



# INTEGRATED WATER MANAGEMENT SYSTEM AT LATUR, INDIA



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By **Rishabh Sethi**

Latur, located in the Marathwada region of Maharashtra is headquarter for Latur district. With an area of 32.56 sq km, it has population of over five Lac people which is growing steadily. Being the district headquarters, Latur is an important administrative centre that houses many regional offices of the state government. The presence of reputed educational institutes coupled with quality healthcare facilities and infrastructure services makes the city an attractive destination. Apart from the resident population, Latur has a floating population of about 25-30 thousands that visit the city everyday for various trade and commerce related activities. [www.spml.co.in](http://www.spml.co.in)

## The Challenge

The water supply to the Latur city was earlier managed by Latur Municipal Corporation (LMC) and had faced major problems in terms of supplying water to its citizens due to source limitations and very poor water supply accounting. The water supply to the city during the normal season was 75 litre per capita daily (LPCD) with availability of water for 1 hour once in 10 days to about 70% of the population. During the summer season, the water supply was further reduced to about 40 LPCD and 30 to 40 tankers per day were engaged to manage shortfall of water supply. The residents were facing extreme water shortage and many times, violence erupted for water. In terms of coverage, about 30% of the population was still not covered by piped water supply. From LMC, the water management function was transferred to Maharashtra Jeevan Pradhikaran (MJP) to infuse operational improvements and finance for various capital schemes.

## Latur Water Supply System

The water supply system of the city consists of intake works from 3 locations namely, Sai head works, Nagzari head works and Dhanegaon head works.

The Sai head works scheme is located at a distance of 8 km from the city and has weir on the river Manjra. The Nagzari KT weir is located at a distance of 12 km on the Manjara river and the two sources together can supply about 35 MLD water to the city. There has been number of up-gradation and expansion after the original scheme by works executed under Stage-II, Part-I (1970) and Stage-III (1989) and Stage-IV, Part-II (2001). The 3<sup>rd</sup> source Dhanegaon was commenced in 2005 and is located at a distance of 60 km from the city with intake on Manjara Dam. LMC has undertaken a source augmentation project under stage V. This scheme involved bulk water transmission over 65 km to address the ever increasing demands. There has been rehabilitation of old water works and distribution systems expansion.

## Distribution and Coverage

The water is processed by three water treatment plants with an aggregate designed capacity of 109 MLD and utilized capacity of 50 MLD (approx). The treated water is pumped by six pumping stations to eleven elevated service reservoirs (ESRs) located at different parts of the city. The capacity of these ESRs put together is 25.50 ML with 12 hours storage. The distribution network has 95 km of transmission mains and 476 km of distribution lines.



## SPML Role in Water Management

Through Maharashtra Jeevan Pradhikaran's initiative and open participation, SPML has undertaken the responsibility of water supply to the city for 10 years. A new company in the name of Latur Water Supply Management Company Ltd. was established by SPML for the purpose.

The main features of the project assigned to SPML were:

- ▶ Take over the existing assets from source to tap
- ▶ Carry out operations, maintenance and repair of the existing resources
- ▶ Deploy staff for operation, maintenance and network expansion including key employees on deputation from MJP and LMC
- ▶ Provide minimum average water supply to residents at adequate pressure
- ▶ Ensure daily and pressurized water supplies within contract period
- ▶ Increase the number of new connections
- ▶ Ensure meter installation to 100% existing connections
- ▶ Collect revenue as cost of water etc. based on the tariffs fixed as per the management contract
- ▶ Implement billing and revenue collection system
- ▶ Create consumer awareness

After signing the contract in June 2008 and further taking over the operations and management, SPML has rapidly changed the entire scenario, conducted survey and research and adopted world class technology to manage the water supply to the satisfaction of the residents. At present water supply is improved up to 100 LPCD covering 90% of the population of the city. The water supply duration is improved significantly from one hour once in 10 days to alternate days for 3 to 4 hours. With the aim to make water available for 24x7 to the 100% of the population, SPML has worked relentlessly towards improving the situation. The efforts made in the right direction have produced good results.

Some of the important initiatives taken by SPML are:

- ▶ Implemented modern distribution management and reduced lost revenue
- ▶ Efficient operation & maintenance by institutional strengthening, business process and distribution improvement
- ▶ Implemented state of the art information technology, management reporting and audit process
- ▶ Adopted effective utility management, cost benefits and sustainable methodologies
- ▶ Established adequate infrastructure like zonal offices, billing and collection centres in all zones, efficient consumer service and complaint redressal, appropriate tariff structure
- ▶ Implemented billing software 'Aquajal' for error free billing and 'Watergems' software for hydraulic analysis
- ▶ Established online billing centers connected with 55 kms OFC cables
- ▶ Used GIS & satellite images for household identification and more than 35000 properties has already been identified

- ▶ Used mobile vans for on the spot bill generation and collection
- ▶ Established customer care centre with toll free number
- ▶ Conducted energy and water audit and implemented the recommendation to achieve energy saving and cost reduction
- ▶ Development of District Metered Area (DMA) for active leakage control, utilization of Flow Control Valve (FCV) for regulating the flow of water
- ▶ Implemented Supervisory Control and Data Acquisition (SCADA) for the projected achievement of 24x7 water supply system
- ▶ 100% metering to achieve reduction in NRW, cost optimization and enhanced revenue collection
- ▶ Conducted consumer awareness programs about the conservation, supply, quality and distribution of water.

## The Results: Better Services and Effective Control

The changes brought by SPML has resulted in alternate day water supply, a major achievement for the complete satisfaction of the residents, reduction in non revenue water, almost complete control on water wastage by pipeline and valve replacement and repair and clearing choked lines, improvement in the quality of water being supplied presently. The use of SPMLAQUA, an in-house technique developed on robust Microsoft technologies platform and Oracle Spatial Database, the system seamlessly manages the entire gamut of services such as billing and CIS, finance management, asset management, operations and maintenance, GIS, asset network management and demand management.

SPMLAQUA is the only enterprise solution for utilities that has an inbuilt CRM and revenue management system. The system improves the efficiency of all operations and eventually enables SPML to take real-time and informed decisions.

Moreover SPML has been successful in convincing residents to pay for the services. Induced awareness in reducing the wastage and moreover an ownership of the city water. Things have changed as the residents have understood the difference between government run water supply system and a professionally run system. The people now feel confident to come to SPML for their complaints and get immediate and efficient response, a most significant achievement of SPML.

### About the Author

Rishabh Sethi is Executive Director at SPML Infra Limited. He is spearheading business development and project management in the company's water and environment verticals. He is credited for establishing a robust IT infrastructure for the organisation, including the implementation of an Enterprise Resource Planning system through SAP. New technologies have helped SPML optimize costs, enhance design and maintain consistent quality conformance. He is also leading the company towards a Strong Water & Environment Business in the areas of O&M of Municipal Water Systems, Sewage & Effluent Treatment Plants and Municipal Solid Waste Management. Prior to his current role, he was working with A.T. Kearney in New York. He is a graduate in Industrial Engineering and Economics from Northwestern University, USA.

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