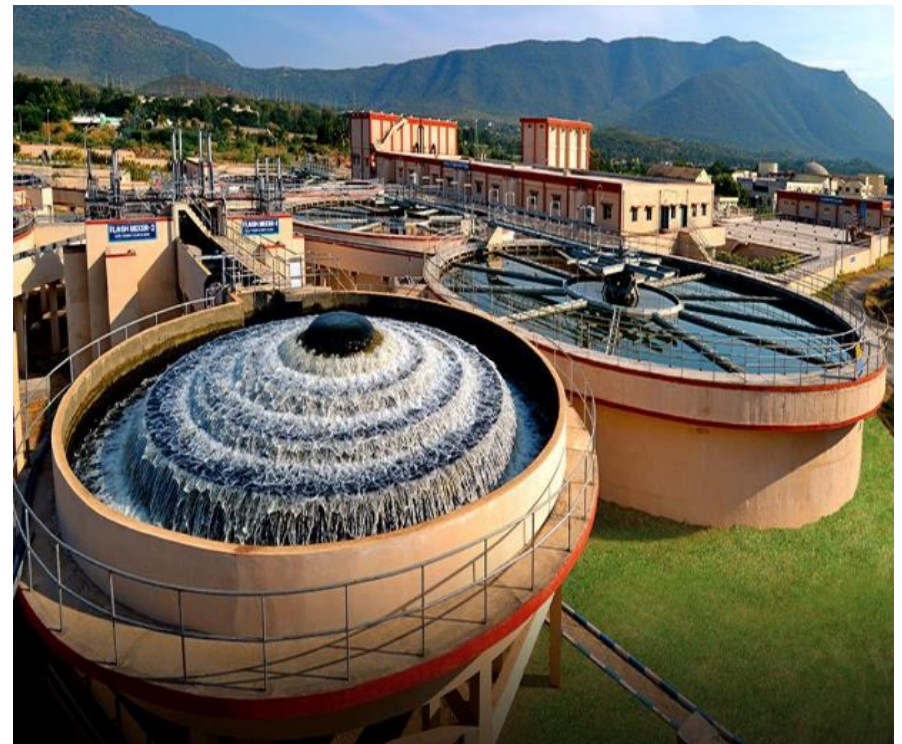
Bhopal SCADA system provides real-time monitoring of various parameters such as water flow rates, pressure levels, tank levels, and energy consumption. It allows operators to remotely control and automate processes such as activating pumps, adjusting valve positions, and managing water treatment operations. The system collects data from different sensors, meters, and control devices. This data is stored securely and can be accessed for historical analysis, trend identification, and performance

evaluation. It includes configurable alarm systems that alert operators in case of abnormal conditions or critical events. This enables prompt response and minimizes potential risks or equipment failures. The system integrates with various hardware components, such as PLCs (Programmable Logic Controllers), RTUs (Remote Terminal Units), and sensors, allowing seamless communication and data exchange. Such measures have completely transformed the manual water supply management into an electronic and sensor-based system.

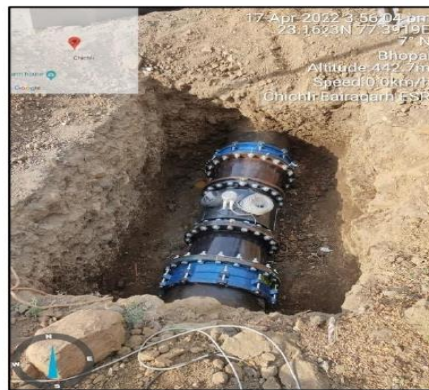
SCADA features facilitate efficient and transparent administration of water resources.: SCADA systems provide real-time monitoring of water infrastructure, including water treatment plants, pump houses, reservoirs, and distribution networks. This enables authorities

to have a comprehensive view of the water supply system and monitor critical parameters such as flow rates, pressure levels, and water quality. Real-time control capabilities allow immediate responses to system anomalies or emergencies, ensuring efficient water management. SCADA collect vast amounts of data from sensors, meters, and control devices distributed throughout the water infrastructure. Advanced data analysis tools enable authorities to extract meaningful insights, identify trends, and detect patterns related to water consumption, energy usage, and system performance. These insights aid in optimizing resource allocation, identifying water leakage or wastage, and implementing effective water conservation strategies. Customizable dashboards and reports provide graphical representations of key performance indicators, water usage patterns, and infrastructure status assisting in data-driven decision-making,

performance monitoring, and communicating important information to stakeholders and the public. It can be accessed remotely, allowing government officials to monitor and control the water infrastructure from anywhere. Integration with mobile apps enhances accessibility, enabling real-time alerts, notifications, and remote management.



Valves, Flow Meters, Pressure Gauges and Controllers used in SCADA



Key Impact:

- Significant reduction of NRW from 40% in 2018 to 16% in 2021
- Reduced manual dependency, operation costs and wastages

- Single point control of whole city water supply system
- Equitable distribution based on localized demand for water
- Coverage of SCADA system pan city in Phase 1
- Primary Distribution

In terms of cost-saving, water SCADA enables efficient resource allocation by accurately tracking water consumption, identifying leaks, and minimizing wastage. By promptly detecting and addressing leaks or equipment malfunctions, SCADA systems prevent water loss, reducing operational costs associated with repair and maintenance. Moreover, the ability to remotely monitor and control equipment allows for proactive maintenance, preventing costly breakdowns and optimizing asset lifespan. Time-saving is another major advantage of water

SCADA systems. These systems automate various processes such as data collection, analysis, and reporting, eliminating the need for manual intervention and reducing human error. Real-time data and alerts enable operators to respond quickly to critical situations, ensuring faster incident management and minimizing potential damage. The centralized control and remote access capabilities of SCADA systems streamline operations, reducing the time required for field visits and manual adjustments.

Linkages with SDG

