

Provisioning of 24x7 Water Supply through Ppp: A Narrative of Ilkal Town in Karnataka

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Submitted: 2026, Mar 25; Accepted: 2026, May 04; Published: 2026, May 14

Citation: Nayak, N. S., Narayan, B., Emily, K., Ayse, E., Zachary, B. (2026). Provisioning of 24x7 Water Supply through Ppp: A Narrative of Ilkal Town in Karnataka. *J Water Res*, 4(2), 01-05.

Abstract

Ensuring the availability and sustainable management of water and sanitation for all is one of the important goals of SDG, 2030. Public-Private-Partnership (PPP) in 24x7 water supply is aimed at bringing efficiency through technical expertise and financial support to sustain the project further on self-financing, based on user charges and achieved through the reduction in non-revenue water. It is considered the bench mark for better quality of life and improved health status due to pressurized water thereby preventing contamination. The objective of this analysis is to examine the process and factors that led to the implementation of 24x7 water supply to the entire Ilkal, one of the few towns in India and the first town in Karnataka reported to be implementing 24x7 under PPP since 2015 and sustaining it. We followed a case study method and included a minimum sample of 30 households surveyed under two regimes and six key informant interviews to collect the relevant information. The project implemented with Asian Development Bank (ADB) loan under the state sponsored North Karnataka Urban Sector Investment Program (NKUSIP) is sustained by levy of user charges and reduction in water losses.

Keywords: Water, 24 x7, Intermittent, Public Private Partnership, Municipal, Urban, Town

1. Introduction

The availability of water continuously for 24x7 hours for drinking and domestic purposes is neither a dream nor an expectation that majority households currently hold in India as the reality for them is to get sufficient potable water at least a few days of the month, which is used for drinking, cooking, cleaning, and washing purposes at the household level. The Report of the High-Powered Expert Committee for Estimating the Investment Requirements for Urban Infrastructure Services (2011) sets 100% piped water supply, 24x7 water flow, and 135 litres per capita per day (lpcd) for cities as the standard water supply norm [1]. But 99% of the towns and cities in India are far behind these norms as urban local bodies (ULBs) are unable to meet these norms. Generally, the operation and maintenance (O&M) of drinking water in addition to the provision of drainage, sewerage, roads and solid

waste management are the prime responsibilities of ULBs in cities and towns in India. With the 73rd and 74th Amendments to the Constitution of India, the panchayats and ULBs assume a greater role in planning the schemes at local level.

2. Background

Ilkal is a small town located in Bagalkot district in northern part of Karnataka, India with an estimated population of about 82,000 in 2023 with around 15,600 households. While implementing 24x7 in 2012 there were around 10,000 households in the town. Thirty-one Councilors represent the city wards. Ilkal is known to be the first town in Karnataka and the second town in India to implement 24x7 for the entire town in the year 2015. It has been more than 10 years since the initiation of the Ilkal 24x7 water supply project in 2012. It was completed in 2015. Currently, the entire town is

dependent on this water supply scheme while many big cities are struggling to move ahead from pilot to upscaling. It was, therefore, important to know the reality, the process and examine the current status of water supply situation in Ilkal.

2.1 Status of Water Supply before 24x7

Before implementing 24x7 water supply scheme in Ilkal, water was supplied from the water pumped from the infiltration well sunk in Hirehalla (the original source of water supply to the town), bore wells and from the Alamatti dam built on Krishna river. The households had to wait for 3 to 8 days and some times for 15 days to receive drinking water. Children, women and youth dragged water in carts. There was no meter installation, and water was supplied only for 2-3 hours on the day of supply.

2.2 Public-Private-Partnership Model

Ilkal 24x7 water supply project is a performance-based construct and operate contract (PBCOC). It was initiated in 2012, with work beginning in 2013 and completed in 2015. The project was sanctioned under NKUSIP of the state government being implemented in 14 urban local bodies with funding (loan) from ADB under contract signed between Government of India and ADB. Multiple agencies or the stakeholders were engaged in this internationally funded water supply project, which is based on PPP. Veolia a French Company, which bagged the contract for implementing 24 x7 water supply project in Ilkal was the private operator responsible for O&M, which continued its operation in the town till 2023. The project finance was in the ratio of 40:50:10 percent shared by ADB, state government and ULB respectively without any share of the private operator. Currently, Padmavathi & Co., Shivamogga is the private operator managing 24x7 water supplies in Ilkal.

3. Research Methods

Learning from the media, internet, reports and official discussions about the implementation of 24x7 in Ilkal town, we visited the town to feel the pulse of the residents, understand and examine the process that facilitated its implementation and review its current status.

We followed a case study method and included a minimum sample of 30 households and expert interviews to collect the relevant information. Two of the households selected for the

survey had to be cancelled as meter connection was disconnected for these households for nonpayment of water bill. In total six expert interviews, involving the local Member of Legislative Assembly (MLA), President of the City Municipal Council (CMC), Councilors, the Municipal Commissioner, an Assistant Executive Engineer of Karnataka Urban Infrastructure & Finance Corporation (KUIDFC), and the Project Manager representing Veolia were held during the case study. To know the perceptions of residents from localities of different socio-economic status, we tried to collect information from wards with residents of high rise buildings in extension areas, slums and areas lying between these two categories in the year 2022.

4. Results and Discussion

4.1 Water Consumption and User charges

The heads of the households, who were also our main respondents in the survey included salaried class (21%), casual labourers (21%), retired employees (6%), weavers (6%) and those engaged in business (46%) activities. In general, the residents were found to be happy as the water pressure was higher as compared to the situation before 24x7 and, could reach even to the third floor.

Earlier to 24 x7, the residents reported that the payment of water bill was not uniform. Around 15% reported that they had never paid water bill earlier despite of municipal water usage. And, 61% reported that they paid Rs.1400 annually, while the remaining 8% said that they had not paid as they were using water from public taps. But currently, under 24x7 water supply, the volumetric tariffs are being levied on water usage with differential water rates at three slabs. The minimum rates fixed under the project vary from Rs. 56 for domestic consumption to Rs. 112 for non-domestic purposes and, Rs. 224 for commercial or industrial purposes, and have remained unchanged since 2015. The average monthly billing was Rs. 203 per house service connection (HSCs) as shown in figure 1. The average rates were found to be higher for high income groups.

The pricing for water amounted to an average of Rs. 10 per Kilolitre (KL) i.e. Rs.0.01 per liter of water within the sample households. The differential rates with low minimum rates allow poor to pay lesser (Rs.7 per KL) than this amount. For the poor, the rates are beneficial as they had to pay a flat rate of about Rs.116 earlier compared to a minimum rate of Rs.56 paid now, which varies according to usage.

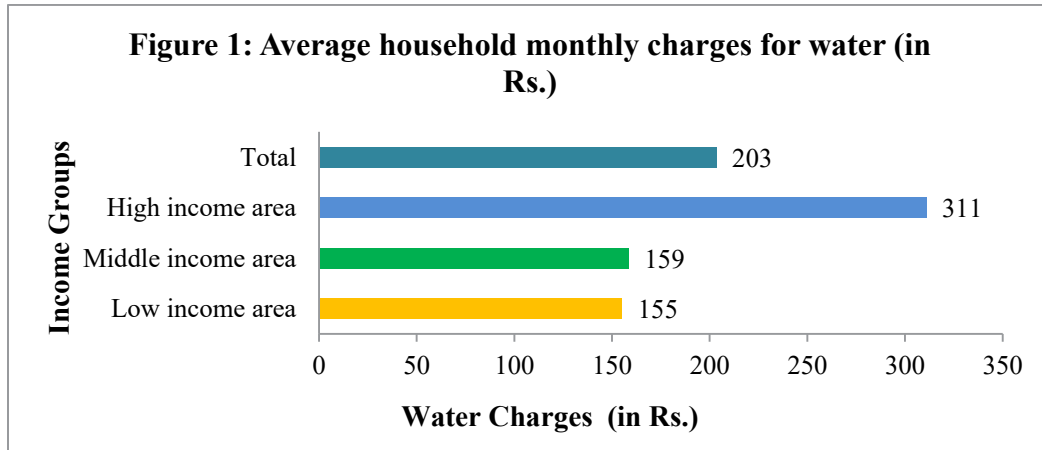
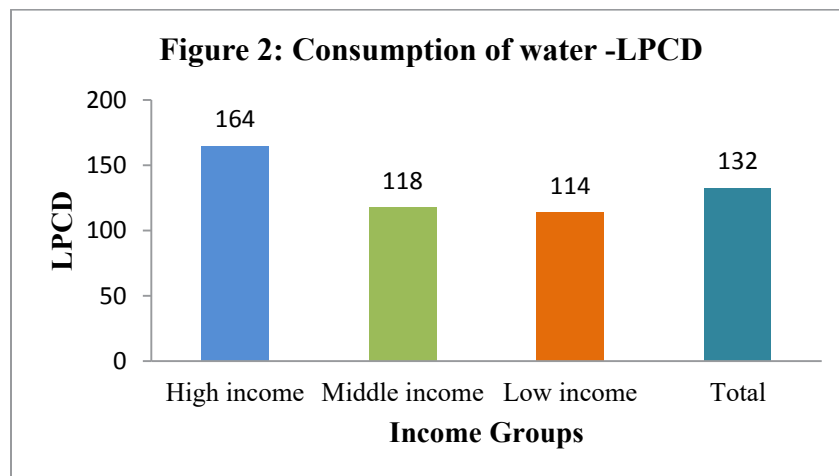


Figure 2 shows that there is an increase in the quantity of monthly water consumption corresponding to the category of households classified from below as low, middle and high income groups. As shown in figure 2, the average reported usage as per the water bills shown during the household survey amounts to 132 lpcd, which is almost near to the Indian standard (135 LPCD) suggested for daily water consumption.



4.2 Ease of Payment

Ilkal has also been the first town to start phone pay and Google pay from March 2021. The private operator issues the bills and, the amount is credited to CMC account. Earlier there was an Escrow account when KUIDFC was also one of the stakeholders. But, now KUIDFC has moved out and a separate account is maintained for collection and payment of water supply charges. The amount is collected by CMC. Earlier, there was a lot of time wasted in visiting all the households. Now the private operator issues bill using Seminal software. The bill is issued on the spot to the customers and the payment is made by them through direct cash payment at CMC counter or through Unified Payments Interface (UPI).

4.3 Sustainance of 24x7 Facility?

The system generated through PPP can sustain if there are inbuilt safeguards in the model. One is assured supply of resource, in this case being water. Secondly, the resources to run and maintain the project, in this case being regular payment of water user charges by residents, hotels and industrial sector with scope for revision of rates to cover increased costs over the period. Thirdly, the continued efficiency in management of the project, which was assured by the O&M by Veolia almost for eight years, while this study was being conducted. The system is currently maintained by Padmavathy & Co. the private operator, and needs to be examined further for its operation.

The water supply system run by the private operator used High density polyethylene (HDPE) 100 pipes, which are widely

considered to be durable and leak-proof replacing galvanized iron (GI) pipes and PVC pipes. The reported daily water requirement of water as per official sources is around 9 MLD, while Karnataka Urban Water Supply & Drainage Board (KUWS&DB) has committed to a capacity of 17.5 MLD with storage backup of 25.5 MLD at WTP. The estimated demand for 2041 is 12.90 MLD and the capacity has already been augmented in the existing WTP. So Ilkal has both, the water source and the capacity to store. And, one of the major factor sustaining the supply is the reported reduction in Non-Revenue Water (NRW) from 50% [] to less than 10% after introducing 24x7 due to reduced leakages and 100% metering.

On the revenue side, our discussions with Municipal officials and Councilors indicated a shortfall in revenue collection on monthly basis. The collection was around 80% of the demand. The O&M expenditure is met by water user charges paid by customers. The monthly payments included Rs.11.7 lakhs paid to Veolia for O&M and Rs.7.4 lakhs being paid to KUWS&DB towards bulk water supply. This amounted to 49% and 31% of the water charges collected and paid to Veolia and KUWSDB respectively. The remaining 20% was used for meeting the costs of additional pipelines, extension works, etc. The annual electricity charges of about Rs. 1.5 crores were paid by CMC to Hubli Electricity Supply Company Limited (HESCOM) from the funds received under State Finance Commission (SFC) grant.

ADB financed this project through KUIDFC in 2012. The loan period is for 25 years and, CMC is yet to repay around 60% of the loan to ADB. CMC has two options, either to increase user charges and make efforts to collect 100% of the demand or to request the state government to pay for a one-time grant to clear the loan. Increasing revenue collection may facilitate regular part payment of the loan. Ilkal CMC is meeting huge electricity costs from State Finance Commission grant given to ULB.

5. Impact

While the media and institutional documents report [, ,] about the impact of the project in terms of reduced waterborne diseases, women's empowerment, increased enrolment in schools due to improved quality of water and time saved in collecting water by household members, etc., there are no scientific studies to prove the impact. ADB completion report (2022) mentions benefits due to savings from health care costs and labour saved due to collection of water to be Rs. 196.6 million and Rs. 349.66 million respectively. The discussions with women in the town do indicate the availability of leisure time for them, ease of doing household chores and cleaning, and lesser absence to work so, increased earnings. The reduction in NRW from 50% to less than 10% is a great saving to CMC. In addition, the increase in HSCs and 100% metering has increased resource base of CMC. The population uncovered by piped water (43%) earlier is receiving on an average 132 lpcd as against 67 lpcd received earlier by them. The economic internal rate of return (EIRR) for the water supply subproject in

Ilkal is estimated to be 20.3% (KUIDFC (2009)).

6. Conclusions and Lessons for Replication

Ilkal CMC exhibits a working model of 24x7 water supply fully executed, conceptualized and activated under local leadership facilitated by the institutional framework including government approval, international funding (loan), availability of water, participation of stakeholders, and the right coordination between them, and, finally the support of the residents who readily accepted the model due to inconveniences in the intermittent water supply.

PPP with Veolia as the private operator has succeeded in Ilkal. Being a single agency and continuation of the contract from the inception of project in 2012 to 2023 might have contributed for the success of Ilkal project. Other important contributor to the well-functioning of Ilkal model could be the exclusion of capital costs and power charges in the cost of bulk water supply.

On the prima facie, residents of Ilkal town seem to be very happy with 24 x7 water supply. There is no study to verify the general claims of reduction in reporting of illness, increase in labour days due to saving of time in water collection, reduction in absentee days at school, etc., which need to be validated based on a scientific study. But, people generally opine that water quality is good and they have less health problems. Ilkal project exhibits similarity to the other three successful projects of Puri city in Odisha, Malkapur and, Shirpur–Warwade towns in Maharashtra. In all the three cases stated above and in Ilkal, the local initiative, leadership, commitment, involvement of the community and women were some of the common factors. An important factor aiding the success of these schemes is the availability of reliable water source.

There are a few hiccups like power failure, stagnant water charges as against the increasing costs and demand for increasing contract fees by the private operator and pending repayment of ADB loan, which need to be addressed and adhered to by the CMC, local leaders, and the government. The water charges remain the same as levied in 2025. Occasionally, the water supply ceases to zero percent from 24x7 supply due to power failure or major repairs. Residents face a huge crisis as there is no back up by the CMC. This should be a lesson to the upcoming 24x7 water supply projects in the state being implemented without a standby system. While Ilkal CMC has paid around 40% of the loan amount, the remaining needs to be paid to showcase 100% success of PPP model. Increasing water user charges to meet the increasing O&M costs, creating additional overhead tanks to store water to meet the demand of extended population as well as to overcome power shut down and, making efforts to collect 100% of water user charges levied, may enable CMC to continue O&M contract with the private operator and create cushion to fully repay ADB loan over the remaining loan period making it a replicable model elsewhere.

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