Performance Improvement Plan for Jalna

Prepared by:
CEPT University and AIILSG in consultation with Jalna Municipal Council

2012

pas performance assessment system

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Prepared by:

Centre for Environmental Planning and Technology (CEPT) University, Ahmedabad
and
All India Institute of Local Self Government (AIILSG), Mumbai
in consultation with
Jalna Municipal Council (JMC), Jalna

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ABBREVIATIONS

AIILSG	All India Institute of Local Self Government
BAU	Business As Usual
CAGR	Compounded Annual Growth Rate
CBO	Community Based Organisation
CEPT	Centre for Environmental Planning and Technology
CO	Chief Officer
CPHEEO	Central Public Health and Environmental Engineering Organization
DCB	Demand Collection Balance
DMA	Directorate of Municipal Administration
DMA	District Metering Area
DPR	Detailed Project Report
ESR	Elevated Service Reservoir
FGD	Focused Group Discussion
GIS	Geographic Information System
GoM	Government of Maharashtra
IHSDP	Integrated Housing and Slum Development Programme
ILCS	Integrated Low Cost Sanitation
JMC	Jalna Municipal Council
KPI	Key Performance Indicator
MJP	Maharashtra Jeevan Pradhikaran
MoUD	Ministry of Urban Development
MSNA	Maharashtra Sujal Nirmal Abhiyan
NGO	Non Governmental Organisation
ODF	Open Defecation Free
PAS	Performance Assessment System
PIP	Performance Improvement Plan
PMC	Project Management Consultant
PWD	Public Works Department
SJSRY	Suvarna Jayanti Shahari Rojgar Yojana
SLB	Service-Level Benchmark
STP	Sewage Treatment Plant
SWM	Solid Waste Management
UIDSSMT	Urban Infrastructure Development Scheme for Small and Medium Towns
ULB	Urban Local Body
WSS	Water Supply and Sanitation
WTP	Water Treatment Plant

EXECUTIVE SUMMARY

The preparation of this Performance Improvement Plan (PIP) for water supply and sanitation has been led by the Jalna Municipal Council (JMC) with support from the PAS Project through teams from All India Institute of Local Self Government (AIILSG), Mumbai and the CEPT University, Ahmedabad.

The preparation of PIP has been done in response to a request from the Government of Maharashtra. The two focus areas of 'making cities Open Defecation Free' and 'moving towards 24x7 water supply' were suggested by the Chief Secretary, Government of Maharashtra in an inception meeting, for starting the Government of India's Service Level Benchmarking (SLB) process in Maharashtra. In addition to that, the inherent theme for PIPs is improving coverage and service levels for un-served poor (slum dwellers) and improving financial sustainability. This PIP exercise uses the set of indicators given by the Govt. of India's Service Level Benchmark Initiative as a baseline to assess past performance and identify priorities.

City Profile: The city of Jalna is headquarters of Jalna District. It is located in South Central Maharashtra which is known as Marathwada Region. Jalna city has an area of 81.86 sq. km. and a population of 2,85,349 residents (census 2011). The majority of the work population is employed in the tertiary sector.

The city is an important administrative centre that houses the district offices of the Government. The entire district is situated in the Godavari Basins. Two rivers flow through the Jalna city, namely Kundalika and Sina. Both these rivers are the tributaries of Dudhna River which finally joins the Godavari. All services in Jalna are provided and maintained by the Jalna Municipal Council (JMC) who is in charge of the administration of Jalna city. Since many years, Jalna is facing a problem of water scarcity which has caused hindrances in provision of services. Jalna District is one of the draught prone areas of the state and is covered under the Central Governments Draught Prone Areas Programme.

Establishments in the Maharashtra Industrial Development Corporation (MIDC) area in the city were the main sources of industrial employment. Nowadays, industries account for a small percentage because of the limited number of industries in operation around the city. Selling water has also become a major source of income in the city in recent years.

40 % of total population (1,13,528 of 2,85,349) in Jalna resides in 53 slum settlements. Out of 53, 42 are notified and are located on public land. The slum localities are spread in all parts of the city. Most of the slums are situated on encroached government land. As a part of PIP diagnostic assessment, visits to all 53 slum settlements were carried out to have a check on on-ground situation of services. During visits, it was found that almost, all slums are unplanned and grown in an uncontrolled manner. Provision of water supply and sanitation services in slums is inadequate. Most slums seem to be dependent on ground water for their daily needs.

Staffing of JMC: Chief Officer of Jalna Municipal Council heads 16 different departments in JMC. Current strength of JMC in terms of staff is 59 plus laborers/peons/*safai kamgars etc.* Sanitation and SWM services are taken care by the Health Dept as there is no dedicated dept. for the same. Overall, JMC has adequate strength.

Water Supply: Jalna is dependent on two sources for water supply. One is its own surface source-Ghanewadi Lake, at 7km. from City, constructed in 1925, during the Nizam's rule. Second source of water for Jalna is through the intake at Shahgadh on Godavari River, which is at 65 km from the city. The Ghanewadi Scheme is owned and operated by the Jalna Municipal Council whereas the Shahgad Scheme has been developed by the Maharashtra Jeevan Pradhikaran (MJP).

Daily, 6 ML water is drawn from the Ghanewadi Lake and 10 ML water through Shahagadh scheme is purchased from Irrigation Department by JMC. Initially, water from Shahgadh was purchased only as and when required. In recent years this has become regular practice as need is raised very often.

Since many years, Jalna is facing severe problem of water scarcity and very low liters per capita per day at the consumer end. Jalna shows abysmally low liters per capita per day supply at consumer end (29) which is a matter of concern for JMC since last many years. This is less due to lack of water availability but mainly due to physical losses of water, illegal usage of water and unequal distribution of water. Coverage of water supply connections in Jalna (31) is also very low as compared to average coverage of class A ULBs in Maharashtra. Metering is completely absent and water is supplied for average duration of 12 minutes with an unusual combination as once for 3 hours in 15 days or even 30 days. The poor service levels have reflected in lower cost recovery & collection efficiency for water supply services. In spite the city being aware of the water scarcity problem, it was observed that the water losses are out of control and percentage of Non Revenue Water is increasing day by day. Overall, Jalna is showing a consistent downfall in terms of its year wise KPIs.

Major issues that need to be addressed on priority by JMC include- Lack and losses of water which have direct or indirect negative impact on almost all key indicators of water supply and sanitation services. JMC is implementing water supply augmentation project and has received funds of Rs. 145 crore. (Year 2006) under the GoI's UIDSSMT scheme for source augmentation. (Escalated cost of which is Rs. 242 crore.), which will resolve the issue of "lack of water" in Jalna (proposed lpcd=69 in the first year after implementation) and also the issue of "physical losses" up to some extent. To rectify further physical and commercial losses in distribution network JMC is seeking technical assistance from MJP for conducting comprehensive water audit.

Sanitation (including sewerage): Jalna does not have underground Sewerage Network at the city level. By and large, disposal of waste water is thus carried out through the septic tanks. However, around 7000 (15%) properties are estimated to having no onsite sanitary disposal.

The coverage of toilets in JMC has decreased from 89% in 2008-09 to 66% in 2010-11. While the figures calculated by considering availability of facilities show that the HHs resorting to open defecation (OD) are only 25%, it was observed that most of the facilities were not functional and hence, percentage of OD was estimated to be around 34%. JMC has conducted door to door survey in selected slums for availing funds under ILCS programme for construction of individual toilets as required. However, the process has stopped at surveys and no progress is seen in terms of funds mobilization and implementation. DPR was also made under IHSDP for only 4 slums, which has also not led to any further progress.

Currently, JMC has provided 42 community toilets with a total of 296 seats. Maintenance of all community toilets is taken care by JMC. During visits, almost all community toilets were found non-functional due to lack of water; missing or broken doors, WC pans & taps; poor maintenance; lack of child friendliness; misuse

of toilet blocks as storage places etc., hence actual no. of HHs dependant on community toilets is estimated to be almost zero. This has aggravated the extent of open defecation in the city. Almost all open plots in the city were marked to be open defecation sites, predominantly along the railway lines and near to community toilets blocks.

Services to slums: Jalna has 53 slum settlements, of which 42 are notified. 40% of total population of Jalna resides in slums, out of which only 25% have individual water supply connections at HH level. It was

observed during the visits to slums that out of these 25% HHs, almost all are partially dependant on ground water as piped water is highly insufficient due to very less continuity of supply.

JMC has started conducting HH level surveys in slums to capture gaps in availability of water supply and sanitation services in slums. Surveys for 10 slums were done, which reflected that HH level coverage of water supply connections is only 21%. In 3 slums it is seen more than 50% and in other 3 it is even less than 10%. Out of total 53, only 44 slums are covered with water supply distribution network.

Coverage of toilets in slums is reported to be only 18%, of which inly 5% is the coverage of individual toilets. Out of total 296 community toilet seats, 232 are located in slums, however they are almost non funtional.

Municipal Finance of JMC: The total budgeted revenue income for JMC in 2011-12 was Rs. 79.51 crore. Main sources of revenue include various taxes and charges levied by the council such as, service taxes, fees, charges, rents. In 2011-12, 47% of revenue income was from grants and contributions. The Octroi compensation grant is a major source of revenue income, amounting to 25% of total revenue income. However, as most of these grants are available as regular transfers, these can be considered as a relatively secured source of income. The revenue income of JMC has grown steadily at a CAGR of 9.17% from 2005-06 onwards.

The capital account of JMC has been in constant deficit. The capital income of JMC consists of receipts on account of capital grants under various scheme of Government of India (GoI) and Government of Maharashtra (GoM). The capital expenditure mainly comprises of the expenditure on account of utilization of capital grants under such schemes. The main sources of capital expenditure are funds received under UIDSSMT water supply scheme and other slum development scheme.

The capital income has increased substantially from the level of Rs 4.83 crore during 2005-06 to Rs. 65.05 crore Budgeted in 2011-12. However this increase is primarily due to the UIDSSMT Grant made available to JMC for the purpose of the water supply project, starting 2009-10. The budgeted figures for water supply project shows under utilization of the key grants for water supply during the year 2010-11. The capital income of JMC has a CAGR of 56.4%, and the capital expenditure has a CAGR of 52.86%. In 2010-11, there was a surplus of 36.17 crore because the received UIDSSMT grants were not utilized fully.

Summary of Performance Improvement Plan for JMC: The proposals suggested are focused on two key areas of establishing 24X7 water supply system and moving towards an open defecation free JMC, as well as improvements in key processes and operations related to the above areas. Based on the analysis of the water and sanitation sectors in Jalna, the Performance Improvement Plan for JMC has been summarized below.

Key actions for improvement	Costs required	Current status
Water supply: towards 24X7 system		
Technical studies and metering	Rs. 1.5 crore	Partially under implementation
Planning and implementation of 24X7 for entire city	Rs. 104.5 crore	Preparation of DPR is required
Sanitation: towards OD free		
Construction of individual and community toilets (including IEC costs)	Rs. 33 crore	Identification of land is under process, Preparation of DPR is required

Key actions for improvement	Costs required	Current status
Total cost of PIP		**Rs. 139crore**

The Council also has to undertake improvement actions related to processes in the water supply and sanitation operations. These actions have no or low cost, and thus can be immediately taken up by the Council. These include identification and regularization of illegal connections, conversion of public stand posts into group connections, periodic surveys at source, treatment and consumer end, proper sampling regimen for monitoring water quality, regular surveys through zonal sanitary inspectors, levy telescopic rates for water supply, drainage tax, and improve collection efficiency of sanitation tax, implementation of Septage Management Plan.

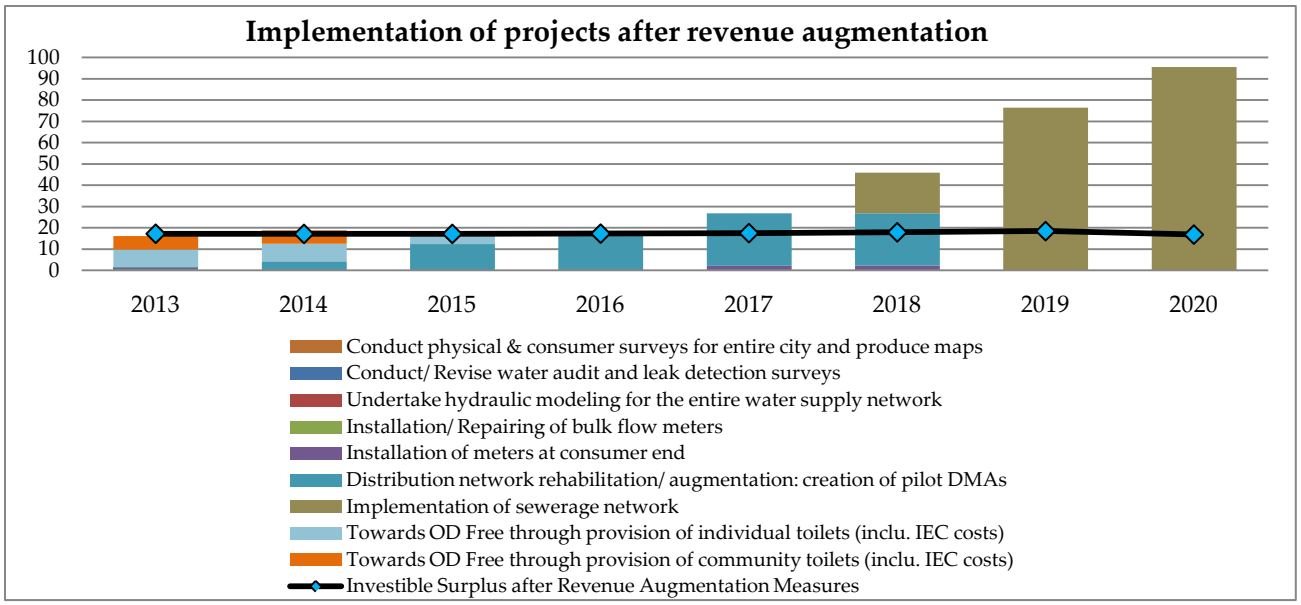
Based on the revenue enhancement measures mentioned above, the investible surplus for JMC will be approx. Rs. 2082 lakhs. The improvements for JMC have been proposed in two phases: 1) Immediate interventions (from 2013 - 2020), and 2) Long term interventions (from 2020 - 2030). The interventions mentioned above to augment revenue as well as process improvements are proposed to begin in 2013.

Proposed Improvement Areas	2013	2014	2015	2016	2017	2018	2019	2020
Water supply								
Fill technical sanctioned posts for better monitoring of services and/or explore outsourcing of O & M of water supply.								
Periodic surveys at source, treatment and consumer end								
Proper sampling regimen for monitoring water quality								
Continue mission to identify and regularise illegal connections								
Moving Towards 24 x 7								
Conduct physical surveys, consumer survey for entire city and produce maps								
Conduct/ Revise water audit and leak detection surveys								
Undertake hydraulic modeling for the entire water supply network								
Distribution network rehabilitation/ augmentation: creation of pilot DMAs								
Installation/ Repairing of bulk flow meters								
Installation of meters at consumer end								
Levy telescopic rates for water supply								
Sanitation (Including sewerage)								
Preparation of Septage Management Plan								
Preparation of DPR for Septage Management								
Implementation of Septage Management Plan								
Preparation of DPR for sewerage network and persuasion for approval through Govt. Grants								
Implementation of sewerage network								

Proposed Improvement Areas	2013	2014	2015	2016	2017	2018	2019	2020
Levy drainage tax, environmental tax in property tax								
Improve collection efficiency of sanitation tax								
Moving Towards ODF								
Prepare DPR for ODF								
Towards OD Free through provision of individual toilets (inclu. IEC costs)								
Towards OD Free through provision of community toilets (inclu. IEC costs)								

Once the revenue augmentation measures and process improvements are in place, it is proposed that JMC can begin its capital intensive projects from 2013.

- Starting from 2013, JMC can begin construction of individual and community toilets. As issues in existing community toilets were observed in terms of operation and maintenance, it is proposed that JMC refurbishes existing toilets before initiating construction of new community toilets. To begin with JMC can go in for construction of individual and community toilets simultaneously. Construction of toilets can be completed in 3 years.
- Arrangements with CBOs can be looked at with respect to maintenance of community toilets. Campaigns to bring about awareness related to cleanliness and hygiene practices, safe sanitation practices, and negative health impacts due to open defecation needs to be conducted by the Council. Local CBOs need to be roped into this exercise to ensure participation by all communities. The campaigns should begin by triggering initiation in the slum settlements and undertaking transect walk to the open defecation sites to highlight the above issues.



Institutional imperatives to achieving proposed improvements: JMC needs to augment its staff as major percentage of the staff comprises non-technical personnel. Moreover, even if water supply operations will be outsourced, technical strength of the private contractor needs to be assessed. Similarly, to efficiently monitor operations of private contractor, technical staff at JMC needs to be increased.

Additionally, JMC needs to mobilise external support through NGOs and CBOs in project formulation and implementation, especially related to services of water supply and sanitation in slums. Given that as

implementation of proposals related to 24X7 requires high technical skills, JMC needs to also bring external support through Project Management Consultants (PMC). Arrangements should be made with PMCs for continued support throughout implementation of the 24X7 project, both immediate and long term. The Council has to also form a PIP taskforce in order to ensure proper implementation of the proposed projects and performance monitoring through regular target setting.

1 INTRODUCTION

The preparation of this Performance Improvement Plan (PIP) for water supply and sanitation has been led by the Jalna Municipal Council (JMC) with support from the PAS Project through teams from All India Institute of Local Self Government (AIILSG), Mumbai and the CEPT University, Ahmedabad.

The preparation of PIP has been done in response to a request from the Government of Maharashtra. The two focus areas of 'making cities Open Defecation Free' and 'moving towards 24x7 water supply' were suggested by the Chief Secretary, Government of Maharashtra in an inception meeting for starting the Government of India's Service Level Benchmarking (SLB) process in Maharashtra. The PIP exercises use the set of indicators given by the SLB Initiative as a baseline to assess past performance and identify priorities.

Preparation of the PIP has been done in three stages:

Initial Performance Assessment: Based on the data received during PAS round II from the JMC, an initial assessment of all SLB indicators for the past three years was done by the PAS team. As a part of the preparatory work, a preliminary profile of ULBs using SLB indicators was prepared. The JMC teams were assisted to generate a city profile based on comparative performance assessment of ULBs for last three years based on PAS data. This involved past trends as well as comparison with other Class A Municipal Councils in Maharashtra.

The AIILSG/CEPT team visited Jalna from 21st June to 26th June 2011 for further exploration of ground realities in UWSS. The preparatory work and the city profile of Jalna were discussed with JMC officials at the first meeting on 21st June '11. The meeting was attended by the Chief Officer, along with officials from Water Supply, Health and Accounts Dept. Preliminary priorities were identified at this meeting. Particular focus was also placed on the issues around making the city open defecation free and exploring the possibility of introducing 24x7 water supply. ULB officials shared their views towards taking their PIPs further and issues that they have to tackle in doing the same.

Detailed Diagnostics and Issues Identification: The diagnostic assessment was prepared by taking into consideration the ground realities, local conditions, and assessment of the present situation. A detailed field guide developed for purpose of PIP preparation included data templates, survey formats; transect walks, schedules of interviews, FGD guidelines, areas for digital documentation, dimensions of stakeholder consultations etc.

A rapid assessment of demographic /physical characteristics, institutional arrangements, key processes and municipal finances was also undertaken to build appropriate context for city performance

Detailed discussions with ULB engineers and support staff were held to assess water and sanitation situation on ground. Field visits were undertaken by teams to facilities like source, treatment and distribution systems to validate secondary data and identify performance issues. Wherever applicable, appropriate consultations were also undertaken with private service providers to help assess and validate issues from different perspectives.

For detailed qualitative insights, the team met respective ULB staff at all levels including *safai karamcharies*, valve operators etc. The team also met slum dwellers, contractors and private parties to understand issues at different levels and areas of services. Through focus group discussions and consultations with the citizens of Jalna, service delivery issues were identified from consumers' perspectives. Transect walks in slum settlements and along city roads helped in mapping slum locations, open defection sites, public and community toilets, solid waste dumping sites etc. On site situation and issues in services were captured through self-explanatory photographs that expressed depth of issues against which immediate actions need to be taken.

Action Planning and Preliminary Costing: On identification of city priorities, consultations were held with the Chief Officer, opinion leaders, Municipal Councilors and JMC officers to discuss improvement actions for municipal water supply and sanitation. This report presents the performance improvement plan of the ULB. It describes improvement actions and the costs that will have to be incurred to implement the identified actions. Efforts that are currently being taken by JMC to improvise service delivery were also considered while suggesting further actions in the respective sectors.

Preliminary Validation of Draft Performance Improvement Plan by JMC: The proposed improvement plan has been shared with JMC and finalised by incorporating the revisions suggested. The Jalna PIP has been prepared in consultation JMC CO, & other officials.

It describes improvement actions and the costs that will have to be incurred to implement the identified actions. The proposals have been reviewed by technical teams at the AIILSG, Mumbai and CEPT University. This PIP report will be submitted to the state government for review and guidance. It is anticipated that the Jalna Municipal Council will identify low-cost actions that can be taken immediately and provide funds for these actions from their budget. For actions that require significant capital expenditure, the JMC will prepare detailed project reports and seek assistance under state and national programmes.

2 CITY PROFILE

This section discusses general characteristics of Jalna related to population, aspects related to slum settlements, and human resources in JMC. Also, aspects related to municipal finances specifically with respect to water supply and sanitation services and extent of private sector participation are discussed here.

2.1 LOCATION

Map 1: Location of Jalna in Maharashtra

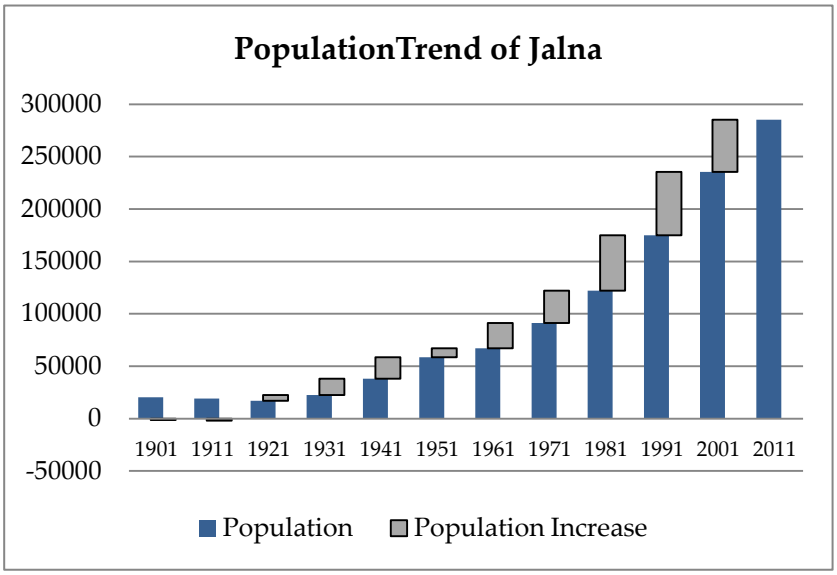
Table 1: General Information: Jalna

General Details	2001	2011
Area	81. 86 km²	81. 86 km²
Population	2,35,529	2,85,349
No. of HHs	40,732	56,652
No of properties	23,600	40,972
No. of Slums	53 (Notified 42)	53 (Notified 42)
Population in slums		1,13,528
% of Slum pop to total		40

The city of Jalna, headquarters of Jalna district is located in South Central Maharashtra also known as Marathwada Region. Jalna is situated on an altitude of 508m. above the mean sea level.

The city has an area of 81.86 sq. km. and a population of 2,85,349 residents (census 2011). The majority of the work population is employed in the tertiary sector.

Graph 1: Population Trend_Jalna



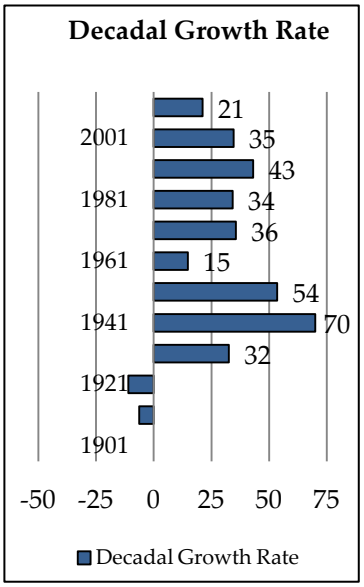
The city is an important administrative centre that houses the district offices. A separate Jalna District was established in 1981, prior to which Jalna was a taluka in Aurangabad District. The district is situated in the Godavari Basin. Two rivers flow through the Jalna city, namely Kundalika and Sina. Both these rivers are the tributaries of Dudhna River which finally join the Godavari. Overall, the city has a flat topography but there is a gentle slope from the North West to South East. All services in Jalna are provided and maintained by the Jalna Municipal Council (JMC) who is in charge of the administration of Jalna city. The city is one of the fast-growing cities of the Marathwada region. Since many years, Jalna is facing acute water scarcity which has caused hindrances in smooth service provision. Jalna District is one

of the draught prone areas and is covered under the Central Governments Draught Prone Areas Programme.

The population of Jalna increased rapidly from 1961 to 1991; this growth can be attributed to the growth of industries in the city. Though the population has increased in the last 2 decades (1991-2011), the growth rate has declined from 43% (1991) to 21% (2011). The Graph 1-1 chows no uniform trend in increase of population. Recent decrease in growth rate could be possibly attributed to the water scarcity and downfall of service quality in UWSS in the city.

Historically, the city developed as a centre of trade and commerce. Jalna acts as an important centre of trade, commerce and services for the surrounding villages of not only Jalna district, but also the neighboring districts of Osmanabad and Buldhana.

Establishments in the Maharashtra Industrial Development Corporation (MIDC) area in the city were the main sources of industrial employment. Nowadays, industries account for a small percentage because of the limited number of industries in operation around the city. Selling water has also become a major source of income in the city in recent years by formal as well as informal vendors.



Graph 2: Decadal Growth Rate: Jalna

2.2 SLUMS IN JALNA

40 % of total population (1,13,528 of 2,85,349) in Jalna reside in 53 slum settlements. Out of 53 slums, 42 are notified and are located on public land. The slum localities are spread spatially across the city. Most of the slums are situated on encroached government land. As a part of PIP diagnostic assessment, visits to all 53 slum settlements were carried out to have a check on on-ground situation of services. Field visits reveal that all slums have grown in an uncontrolled manner. Provision of water supply and sanitation services in slums is inadequate. Most slums seem to be dependent on ground water sources such as municipal hand pumps and private bore or open wells for their daily needs. As per JMC's budget, 5% funds are reserved for EWS, of which 100% were actually spent on EWS in last 3 years.

SLUM PROFILE OF JALNA	
Total number of slum settlements (2011)	53
No. of notified slum settlements (2011)	42 (79%)
No. of non notified slum settlements (2011)	11 (21%)
Total number of slum settlements (2001)	53
No. of notified slum settlements in (2001)	42 (79%)
No. of non notified slum settlements (2001)	11 (21%)
LAND OWNERSHIP	
No. of slum settlements on Public land	42 (79%)

Table 2: Slum Profile of Jalna

Map 2: Slums in Jalna

2.3 STAFFING OF JALNA MUNICIPAL COUNCIL

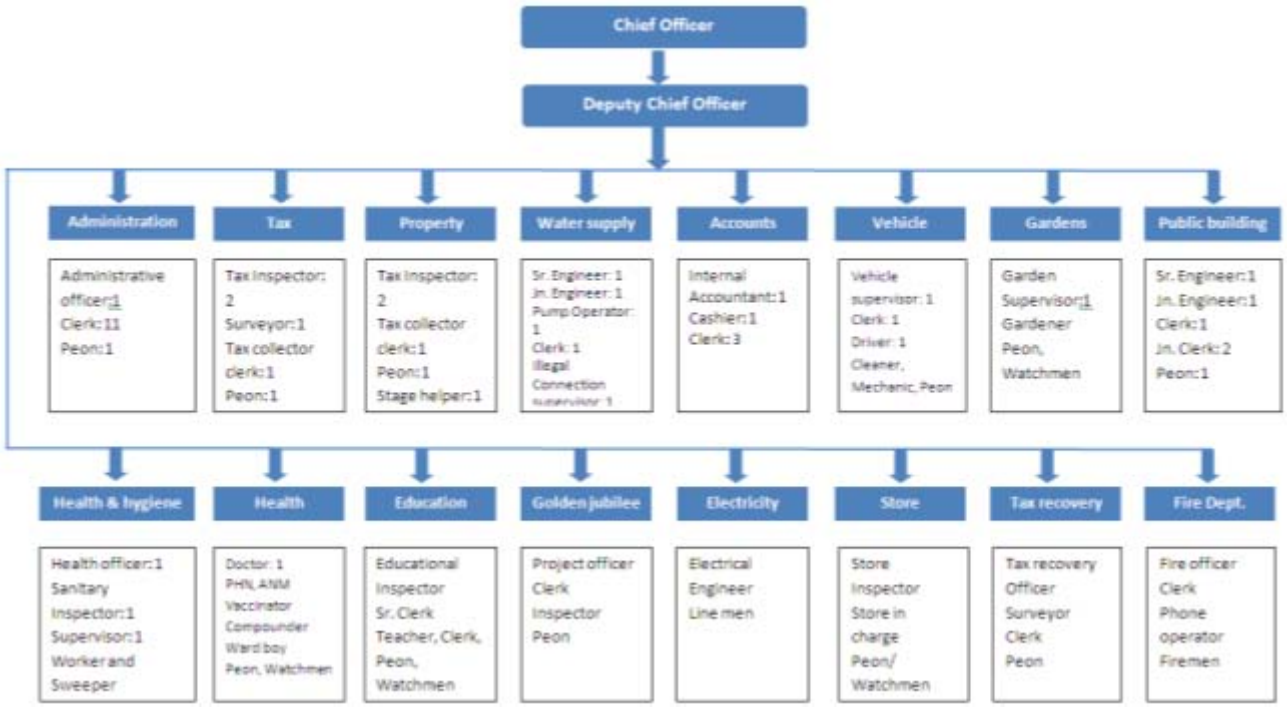
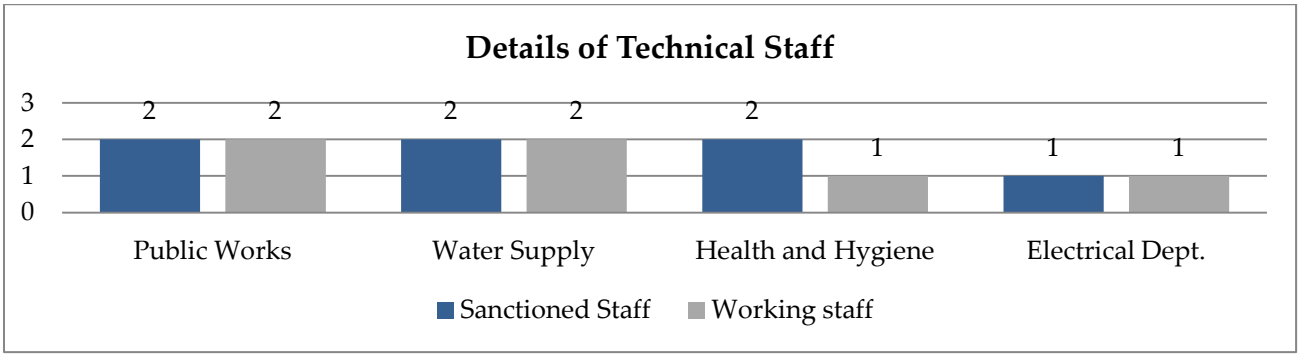


Figure 1: Organogram of JMC

Chief Officer of Jalna Municipal Council heads 16 different departments in JMC. Current strength of JMC in terms of staff is 59 plus laborers/peons/*safai kamgars etc.* Sanitation and SWM services are taken care by the Health Dept as there is no dedicated dept. for the same. Overall, JMC has adequate strength.



2.4 MUNICIPAL FINANCE ASSESSMENT

The municipal finances of JMC have been reviewed for the last seven years, from 2005-06 to 2011-12. While for 2005-06 to 2009-10 the information is of 'actuals', budget estimates are given for the remaining two years. The analysis is based on a 'recast budget'. This was done mainly to reclassify some of the capital grants reported as revenue income to capital income. The total approved budget of JMC in 2011-12 was Rs. 98.5 crore.

Table 3: Summary if revenue account and Capital account of JMC (in Rs. crore)

Items	2005-06 (actual)	2006-07 (actual)	2007-08 (actual)	2008-09 (actual)	2009-10 (actual)	2010-11 (budget)	2011-12 (budget)
Opening Balance	2.18	7.03	8.14	5.14	11.70	66.49	69.34
Revenue Account							
Revenue Income	22.76	28.84	24.93	28.81	28.33	65.85	79.51
Revenue Expenditure	18.12	16.55	19.2	22.74	21.04	39.03	47.85
Operating Expenditure (%)	80	57	78	79	74	59	60
Capital Account							
Capital Income	4.83	2.62	4.21	1.97	56.88	64.26	110.55
Capital Expenditure	7.29	10.05	8.58	11.03	57.62	36.17	60.05
Capital Utilization (%)	150.93	383.59	203.80	559.90	101.30	56.29	58.8
Overall surplus / (deficit)	2.18	4.86	1.12	-2.99	6.55	54.81	77.16

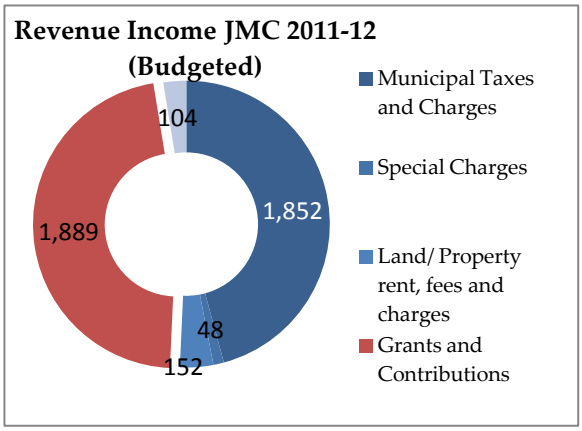
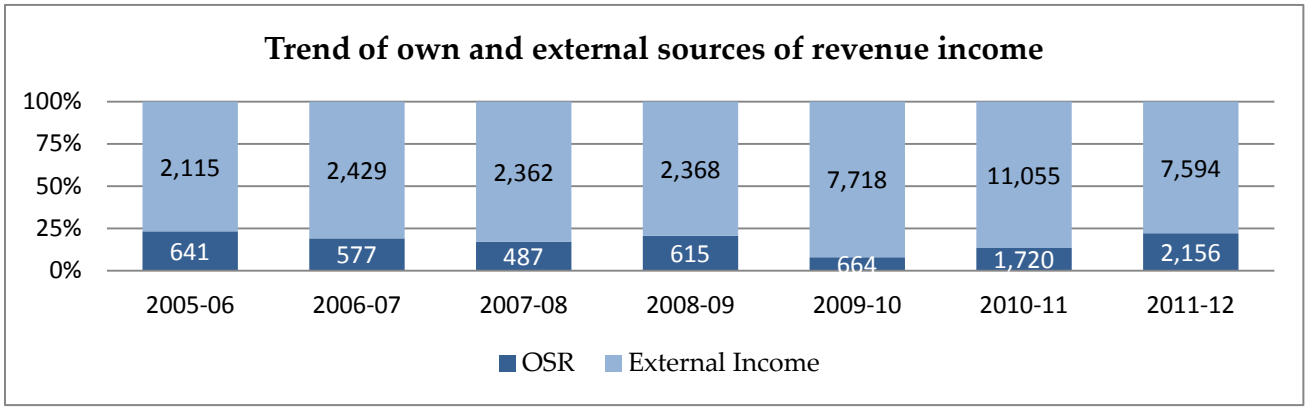


Chart 1: Breakup of Revenue Income in 2011-12

Revenue Account: The total budgeted revenue income for JMC in 2011-12 was Rs 79.51 crore. Main sources of revenue include various taxes and charges levied by the council such as, service taxes, fees, charges, rents. Miscellaneous grants and contributions account for a substantial part of the revenue income of JMC. In 2011-12, 47% of revenue income was from grants and contributions. The Octroi compensation grant is a major source of revenue income, amounting to 25% of total revenue income. However, as most of these grants are available as regular transfers, these can be considered as a relatively secure source of income. The revenue income of JMC has grown steadily at a CAGR of 9.17% from 2005-06 onwards.



Graph 3: Trend of own and external sources of revenue income of JMC (in Rs Lakhs)

The own sources of JMC consist of tax and non tax revenue. Contribution of own sources was 22% of the total revenue income of the JMC in 20011-12. Tax revenue mainly consists of property tax and general water tax. Over the past 5 years, the share of own sources of income has been consistently increasing, in 2011-12 it accounted for 28% of the total income. Property tax has been the main source of own revenue at 37%. The main sources of external income are grants such as Octroi compensation and state and central government sponsored schemes for augmenting water supply and other services.

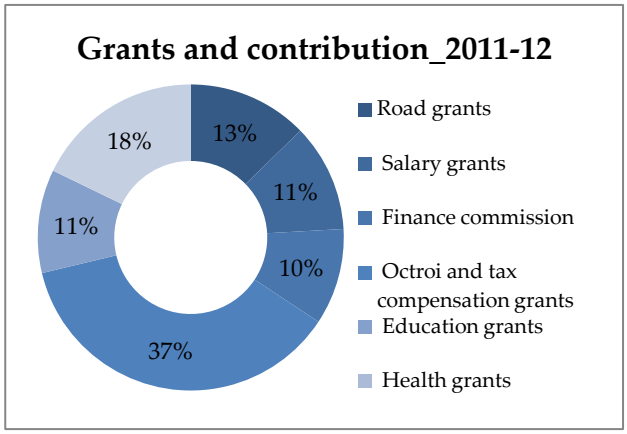
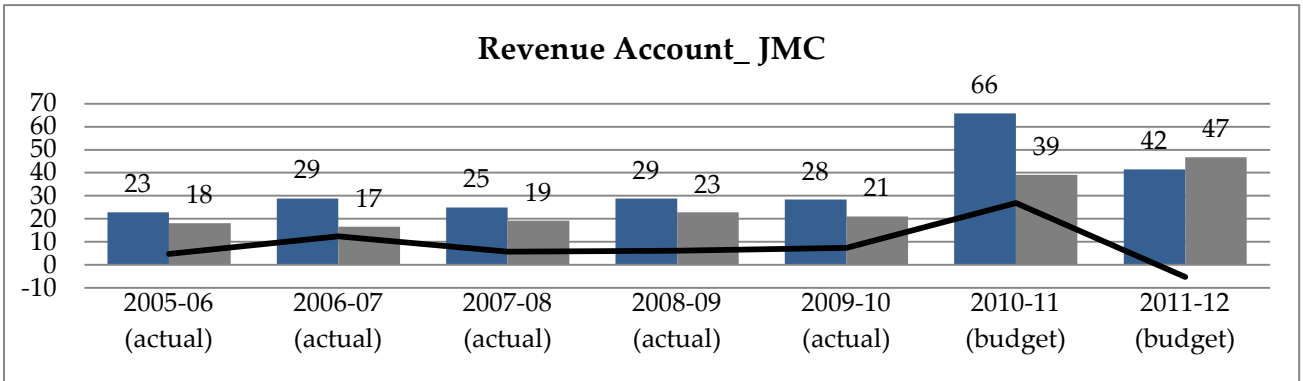


Chart 2: Grants and contribution_2011-12

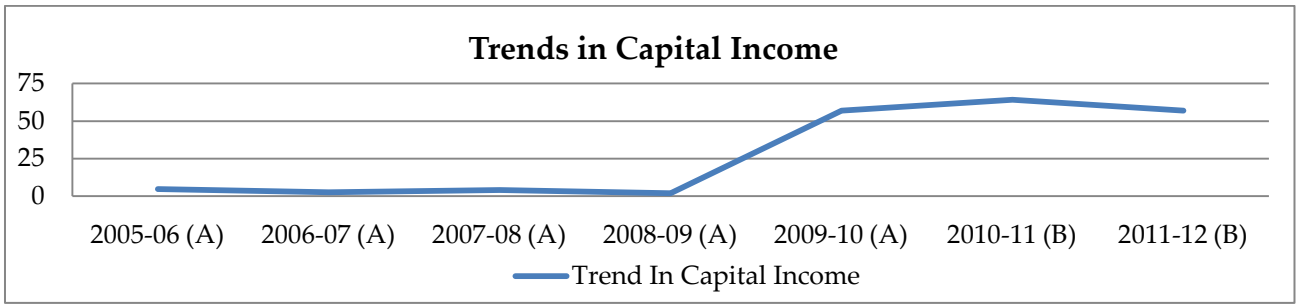
Revenue expenditure of JMC has been analysed against main departmental budget heads of general administration and tax collection department, public security, public health and sanitation, etc. The basic



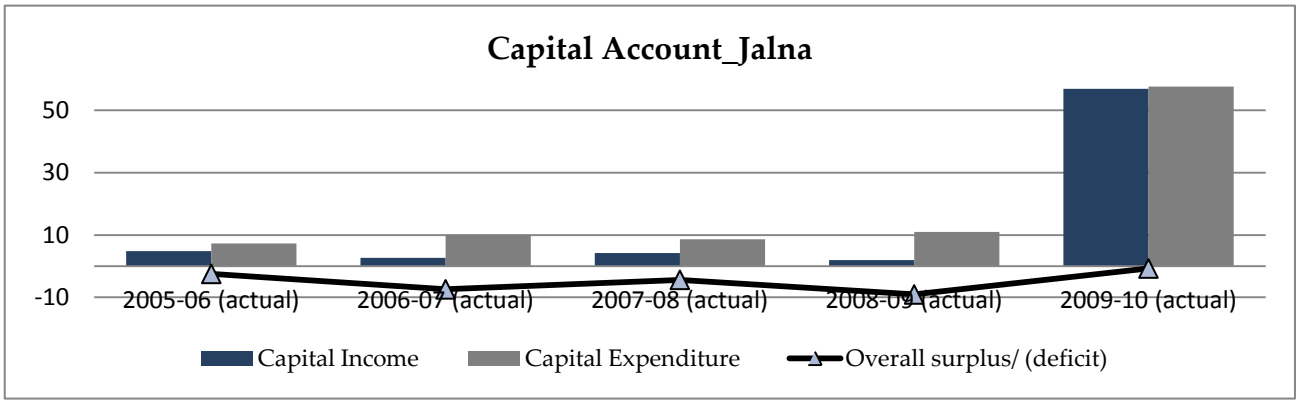
Graph 4: Revenue income vs. expenditure of JMC (in Rs. Crore). Source: (Jalna Municipal council, 2005-06 to 2011-12)

services such as water supply, sanitation and sewerage form about 37% of the total revenue expenditure of JMC. The per capita revenue expenditure in JMC is Rs. 1642. More than 40% of revenue expenditure is on establishment costs. 45% of total expenditure on water supply and sanitation is on O&M expenses.

Capital Account: The capital income of JMC consists of receipts on account of capital grants under various scheme of Government of India (GoI) and Government of Maharashtra (GoM). The capital expenditure mainly comprises of the expenditure on account of utilization of capital grants under such schemes. The main sources of capital expenditure are funds received under UIDSSMT water supply scheme and other slum development scheme.



Graph 5: Trends in Capital Income of JMC (in Rs. Crore)



Graph 6: Capital Account, JMC

Source: Budget documents of Jalna Municipal Council; A – Actual figures; B – Budgeted figures;

In 2011-12 JMC's per capita capital income is Rs 2000; however this is mainly due the addition of UIDSSMT grant of Rs 55 crore from 2009-10 onwards.

The capital expenditure has increased substantially from the level of Rs. 4.83 crore in 2005-06 to Rs. 65.05 crore budgeted in 2011-12 representing almost a tenfold increase in capital expenditure. This increase is mainly due to the water supply project under UIDSSMT as mentioned above. From the figures available from the budget books, it is clear that JMC is has utilized its grants on time. Of the Rs 56.88 crore received for water supply projects under UIDSSMT and other schemes, Rs.57.62. have been utilized. JMC has achieved a utilization of 101%, which shows that it has actually used its own sources for the water supply projects. The budgeted figures for water supply project shows under utilization of the key grants for water supply during the year 2009-10.

The summary of financials of JMC can be analyzed as follows. The operating ratio of JMC has a falling trend, except in 2011-12. The revenue income of JMC has a CAGR of 19.7%. In 2011-12 the revenue expenditure increased 14.8 %, main increase was due to increase in sewerage administrative expenditure.

The capital account has been in constant deficit, except in 2010-11. The capital income of JMC has a CAGR of 56.4%, and the capital expenditure has a CAGR of 52.86%. In 2010-11, there was a surplus of 36.17 crore, because the received UIDSSMT grants were not utilized fully.

Overall, JMC has been in surplus throughout, except for in the year 2008-09. Based on review of finances for the period 2005-06 to 2011-12, the possible area that JMC could focus is improving efficiency of collection of taxes and charges.

The share of revenues from assigned revenues, grants and contribution is substantially high as compared to revenues from own sources i.e. 78% against combined total of 22% for own sources of revenue. Revenues received through grants and contributions are not under the control of the JMC and therefore it is advisable to reduce the dependence of such sources.

2.5 PRIVATE SECTOR PARTICIPATION IN JALNA

Currently, only transportation of solid waste is outsourced by JMC to the local private contractor in Jalna. The services provided by the private contractor are not monitored by JMC, which has led to chunk of garbage on the roads. As mentioned previously, a new water supply scheme for Jalna is being implemented under UIDSSMT. As proposed in the DPR, after successful execution of this scheme, its O & M is proposed to be taken care by the local private contractor, Maharashtra Agencies, Aurangabad for next 2 years. Thereafter it will be handed over to the JMC for regular O & M.

Photo Plate 1: Jalna: at a Glance

Photo Plate 2 Interaction with JMC staff, elected representatives and Citizens of Jalna

Yes… will prepare the best PIP

Kitna pani diya uske records to nahi rakhte hum..

Madam, ek mahinese pani nahi aaya.. Roj kisise kharidna padta hai…

Yes.. and the water was almost non potable

Photo Plate 3 Interaction with JMC staff, elected representatives and Citizens of Jalna

Bus gharme ek sandas banake do..Pani ka hum sambhal lenge !

Group Leaders : Hum apni tarafse bohot koshish karte hai sabko samzaneki (Public Awareness) but problems ITNE bade hai..k hamare level pe solve nahi ho sakte

Aamhi panyasathi uposhan pan kela.. Pan kaaahi fayda nahi!!

Maine to apna apna sandas bana lia hai…Kaun roj ke zagde karta rahega!

3 ASSESSMENT AND PROPOSALS FOR WATER SUPPLY

This section provides an overview of the water supply system in JMC, its performance and issues, and proposals to improvement. It also discusses the status of ongoing major projects that will have an impact on performance of service delivery by JMC.

3.1 ASSESSMENT OF CURRENT WATER SUPPLY SYSTEM

Map 3: Water Supply System, Jalna

Jalna is dependent on two sources for water supply. One is its own surface source- Ghanewadi Lake, at 7km. from City, constructed in 1925, during the Nizam's rule. Second source of water for Jalna is through the intake at Shahgadh on Godavari River, which is at 65 km from the city. This scheme has been jointly developed for Jalna and Ambad cities. Water is allowed to flow from Jaikwadi dam at Godavari River to the intake at Shahgadh as per demand raised by Jalna and Ambad. Water is stored at Shahgadh and supplied to the cities of Jalna and Ambad. The Ghanewadi Scheme is owned and operated by the Jalna Municipal Council whereas the Shahgad Scheme has been developed by the Maharashtra Jeevan Pradhikaran (MJP); JMC has not yet taken charge of the scheme since its inception.

Daily, 6 ML water is drawn from the Ghanewadi Lake and 10 ML water through Shahagadh scheme is purchased from Irrigation Department by JMC. Initially, water from Shahgadh was purchased only as and when required. In recent years this has become regular practice as need is raised very often.

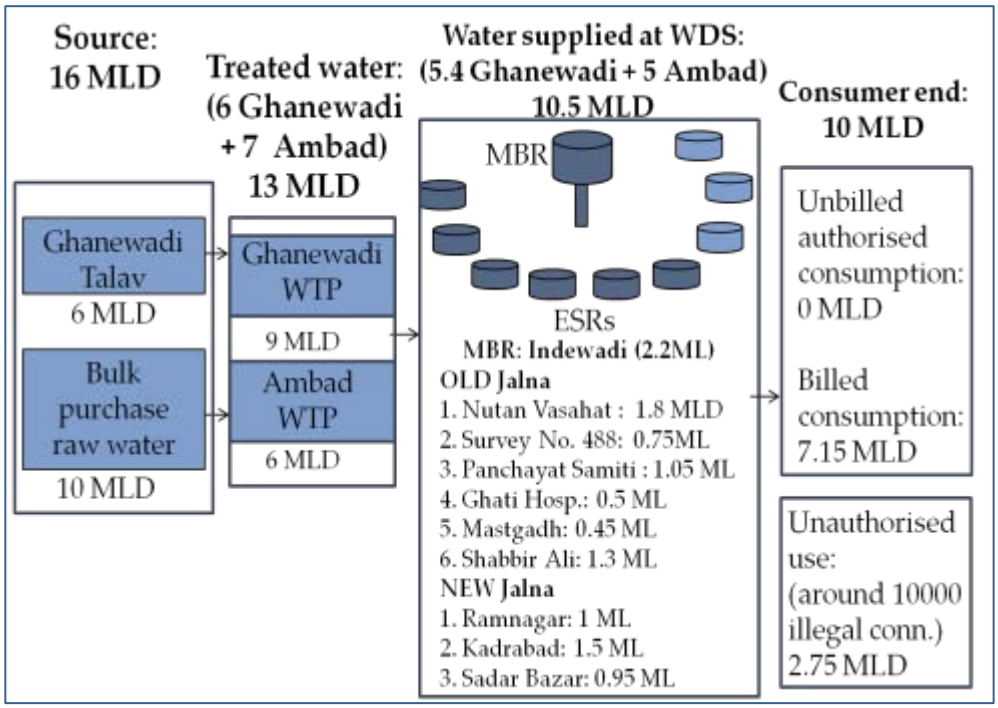


Figure 2: Water Supply: Schematic Diagram 1

The water is supplied to the city after purification at treatment plants. One treatment plant is located near Ghanewadi, to treat water drawn from Ghanewadi lake and one at Ambad to treat water purchased from Shahagadh scheme. The water is purified by giving alum dosing, settling and adding bleaching powder, etc.

For convenience in service delivery Jalna is divided into two parts viz. Old Jalna and New Jalna. As indicated in Figure No. 2 above, water received from Shahgadh is stored at Indewadi MBR and then distributed to the entire Jalna city through 9 ESRs located all over in the city. In spite the city being aware of the water scarcity problem, it was observed that the water losses are out of control and percentage of Non Revenue Water is increasing day by day.

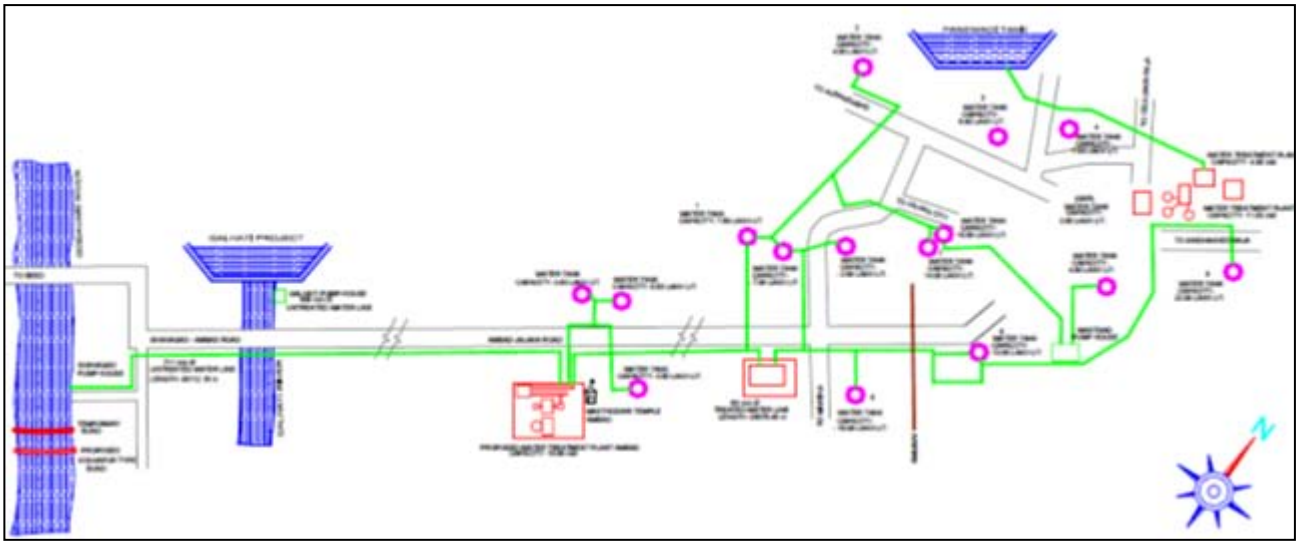
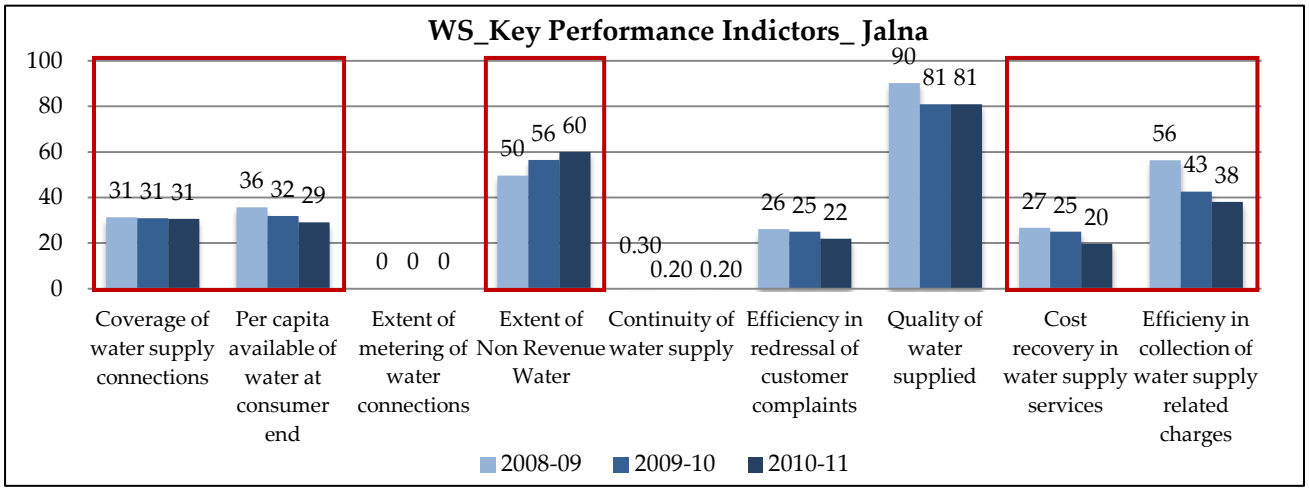


Figure 3: Water Supply Schematic Diagram 2, Jalna

JMC is implementing water supply augmentation project and has received funds of Rs. 145 crore. (Year 2006) under the GoI's UIDSSMT scheme for source augmentation. (escalated cost of which is Rs. 242 crore.) Under this scheme water will be directly lifted from Jaikwadi dam at Paithan and supplied to Jalna unlike the existing scheme. This is designed for 66 MLD water supply for the projected population of 5.43

lakh in the year 2031. New trunk and transmission main are being laid under this scheme along with the source augmentation. This will help reduce the real losses at the source and trunk & transmission mains.

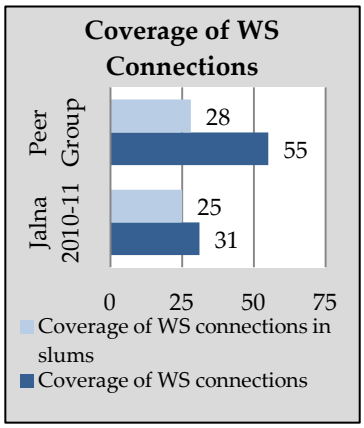
3.2 ASSESSMENT OF SERVICE DELIVERY



Graph 7: Water Supply KPIs for JMC

Since many years, Jalna is facing severe problem of water scarcity and very low liters per capita per day at the consumer end. The graph below provides a snapshot of water supply service in Jalna. Jalna shows abysmally low liters per capita per day supply at consumer end (29) which is a matter of concern for JMC since last many years. This is less due to lack of water availability but mainly due to physical losses of water and illegal usage of water. Coverage of water supply connections in Jalna is also very low as compared to average coverage of class A ULBs in Maharashtra. Metering is completely absent and water is supplied for average duration of 12 minutes with an unusual combination as once for 3 hours in 15 days or even 30 days. The poor service levels have reflected in lower cost recovery & collection efficiency for water supply services.

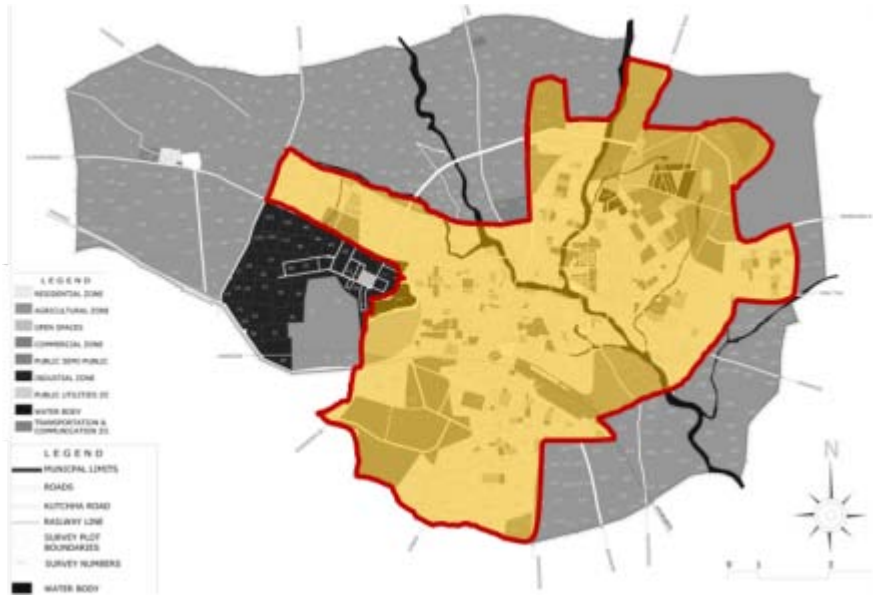
During site visits, it was observed clearly that Jalna is lagging behind in achieving service level benchmarks as prescribed by MoUD. It is rather showing a consistent downfall in terms of its year wise KPIs. It was important and also interesting to explore whether this situation is engendered because of lack of resources or poor performance of the service delivery.



Graph 8: Coverage of water supply in Jalna

3.2.1 Access and Coverage

Coverage of water supply connections: Graph No. 3-3 shows that Jalna's coverage of water supply connections (31%) is below the peer group average (55%). Because of unequal distribution and unusual duration of supply at consumer end, consumers are not willing to avail the connections and pay for "no water". However, in areas where water distribution is comparatively good, there seem cases of double connections in which second connection is illegally acquired. It was narrated by the city engineer that sometimes due to ill functioning of one connection, second connection is granted officially to the same consumer. However, due to political forces, original connection is not discontinued. Apart from this also, many illegal connections were noticed.



Map 4: Area covered with water supply distribution network

The water distribution network is estimated to cover about 60% of the total - area of Jalna, However, the coverage of household level connections of water supply is relatively low at 31%. Because of lack of willingness to avail connections and lack of water even if connections are availed, almost 100% of citizens are fully or partially dependent on alternative municipal or private ground water sources JMC owns 480 municipal hand pumps and 100 municipal open wells through which water is consumed by the slum as well as non-slum users, free of charge. As per discussions with JMC engineer, in addition to this, around 40% HHs have private open or bore wells at their door steps which are used as supplementary to the municipal water. The household level coverage of water supply connections in slums is reported to be 28%, which is comparable to the city level coverage.

Increasing no. of illegal connections has a huge impact on coverage of WS connections as well as extent of NRW of Jalna. Regularizing illegal connections is one of the significant actions to improve coverage in Jalna considerably. For this, Jalna had taken an initiative to overcome this issue of illegal connections. JMC had appointed a team of 8 bill collectors to identify illegal connections in their respective wards of bill collection (total 27) and do the needful to regularize all such connections. This mission could not be carried further due to political interference. This responsibility was then shifted to the ex-bill collector who was ready to take this mission ahead. With dedicated efforts, he succeeded in identifying and regularizing only 74 illegal connections out of estimated total of 10000. According to him, it's an intricate process to identify and regularize illegal connections, not technically but because of effect of political forces.

Proposals for improvement: As mentioned previously, it is necessary to accurately assess the coverage of household level connections in the city.

Identify and regularize illegal connections: Around 10000 connections, that are estimated to be illegal, need to be identified through door to door surveys and actions should be taken to regularize the same. The coverage will increase to at least 40% from 31% only by regularizing illegal connections, excluding the cases of double connections. The mission started by JMC needs to be geared up to remove all illegal connections and stop illegal usage of water.

Augmentation of water: Currently, lpcd being abysmally low, citizens are not willing to avail the connections. Once the water source is augmented, increased lpcd may encourage citizens to avail connections from JMC.

Improved operation of water supply system/ Redressal of water supply related complaints: Presently, citizens are unhappy with mismanaged water supply system and eventually non-predictable duration of water supply. Once the water is made available, JMC needs to improve its efficiency to manage the supply well in order to encourage citizens to avail water supply connections and stop using Ground Water.

3.2.2 Service levels and Quality

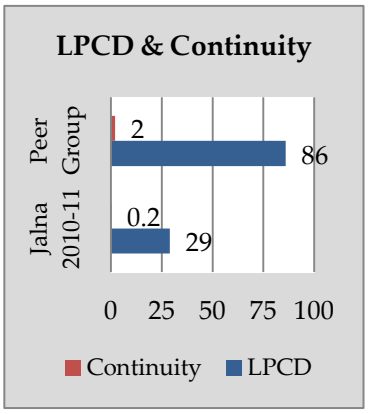
Per capita supply of water: One of the major issues relates to equitable distribution of water within the service area. In spite of lower coverage, the disparity in supply within areas is high. Days and hours of supply are also not constant or not even predictable. One particular area might get water for continuous 4 days and another may not get it even after a month. In absence of sufficiency of water availability, the people resort to alternative ground water sources. It has been estimated by JMC's staff that ground water is a major contribution to Jalna's LPCD. Consumption of GW other than municipal sources (1.8 MLD) constitutes around 20% of the total quantity of water consumed.

Due to perceived issues in water supply system, practice of private water supply is in prevalence in Jalna.

Table 4: Water Supplied by Private Suppliers

WATER SUPPLIED BY PRIVATE WATER SUPPLIER		
No. of Bulk Water Sellers	9	@ rate of Rs 10/500 ltr
No. of Bulk Water Suppliers	60-65	@ rate of Rs 50/500 ltr
Avg. water sold daily by one seller (Ltr.)	10000	
Total water sold by bulk sellers per day (Ltr.)	**90,000**	
No. of HH Level Water sellers	20000	@ rate of Rs 1/*handa* (10ltr)
Avg water sold daily by one seller (Ltr.)	100	
Total water sold by HH level sellers per day (Ltr.)	**20,00,000**	
Total quantity of water sold per day (MLD)	**2.09**	

As estimated in Table No. 6 above, as per discussions with various private water suppliers, around 2.09 MLD of water is supplied daily through tankers/containers. Containers are apparently filled with the GW from bore wells owned by water sellers. 9 such bulk water sellers exist who sell water to around 65 bulk water suppliers. One bulk water supplier, for supplying 500 ltr. water in one trip, charges Rs. 50 to the buyer and eventually earns minimum Rs. 40 per trip. Apart from this bulk water sale, water is also sold at HH level as well. Around 20,000 such sellers exist who sell around 2 MLD water at the rate of Re. 1 / *handa* (approx. 10 ltr.)



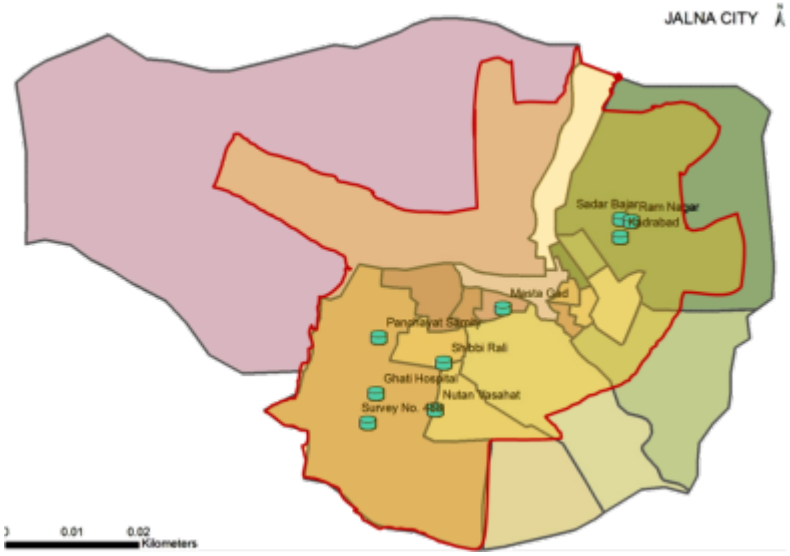
Graph 9: LPCD and Continuity, Jalna

It was observed that ground water is extracted in bulk and may lead to nature's annihilation. It was also noticed that most of the municipal hand pumps or bore wells were dry but those owned by the private water sellers are almost perennial.

Looking at the quantity of water supplied, per capita supply of water at production level is 56, if measured ex-treatment it is 46 lpcd; while at the consumer end, it is 29 lpcd. While the indicator assesses only water quantity supplied at consumer end, in order to ensure reliability of the indicator, water produced at source, supplied from treatment plant and consumed at the consumer end need to be quantified to be accurate. This will also ensure better estimates of the extent of non-revenue water in the

city. Currently, quantities are estimated on the basis of pumping capacities and hours of pumping. While metering at all major bulk and consumer connections can be done, it is capital intensive.

Continuity of water supply: As discussed previously, due to ill management of water supply to the consumer end, duration of water supply is not maintained regular in all areas. Total quantity of water supplied through piped network is not well distributed over the area covered with distribution network. Days and hours of supply are also not constant or predictable. There is no uniformity in duration and quantity of water supply to any particular zone or ward or area. One particular area might get water for continuous 4 days and another may not get it even after a month. Distribution of water was found to be more prominent issue than the availability of water. Issue is also due to existing locations of ESRs and design of distribution network, because of which water supply at nearest locations to ESRs and at tail ends varies considerably.



Map 5: Locations of ESRs & area covered with distribution network along with ward boundaries

Proposals for improvement:

Augmentation of water: Jalna needs addition into existing water production in order to enhance its current lpcd. This is planned to be achieved by JMC through a water augmentation project being implemented under UIDSSMT. With the successful implementation of this project, Jalna's lpcd may rise to 69 in the first phase by 2012

Water Audit to identify leakages and eventually reduce water losses: In spite of lpcd being extremely low, JMC has ignored water losses occurring through trunk, transmission and distribution network. Through water audit, the technical assessment of network needs to be done to locate leakages. Leakages further need to be plugged which will enable JMC increase lpcd at consumer end. Further technical assessment of existing distribution network, especially of the network under Ghanewadi scheme (1925), is also required to identify which part of network needs to undergo refurbishment.

Quantification of water at various levels: For quantifying water at various levels, periodic surveys at the major bulk production and selected consumer points need to be conducted. These can be done either through methods like bucket survey or using portable flow meters.

Refurbishment of existing distribution system: To void variation in water supply at nearest locations to ESRs and that at tail ends, it is required to conduct technical analysis of existing distribution network through hydraulic modeling and identify the parts of network that may need refurbishment.

Monitor water supply duration at various locations: In order to ensure that water supply in all the zones of the city is regulated (fixed timings of supply and at adequate pressure), it is necessary to monitor water

supply duration to all these zones separately through regular surveys coinciding with the water quantity surveys. Appropriate monitoring mechanisms can also be adopted by JMC to detect low pressure zones. This will also help to assess areas of major problems in the existing network.

Quality of water supply: Quality of water is reported to be 81% in the current year, which is declined from 90% in 2008-09. Through site visits, it was observed that cleanliness at WTP and maintenance of the treatment machinery was not up to the mark. Apart from the measures that are taken for improving quality of water at the WTPs, it is also important to maintain quality of treated water till the time it reaches consumer end. Major and minor leakages in distribution network are causing contamination of treated water. Currently, there is no system in place that will help identify leakages in distribution system and hence contamination of water. Complaints against poor quality of water at consumer end are not analysed spatially, which could help JMC identify such locations.

The new treatment plant being implemented under the UIDSSMT scheme may help in improving quality of treatment of water and eventually quality of water. The new treatment plant is located at Shahagadh, at 65 km from the city. The transmission main connecting this treatment plant to the Indewadi MBR will also be newly laid with DI pipeline, which will minimize transmission losses substantially.

Metering of water supply connections: Jalna has no metering at consumer end, due to which JMC is unable to calculate quantity of water consumed at the user end. The bulk flow meters were observed to be fixed at the source and treatment plants which were found non-functional.

Drawing lessons from several cities managed by the Maharashtra Jeevan Pradhikaran (MJP), and as required under the reforms required under the Sujal Nirmal Maharashtra Abhiyan (MSNA), JMC needs to ensure that metering is introduced at all levels.

Proposals for improvement:

Assessment of water quality related complaints: Possibilities of linking the complaint redressal system with quality monitoring need to be assessed. For instance, if particular areas of the city reports frequent complaints of low quality, these can be analyzed better for likely causes and solutions.

Improve O & M of treatment plant: Existing treatment plant at Ghanewadi needs to be maintained on regular basis. Periodic technical assessment of WTP machinery is required.

Fix/ Repair bulk flow meters at source and treatment plants under the water supply augmentation scheme: Through the water augmentation scheme under UIDSSMT, development of source and WTP is being done. This will include fixing of bulk flow meters. Existing non functional bulk flow meters can be repaired on a priority basis.

3.2.3 Efficiency in Service Operations

Extent of NRW: In spite of lower LPCD levels, it is further observed that the water losses are not managed properly by JMC. Huge water losses were observed not only at the consumer end, but predominantly at the trunk and transmission mains. It is estimated that there are about 10000 (36%) connections which have been connected illegally.

Jalna pays for 10 MLD water from Shahgadh scheme, whereas only 5 MLD out of that is supplied at the consumer end. Out of this 5 MLD, around 30% of water is consumed either illegally or free of charge

through public stand posts for which JMC receives no revenue. "No Water" and poor service levels have also aggregated lower cost recovery and efficiency of collection of water related charges.

Proposals for improvement:

Almost all measures suggested above especially for coverage of water supply connections and per capita supply are required to be taken for reducing NRW effectively. Collectively they are re-highlighted as follows:

Identify and plug leakages: Massive water losses were observed through the leakages in the transmission and distribution network that need to be plugged on priority to be able to save water and enhance lpcd at consumer end. JMC had appointed a team of 4 valve men who were given the responsibility of detecting leakages and plugging them on the spot.

Identify and regularize illegal connections: Around 10000 connections, that are estimated to be illegal, need to be identified through door to door surveys and actions should be taken to regularize the same. The coverage will increase to 48% from 31% only by regularization of illegal connections. The mission started by JMC needs to be geared up to remove all illegal connections and stop illegal usage of water.

Quantification of water at various levels: For quantifying water at various levels, periodic surveys at the major bulk production and selected consumer points need to be conducted. These can be done either through methods like bucket survey or using existing or portable flow meters. Repair and maintenance of existing meters at source and WTP is necessary. Post repairing Functioning of these meters also needs to be monitored by JMC in future.

Technical assessment of existing distribution network: Further technical assessment of existing distribution network under Ghanewadi and Shahgadh schemes is also required to identify which part of network needs to undergo refurbishment to avoid physical losses.

Efficiency in redressal of customer complaints: Consumer redressal is another area that has not been properly addressed by JMC. Not all the complaints that are received are registered. As per records, it looks like only 20 to 25 complaints are received per month; whereas, estimated no. of complaints received per month vary between 100 to 150. This is because rest of complaints that are received in person or telephonically are not even registered. Due to lack of records, it is difficult for JMC to assess complaints type wise or location wise, which could have helped them in identifying areas of improvement.

Even if the records are not maintained properly, it was observed that most of the complaints are due to lack of water at consumer end, contaminated water and irregular duration of water supply.

3.2.4 Equity in Service Delivery

Jalna has 53 slum settlements, of which 42 are notified. 40% of total population of Jalna resides in slums, out of which only 25% have individual water supply connections at HH level. It was observed during the visits to slums that , almost 25% HHs are partially dependant on ground water through municipal or private open and bore wells as piped water is highly insufficient because of very less continuity of supply.

JMC has started conducting HH level surveys in slums to capture gaps in availability of water supply and sanitation services in slums. Surveys for 10 slums were done, which reflected that HH level coverage of

water supply connections is only 21%. In 3 slums it is seen more than 50% and in other 3 it is even less than 10%. Out of total 53, only 44 slums are covered with water supply distribution network.

3.2.5 Financial Sustainability

Cost recovery (O&M) of water supply: JMC's cost recovery on O&M of water supply services is declining consistently since last 3 years and is only 20% in 2010-11. In 2010-11, the total operating expenditure on water supply was 556 lakhs and revenue demand from water tax is 110 lakhs. The main reason for poor cost recovery is the low revenue demand. The reason for this can be attributed to the low coverage of water supply services at 31%. On the expenditure side the major heads of expenditure are Electricity Charges/Fuel Costs and repair and maintenance of water supply machinery. Current water tariff in Jalna is Rs. 806/anum, which is same for slum and non slum users and non residential properties. Increasing water tariff at this stage cannot be the solution for JMC to increase the cost recovery, as people are reluctant to pay even the current taxes as water supply services are not reliable and lpcd is very low. However, JMC should consider revision of water tariff after the new scheme of source augmentation is made functional at the end of 2012.

Collection Efficiency: Present collection efficiency of water tax of JMC is 38%.The main reason for the low collection efficiency is the peoples' unwillingness to pay as the present tariff structure is perceived to be very high as against the level of services that are being provided by JMC. Proposed scheme of water supply augmentation under UIDSSMT may help changing this scenario drastically. Once the scheme is operationalised and lpcd is increased, consumers' willingness to pay taxes is likely to be increased.

Taking into consideration the limitations of JMC staff in collecting taxes, for better efficiency of collection of taxes, option of outsourcing tax collection can be explored by JMC.

Photo Plate 4: Water Supply: Jalna

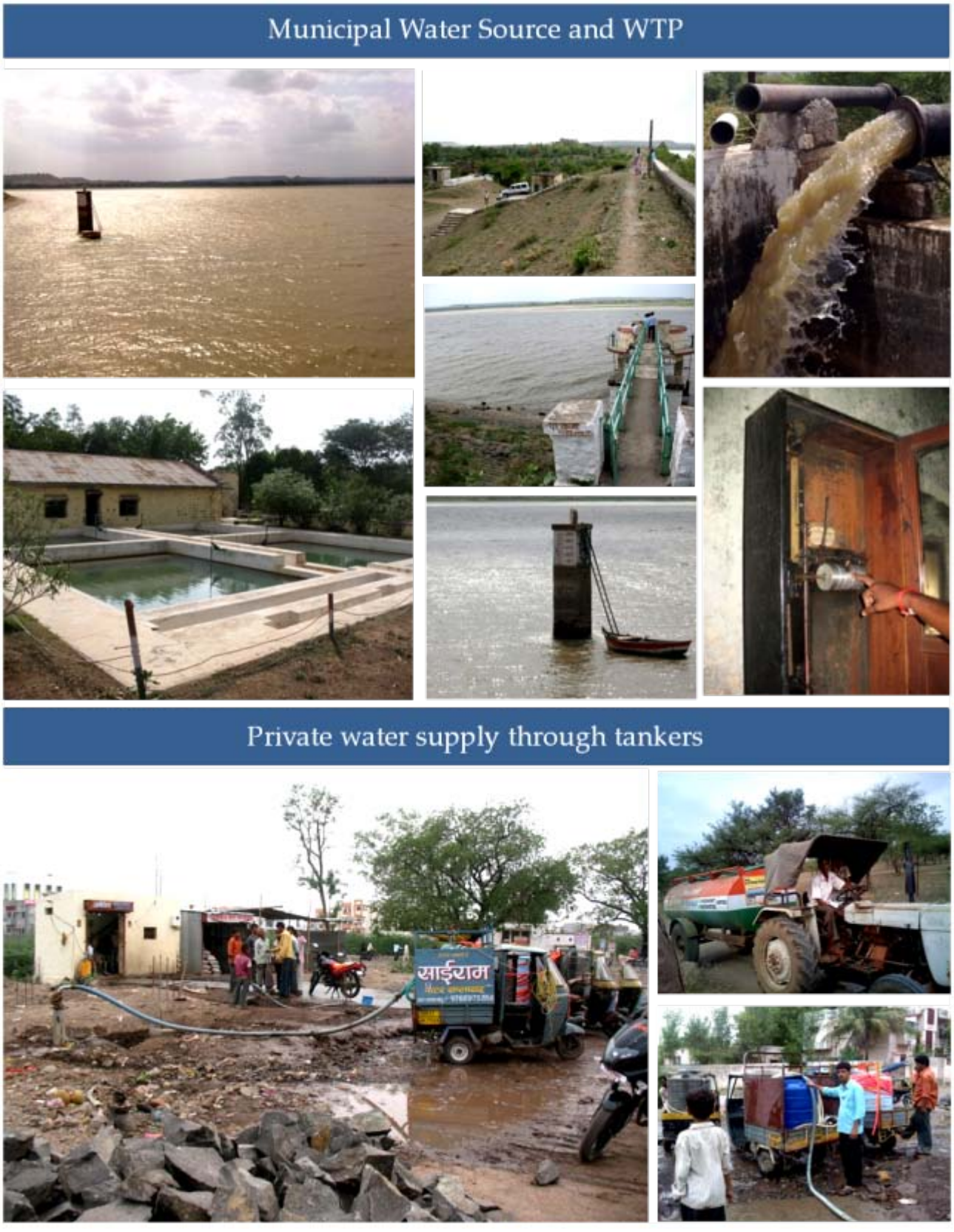


Photo Plate 5 Water Consumption: Jalna

Photo Plate 6: Ground Water Supply, Jalna

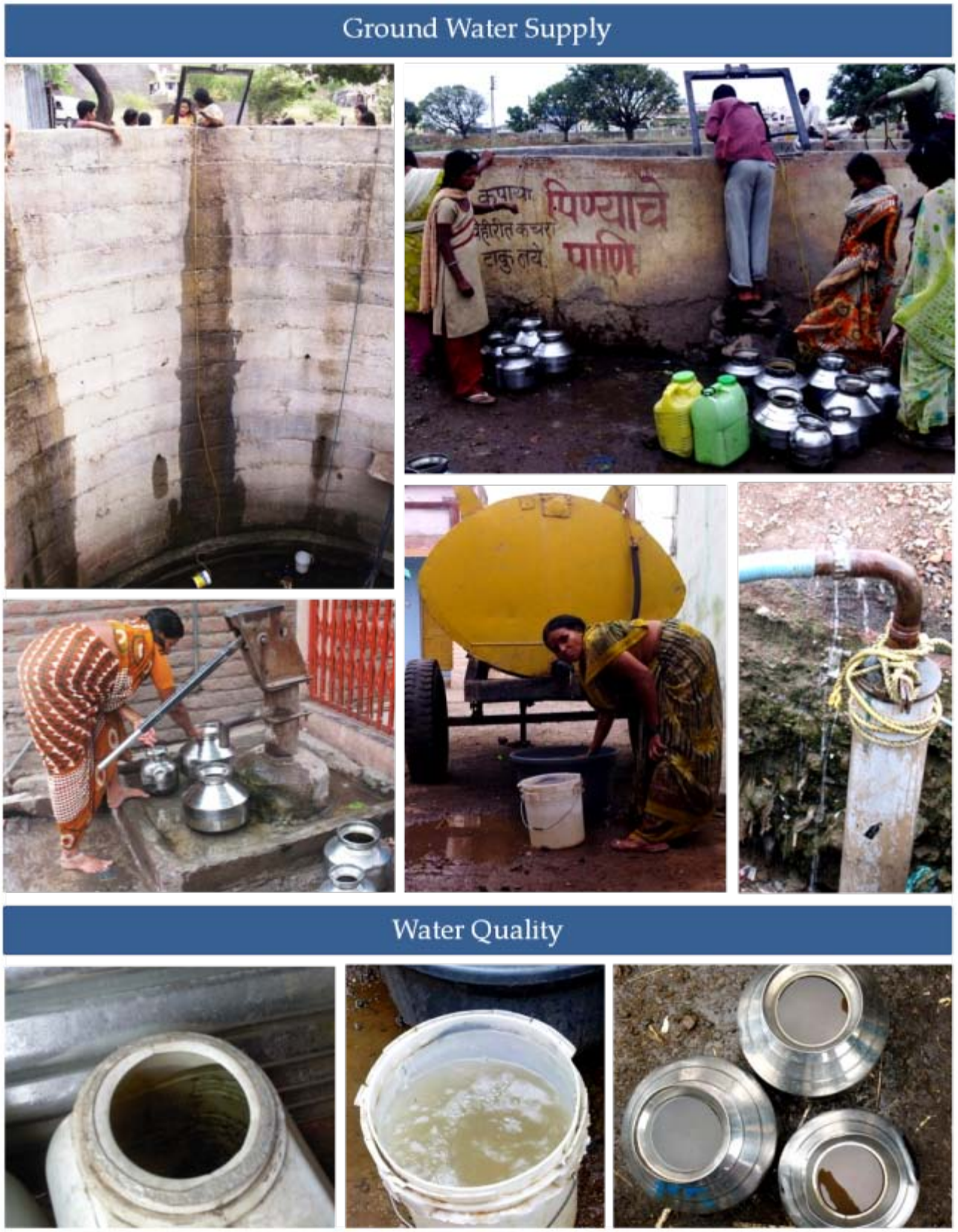


Photo Plate 7: Water Losses, Jalna

3.3 PROPOSED ACTIONS/INTERVENTIONS FOR WATER SUPPLY

Based on the above analysis following indicator wise priorities could be derived for JMC.

Table 5: Prioritization of actions for improvement in water supply, JMC

PRIORITY	WATER SUPPLY KPIs
First / Immediate	• Per Capita supply of water • Continuity of water supply • Extent of Non Revenue Water (NRW) • Efficiency in redressal of customer complaints • Cost recovery (O&M) in water supply services • Efficiency in collection of water supply charges
Second	• Coverage of water supply connections • Quality of water supplied
Third	• Extent of functional metering of water connections • Coverage of water supply connections in slums

The following interventions are proposed based on discussions with JMC and analysis of the key indicators & their data reliability. The proposals listed below mainly include the no-cost or low cost interventions that need to be carried out by JMC. Capacity building of the staff must also be conducted to ensure proper implementation of these interventions. As the focus of improvement in water supply is to move towards a 24X7 water supply system, the interventions mentioned below need to be carried out by JMC to ensure basic systems are in place. Detailed interventions which will incur capital investment by JMC are discussed in the next section.

Table 6: Summary of interventions required in water supply services, JMC

Categories	Issues Identified	Interventions required
Access and Coverage	• Low coverage as people are not willing to avail the connections because of uncertainty in piped water supply • Illegal connections at consumer end	• Identify illegal connections through HH level surveys or by continuing current mission of identifying illegal connections and regularize them • Encourage citizens to avail connections by ensuring better quality water and services, simplifying procedures of granting connections and/or by giving some other incentives for the same. • Create heads of 'general' (for non-slum households) and 'slum' households in the connection register and maintain data likewise. • Existing municipal hand pumps can be converted to group connections granted to defined group of users in slums
Service levels and quality	• Uncertainty and irregularity in water supply days and hours • Old distribution network (since 1925)	• Augmentation of water is the primary need (which is being taken care under UIDSSMT's scheme.) • Technical assessment of existing distribution network: Likeliness of refurbishment of part of distribution network needs to be verified through hydraulic modeling etc. • Quantification of water at various levels: Repair existing bulk flow meters, train staff to conduct periodic surveys at the major bulk production and consumer points, either through methods like bucket survey or using portable flow meters. • Monitor water supply duration at various locations:

		Monitor water supply duration to all supply zones separately through surveys.
Efficiency in service operations	• Physical and commercial losses of water at trunk main, transmission main and distribution network	• Data recording system needs to be improved to be able to use it for decision making. • Assessment of various kinds of complaints needs to be done to identify areas of improvement.
Financial Sustainability	• Collection efficiency and eventually cost recovery are poor as consumers are not willing to pay for poor quality of services	• Above actions will improvise service levels which will eventually help enhance willingness of the consumers to pay taxes and hence increase the collection of taxes • Policy level interventions • Outsourcing collection of taxes.

3.4 WATER AUGMENTATION PROJECT UNDER UIDSSMT

Augmentation to Jalna water supply scheme is sanctioned and being implemented under UIDSSMT since 2009, which is expected to be completed by the end of 2012. Scope of this project includes- water augmentation, development of new source at Jaikwadi dam on Godavari river, laying complete new trunk and transmission mains, develop new treatment plant at Ambad and construct MBR at Shirner. Considering activities being conducted under this project, it is expected to have major reflections on performance indicators as follows:

Table 7: Effect of new water supply scheme on KPIs

Actions being implemented	Direct Effect on	Indirect Effect on
Water Augmentation	Per capita supply, Continuity	Coverage of connections, cost recovery in water supply, collection efficiency of WS related charges
Laying new trunk main	Non revenue water	
Laying new transmission main (Partial)	Non revenue water	Quality of water
Development of new WTP	Quality of water	

Table 8: Scope and estimated costs on new water supply scheme as per DPR, JMC

SN.	Sub-Work	Cost Rs. (Cr.)
1	Working Survey	0.1
2	Approach Channel 30 M. long	0.1
3	Jack well with pump house rectangular size 15 x 20 M	1.7
4	Approach Bridge 4 M wide 250 M. long	0.5
5	Approach Bund 4 M wide 50 M. long	0.0
6	Raw water rising main 900 mm. dia D. I. K-9 L= 46 Km.	53.4
7	Raw water pumping machinery 455 BHP 6 No. Pump.	4.0
8	Shaft at Shirner 2 M. dia. 3 M. height	0.0
9	Raw water gravity main 900 mm. dia D. I. K-9 L=12.06Km	14.7
10	WTP Capacity 24 MLD	2.3
11	Pure water pump machinery 310 BHP 6 No. DWCT P.	3.6
12	Pure water rising main 900 mm. dia D.I.K.-9 L=26.5km	31.2
13	Staff Quarters @ Headwork & WTP	0.2
14	Misc. Works (Electrical Connections, Transformer, Wire Fencing etc. Road Crossing, Canal Crossing)	1.1

15	Renovation to Old WTP & Compound wall	0.5
16	Land Acquisition	0.0
17	Trail & Run charges	0.3
	Cost of the Scheme	113.7
	Cost of escalation	10.0
	Cost of schemes with escalation charges	123.7
	Proportionate cost of Dam	0.0
	Cost of scheme with 17.5% E.T.P. Charges	145.3
	Total Cost of scheme	145.3

Considering the current status of implementation of new water supply scheme, it is estimated that its execution will be successfully completed and the scheme was to be operationalised by Dec. 2012. As per DPR, the scheme is designed for the ultimate year 2031. However, the scheme is planned to be operationalised in 2 phases, with an intermediate stage as 2016 & ultimate stage as 2031. While calculating water demand for Jalna, an assumption is made to have partial sewerage network in place by the end of 2015. An attempt has been made to foresee the overall scenario of water availability in Jalna till 2031 based on projections and assumptions made in the DPR.

Table 9: Water augmentation vs. actual water demand

Water Augmentation vs. Actual Demand		For sewered zone		For non-sewered zone		Gross Dem. with 15% losses (MLD)	Water Aug. (MLD)	GAP (MLD)	LPCD after 15% losses (Aug. water)
Year	Total Pop (Lakh)	Pop (Lakh)	Water Dem. (MLD)	Pop (Lakh)	Water Dem. (MLD)				
2011	2.85		0	2.85	20	23			
2012	3		0	3	21	24.1	24	0.1	**68**
2013	3.14		0	3.14	22	25.3	28.3	-3	**76.4**
2014	3.29		0	3.29	23	26.5	33.3	-6.8	**86**
2015	3.43	1.03	13.9	2.06	14.4	32.6	39.2	-6.6	**97**
2016	3.58	2.22	30	1.36	9.5	45.4	46.1	-0.7	**109.6**
2017	3.6	3.6	48.6	0	0	55.9	47.2	8.7	**111.5**
2021	3.7	3.7	50	-	-	57.4	52	5.5	**119.4**
2026	3.82	3.82	51.6	-	-	59.4	58.6	0.8	**130.2**
2027	4.15	4.15	56	-	-	64.4	60	4.4	**123**
2028	4.47	4.47	60.3	-	-	69.4	61.4	7.9	**116.8**
2029	4.79	4.79	64.7	-	-	74.4	62.9	11.5	**111.6**
2030	5.11	5.11	69	-	-	79.4	64.4	14.9	**107.1**
2031	5.44	5.44	73.4	-	-	84.4	66	18.4	**103.2**

Source: Projections based on DPR prepared for Source Augmentation under UIDSSMT scheme.

The scheme is designed such that, 66 MLD water will be reserved for JMC in the year 2031. JMC plans to draw 24 MLD water in 2012 after the scheme is made

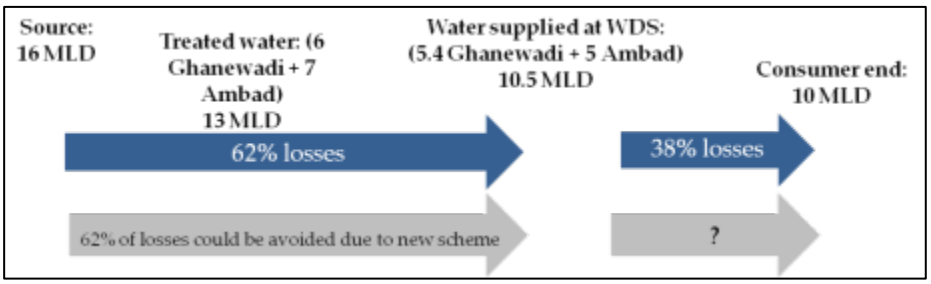


Figure 4: Effect of new water scheme on water losses

operationlised. Considering this, if year wise scenario is projected to calculate water availability against actual water demand, it is observed that the per capita supply will be much more than the current supply but is still not sufficient to reach up to the benchmark of 135, if sewerage network is considered to be in place by then.

Secondly, as new trunk and transmission mains are being laid with ductile iron pipes (D.I.K-9), it is expected to achieve substantial reduction in water losses at trunk and transmission mains. This may help in reducing physical losses of water by 62% of what are currently observed. However, remaining 38% losses are occurring through the distribution network which is not being repaired/ replaces under this scheme and may need formation of separate project all together. Considering 38% losses in the distribution system approximate per capita supply of water after the new scheme is operationlaised, will be even less that what is calculated as per DPR.

Table 10: Projected LPCD after water augmentation

LPCD After Water Aug.	Pop. Lakh	After augmentation, WS (MLD)	LPCD Expected with 15% losses	LPCD with 38% losses
2012	3.00	24	68	**50**
2013	3.14	28	76	**56**
2014	3.29	33	86	**63**
2015	3.43	39	97	**71**
2016	3.58	46	110	**80**

Source: Projections based on DPR prepared for Source Augmentation under UIDSSMT scheme.

Table No.12 shows that even after supplying additional water, per capita supply of water at consumer end will be leaning towards lower end as compared to other cities. This highlights the need of technical assessment of existing distribution network and replacement/ refurbishment wherever required.

3.5 MOVING TOWARDS 24 X 7 WATER SUPPLY IN JALNA

Govt. of Maharashtra's major focus in performance improvement has been the planning and implementation of 24X7 water supply system in all Class A cities in the state. Presently, O & M of water supply system was observed to have many issues with respect to management of supply hours, unequal spatial distribution of water. As compared to any other peer class cities, Jalna portrays below average scenario as far as its water supply services are considered. The key indicator which is thought of on priority while planning for 24 x 7 is per capita supply which is abysmally lower in case of Jalna than the recommended level of 135 lpcd.

JMC is one of the beneficiary cities under Sujal Nirmal Maharashtra Abhiyan. JMC, with the help of MJP, is now carrying out energy and water audit, under Sujal Nirmal Maharashtra Abhiyan (SNMA), which was expected to be completed by December 2012. This will help JMC to identify capacity of existing water supply & distribution network, pumping machinery and refurbishments & repairs that need to be made in the same.

While steps towards achieving 24X7 water supply requires substantial efforts, certain actions related to up gradation of human resources and improved management information systems are easier to implement. The technical guidelines suggested by MoUD towards 24X7 systems provide an approach based on the technical, commercial and institutional improvements required.

Technical improvements: Given that the Council currently operates its water supply in intermittent conditions, technical shortcomings would exist which would constraint the shift towards establishing 24X7 water supply systems. These are discussed below.

- Reliable data on distribution networks and customers do not exist;
- Pipelines comprising the distribution system are totally interlinked;
- There is virtually no metering of bulk water produced, its transmission or distribution at any point;
- Customer meters do not function with any predictable accuracy under intermittent supply conditions.
- Control of leakage on a routine, planned basis is impossible; and
- It is unusual for a service providers to routinely measure system pressure

Some of the technical and commercial constraints mentioned by MoUD guidelines are resolved through the implementation of GoM's reform program of SNMA.

Reliable data on distribution network and customers is achieved through:

1. Consumer end survey**:** 100% consumer survey will help in identifying and subsequent regularization of illegal connection**s.** It will provide data on household consumption which will help in assessment of augmentation of water sources, if required.
2. GIS mapping and hydraulic modeling**:** GIS mapping will provide detailed network maps with results from consumer survey and hydraulic modeling will help to implement equitable distribution zones in the city.

Interlinked distribution network can be restructured through:

3. Water audit & leak detection and Energy audit study**:** Water audits will help in identification of major points of losses (real: physical and apparent) from source to consumer end in the network. Along with leak detection studies, this will help locate critical areas in the network. The network refurbishment and augmentation can then focus on these areas on priority basis.
4. Demarcation of District Metering Area (DMA)s & installation of bulk flow meters**:** The analysis of results generated from GIS mapping and hydraulic modeling will be used for demarcation of DMA. Once the DMAs are demarcated, bulk flow meters will be installed to monitor quantity of flow into these DMAs.

Metering at bulk production and distribution points including consumer connections

5. Introduce consumer metering and volumetric tariff**:** The reforms mentioned above related to regularisation of illegal connections, implementation of suggestions of water audit and energy audit, formation of DMA, etc. will reduce the operation and maintenance expenditure. Once these reforms are in place, the city should introduce metering at consumer end and volumetric tariff to recover full O & M cost.

Commercial improvements: Given that the technical improvements need to be financially sustainable, the conversion to 24X7 water systems requires advanced commercial systems and procedures. In Jalna, billing is currently based on flat tariff. With introduction of metering and volumetric tariff system, consumers will be charged based on the water quantities consumed. In order to ensure that the system progresses smoothly, in the initial phase, the JMC needs to develop public awareness.

Institutional improvements: To move towards 24X7 water systems, the Council has to significantly improve and supplement its managerial and technical skills as well as those of the private operator, as hitherto these skills were oriented towards maintaining an intermittent supply. Some of the technical aspects that will require improved skills and automation are

- Planning and design of water supply infrastructure from source to distribution to customer for 24X7 system, including concept and establishment of DMAs.
- Restructuring of existing systems, presently operated under intermittent conditions, to continuous supply at minimal cost and simultaneously maintaining supply throughout the conversion process.
- Appropriate hydraulic models and application to planning, design and operation.
- All aspects of pressure management including specification of pressure valves
- Design and specification of flow and pressure measurement and control devices for management of continuous supply.

Hence the operational skills required to plan and implement these measures would include operation under continuous supply, pressure management, proactive detection and repair of leaks, proactive detection and regularization/ disconnection of illegal connections, mapping of water service infrastructure on GIS linked to operation, maintenance and customer services tracking. Staff at JMC needs to be augmented and trained in order to ensure smooth functioning of the 24X7 system.

Table 11: Interventions in water supply services requiring substantial/ Minimal/ No capital investment

INTERVENTIONS WITH SUBSTANTIAL CAPITAL EXPENDITURE				
		Action	**KPIs Impacted**	**Est. Cost (Rs. Cr.)**
Immediate Priority	1	Augmentation of source*	Coverage. LPCD, Continuity, Coverage in slums, complaint redressal, Cost Recovery and Efficiency in Collection of Charges	242 (Escalated Cost for the year 2011)
	2	Improvement in Trunk Main (reduction in raw water transmission losses)*	LPCD, NRW and Cost Recovery	
	3	Reduction in Treated water transmission losses*	LPCD, NRW, Quality of water and Cost Recovery	
Second Priority	4	Improvement in Distribution System#	Coverage, LPCD, Continuity, NRW, Quality of water and Cost Recovery	81.9
	5	Expansion of distribution network	Coverage of WS Connections	
	6	Improvement in water storage	LPCD, NRW and Quality of water	
	7	Replacement of Pumping machinery	LPCD and NRW	

** Action being implemented under UIDSSMT*

 # Action under consideration by Jalna Municipal Council

INTERVENTIONS WITH MINIMAL CAPITAL EXPENDITURE				
		Action	KPIs Impacted	Est. Cost (Rs. Cr.)
Immediate Priority	1	Energy and Water Audit#	Coverage, LPCD, Continuity, Coverage in slums, complaint redressal, Cost Recovery and Efficiency in Collection of Charges	0.9
	2	Identification and plugging of leakages#	LPCD, NRW and Cost Recovery	1.1
	3	Regularizing illegal connections#	Coverage of WS Connections, LPCD, NRW and Cost Recovery	
Second Priority	4	Maintenance of WTP and pumping machinery	Quality of water	
	5	Periodic checking of water losses and its repairing	LPCD and NRW	0.2

POLICY LEVEL INTERVENTIONS		
	Action	KPIs Impacted
1	Policy for regularisation of illegal connections	Coverage, Coverage in slums, Cost Recovery
2	Tariff revision	Cost Recovery
3	Simplification of application procedures for new connections.	Coverage, Coverage in slums, Cost Recovery
4	Improved billing and collection efficiency by efficient production of bills, customer friendly collection systems, Incentives for early payments/ penalties for arrears	Efficiency in Collection of Charges

Considering various aspects required for moving towards 24 x 7 water supply in Jalna an attempt is given for estimating the overall costs for various items as follows. It shows that Jalna will require minimum funds of Rs. 106 crore to be raised from various sources to implement continuous water supply. In case of absence of funds, the JMC can also choose a pilot DMA and establish continuous water supply scheme. Lessons from pilot project can feed in to a city wide project with support from appropriate private partners.

A summary of the actions and cost implications towards achieving 24X7 water systems is given below.

Table 12: Summary of improvement actions to implement 24X7 systems in Jalna

COST ESTIMATION FOR 24 X 7 WATER SUPPLY IN JALNA MUNICIPAL COUNCIL					
SN	HEAD	BLOCK COST	UNIT	Rs. Lakh	STATUS
1	Satellite Image-	90000	Up to 64 sq.km.	1.1	Sanctioned under SNMA
		1350	Beyond 64 sq. km. for each sq.km		Sanctioned under SNMA
2	Supply and installation of GIS software	195000	Each	2	Sanctioned under SNMA
3	Digitization of satellite image-	6250	Per sq.km.	5.1	Sanctioned under SNMA
4	Physical Surveys- GIS Network Survey and Base Map Survey	3000	Rs./ km	12.42	Sanctioned under SNMA

5	Consumer Surveys	36	Rs. / HH	20.4	Sanctioned under SNMA
6	Water Audit	4700000	Rs. For towns of pop. 2 lakh	59.8	Sanctioned under SNMA
		1000	Rs. Additional for pop. above 2 lakh		
7	Energy Audit		L.S	30.0	Sanctioned under SNMA
8	Hydraulic Model (4140 nodes- with 10 nodes/km)	600	Rs/ node	24.84	Sanctioned under SNMA
9	Billing Software + 1 year maintenance	10,00,000		10.0	
10	Bulk Flow Meters (28)	30000	Rs. Per bulk flow meter	8.4	Sanctioned under SNMA
11	Replacement of House Service Connections	5000	Rs/ connection with mechanical meter	433	
12	Rehabilitation of Distribution Network*- 100% (102 Km) to be replaced and around 20% to be added	7300000	Rs. / sq. km	8190.6	
13	TOTAL (1+2+3+4+5+6+7+8+9+10+11+12) Rs. lakh			8798.0	
14	Including 20% Contingencies			10557.6	
	TOTAL ESTIMATED COST FOR 24 X 7 WATER SUPPLY IN JALNA (Rs.)			**106 Cr.**	

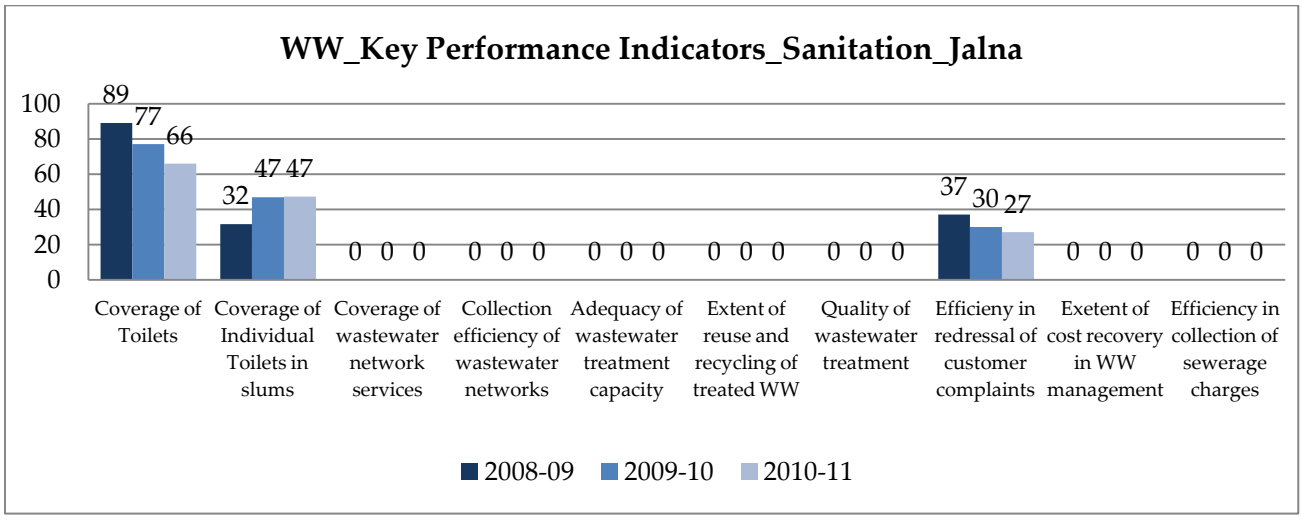
**As estimated by the city engineer, 100% existing distribution needs to be replaced for moving towards 24 x 7*

4 ASSESSMENT AND PROPOSALS FOR SANITATION

This section captures the sanitation aspects in Jalna related to coverage of toilets in the city as well as services in slums, septage management and a summary of proposed interventions for improving sanitation in the city.

4.1 ASSESSMENT OF CURRENT SANITATION SCENARIO

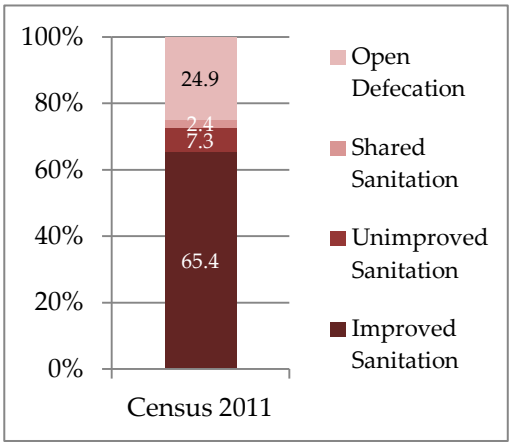
Jalna does not have underground Sewerage Network at the city level. By and large, disposal of black water is carried out through the septic tanks. However, around 7000 (15%) properties are estimated to having no onsite sanitary disposal. Collection of grey water is carried through network of open drains which is finally let out in the rivers *Kundalika and Sina*



Graph 10: Waste Water KPIs for Jalna

4.1.1 Access and Coverage

The coverage of toilets in JMC has decreased from 89% in 2008-09 to 66% in 2010-11. This accounts for both individual toilets as well as access to community/ pay-n-use toilets for both residential and non-residential properties.



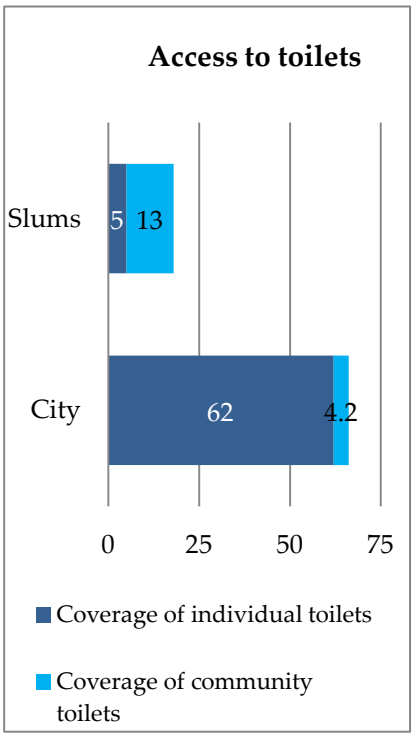
Graph 11: Population with access to sanitation facilities as per Census 2011

As per the recent figures from census 2011, 65% of the households have access to improved sanitation However, 25% of households do not have access to any sanitation and thus resort to open defecation. While the figures calculated by considering availability of facilities as per census, show that the HHs resorting to open defecation (OD) are 25%, it was observed that some of the facilities were not functional and hence, actual percentage of OD was estimated to be around 34%. JMC has conducted door to door survey in some slums for availing funds under ILCS programme for construction of individual toilets as required. However, the process has stopped at surveys and no progress is seen in terms of funds mobilization and implementation. DPR was also made under IHSDP for only 4 slums, which has also not led to any further implementation.

Currently, JMC has provided for 42 community toilets with a total of 296 seats. Assuming an average of 8 HHs per seat, it is estimated that around 2072 HHs can be served by the community toilets. However, as

each community toilet was visited by the team and observed to be non-functional, actual no. of HHs dependant on community toilets is estimated to be almost zero. Maintenance of all community toilets is taken care by JMC. During visits, almost all community toilets were found non-functional due to lack of water; missing or broken doors, WC pans & taps; poor maintenance; lack of child friendliness; misuse of toilet blocks as storage places etc. This has aggravated the extent of open defecation in the city. Almost all open plots in the city were marked to be open defecation sites, predominantly along the railway lines and near to community toilets blocks. Surprisingly, play grounds of schools are also becoming open defecation sites, because of negligence towards cleaning of such places. At city level, coverage of community toilets was found to be only 4%.

4.1.2 Equity in Service Delivery

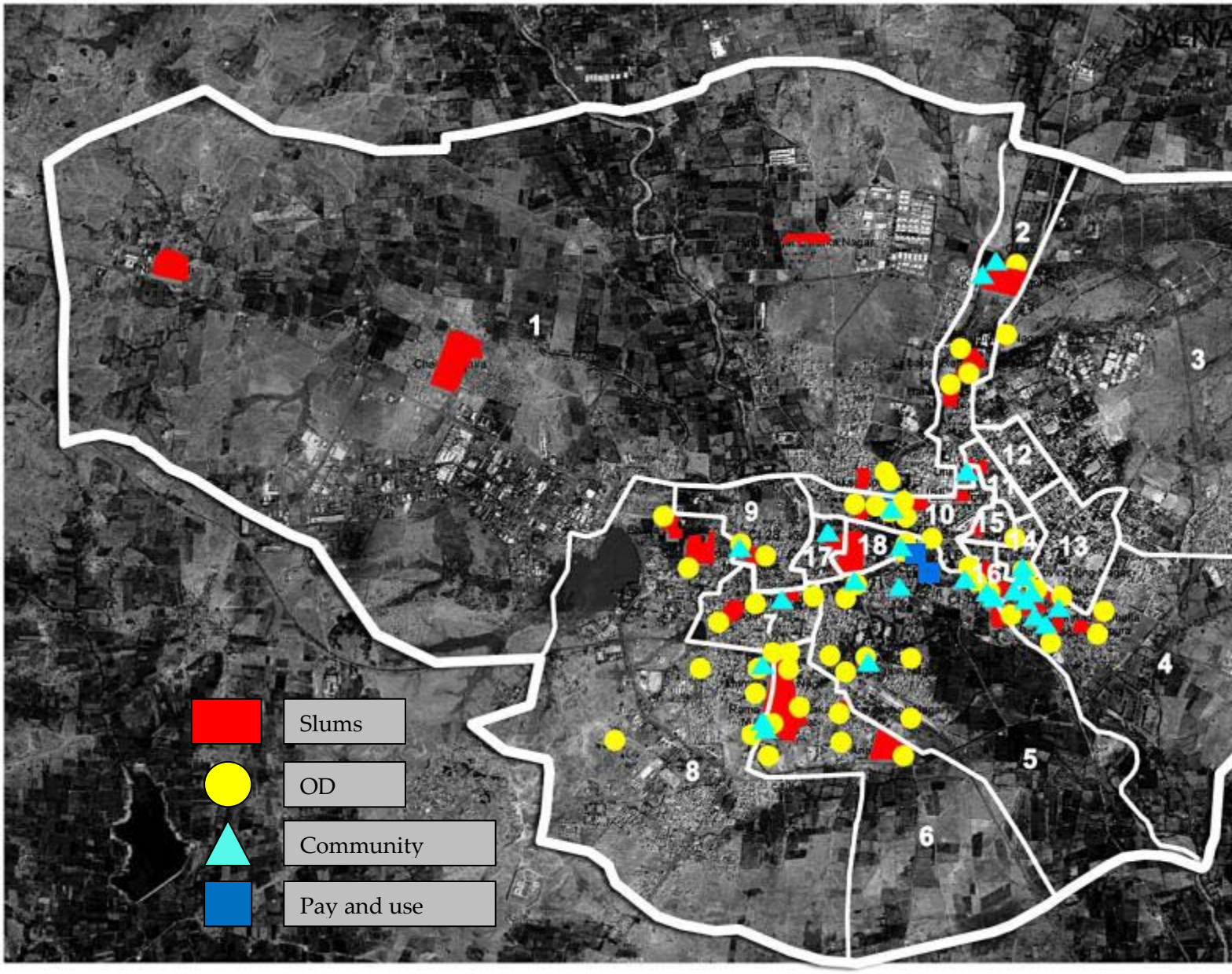


Graph 12: Coverage of Toilets at city level and slums in Jalna

Coverage of toilets in slums is reported to be only 18%, of which only 5% is the coverage of individual toilets. Out of total 296 community toilet seats, 232 are located in slums, however they are almost non funtional. HH level surveys are being conducted by JMC. According to the partial data that is available so far, a few slums have coverage of individual + community toilets even less than 5%. There are few slums that have no access to community toilets and thus resort to open defecation. Available data showed that the ratio of HHs/ seat of community toilets varies slum wise, from 10HH/ seat to 23 HHs/ seat.

All 53 notified slum settlements are covered under property tax collection and assessment, while collection efficiency of taxes and charges is very less in slums. No policies have been introduced for provisions of services in slums in Jalna. Also, other than 5% funds that are reserved for EWS, no additional funds are reserved in the budget for provision of services in the slums.

It can be seen from the map no. 5 that almost 20% of total slums do not have any access to community toilets. As estimated by the JMC staff, these are the same slums that are not covered with water supply distribution network. Wherever, the community toilets are located near slums, the no. of seats is not sufficient to cater to HHs in those particular slums.

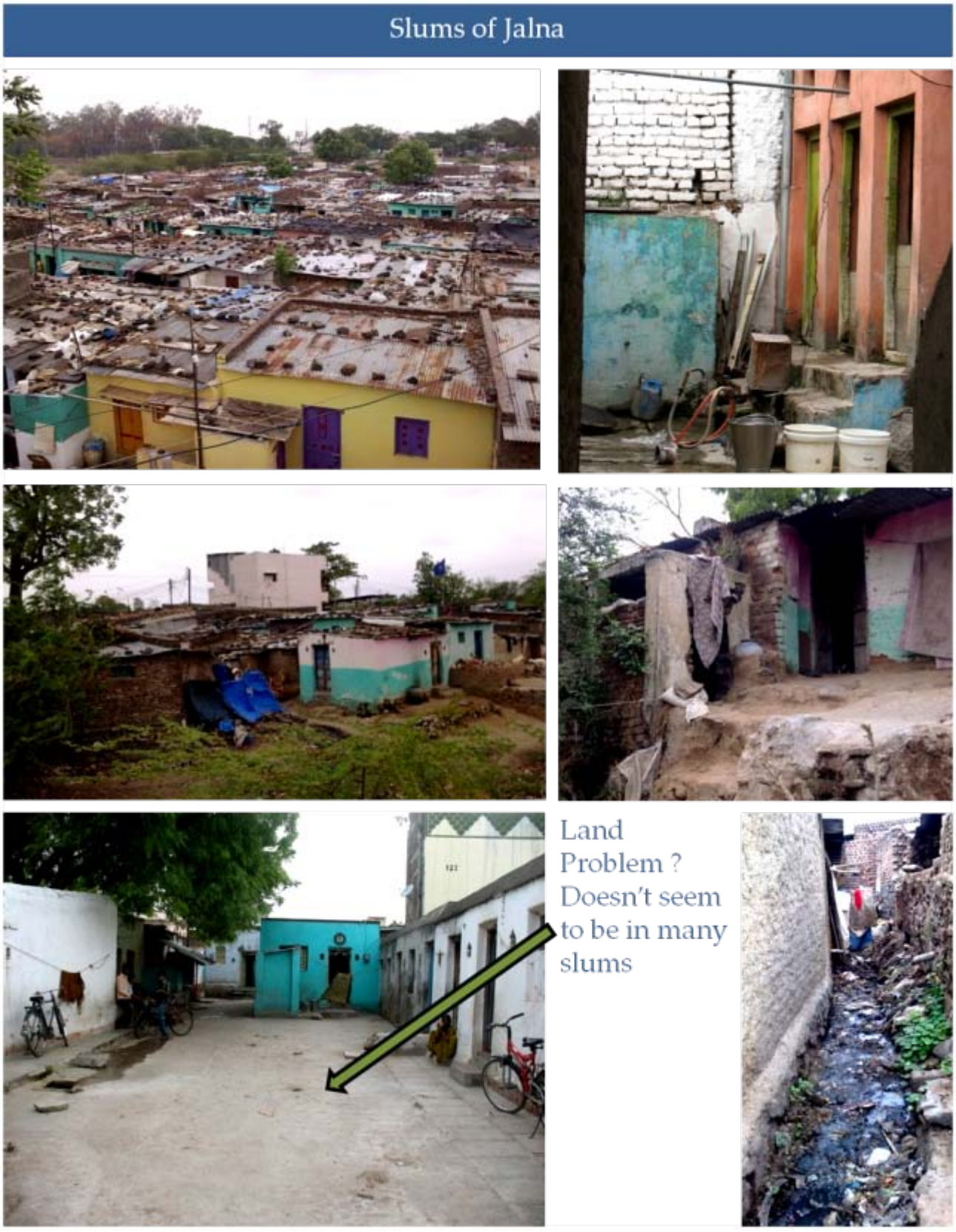


Map 6: Locations of community toilets and OD Spots

Photo Plate 8 Community Toilets: Jalna

Photo Plate 9 Poor maintenance of CTs and OD

Photo Plate 10 Services in Slums: Jalna



4.2 MOVING TOWARDS OPEN DEFECATION FREE IN JMC

Given that Govt. of Maharashtra's major focus in urban sanitation has been towards **'making cities Open Defecation Free',** the performance improvement plan in sanitation for JMC has concentrated on covering the gap in toilet coverage, and related components (like IEC, awareness campaigns, etc.).

For making Jalna Open Defecation Free city, in the given condition of ample water supply, essential is to first create awareness in citizens of Jalna about using the existing toilet facilities properly through necessary IEC measures. Second priority is to provide additional individual, shared and community toilet seats, along with the required infrastructure, to meet the gap in demand and supply.

Based on the above analysis, various options have been worked out based on provision of individual toilets, individual and community toilets where constraints for providing individual toilets exist and construction of additional toilets with refurbishment of existing ones where required.

Option 1: Achieving Open Defecation Free status through 100% provision of individual toilets: To ensure OD free status, the Council has to construct about 21643 individual toilets. Assuming average cost of Rs. 30,000 per individual toilet, the total cost works out to be Rs. 69 crore.

Option 2: Achieving Open Defecation Free status through provision of individual and community toilets: In consultation with JMC, an assumption is made that around 30% of the citizens having no access to toilets would have the affordability (Rs. 10000=1/3rd of total cost) and space for individual toilets. With this assumption, 6493 HHs can be provided with individual toilets. In addition to this, 1598 new community toilet seats will have to be constructed, considering 296 existing seats are refurbished. The estimated total cost for this option is Rs. 33 crore.

Option 3: Achieving Open Defecation Free status through provision of only community toilets: Alternatively, the Council can also look at the option to make the city OD free through provision of community toilets. Under this scenario, the Council will incur total cost of Rs. 19 crore for constructing about 2410 new community toilet seats and refurbishing the existing ones.

Table 13: Summary of options to make Jalna Open Defecation Free

FOR MAKING JALNA OPEN DEFECATION FREE					
JALNA- EXISTING CONDITION					
Total HHs	HHs with access to individual toilets	HHs / Properties without access to ind toilets	Existing seats of community toilets	Functional seats	Seats that need refurbishment
56652	35009	21643	296	0	296

Strategies for ODF	Option 1	Option 2	Option 3
Number of individual toilets	21643	6493	0
Number of seats in community toilets	0	1598	2410
Cost per individual toilet	30000	30000	0
Cost per seat in community toilet (inclu. connection to septic tank)	0	70000	70000
Total cost of construction (in Rs. crore)	65	31	17
IEC Activities at 5% of construction cost	3.2	1.5	0.8
Cost of refurbishment of existing CTs	1.2	1.2	1.2
Total Cost for Making Wardha ODF	69	33	19

** Block costs have been assumed in consultation with JMC staff.*

Considering JMC's current financial position, achieving 100% toilet coverage through option 1 does not seem to be financially feasible. Issues of space constraints for constructing individual toilets have also been observed in some of the settlements. On the other hand, while option 3 is the least costly of all options, operation and maintenance of the community blocks will remain an issue as similar issues can be seen in the existing community toilets. During the site visits, it was observed that toilet blocks were not functioning due to lack of water availability, dilapidated infrastructure, no electricity etc. JMC needs to also look at refurbishment of such toilet blocks before constructing new blocks. Option 2, which requires construction of individual toilets where possible and community toilet blocks in the remaining areas is therefore most feasible. JMC has already culled out open spaces in 25 slums for construction of community + individual toilets. Proposals are also prepared by JMC along with detailed cost estimations through a private agency that need to be processed further & seek funding from state government under various schemes.

Currently, a few CBOs and *Mahila Bachat Gats* (MBGs) in Jalna that were contacted by the team during visit to Jalna are active especially in sanitation and hygiene for children. As water and sanitation are severe issues in Jalna, according to CBOs and MBGs, it is almost impossible to resolve such issues and create required awareness at their level unless sufficient level of services are being provided by JMC. However, they are willing to take part in creating awareness about water and sanitation at grass root level. They need to be encouraged and trained further to put in their efforts in correct directions.

Considering capacities of current JMC staff to maintain community toilets clean and keep functional, JMC should consider outsourcing the repair and maintenance of community toilets to the private agency. Performance of services provided by the private contractor needs to be well monitored by JMC.

In addition to provision and refurbishment of infrastructure, JMC must also simultaneously undertake community mobilization and awareness campaigns in order to ensure that the community toilet blocks are maintained/ managed properly. While the maintenance of all the pay-n-use toilets has been contracted out, similar arrangements with CBOs can be looked at with respect to community toilets. Campaigns to bring about awareness related to cleanliness and hygiene practices, safe sanitation practices, and negative health impacts due to open defecation needs to be conducted by the Council. Existing local CBOs (like the Mahila Bachat Gats) need to be roped into this exercise to ensure participation by all communities. The campaigns should begin by triggering initiation in the slum settlements and undertaking transect walk to the open defecation sites to highlight the above issues.

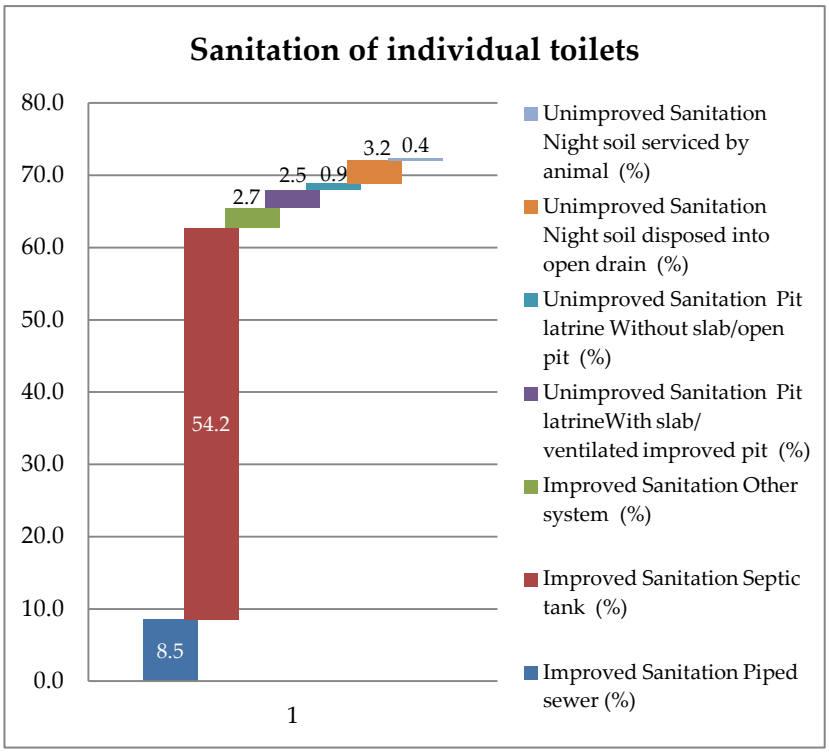
JMC should also refer to the best practices adopted by other cities in Maharashtra to make their cities Open Defecation Free. A few cities that have prioritized safe access to sanitation have managed to provide required infrastructure through ULB funds, maintain that on regular basis by ULB staff and create awareness through IECs or even through punishments whenever required.

It is proposed that the JMC will move towards achieving ODF status within the next five years. The detailed phasing is discussed in the next chapter. Simultaneously, the Council will have to undertake revenue augmentation measures like increased collection efficiency of sanitation taxes, levy charges for maintenance of community toilets, etc.

4.3 SEPTAGE AND SULLAGE MANAGEMENT

Overall, the city scene shows signs of irregular cleaning of roads & drains and lack of awareness about health & hygiene amongst citizens.

As previously mentioned, Jalna doesn't have sewerage network in place; hence on-site sanitary disposal is mainly carried out through septic tanks. Waste water management is taken care by the network of open drains. All small open drains are connected to the major ones and are finally allowed to meet the rivers and other water bodies outside the city. More than 20% HHs were estimated to having no safe disposal system. Waste water from all these properties is currently allowed to flow directly into the open drains.



Graph 13: Breakup of improved and un-improved sanitation in JMC

It is not clear if the toilets and septic tanks were built as per approved standards and specifications. While travelling in the city, it was clearly visible that a large number of septic tanks are not connected to the mandated soak pits for filtering waste water coming out of the septic tanks. Instead they are directly draining the waste water into open drains. Discussions with JMC engineers and staff point to high possibility of inappropriate septic tank constructions.

Collection of Septage: All the desludging and transportation is through 'vacuum suction tanks' attached to a tractor. The JMC has one vacuum suction tanks of 2000 litres capacity. There are no private operators in the JMC area providing desludging services.

The desludging operations are managed by the JMC staff in the Health Department. City is divided into 6 zones for monitoring of services. 6 sanitary inspectors are appointed to look after 6 zones. The cleaning service provided on demand at a charge of Rs. 2000 per one trip. Only 35 ft. pipe is connected to the suction machine. If that is not sufficient in some areas, an extension is attached to it, the expenses for which are borne by JMC. It was estimated that septic tanks are cleaned once in minimum 5 years.

As per the standards specified by Govt. of India (IS: 2470 Part 1 and 2), "*half yearly or yearly de-sludging of septic tank is desirable. Small domestic tanks, for economic reasons, may be cleaned at least once in two years provided that the tank is not overloaded due to use by more than the number for which it is designed. It must also be noted that frequent de-sludging inhibits the anaerobic action in the tank. The inspection activity will also help to identify the tanks that require pumping, and those that may be cleaned in the next cycle.* "

Photo Plate 11 Open Drains: Jalna

Disposal/ Treatment of Septage: The JMC has a site of 35 acres situated about 4 km. from the city limits for dumping and treating solid waste and night soil. Some facilities like – place for segregation of solid waste, decomposting pits etc were built for solid waste management. In the same site, pits were dug to empty the night soil carried by the vacuum tankers. However, over the last 3-4 years this facility has become dilapidated and is now a dump yard. Sometimes the vacuum cleaning tank cannot reach the site (due to bad approach road) and hence the night soil from the vacuum tanks is dumped in unspecified open spaces around the city. There is no record of where the tanks were emptied.

Collection of grey water: Collection of grey water in Jalna is through open drain network, which are not cleaned regularly or even periodically. The major cause of blocking these drains is also low coverage (29%) and collection efficiency (78%) for solid waste generated in the city. Cleaning of open drains and community toilets is taken care by JMC. JMC has deployed 123 *safai karmacharis* to sweep roads and clean open drains & community toilets. In spite of having sufficient no. of safai karmacharis and reporting system for them in place, cleaning services and their monitoring by JMC was found extremely weak due to which overall city portrays unhygienic and disorganized environment.

Proposals for Improvement: Govt. of India's Draft of Advisory on Septage Management in Indian cities further states that pumping programs that focus on routine inspection and pumping when required, rather than mandated periodic pumping, are most efficient. This is because households generate varying volumes of sludge at different rates. It also mentions that prior to sending the trucks for de-sludging, the service provider (local government/private operator) can consider sending an inspection crew to inform the residents of such activity, locate manholes and access points, and probe tanks to determine level of accumulated sludge. One simple means of gauging sludge depths is by using a probe on a long handle and submerge into the tank. The policy states that the standard practice in India is to de-sludge every two years or so. Community run programs such as distribution of flyers about proper care and maintenance of septic tanks would also help build awareness among people. Some of the aspects that the Septage Management Plan should undertake include:

- Manual of Practice: listing operation procedures for specific equipment and documenting day to day procedures
- Record keeping and manifests: maintain accurate records related to septic tanks and volume pumped for billing and compliance purposes. These records should specify location or address of the pumped septic tank, septage characteristics (residential/commercial), details of property owner, volume of septage pumped, any other details like deficiencies in piping/ manholes, etc.
  Record keeping is an important part of the monitoring aspect as it allows the local government to keep track of the service it provides/ that the private operator undertakes.

Improvement in Monitoring: JMC needs to undertake initiatives to ensure implementation of a proper septage management plan for the city. Amongst other things, this will include estimation of septage generated in the city, increased provision of public services to cater to safe disposal of septage, encourage private operators and community based organizations to provide services like emptying of septic tanks, monitor emptying and tracking operator activities, and provide health and safety guidelines for the operators (MoUD, 2011). The Council will need to regularly monitor the effluent and dried septage quality. Additionally, the state government on its part needs to ensure that the current policies are amended to support and require local governments to improve sanitation and reorganize and clarify institutional roles and responsibilities.

4.4 SUMMARY OF PROPOSED ACTIONS/ INTERVENTIONS

The following interventions are proposed based on discussions with the Council, and analysis of the key indicators and their data reliability. The proposal listed below to make JMC open defecation free is based on experiences and constraints faced in current management of toilet options. Extensive awareness campaigns must also be conducted to ensure achievement of being open defecation free.

In order to make JMC OD free, it is proposed that provision of both individual and community toilets are undertaken. In instances where space and affordability is not an issue, individual toilets can be constructed. However, where space is a major constraint, construction of community toilets can be opted for. JMC should prioritize their actions with respect to following KPIs.

Table 14: Snapshot of identified issues and probable solutions

SN	SNAPSHOT OF SANITATION ISSUES	PROBABLE SOLUTIONS
1	Gap in availability and demand of toilets	Construction of individual, group and community toilets with necessary IEC measures on use of toilet facilities
2	Non functionality of existing toilets	Refurbishment of existing toilets, Strategy for maintenance of toilets, consider outsourcing repair and maintenance of community toilets
3	Lack of safe disposal of waste water	Septage and sullage management for short term and Construction of underground sewerage network and STP for long term
4	Lack of septic tanks to a few properties	Construction of Septic Tanks
5	Open defecation	Assured access to water, access to functional individual/ community toilets, public awareness

INTERVENTIONS WITH SUBSTANTIAL CAPITAL EXPENDITURE				
		Action	**Improvement of KPIs**	**Est. Cost (Rs. Cr.)**
Immediate Priority 1	1	Construction of individual and community toilets	Coverage of toilets, Coverage of toilets in slums, complaint redressal	33
Second Priority	2	Construction of UG sewerage network and STP	Coverage of wastewater network services/ in slums, Collection efficiency of wastewater networks, Adequacy of wastewater treatment capacity, Extent of reuse and recycling of treated wastewater, Quality of wastewater treatment, Efficiency in redressal of customer complaints	204.5 (estimated based on block cost)

INTERVENTIONS WITH MINIMAL CAPITAL EXPENDITURE				
		Action	Improvement of KPIs	Est. Cost (Rs. Cr.)
Immediate Priority 1	1	Refurbishment of existing community toilets	Coverage of toilets, Coverage of toilets in slums, Efficiency in redressal of customer complaints.	6.2
	2	Construction of septic tanks to the existing toilets with no STs.	Efficiency in redressal of customer complaints	0.15
	3	Periodic maintenance of Open Drains	Efficiency in redressal of customer complaints	
Second Priority	3	Refurbishment/ upgradation of existing open drains	Efficiency in redressal of customer complaints	1.4

Along with all these actions, JMC also must prepare a Septage Management Plan to ensure safe and proper disposal of septage and streamline its operations.

Table 15.Summary of improvement actions for sanitation in JMC

Activity	Description	Status/ Next steps
Strategies for ODF	Provision of individual and community toilets	Preparation of DPR needs to be undertaken
	Undertake IEC activities	
	Design policies (punishments, penalties, incentives etc.)	Set bye-laws for sanitation
Strategies for Septage Management	Comprehensive plan to be implemented	Preparation of Septage Management Plan and DPR
Underground Sewerage Network as long term plan	Sewerage connections to 100% properties and 100% efficiency in collection and treatment of waste water.	Preparation of DPR and exploring funding under Maharashtra Suvarn Jayanti Nagarotthan Maha Abhiyan

5 SUMMARY OF PERFORMANCE IMPROVEMENT PLAN FOR JALNA

This section provides summary of all the improvement actions for water supply and sanitation, including costs of implementing these actions. The section also gives insight into the policy as well as institutional implications along with the phasing of the improvements that have been proposed.

5.1 SUMMARY OF PROPOSALS

JMC and even residents of Jalna seem more concerned about the water supply issues on priority. Inadequacy and restricted access to water is more prominent for Jalna than any other service deficiencies. This has put improvement in water supply system on the top most priority for the city. Also for sanitation facilitates to work efficiently, it is necessary to upgrade and regularize water supply system first.

The proposals summarized below are focused on two key areas of establishing 24X7 water supply system and moving towards open defecation free JMC, as well as improvements in key processes and operations related to these two focal areas. As discussed previously, the new water supply scheme for Jalna is under implementation. However, water augmentation and strengthening of physical infrastructure cannot be the only solutions that to make O & M of water supply system efficient. Other aspects like capacity building of JMC staff, development of monitoring mechanisms, identify and rectify issues related to management of water supply system on daily basis are also of the equal importance.

On coverage of toilets, considering the current experiences and capacity of JMC, improvements are considered for both individual as well as community toilet provision.

Based on the analysis of the water and sanitation sectors in Jalna, the Performance Improvement Plan for JMC has been summarized below. The total PIP cost for JMC will be Rs. 139 crore.

Table 16. Summary of Performance Improvement Plan for JMC

Key actions for improvement	Costs required	Current status
Water supply: towards 24X7 system		
Technical studies and metering	Rs. 1.5 crore	Partially under implementation
Planning and implementation of 24X7 for entire city	Rs. 104.5 crore	Preparation of DPR is required
Sanitation: towards OD free		
Construction of individual and community toilets (including IEC costs)	Rs. 33 crore	Identification of land is under process, Preparation of DPR is required
Total cost of PIP		**Rs. 139 crore**

The Council also has to undertake improvement actions related to processes followed in the water supply and sanitation operations. These actions being no or low cost can be immediately taken up by the Council. These include

- Periodic surveys at source, treatment and consumer end
- Proper sampling regimen for monitoring water quality
- Regular surveys through zonal sanitary inspectors
- Levy telescopic rates for water supply, drainage tax, and improve collection efficiency of sanitation tax
- Implementation of Septage Management Plan.

- Identification and regularization of illegal connections.
- Conversion of Public stand posts into group connections.

Improvements related to performance of JMC in O & M of water supply

As observed, currently JMC is lacking in regularizing daily O & M of water supply system. Key reasons for the same are political influence on the provision of services because of which services are not distributed equally and lack of efficient technical staff at JMC. JMC, whenever required seeks technical assistance from MJP. In addition to this, for regular O & M, JMC should also explore possible options for outsourcing of services by giving performance based contracts to the private agencies.

5.2 PHASING AND STEPS TO IMPROVEMENT

JMC has to improve its current financial position in order to carry out the improvements suggested above. The suggestions for improvement are based on analysis of the Business-as-usual (BAU) and interventions required to improve the BAU scenario.

Investment capacity in BAU scenario: The BAU scenario is based on the hypothesis that the past trends in key financials of Jalna Municipal Council would continue in the future. Based on such assumption the key financials of the council have been projected and the investible surplus has been determined.

The Table No. 20 indicates the investible surplus projected for 10 years from 2011-12;

Table 17: Projected investment capacity- business as usual scenario (Rs. in lakhs)

Year	Revenue surplus (other than WS, WW and SWM)	Revenue surplus for WS, WW and SWM	Debt servicing	Surplus after Capital Income and Expenditure	Investible surplus/ (need for external funds)
			Budgeted		
2010-11	3755	(1084)	-	2809	5480
2011-12	4643	(1477)	-	(3163)	(3)
			Projected		
2012-13	4,630	(1,541)	-	(1,492)	1,596
2013-14	4,607	(1,591)	-	(1,670)	1,346
2014-15	4,574	(1,643)	-	(1,866)	1,065
2015-16	4,530	(1,696)	-	(2,083)	752
2016-17	4,473	(1,750)	-	(2,321)	402
2017-18	4,402	(1,805)	-	(2,583)	13
2018-19	4,315	(1,861)	-	(2,872)	(418)
2019-20	4,212	(1,919)	-	(3,191)	(898)
2020-21	4,089	(1,977)	-	(3,541)	(1,429)
2021-22	3,945	(2,036)	-	(3,926)	(2,017)

From the above table it is clear that unless JMC is not able to add to its revenue income, it would need to depend on external funding just to finance its operations and routine capital expenditure.

In the above business as usual scenario, the additional revenues that would be generated because of the operationalizing of the water supply project under implementation have not been considered, although the capital expenditure has been considered as part of the business as usual scenario. It would therefore

be proper to add the revenues and also add the incremental O&M for the project under implementation to get a more accurate picture of the investible surplus.

The information regarding the operation and maintenance cost and additional revenues were not available and hence the impact of the project under implementation is being simulated using the following assumptions:

Table 18: Assumptions for simulation of impact of project under implementation

S. No.	Item	Assumption
1.	Design population	543520
2.	Current population	285,349 (2010)
3.	Current coverage of population	48%
4.	Current covered population	136968 (2010)
5.	Targeted coverage	90%
6.	Annual increase targeted	14%
7.	O&M expenses as a % of capital expenditure	1.5%

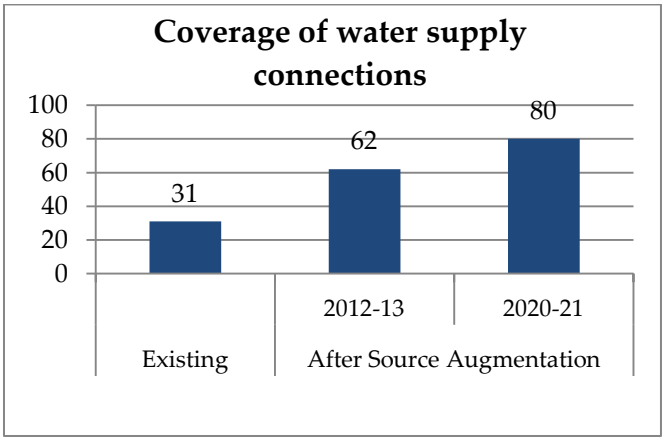
The following table provides the revenue and cost implications of the UIDSSMT project under implementation and the investible surplus considering the net effect of the project.

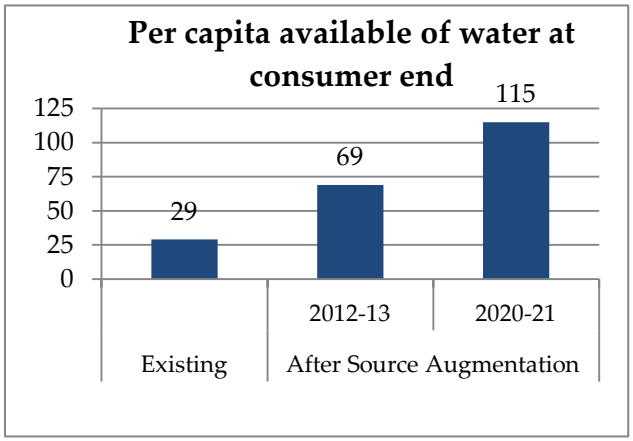
Table 19: Investible surplus incorporating the net impact of UIDSSMT project under implementation (Rs. in lakhs)

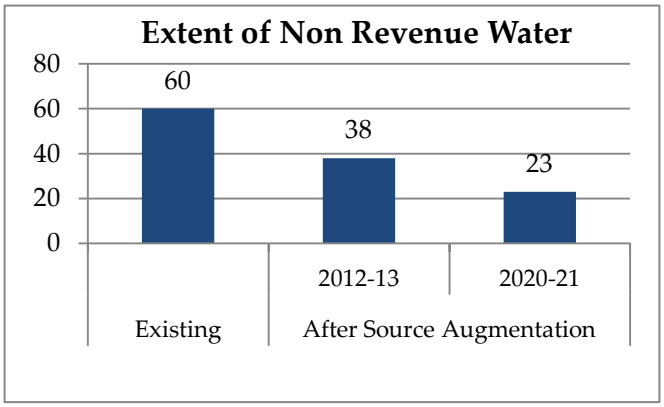
Year	Investible surplus	Incremental revenues	Incremental costs	Net effect	Net investible surplus
			Budgeted		
2010-11	5480	-	-	-	-
2011-12	(3)	-	-	-	-
			Projected		
2012-13	1,596	-	-	-	1,596
2013-14	1,346	34	17	17	1,363
2014-15	1,065	79	18	61	1,126
2015-16	752	136	19	117	869
2016-17	402	209	29	180	582
2017-18	13	302	42	260	273
2018-19	(418)	419	58	360	(58)
2019-20	(898)	565	79	486	(411)
2020-21	(1,429)	748	104	644	(785)
2021-22	(2,017)	976	136	840	(1,177)

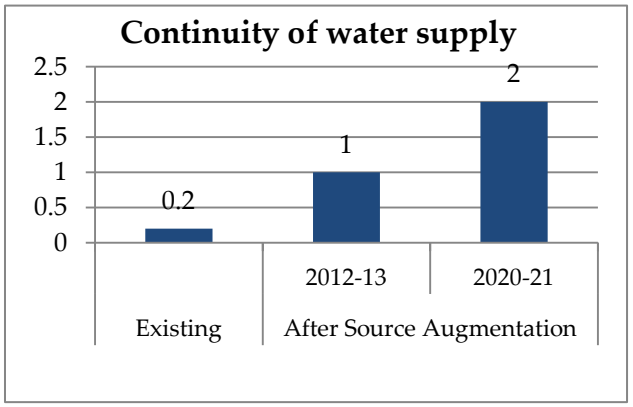
From the above scenario, it can be observed that JMC can improve its revenue surplus, from a surplus of Rs 1596 lakhs. It will have an overall deficit of Rs 1177 lakhs over a period of ten years from 2012-13 till 2021-22.

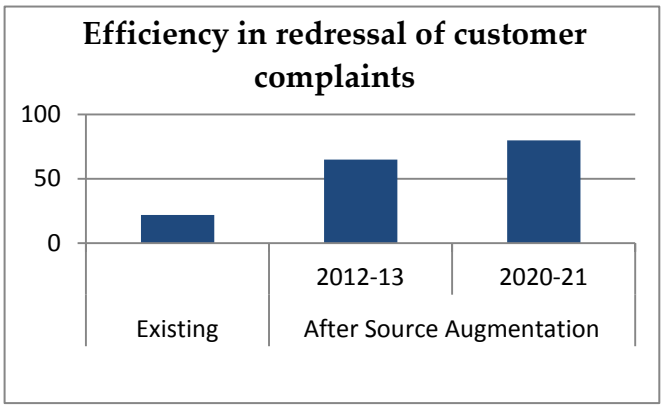
Impact of Source Augmentation on KPIs of JMC:

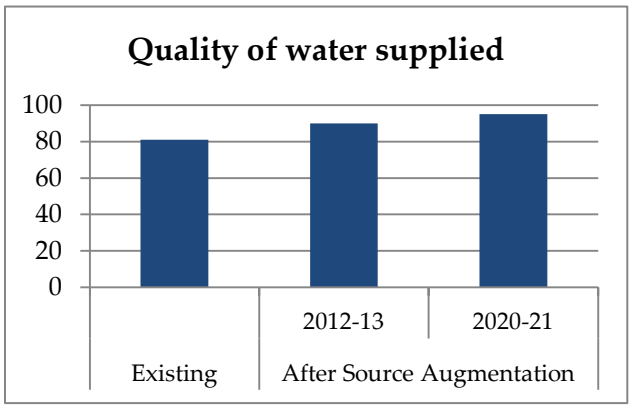












5.3 INVESTMENT CAPACITY AFTER REVENUE ENHANCEMENT MEASURES

It is extremely critical that Jalna Municipal Corporation undertakes revenue enhancement measures as otherwise it would need to resort to external resources to fund its internal operations as well. Some of the steps that can be potentially taken to increase revenue are as follows:

1) Increase in property tax collection efficiency
2) Increase in water supply tariff
3) Increase in collection efficiency for water charges

The above actions do not require capital investments for implementations and need only process changes. To simulate the effect of the above changes in the investment capacity the following assumptions have been made.

Table 20: Assumptions for simulation of revenue enhancement

S. No.	Item	Assumption
1	Property tax	Current collection efficiency: 50% Targeted collection efficiency: 95% Annual increment (over 6 years): 7.5%
2	Increase in water supply tariff	Based on the proposed tariff
3	Increase in collection efficiency of water charges	Current collection efficiency: 38% Targeted collection efficiency: 95% Annual increment (over 8 years): 8%

The following table presents the incremental revenues because of the revenue enhancement measures.

Table 21: Investible surplus after revenue enhancement actions (Rs. in lakhs)

Year	Investible surplus	Increment due to improvement in property tax collection	Increment due to tariff revision and improvement in water charges collection	Net investible surplus
		Budgeted		
2010-11	5480	-	-	-
2011-12	(3)	-	-	-
		Projected		
2012-13	1,596	-	124	1,721
2013-14	1,346	149	219	1,714
2014-15	1,065	322	328	1,715
2015-16	752	521	454	1,727
2016-17	402	750	598	1,751
2017-18	13	1,013	763	1,789
2018-19	(418)	1,313	950	1,844
2019-20	(898)	1,418	1,162	1,682
2020-21	(1,429)	1,531	1,275	1,377
2021-22	(2,017)	1,654	1,378	1,015

Through revenue enhancement measures, JMC will improve its revenue surplus to Rs 1015 lakhs in 2021-22 and utilize the additional revenues for funding its capital projects for improving the services.

The PIP improvements for JMC have been proposed in II phases:

Along with the revenue enhancement measures, JMC needs to enforce serious expenditure controls to contribute towards improving the investible surplus.

Based on the revenue enhancement measures mentioned above, the investible surplus for JMC will be approx. Rs. 2082 lakhs. The improvements for JMC have been proposed in two phases: 1) Immediate interventions (from 2013 - 2020), and 2) Long term interventions (from 2020 - 2030). The interventions mentioned above to augment revenue as well as process improvements are proposed to begin in 2013.

Table 22. Phase 1 of PIP for JMC (2013-2020)

Proposed Improvement Areas	2013	2014	2015	2016	2017	2018	2019	2020
Water supply								
Fill technical sanctioned posts for better monitoring of services and/or explore outsourcing of O & M of water supply.								
Periodic surveys at source, treatment and consumer end								
Proper sampling regimen for monitoring water quality								
Continue mission to identify and regularise illegal connections								
Moving Towards 24 x 7								
Conduct physical surveys, consumer survey for entire city and produce maps								
Conduct/ Revise water audit and leak detection surveys								
Undertake hydraulic modeling for the entire water supply network								
Distribution network rehabilitation/ augmentation: creation of pilot DMAs								
Installation/ Repairing of bulk flow meters								
Installation of meters at consumer end								
Levy telescopic rates for water supply								
Sanitation (Including sewerage)								
Preparation of Septage Management Plan								
Preparation of DPR for Septage Management								
Implementation of Septage Management Plan								
Preparation of DPR for sewerage network and persuasion for approval through Govt. Grants								
Implementation of sewerage network								
Levy drainage tax, environmental tax in property tax								
Improve collection efficiency of sanitation tax								
Moving Towards ODF								
Prepare DPR for ODF								
Towards OD Free through provision of individual toilets (inclu. IEC costs)								
Towards OD Free through provision of community toilets (inclu. IEC costs)								

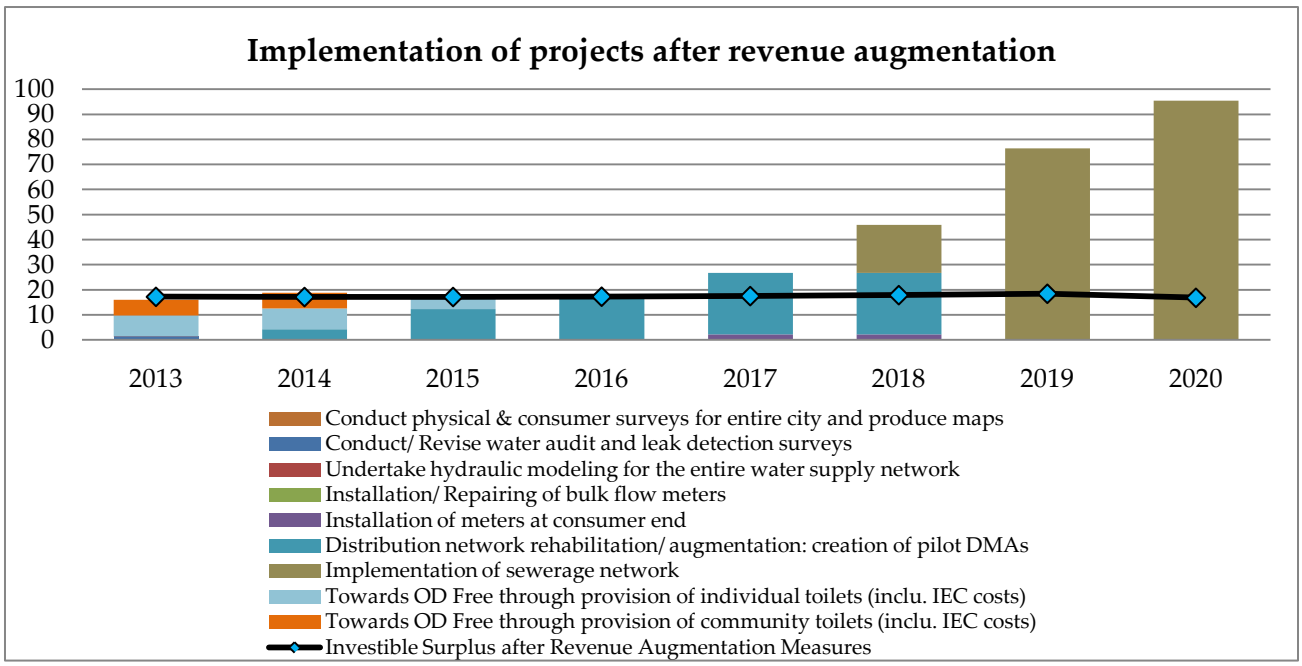
Once the revenue augmentation measures and process improvements are in place, it is proposed that JMC can begin its capital intensive projects from 2013.

- Starting from 2013, JMC can begin construction of individual and community toilets. As issues in existing community toilets were observed in terms of operation and maintenance, it is proposed that

JMC refurbishes existing toilets before initiating construction of new community toilets. To begin with JMC can go in for construction of individual and community toilets simultaneously. Construction of toilets can be completed in 3 years.

- Arrangements with CBOs can be looked at with respect to maintenance of community toilets. Campaigns to bring about awareness related to cleanliness and hygiene practices, safe sanitation practices, and negative health impacts due to open defecation needs to be conducted by the Council. Local CBOs need to be roped into this exercise to ensure participation by all communities. The campaigns should begin by triggering initiation in the slum settlements and undertaking transect walk to the open defecation sites to highlight the above issues.

Figure 5: Phasing for Implementation of projects after revenue enhancement measures



5.4 INSTITUTIONAL IMPERATIVES TO ACHIEVING PROPOSED IMPROVEMENTS

In order to realise the targets set for improving water supply and sanitation in JMC, the existing institutional framework must be enhanced to enable better operation and management of these services. While in certain areas, it is the lack of a defined policy restricting provision of services, in other instances it is the improper regulation of the existing policies. JMC has to focus its attention on improving policies related to services, financial sustainability and accountability to the consumers.

Augment staff at JMC: JMC needs to also augment its staff as major percentage of the staff comprises non-technical personnel. Moreover, if water supply operations are to be outsourced, technical strength of the private contractor needs to be assessed. Similarly, to efficiently monitor operations of private contractor, technical staff at JMC needs to be increased.

Mobilisation of external support: Additionally, JMC needs to mobilise external support through NGOs and CBOs in project formulation and implementation, especially related to services of water supply and sanitation in slums. Given that as implementation of proposals related to 24X7 requires high technical skills, JMC needs to also bring external support through Project Management Consultants (PMC). Arrangements should be made with PMCs for continued support throughout implementation of the 24X7 project, both immediate and long term.

A summary of the institutional reforms that JMC needs to undertake are given below.

Table 23. Institutional improvements proposed for JMC

Area of improvement	Suggested improvements
Across all sectors	
Human resource management	JMC needs to augment its technical staff in view of proposed projects like 24X7 water supply system and open defecation free JMC. Also to ensure adequate utilisation of funds for capital projects, JMC needs to employ additional resources, either internal or external.
Equity in service delivery	Introduce policy to improve water supply and sanitation services to slum settlements, as well as un-served areas of the city. Reform institutional arrangements to target and monitor improvement services to slum settlements.
Financial sustainability	As in the case of increase in water supply tariffs, provisions to introduce tariff for sewerage, sanitation, septage management need to be introduced. Contractual arrangement with Private Contractor needs to be revised to include performance based incentives/ penalties.
Consumer redressal system	Currently while it is mandatory for JMC to have a consumer redressal system in place, the same is not maintained by JMC. If all the water supply services are outsourced in future, complaint redressal will be Private Contractor's responsibility. However, as per contract, JMC should be kept in the loop of complaint redressal system, so that areas for monitoring of services could be identifies by JMC. Contract needs to be revised to include penalisation of Private Contractor in case of non-functioning of consumer redressal system.
Sector specific	
Water supply	There is a need to increase monitoring of performance in O & M of water supply. These can be done, as suggested, by incorporating appropriate annual targets/ improvements to be achieved by the JMC. In the case, O & M services are outsourced in future, appropriate annual targets/ improvements to be achieved by the private contractor need to be incorporated in the contract and if he fails to achieve these targets, penalty must be levied. While in certain aspects reporting procedures are outline (e.g. quality), a comprehensive reporting mechanism needs to be worked based on targets/ improvements achieved.
Sanitation (including sewerage)	Policy provisions to bring about involvement of private sector in areas of septage management, and sanitation services to slum settlements needs to be implemented.

The Council has to also form a PIP taskforce in order to ensure proper implementation of the proposed projects. This is discussed below.

Constitution of the PIP taskforce:

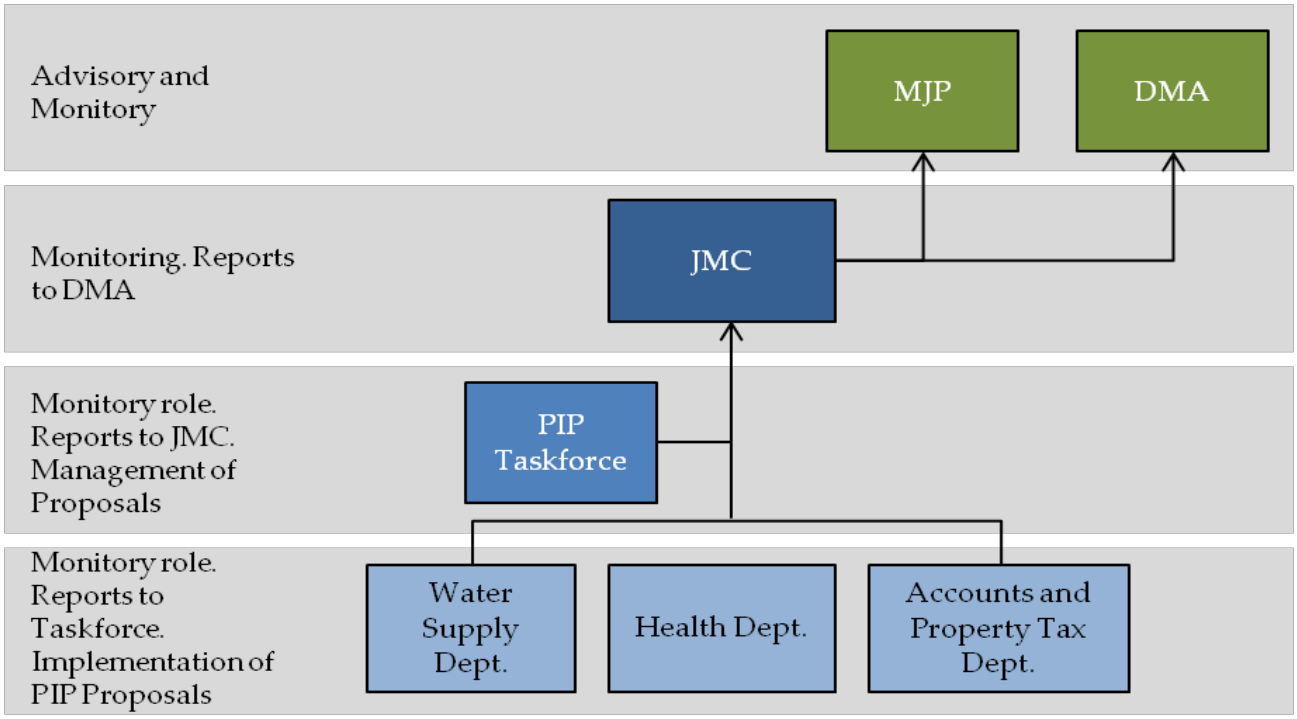


Figure 6: Constitution of PIP Taskforce

The first step towards implementation of the proposed projects should be to constitute a PIP taskforce comprising of key technical staff for water supply and sanitation.. The taskforce should comprise managerial and technical staff from water supply and sanitation department. This can also include resource persons with experience in implementing continuous water supply systems as this involves advanced technical skills. Maharashtra Jeevan Pradhikaran (MJP) being the notified agency for technical approvals to JMC, it should also be involved at appropriate stages of planning and implementation. JMC must legally mandate the PIP taskforce with implementing the proposed projects. Appropriate budget provisions should be made to properly manage the taskforce. The responsibilities of the taskforce will include quarterly progress updates to Chief Officer and General Body, and annual progress reports to the Urban Development Department (UDD). A broad schematic of the institutional structure is shown below.

Performance monitoring through regular setting of targets and use of performance indicators: In order to ensure that JMC is able to achieve the performance improvement proposals outlined above, it is necessary that it has a well structured monitoring framework in place. The monitoring aspects will include

- Timely data capture and analysis of performance indicators
- Assessment and evaluation of progress
- Setting of targets (for own department as well as private service providers) and corrective action if required
- Decisions on policy, resource allocation and incentives/ penalties
- Operational decisions and plans

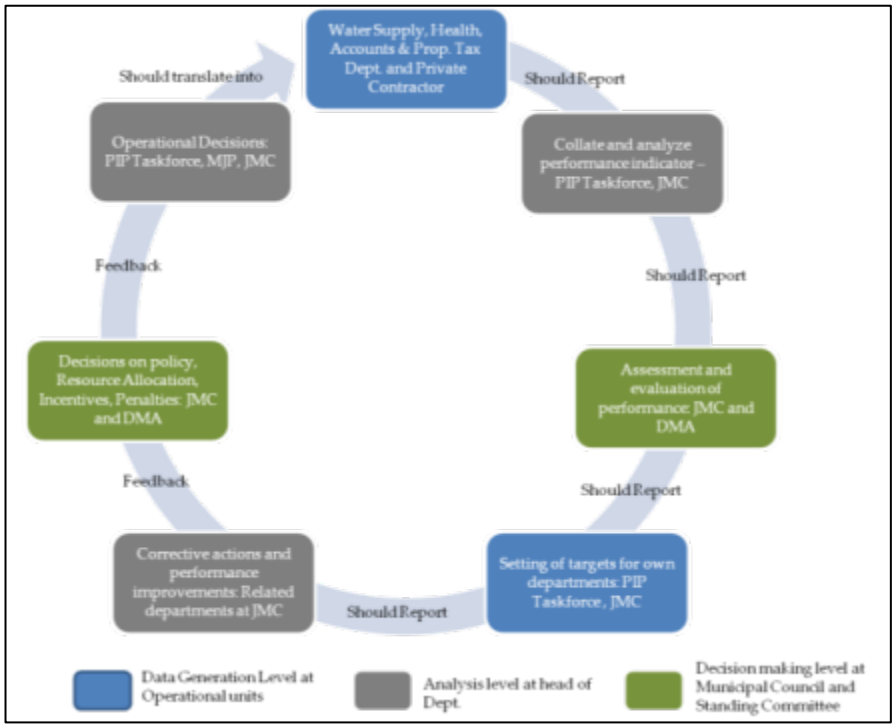


Figure 7: Performance monitoring framework proposed for JMC. Adapted from MoUD website: http://www.urbanindia.nic.in/programme/uwss/slb/slb.htm

As the performance improvement proposals are phased from 2014 till 2030, it is necessary for JMC to ensure that through the above process, the targets set for each year is achieved and if required corrective measures need to be incorporated. This will be possible only if the information related to performance indicators are updated and analysed regularly. Similarly, policies to provide incentives/ penalties to internal and external staff based on their performance needs to be implemented. Given that JMC should look to external agencies for support in PIP, the monitoring process should also include review of these agencies. A possible performance monitoring framework is suggested in the Figure No. 4 above.

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The Performance Assessment System (PAS) Project

The PAS Project aims to develop appropriate methods and tools to measure, monitor and improve delivery of water and sanitation in cities and towns in India. The PAS Project includes three major components of performance measurement, performance monitoring and performance improvement. It covers all the 400+ urban local governments in Gujarat and Maharashtra.

CEPT University has received a grant from the Bill and Melinda Gates Foundation for the PAS Project. It is being implemented by CEPT University with support of Urban Management Centre (UMC) in Gujarat and All India Institute of Local Self-Government (AIILSG) in Maharashtra.

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