


Performance Improvement Plan for Achalpur

Prepared by:

CEPT University and AIILSG in consultation with Achalpur Municipal Council

2012

pas performance assessment system

Performance Improvement Plan for Achalpur

Prepared by:

Centre for Environmental Planning and Technology (CEPT) University

and

All India Institute of Local Self Government (AIILSG)

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Achalpur Municipal Council (AMC), Achalpur

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ABBREVIATIONS

AIILSG	All India Institute of Local Self Government
AMC	Achalpur Municipal council
BAU	Business As Usual
BRGF	Backward Region Grants Fund
CAGR	Compounded Annual Growth Rate
CBO	Community Based Organisation
CEPT	Centre for Environmental Planning and Technology
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
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
RAY	Rajiv Awaz Yojana
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 Achalpu Municipal Council (AMC) 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: Achalpur is Class A municipal council in Amravati Division. It is located in Amravati district. Municipal council of Achalpur was formed in 1869. Paratwada which was developed as military camp was later merged with Achalpur. The city now has two divisions namely Achalpur and Paratwada.

Achalpur Municipal Council is the administrative body of the city and is responsible for the delivery of the basic services like Water Supply, Sanitation; SWM, Street lighting etc. majority of the population is predominantly dependent upon agriculture. Achalpur in the past was an important centre for procurement of cotton.

Water supply: Achalpur Municipal Council is one of the few cities which fully depend upon ground water for the Water Supply of the city. There are 13 tube/bore wells from which the water is extracted.

Some of the slum pockets in the city do not have internal Water Supply network. Coverage of Water Supply in slums is only 12%. Presently water is supplied daily for 3 hrs. Interestingly unlike other class A cities in Maharashtra all the connections are metered. Total length of distribution network is 140 Km approximately. Out of the 16 sq.km area of the city, only 10.5 sq.km area is covered by water supply network.

Sanitation (including sewerage): Situation of sewerage and drainage is almost similar to other municipal councils in same class. There is no underground sewerage network in the city. It is estimated that approximately 11MLD waste water is generated in the city. Waste water generated in Achalpur is collected in open drains which run along major roads. Open drains near market area and in some newly developed residential areas are properly lined. But there are some areas where the condition of open drains needs immediate attention. Since the drains are open, often they are clogged with plastic wrappers and other solid waste which is generated.

In Achalpur 50% of the HHs have individual toilet facilities. There has been a marginal increase in percentage of HHs with individual toilets. Majority of the HHs which do not have access to toilets are

located in slums, where they either do not have land for construction of toilets or they are not financially sound so that they could build it on their own.

There are 21 Community toilets out of which only 9 are functional. Out of the total 303 seats only 123 can be used with proper maintenance. Based on the discussion with slum dwellers it was observed that there was no proper maintenance of community toilets. Some community toilets did not have electricity connection, no water connection. 19 out of 32 slum pockets do not have access to function community toilets.

Services to slums: There are 33 slum pockets in Achalpur city. Out of which 27 pockets were notified during 1984-88 and remaining 5 are non- notified slums. Total population on slums in 2001 was 56966. Current population is estimated to be 60387, which accounts to 54% of the total population.

The slums cover an area of 5.3 sq.km which accounts to 33% of the total city area. Majority of the slums are located in the gaothan area i.e. in the core of the city. Out of 32 slum pockets 9 are in Paratwada and remaining 23 are in Achalpur. Most of the slums are along the river basin falling with flood zone. Majority of the slums are in Achalpur where agriculture labours and other labours reside.

Under VAMBAY scheme, 16 slum settlements were selected and total of 2945 HH with individual toilets were built. Rest of the slum settlements lack basic infrastructure amenities are still lagging. 15 community toilets were built under Nirmal Bharat scheme.

Municipal Finance of AMC: AMC records the various line items of receipts, i.e., income and expenditure, under three broad categories—revenue account, capital account, and extra-ordinary account—as per their sources and applications. The budges were observed to have irregularities in the manner in which the capital and revenue receipts and expenditure were recorded. These included allocation of capital receipts into revenue receipts, double counting of capital expenditure into both revenue and capital expenditure etc.

The revenue income in the last five financial years has increased at a CAGR of 8.9% to reach a level of Rs. 19.55 Crores in 2009-10 from a level of Rs. 12.76 Crores in 2005-06. While revenue expenditure has grown at a CAGR of 6% to reach a level of Rs. 16.31 Crores in 2009-10 from a level of Rs. 12.06 Crores in 2005-06. Though the revenues are increasing at a relatively higher rate the difference is not significant thus the revenue surplus has not been significant.

Own sources contribute to an average 35% of the total revenue income of the Achalpur Municipal Council. Taxes account for 5.8%, while 65 % of the revenue income comes in the form of compensatory grants and assigned revenues. The share property tax has significant potential of improvement as the current collection efficiency of property tax is only 32.6%.

Water supply, wastewater disposal and solid waste management services account for 24% of the total revenue expenditure. The expenditure has grown at a CAGR of 6.9% in the last five years.

Major capital expenditure is towards urban poor and project on capacity augmentation of water supply network under UIDSSMT. Per capita revenue expenditure towards water supply, sewerage and solid waste management services is Rs. 2.72 Crores. AMC levies water supply charges and water supply tax and sanitary tax under the consolidated property tax to recover the expenditure towards water supply and sanitation services. Cost recovery for water supply services has been above 90%

during the study period but cost recovery of other services is negligible and warrants actions toward making these services self-sufficient.

Summary of Performance Improvement Plan for AMC: The proposals suggested are focused on two key areas of establishing 24X7 water supply system and moving towards an open defecation free AMC, 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 Achalpur, the Performance Improvement Plan for AMC has been summarized below.

Table 1-Summary of Performance Improvement Plan

ACTION	COST IN CRORES	CURRENT STATUS
WATER SUPPLY : Towards 24 X 7 system		
24X 7 Water Supply	Rs 39	Project Proposed (WS project under UIDSSMT RS 40Cr- is proposed and 30% work is completed.). Majorly covers the actions required for 24X7 WS
Other minimal cost actions (Water supply - plugging of leakages replacement of pumping machinery)	Rs 0.3	Project proposed
SANITATION : Towards ODF		
ODF city	Rs 15.6	Preparation of DPR required
Other minimal cost actions -Sanitation - construction of septic tanks for existing toilets)	Rs 0.2	
Total Cost Achalpur Municipal Council	Rs 56 Cr.	

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 revision of 'new connection' format, periodic surveys at source, treatment and consumer end of water supplied, levying telescopic rates for water supply, drainage tax, and improve collection efficiency of sanitation tax.

Based on the revenue enhancement measures mentioned above, the investible surplus for AMC is projected to be approx. Rs. 7.5 Crore in the next ten years. Thus, the investible surplus of AMC can be gradually improved. Hence AMC can look to financing certain areas of its water supply and sanitation projects. The improvements for AMC have been proposed in two phases: 1) Immediate interventions (from 2013 - 2018), and 2) Long term interventions (from 2018 - 2023). The interventions

mentioned above to augment revenue as well as process improvements are proposed to begin in 2013. The costs shown below indicated are inflated at 7.5% for each year.

Phase 1: Immediate interventions (from 2013 - 2018)

It is proposed that AMC will begin with interventions related to process and policy changes that will not require capital investment such as improving reliability of information through better formats, surveys, etc as well as initiatives such as increasing collection efficiency of charges, introducing drainage tax, etc.

Table 2-Phase 1 of PIP for AMC (2013-2018)

Proposed improvement areas	2013	2014	2015	2016	2017	2018
Water Supply						
Consumer surveys for entire city						
Periodic surveys at source, treatment and consumer end						
Identification and regularization of illegal connections						
Water augmentation and improvement in water supply mechanism						
Refurbishment of old network, detection and plugging of leakages						
Additional connections by expanding distribution network						
Conduct water audit and leak detection surveys						
Undertake hydraulic modeling for entire water supply network						
Policy level Improvement Areas						
Policy level interventions (pre/post improvement in Water Supply mechanism)						
Levy telescopic rates for water supply						
Sanitation						
Preparation and Implementation of Septage Management Plan						
Preparation of DPR						
IEC Campaigns etc						
Policy level Improvement Areas						
Improve collection efficiency of sanitation tax						
Levy telescopic rates for drainage tax						

Phase 1 of PIP in AMC: 2013 to 2018

- Augmentation of Water supply in Achalpur improvements will help AMC move towards 24X7. AMC has augmentation proposals under UIDSSMT which is sanctioned and the work has started for network refurbishment and augmentation. This will be completed by 2015. This will ensure 100% metering and 2hrs of supply per day. To achieve 24X7 Water Supply

AMC will need to conduct Water and energy audit and will also need to give new connections by expanding the network.

- In order to realise the targets set for improving water supply and sanitation in AMC, 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. AMC has to focus its attention on improving policies related to services, financial sustainability, and accountability to the consumers.
- Starting from 2013 AMC can also refurbish the existing non functional community toilets.

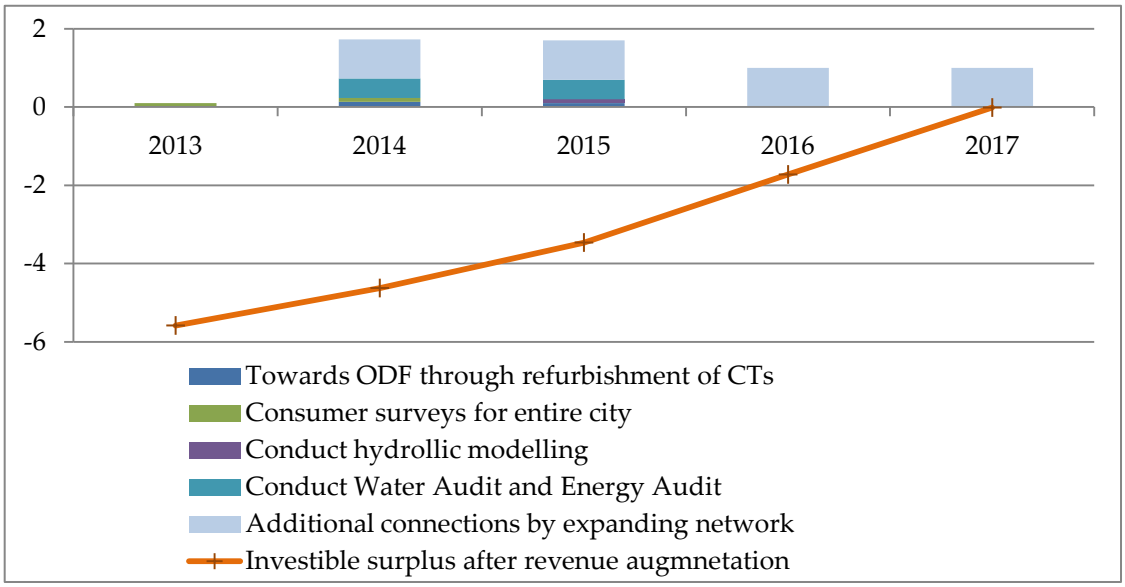


Figure 1-Phase 1: Proposed phasing of water and sanitation projects, after undertaking revenue enhancement measures

AMC has 9 CTs that are not functional with 136 seats.

Phase 2 of PIP in AMC- 2018 to 2022:

- Starting from 2018, AMC can begin construction of individual and community toilets as the investible surplus is from 2018. As issues in existing community toilets were observed in terms of operation and maintenance, it is proposed that AMC refurbishes these community toilets before initiating construction of new community toilets.
- Existing community toilets can be refurbished and the maintenance of the same can be given to NGOs and CBOs. 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. 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.
- AMC can go in for construction of individual toilets simultaneously. Construction of individual toilets will be completed in five years, while community toilets will be completed by four years.
- The other actions like IEC campaigns etc can take place before 2018.

Table 3-Sources of revenue to fund ODF in AMC (in Rs. Crores)

Implementation of ODF in AMC	2018	2019	2020	2021
Total cost	2	5.0	7.0	2
Investible surplus after implementation of other projects	2.0	5.0	7.0	2.0
Additional funds required	0	0.2	2.0	0

1 INTRODUCTION

The preparation of this Performance Improvement Plan (PIP) for water supply and sanitation has been led by the Achalpur Nagar Parishad 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. The PIP exercises use the set of indicators given by the SLB Initiative as a baseline to assess past performance and identify priorities.

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. During the preparation of PIPs several dialogues, periodic consultations and meetings with Achalpur Chief Officer and officials from respective departments were held.

Preparation of the PIP has been done in following stages:

Initial Performance Assessment: Based on the data received during PAS round II from the Achalpur Nagar Parishad, an initial assessment of all SLB indicators for the past three years were done by the PAS team. As a part of the preparatory work, a preliminary profile of ULBs using SLB indicators was prepared. The AMC 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 Achalpur from 24th July to 30th July 2011 for further exploration of ground realities in UWSS. The preparatory work and the city profile of Achalpur were discussed with ANP officials at the first meeting on 24th July '11. The meeting was attended by the Chief Officer, along with officials from Water Supply and Health 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 Achalpur, 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: Consultations with sector experts were also held in August 2011 for proposing actions and estimating the required capital cost/ investment based on identified improvement areas. At the end of the expert consultations the options for improving water supply, sanitation and SWM scenario were discussed with concerned AMC officials and Chief Officer. The diagnostic study, detailed assessment and preliminary strategies for improvement were shared with AMC officials during second PIP consultative workshop in September 2011 at Achalpur. The suggestions by AMC officials were taken and incorporated in the PIP.

On identification of city priorities, consultations were held with the Chief Officer, opinion leaders, Municipal councillors, AMC officers, and representatives of water and sanitation committees to discuss priorities for municipal water supply and sanitation. While proposing strategies and actions for improvement the assessment of on-going projects was done. The actions for improvement were identified, prioritised and streamlined in consultation with AMC officials to achieve both priority/ focal areas - 'Open Defecation Free AMC' and '24 X 7' water supply.

In the PIP report the identified interventions were classified as minimal capital expenditure, substantial capital expenditure and process and policy related. Actions to improve reliability of performance indicators are also identified. Cost estimates have been developed for all actions identified. The proposed strategies and actions for improvement and estimated capital cost required to implement actions was discussed with AMC officials during the third PIP consultative workshop in November 2011 at Achalpur.

Preliminary Validation of Draft Performance Improvement Plan by AMC: The proposed draft PIP was shared with AMC, and finalised by incorporating the revisions suggested. The Achalpur PIP has been validated by Achalpur CO, & AMC 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 and CEPT University. This PIP report will be submitted to the state government for review and guidance. It is anticipated that the Achalpur 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 AMC will prepare detailed project reports and seek assistance under state and national programmes.

Photo Plate no 1: General characteristics of Achalpur

Glimpse of Achalpur city

Achalpur Municipal Council

Achalpur Municipal Council Office

Slums in Achalpur

Water supply pumping station

Slums in Achalpur

Record keeping in the Achalpur Office

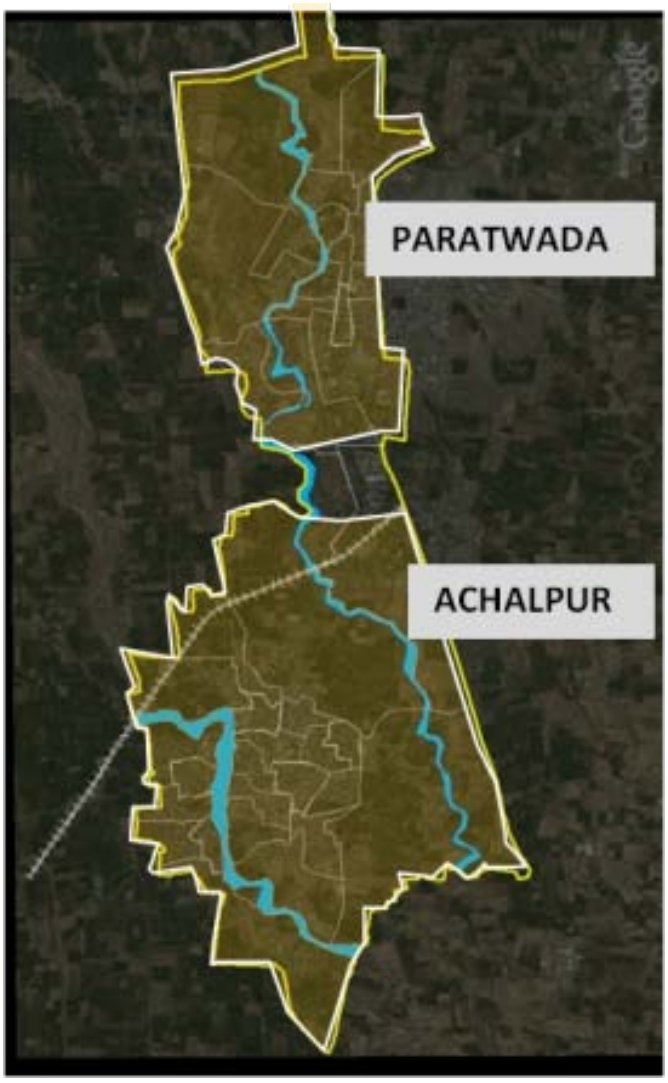
Developed slums in Achalpur

Achalpur City

2 CITY PROFILE

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

2.1 LOCATION



Achalpur is Class A municipal council in Amravati Division. It is located in Amravati district. Municipal council of Achalpur was formed in 1869. Paratwada which was developed as military camp was later merged with Achalpur. The city now has two divisions namely Achalpur and Paratwada.

There are two rivers which pass through Achalpur namely river Sapan and river Bichan. Average annual rainfall in the city is 700 mm.

Achalpur Municipal Council is the administrative body of the city and is responsible for the delivery of the basic services like Water Supply, Sanitation; SWM, Street lighting etc. majority of the population is predominantly dependent upon agriculture. Achalpur in the past was an important centre for procurement of cotton.

Figure 2- Map of Achalpur and Paratwada

Source: CEPT University, 2011

Table 4- Demographic Table

Population	**102316**	**112293**
Number of HHs	21463	22747
Number of Slums (Notified)	27	27
Number of Slums (Non Notified)	5	5
Number of Slum HHs	11393	12548
City Area	16 sq km	16 sq km
No of wards	38	38
Gross Density (per Ha)	63	70

2.2 SERVICES IN SLUMS IN ACHALPUR

One of the focal areas under the PAS program improvement areas is the provision of services to urban poor. While the performance measurement tool captures information at city level on services provided to slums, a more detailed measurement tool was also developed to capture settlement level variations in services. There are 33 slum pockets in Achalpur city. Out of which 27 pockets were notified during 1984-88 and remaining 5 are non- notified slums. Total population on slums in 2001 was 56966. Current population is estimated to be 60387, which accounts to 54% of the total population.

The slums cover an area of 5.3 sq.km which accounts to 33% of the total city area. Majority of the slums are located in the gaothan area i.e. in the core of the city. Out of 32 slum pockets 9 are in Paratwada and remaining 23 are in Achalpur. Most of the slums are along the river basin falling with flood zone. Majority of the slums are in Achalpur where agriculture labourers and other labourers reside.

An average of 45% of the capital expenditure has been towards housing, infrastructure, etc., in slums and areas with urban poor. Slums and urban poor, water supply and sewerage management, etc., have not been budgeted separately.

Under VAMBAY scheme, 16 slum settlements were selected and total of 2945 HH with individual toilets were built. Rest of the slum settlements lack basic infrastructure amenities are still lagging. 15 community toilets were built under Nirmal Bharat scheme.

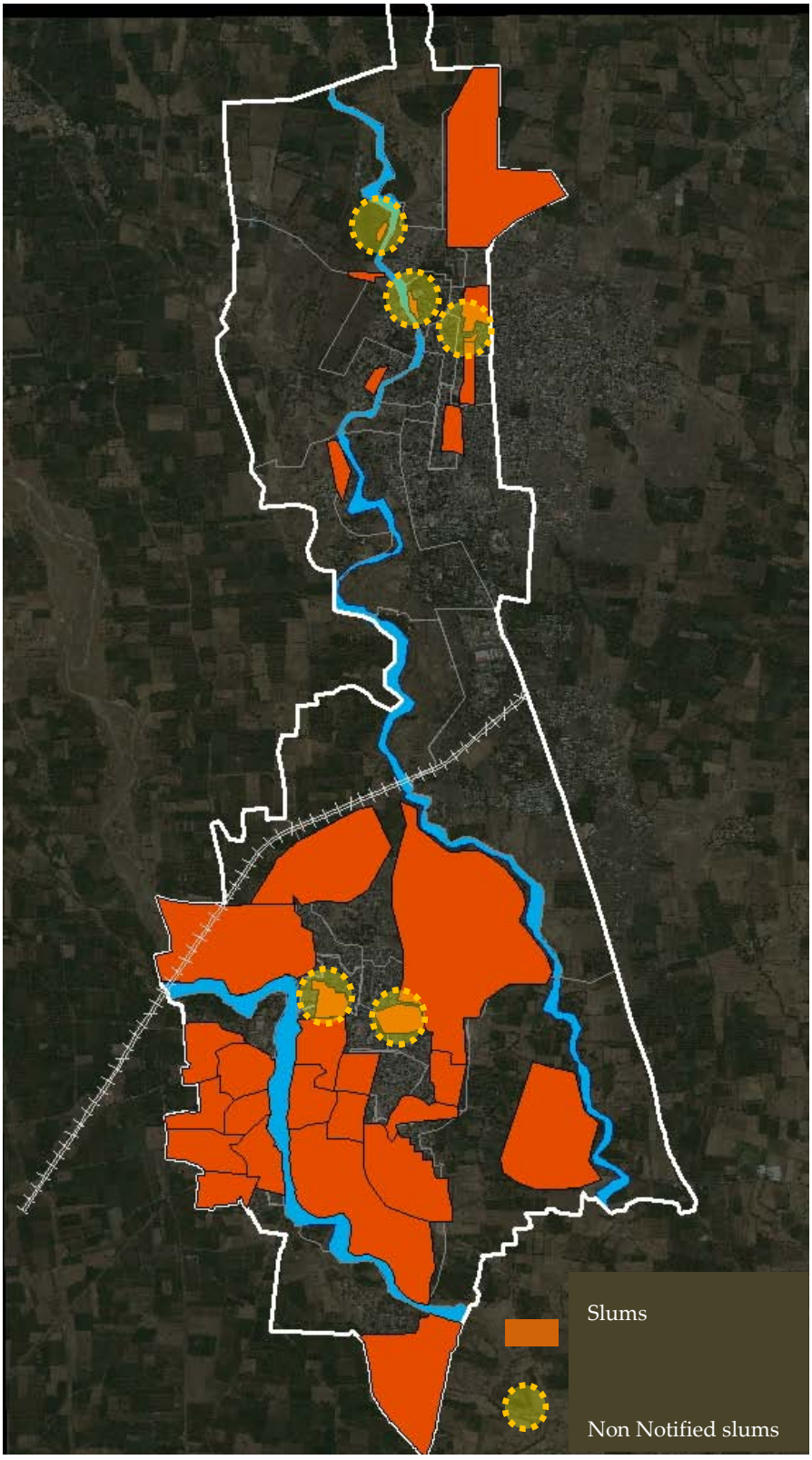


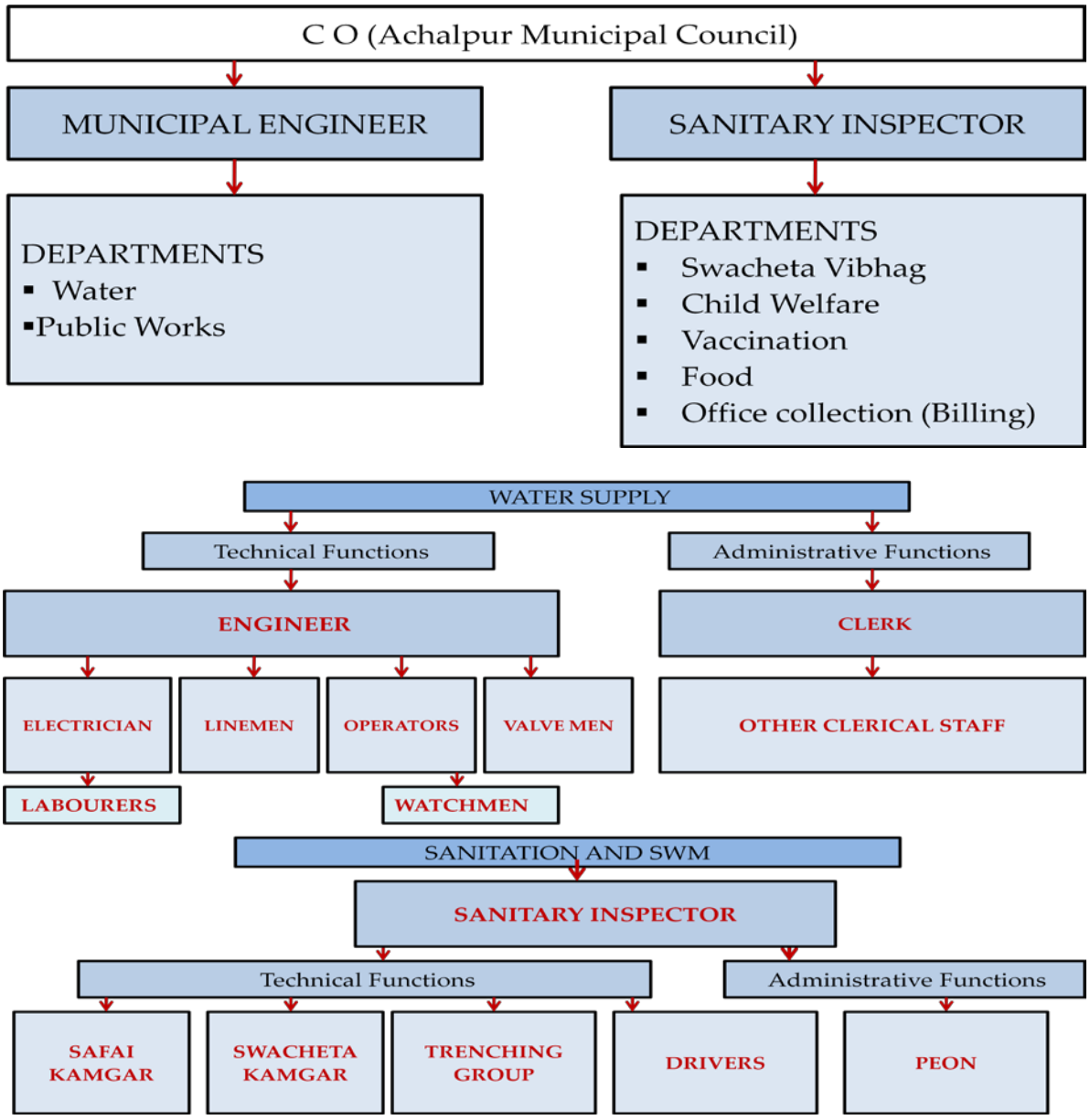
Figure 3-Map showing Notified and Non notified slums

Source: CEPT University 2011

STAFFING OF ACHALPUR COUNCIL

All the departments in Achalpur are under the President. The Chief Officer heads all the departments under the President. The administrative officer has to report to the Chief Officer as he is in charge and responsible for functions of all the departments.

The Water Supply Department and Sanitation Department has two wings namely for technical and administrative functions. The Municipal Engineer is responsible for the Water Supply Department and the Sanitary Inspector for the Sanitation Department. The Sanitation and Solid Waste Management are clubbed under one department. Achalpur Municipal Council has less no of filled posts compared to the required manpower for services in the city, especially for Water supply.



Department	Sanctioned Staff	Working staff
Water Supply	19	11
Waste water and SWM	60	156

Source: CEPT University 2011

2.3 MUNICIPAL FINANCE ASSESSMENT[1]

The municipal finances of the AMC have been reviewed for the last seven years, commencing from the financial year 2005-06 to 2011-12. While the financials for 2005-06 to 2009-10 are Actuals, the figures for the remaining two years are the budgeted figures.

Table 5- Revised financial summary (recast budget figures) of AMC (in Rs. Crores)

	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	2009-10 (Actuals)	2010-11 (Budgeted)	2011-12 (Budgeted)
Opening balance	1.55	3.9	10.42	26.0	22.14	16.48	4.6
Revenue Income	12.76	15.66	33.20	19.06	19.55	32.10	48.06
Revenue Expenditure	12.06	13.44	31.85	16.67	16.31	27.04	29.86
Revenue surplus / Deficit	0.69	2.24	1.34	2.38	3.24	5.06	18.20
Capital Income	1.21	5.10	3.91	3.81	9.10	8.76	10.02
Capital Expenditure	1.57	3.81	5.72	8.17	15.12	21.05	16.00
Capital Surplus / Deficit	(0.36)	1.28	(1.81)	(4.35)	(6.05)	(12.28)	(5.98)
Extra-ordinary income	17.98	24.25	57.79	27.03	32.25	46.45	64.31
Extra-ordinary Expenditure	16.66	20.54	41.75	29.19	35.15	51.03	66.91
Closing Balance	3.20	10.42	26.0	22.14	16.48	4.66	14.28

Revenue Account: AMC under Municipal Councils, Nagar Panchayats and Industrial Townships Act, Maharashtra 1965 is liable to provide for a mandatory consolidated property tax consisting of General tax, General water tax, Lighting tax, General sanitary tax, Special latrine tax, Fire tax and Environment tax. These form the major component of the revenue income apart from income from

[1]*This section is based on a detailed analysis of municipal finances as reported in CRISIL 2012.*

internal resources in the form of non-tax items. External resources of income are in the form of shared taxes/transfers and revenue grants from the state and central governments.

Revenue expenditure comprises expenditure incurred on salaries, operation & maintenance, and other heads. Here, the recast figures have been adopted for further analysis.

Table 6-Overview of (recast) finances of water supply, wastewater and solid waste management services (In Rs. Cr)

Items	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	2009-10 (Actuals)	2010-11 (Budgeted)	2011-12 (Budgeted)
Revenue Income	1.60	2.17	1.76	1.98	1.74	3.16	3.74
Revenue Expenditure	2.57	2.86	3.21	3.73	3.60	5.65	7.05
Revenue Surplus/(Deficit)	(0.96)	(0.68)	(1.44)	(1.74)	(1.86)	(2.49)	(3.31)
Capital Receipts	0.09	2.15	0.53	0.70	0.01	2.61	4.61
Capital Expenditure	0.18	0.30	0.28	0.69	11.38	1.67	3.88
Capital Surplus/(Deficit)	(0.86)	1.84	0.24	0.007	(11.37)	0.94	0.73

The high capital expenditure in the year 2009-10 s due to UIDSSMT project in that particular year. Per capita revenue expenditure towards water supply, sewerage and solid waste management services is Rs. 272.64. AMC levies water supply charges and water supply tax and sanitary tax under the consolidated property tax to recover the expenditure towards water supply and sanitation services.

Cost recovery for water supply services has been above 90% during the study period but cost recovery of other services is negligible.

Table 7-Sources of revenue income (In Rs. Cr)

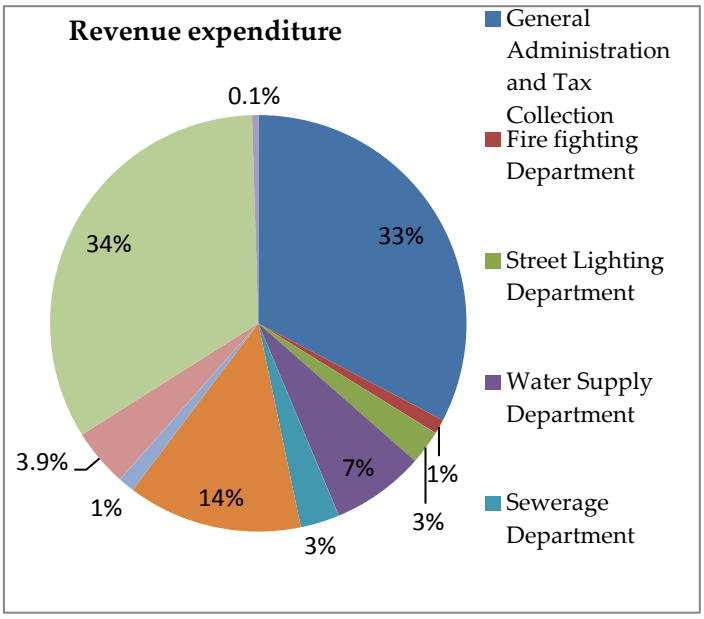
	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	2009-10 (Actuals)	2010-11 (Budgeted)	2011-12 (Budgeted)
Municipal Taxes and Charges	0.98	10.05	1.12	1.24	1.0	3.24	3.73
property tax	*0.75*	*0.76*	*0.76*	*0.76*	*0.64*	*2.24*	*2.54*
Land/Property Rent and Charges	2.84	4.19	4.88	4.77	5.18	6.86	6.92
Grants and Contributions	8.38	9.13	26.18	11.13	11.83	15.83	36.16
Others	0.54	1.32	1.10	1.90	1.53	6.15	1.17
Total Revenue Income	**12.76**	**15.66**	**33.20**	**19.06**	**19.55**	**32.10**	**48.06**

	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	2009-10 (Actuals)	2010-11 (Budgeted)	2011-12 (Budgeted)
Population (No.)	125800	126000	126500	127000	127316	127316	128000
Per Capita Revenue Income (Rs.)	10.15	12.43	26.25	15.01	15.36	25.22	37.55
Per Capita Property Tax (Rs.)	0.60	0.61	0.63	0.63	0.51	1.76	1.99
Per Capita Revenue from Own Source (Rs.)	3.48	5.18	5.55	6.24	6.07	12.78	9.30

Source: Budget documents of Achalpur Municipal Council

Own sources of revenue: Own sources contribute to an average 35% of the total revenue income of the Achalpur Municipal Council. Own sources include property tax (comprising general tax, water, sewerage, and sanitation taxes), other taxes, and non-tax income in the form of development charges, income from municipal properties, fees & fines, and other miscellaneous tax and non-tax items. The own sources have grown at a CAGR of 15% in the last five financial years indicating a healthy trend towards financial sustainability. It is budgeted to further increase to 50% of the revenue income during the next two financial years.

Non Tax Revenue: It consists of rents from municipal properties, various service charges, and fees for issuing licenses and approvals. Non-tax revenue accounts for 30 % of the total revenue income of the Achalpur Municipal Council. This source registered a CAGR of 12% during the period under consideration.



Graph 1-Revenue Expenditure of AMC

Source: Achalpur Municipal Council 2005-06 to 2011-12

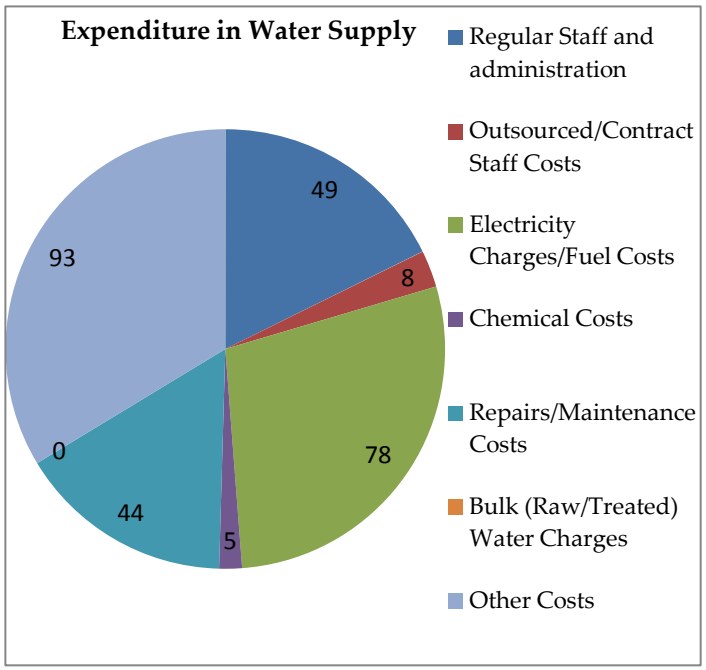
In Revenue Expenditure: Achalpur Municipal Council total capital expenditure shows a rise in 2009-10 and a fall in the year 2010-11.

The maximum expenditure in the Water Supply sector is under the electricity and fuel charges, followed by repairs and maintenance.

Under the UWSS the ULB levies charges only for Water Supply and Solid Waste Management. The collection efficiency for Water Supply charges along with cost recovery has decreased in the last 3

years from 104% to 91%.

Under SWM charges are Rs 30 per in residential HH's and Rs 100 in commercial HH's is collected as SWM charges.



Graph 2- Expenditure in Water Supply

Capital Account: The capital receipts/income is contributed by the funds received in the form of grants, contributions, and borrowings under various central and state government sponsored schemes for the implementation of projects and creation of assets meant to generate benefits over multiple years. Capital income also accounts for the income generated from the sale of assets. Capital expenditure accounts for the expenditure incurred pertaining to the acquisition of permanent assets such as purchase of land, buildings, machines, and vehicles.

In the existing budgets of the Achalpur Municipal Council, the same has been accounted under revenue income instead of capital income.

For further assessment, the budget has been recast and capital income has been appropriately recorded based on the following principles:

- Income under schemes for asset creation
- Items/heads under which capital expenditure is shown, thus implying that the income sources were used for asset creation.

Table 8: Re-classified budget items (Rs. Crores)

Items	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	2009-10 (Actuals)	2010-11 (Budgeted)	2011-12 (Budgeted)
Grants for construction of secondary education schools	0.0	0.0	1.5	0.0	0.0	0.1
Grants for construction of roads	0.001	1.34	0.75	1.40	0.46	1..0
Motor vehicle grant	0.003	0.0	0.0	0.0	0.0	0.01

Items	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	2009-10 (Actuals)	2010-11 (Budgeted)	2011-12 (Budgeted)
Grants for construction of roads	0.0	0.0	0.0	0.0	0.0	1.00
IUDP	0.05	0.04	0.0	0.0	0.0	0.66
Nagrothan Scheme	0.0	0.0	0.0	0.0	0.0	0.50
ILCS	0.0	0.0	0.0	0.0	0.0	1.00
SJSRY	0.27	0.50	0.70	0.81	0.67	0.80
BRGF	0.0	0.0	0.0	0.0	0.84	1.29
IUDP	0.04.0	0.0	0.0	0.0	0.0	0.0
Water supply scheme	0.08	0.0	0.0	0.0	0.0	0.10
UD	0.0	0.0	0.05	0.0	0.0	0.15
Dalit Community welfare scheme	0.60	1.05	0.68	0.75	0.0	1.00
Dalit Community (water supply)	0.007	0.002	0.002	0.0	0.01	0.01
Special Grants	0.13	0.0	0.83	0.15	0.0	0.15
UIDSSMT (Water Supply)	0.0	2.15	0.53	0.70.0	0.0	1.00
ISHDP	0.0	0.0	0.33	0.0	0.0	0.10
Sujal NIrman Scheme	0.0	0.0	0.0	0.0	7.09	0.0
Total Capital Income	**1.21**	**5.10**	**3.91**	**3.81**	**9.10**	**8.76**

Financial Summary:

Table 9-Financial Summary

Items	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	2009-10 (Actuals)	2010-11 (Budgeted)	2011-12 (Budgeted)
Opening Balance	1.55	3.20	10.42	26.00	22.14	16.46	4.66
Revenue Account	0.69	2.22	1.34	2.38	3.24	5.06	18.20
Capital Account							
Capital Income	1.21	5.10	3.91	3.81	9.10	8.76	10.02
Capital Expenditure	1.57	3.81	5.72	8.17	15.12	21.05	16.00
Capital Account Surplus/(Deficit)	**(0.36.)**	**1.28**	**(1.81)**	**(4.35)**	**(6.02)**	**(12.28)**	**(5.98)**
Surplus after Considering Revenue	1.89	6.71	9.95	24.02	19.36	9.24	16.88
% Utilization of Capital Income	1.29	0.74	1.46	2.14	1.66	2.40	1.59

As shown in the above table the capital expenditure has increased to a level of Rs. 1936 Lakhs in 2009-10 from a level of Rs. 189.01 Lakhs in 2005-06 at a CAGR of 57% during the last five financial years. AMC has been able to utilize the available capital income as the utilization levels have been above 100%. A fund level comparison to further judge the utilization patterns is not possible due to the method of recording the items in the capital and revenue accounts.

Photo Plate: Water Supply Scenario in Achalpur

Water treatment at AMC

Water treatment at AMC

Water treatment at AMC

Pumping station at AMC

Pumping station at AMC

Water treatment at AMC

Pumping station at AMC

Drinking Water at AMC

ESR at AMC

3 ASSESSMENT AND PROPOSALS FOR WATER SUPPLY

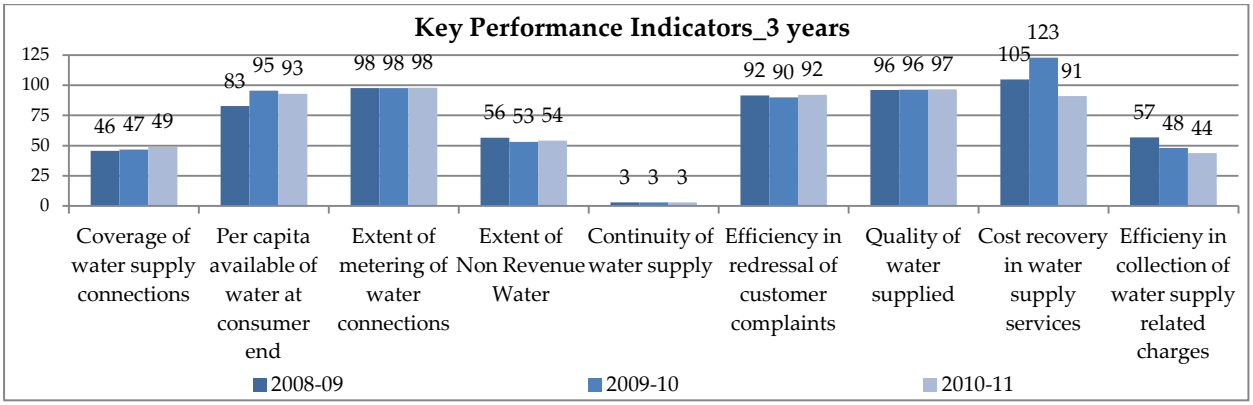
This section provides an overview of the water supply system in AMC, its performance and issues, and proposals to improvement. It also discusses the role and responsibilities of AMC as well as suggestions to improve upon the current status of the city.

3.1 ASSESSMENT OF CURRENT WATER SUPPLY SYSTEMS

Achalpur Municipal Council is one of the few cities which fully depend upon ground water for the Water Supply of the city. There are 13 tube/bore wells from which the water is extracted.

Some of the slum pockets in the city do not have internal Water Supply network. Coverage of Water Supply in slums is only 12%. Presently water is supplied daily for 3 hrs. Interestingly unlike other class A cities in Maharashtra all the connections are metered. Total length of distribution network is 140 Km approximately. Out of the 16 sq.km area of the city, only 10.5 sq.km area is covered by water supply network.

WS_KEY PERFORMANCE INDICATORS OF ACHALPUR_3 YEARS



Graph 3-Key Performance Indicators _Water Supply

Achalpur has only 50% coverage of water supply connections but the city has 98% metered connections The indicator value for Extent of metering of water connections has reliability grade A as meters are installed at all consumer points and the household consumption is estimated through surveys. Whereas the reliability grade of the Water supply coverage is B as the records are through property tax records. Extent of non revenue water has remained almost constant in the last three years with D reliability. Cost recovery of Achalpur is 91 % which has decreased from 2008 with Reliability D.

WATER SUPPLY SYSTEM: There are only 11126 connections for 22742 HHs. There are 150 stand post and 90 hand pumps. As described earlier more than 50% of the population lives in slum the no of HHs dependent upon free supply is more. This is also partly a reason for low coverage of Water Supply in Achalpur.

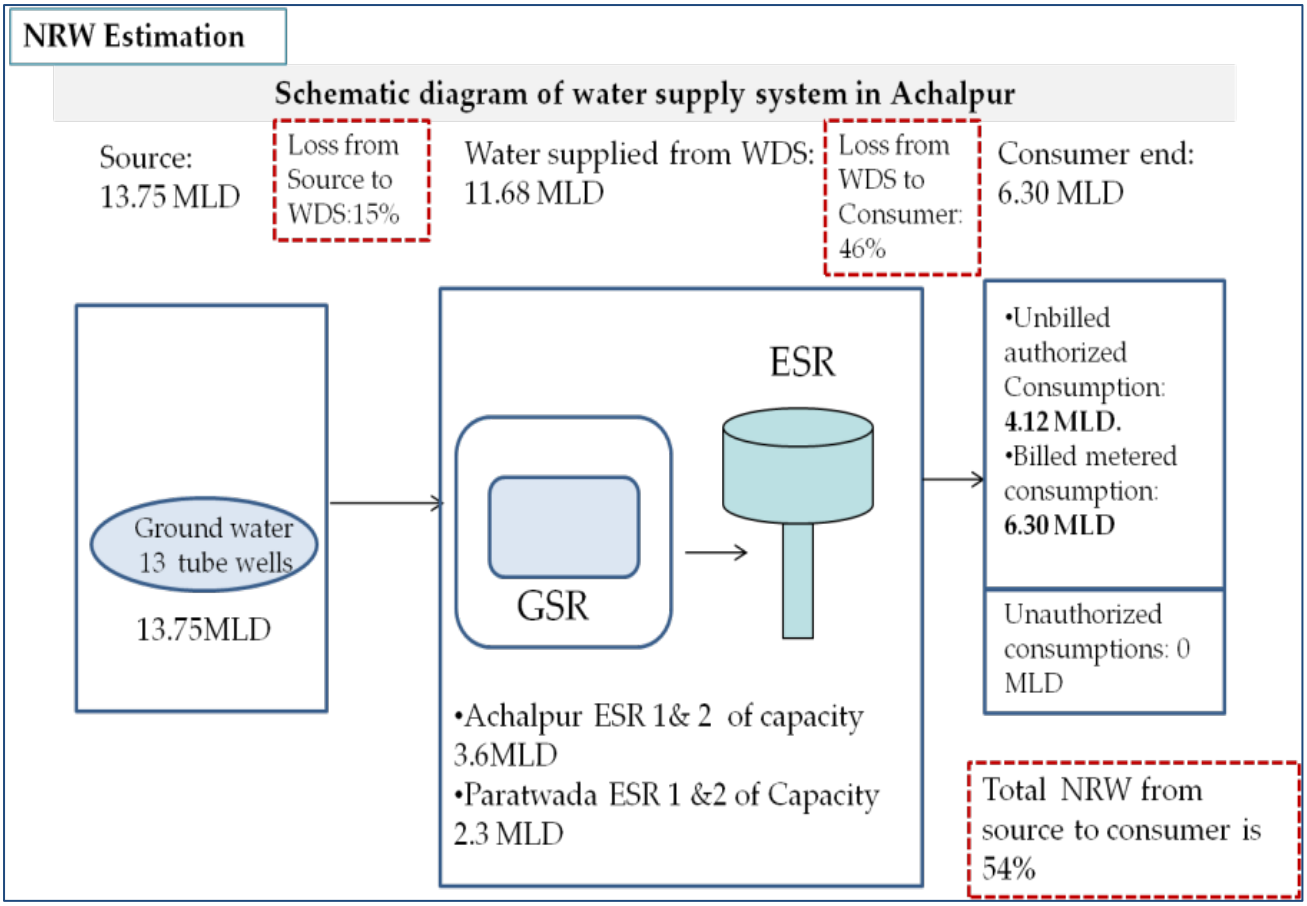


Figure 4- Schematic diagram of water supply system in Achalpur

3.2 ASSESSMENT OF SERVICE DELIVERY

3.2.1 Access and Coverage

Coverage of water supply connections: Coverage of WS connections in Achalpur is very less i.e. mere 49%. There are 150 PSPs and in addition, 90 Hand Pumps at different locations, mostly in slums which provide free WS to the slum dwellers. Apart from this it was observed that the process of getting WS connection was lengthy and required lot of documentation. The biggest roadblock is having a property tax register record which many slum HHs do not have. Only the notified slums have records in the property tax register and are eligible for water supply and sanitation services

Achalpur does not have water supply network in some newly developed areas. The entire water supply in Achalpur is ground water. Figure 5 indicates the location of the tube wells and the 4 existing ESRs in the city.

Figure 5- Map showing the location of ESRs and tube wells

Source: CEPT University ,2011

Proposals for improvement:

Water supply network needs to be extended to the newly developed areas. Some slum pockets also do not have water supply network. These areas need to be provided with network in the new water supply augmentation plan. Water supply augmentation plan to lift water from Chandrabhaga dam is already proposed.

3.2.2 Service levels and Quality

Per capita supply of water: The per capita supply of water in Achalpur has increased in the last 3 years and is higher than the average value of A class cities.

Achalpur is the one of the few Cities in Maharashtra where all water supply connections are metered. Extent of metering is 98% in the city

Proposal for improvement:

As AMC needs to have a good network and management of bill collectors, it is also possible to train the collectors to conduct periodic surveys at the major bulk production and consumer points. These can be done either through methods like bucket survey or using portable flow meters. This also needs to be factored into the contract to ensure the parameter of minimum wastage of water is met.

Continuity of water supply: Achalpur gets water almost every day for 3 hrs. The continuity of water is better than the peer group value.

Proposals for improvement:

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 AMC to detect low pressure zones. This will also help to assess areas of major problems in the existing network.

Quality of water supply: The quality of water supply in Achalpur is 96%. Residual chlorine tests are done at source, consumer end and at intermediate points. Physical and chemical tests are done at the source only, whereas the bacteriological tests are done at the consumer end and at intermediate points.

Proposals for improvement: More stringent monitoring of the quality procedures should be undertaken by AMC for 100% quality in water supply.

Metering: Out of all the water supply connections 98% of the water supply connections in Achalpur are metered.

Proposals for improvement:

All water supply connections in Achalpur are metered but the Council does not have enough manpower within for billing and meter reading. Manpower needs to be hired for the same. Contracting of whole meter reading and billing process to private contractor should be done.

3.2.3 Financial Sustainability

Water supply charges form the key source of income to recover the expenditure incurred on the services. The collection efficiency of water supply related charges has been close to an average of 51% during the last three financial years. Improving the collection efficiency and coverage of connections could lead to an increase in the recovery amounts. This could further be offset by reducing the existing rate charged against the services.

Cost recovery (O&M) of water supply: Presence of metering and a formal mechanism in levying charges, AMC has been able to recover the costs incurred under water supply services.

Below table details the tariff structure currently adopted by the city:

Volumetric Tariff	
Residential (Rs. / Kl)	10.20
Institutional (Rs. / Kl)	19.65
Commercial (Rs. / Kl)	46.20

According to the state government recommendations, the tariff structure was worked out considering the expenditure incurred by AMC towards servicing the part of the water demand. NRW levels in the existing system are at 54%. This revenue loss was factored in the calculations for arriving at the revised tariff. It is expected that after the implementation of UIDSSMT scheme the NRW levels might reduce by some levels. However in absence of details pertaining to the impact of UIDSSMT project on NRW levels, existing NRW levels are considered for calculation. The tariff as calculated using the state government guidelines is lower than the tariff levied by AMC.

Table 10- Overview of (recast) finances of water supply, wastewater and solid waste management services (In Rs. Crores)

Items	2005-06 (Actuals)	2006-07 (Actuals)	2007-08 (Actuals)	2008-09 (Actuals)	2009-10 (Actuals)	2010-11 (Budgeted	2011-12 (Budgeted
Revenue Income	1.60	2.17	1.77	1.98	1.74	3.16	3.74
Revenue Expenditure	2.57	2.86	3.21	3.73	3.60	5.65	7.05
Revenue Surplus/(Deficit)	(0.96)	(0.68)	(1.44)	(1.74)	(1.86)	(2.49)	(3.31)
Capital Receipts	0.09	2.15	0.53	0.70	0.01	2.61	4.61
Capital Expenditure	0.18	0.30	0.28	0.69	11.38	1.67	3.88
Capital Surplus/(Def	(0.08)	1.84	0.24	0.007	(11.37)	0.94	0.73

As shown in the above table the revenue expenditure towards services has increased at a higher rate than revenue income. The revenue account has been in the deficit throughout the period of study. Major capital expenditures include the capacity augmentation of water supply system under UIDSSMT scheme.

Collection efficiency of water supply charges: The billing process is lengthy in AMC. The time given for payment of the bills to the consumers is less and there are no other alternative of bill payments.

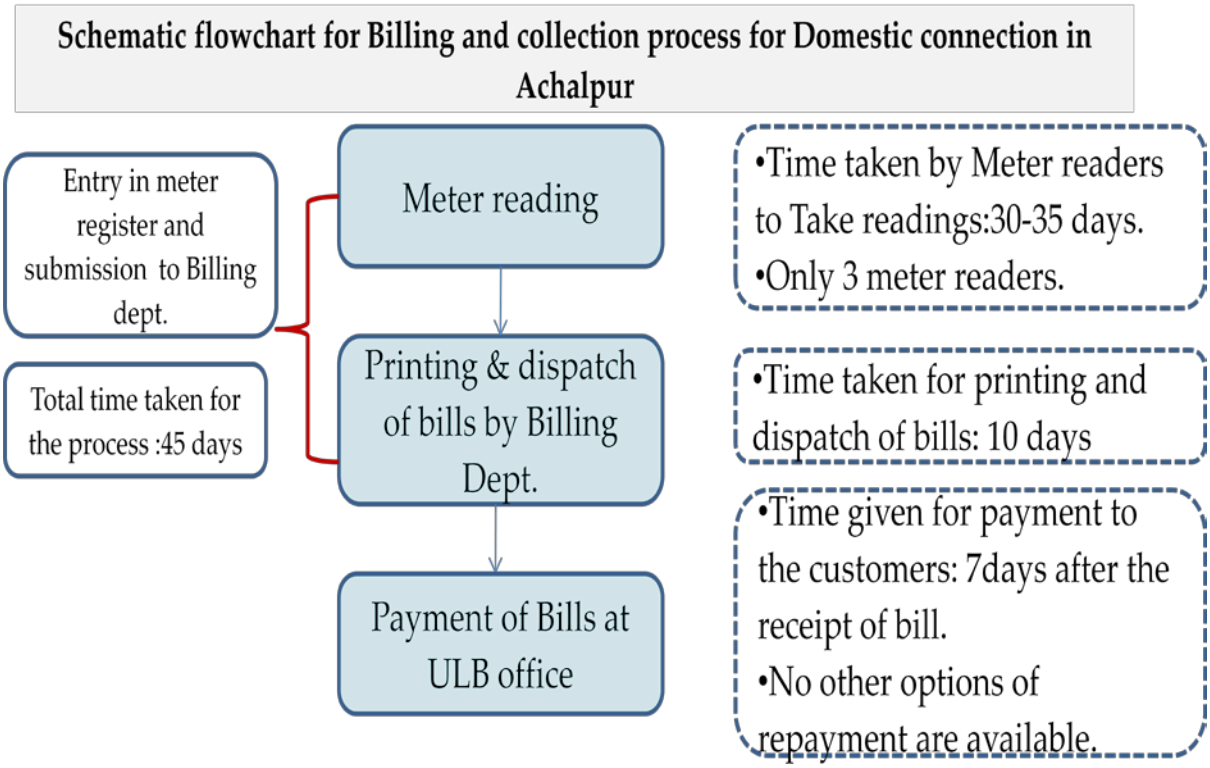


Figure 6-Schematic flowchart for billing process

Proposals for improvement: Providing different options for payment of bills such as banks, Post office etc can help in increasing the collection efficiency of water supply related charges.

Following is the existing tariff structure with comparison to the tariff calculated on the basis of Maharashtra state government GR on tariffs.

Consumer Group	Connections	Existing base tariff levied by MJP (Rs. / KL) [2]	Tariff Calculated on the basis of Maharashtra State Government Recommendations (Rs. / KL)
Residential	10,363	10.20	5.53
Institutional	255	19.65	16.60
Commercial	140	46.20	22.14

Proposals for improvement: The underlying assumption is 100% collection efficiency. Reduction in collection efficiency would necessitate increase in the fare structure to maintain to cost recovery to 100%. Currently, industrial and mixed residential use connections are not given in the city. Categorizing on the existing connections into the categories recommended by the state government would enable some degree of cross subsidization and bring the tariff for residential connections a bit lower.

3.2.4 Efficiency in Service Operations

Extent of NRW: In Achalpur more than 50% HHs depend upon free water supply i.e. PSPs which is contributing to high NRW values. Since people get easy free water, there no willingness among people to take WS connection. There is lot of wastage of water at these PSPs; there are no taps to most of the stand posts. Water keeps flowing through them even when no one is using it.

Proposals for improvement: To reduce NRW Phase wise removal of PSPs and Hand Pumps should be undertaken on top priority. Removal of entry barriers for getting WS connections for slum dwellers will help in encouraging slum dwellers to take new water supply connections. Removal of entry barriers for getting WS connections for slum dwellers will help in encouraging slum dwellers to take new water supply connections as the time required to get new connections is extensive due to the lengthy process. The figure below indicates the process required to get a new Water Supply connection.

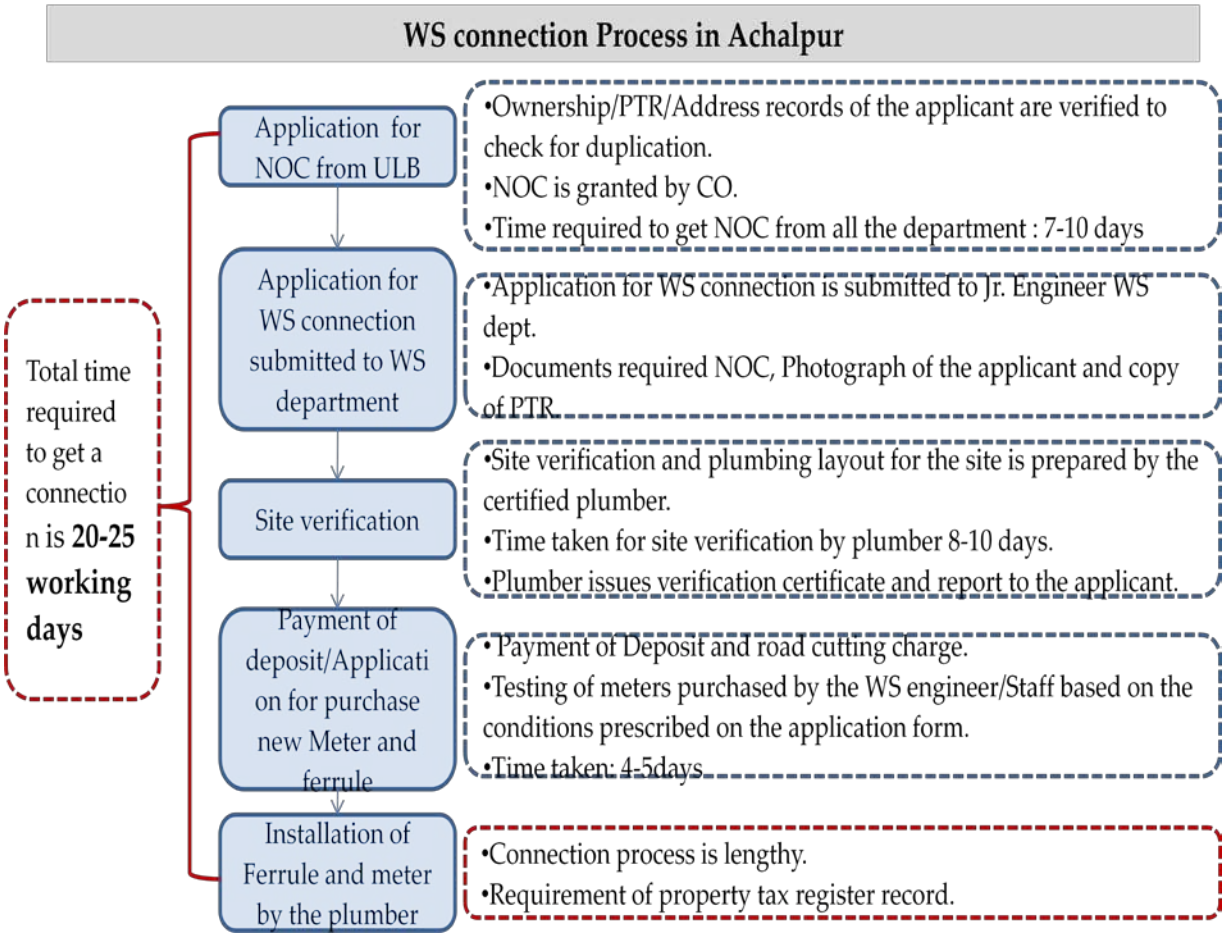


Figure 7-Water Supply connection process in Achalpur

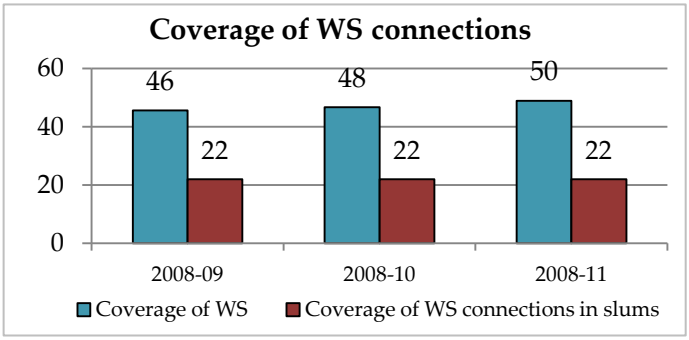
Efficiency in Redressal of customer complaints: The efficiency in redressal of customer complaints has decreased as the water supply timings are not fixed and consumers have to face the difficulty. The reliability for the same is B as proper records are maintained for the complaints received.

3.2.5 Equity in Service Delivery

Coverage in notified slums:

The slums do not have any separate policies for taking water supply connections. All slums in Achalpur do not have internal water supply network.

The settlements are provided access to water supply through household connections, public stand posts and in some cases, group connections. The coverage of household connections in notified slum settlements is 22%.



Graph 4-Coverage of Water Supply connections in slums

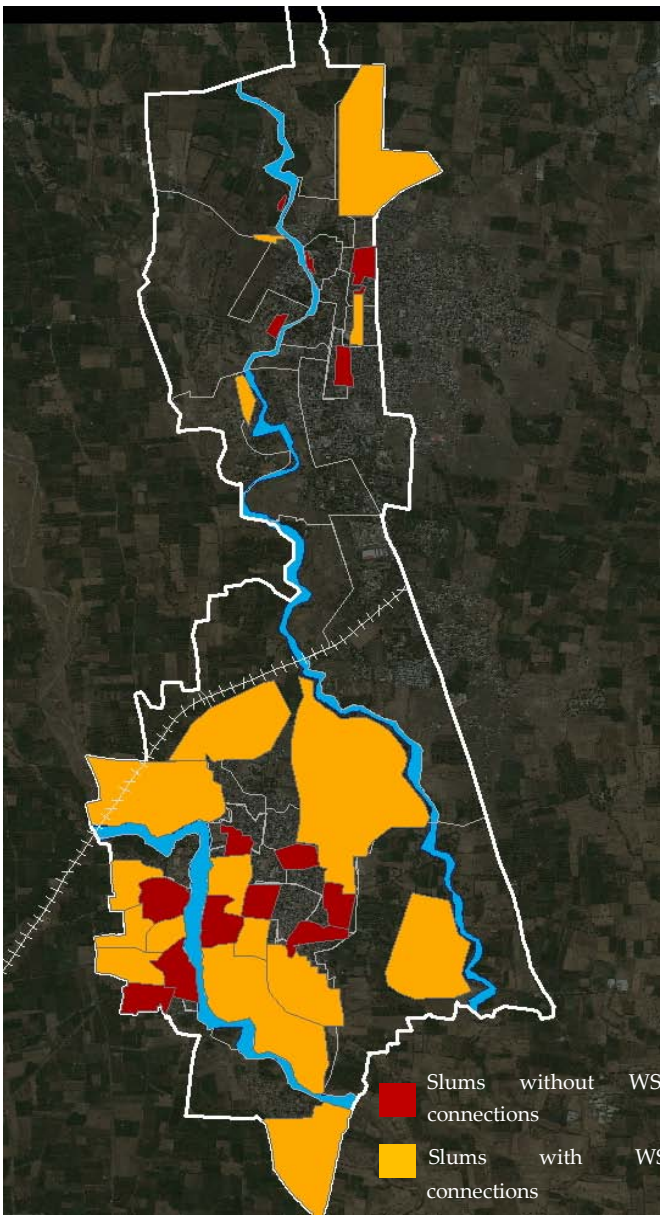


Figure 8 indicates the slums that do not have water supply connections highlighted in red. Figure 9 indicates the range of coverage of water supply connections in slums settlements where the connections are existent. It is observed that very few slums have coverage of water supply connections more than 60%.

Figure 8-Coverage of Water Supply connections in Achalpur

Source: CEPT University, 2011

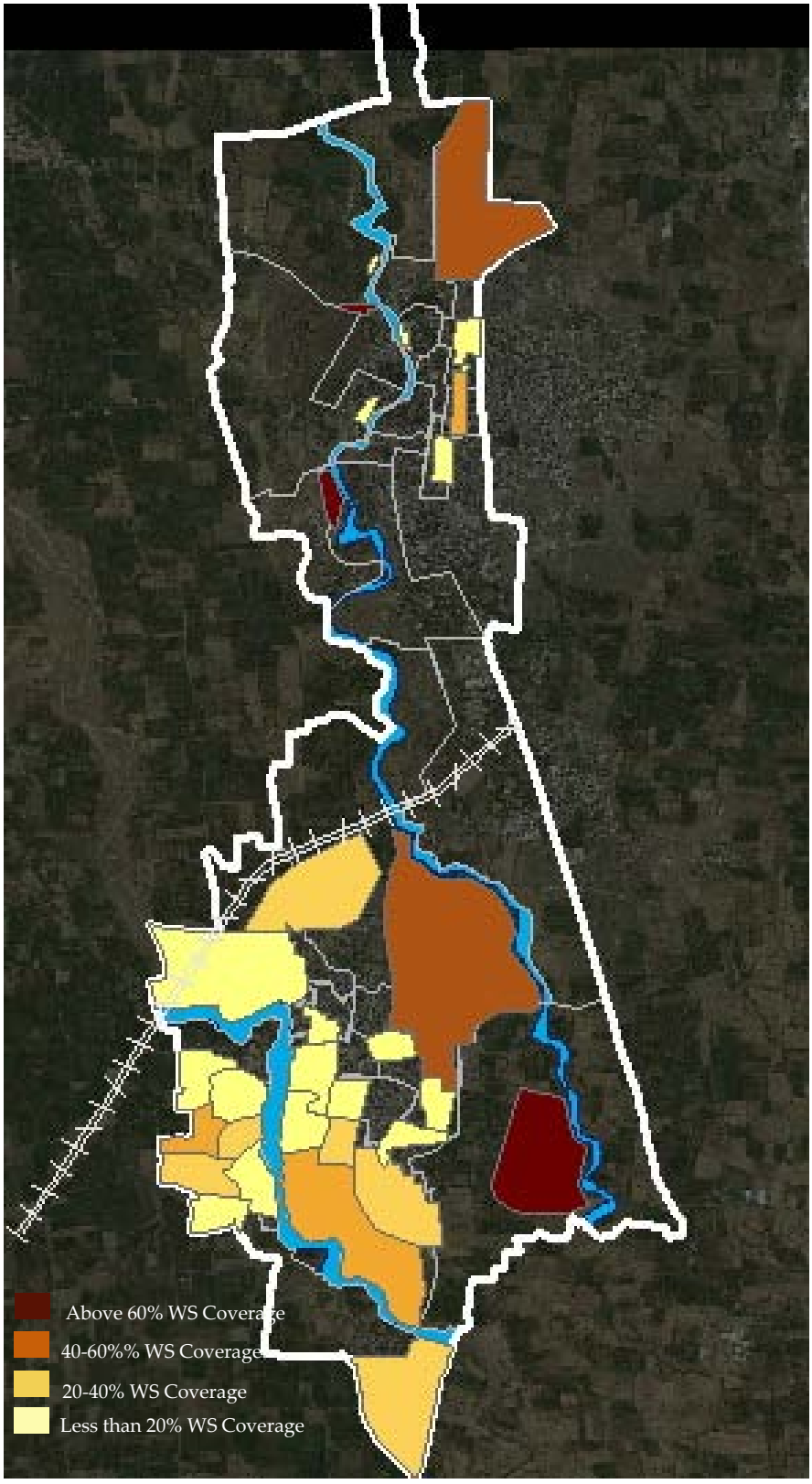


Figure 9- Map showing the slums with water supply connections

Source: CEPT University 2011

3.3 PROPOSED ACTIONS/ INTERVENTIONS FOR WATER SUPPLY

The following interventions are proposed based on discussions with the Council, and analysis of the key indicators and their data reliability.

Table 11-Proposed Actions for water supply

Categories	Interventions required
Access and Coverage	Lying of network in areas where there is no water supply network and in slums. Removal of hand pumps and giving new individual connections or group connections in slums areas.
Service levels and quality	Removal of hand pumps and PSPs Increase in manpower for meter reading in the city Increase in manpower for billing and collection The water supply connection procedure should be made easy
Financial sustainability	The Council needs to increase telescopic rates. This will require change in the policy of water supply charges. Categorizing on the existing connections into the categories recommended by the state government would enable some degree of cross subsidization and bring the tariff for residential connections a bit lower.
Efficiency in service operations	AMC has to appoint staff for operating and managing the complaint redressal software system

3.4 MOVING TOWARDS 24 X 7 WATER SUPPLY IN ACHALPUR

The Government of Maharashtra has decided to focus on continuous water supply as one of the themes for performance improvement planning in Class A cities of Maharashtra. Considering various aspects required for moving towards 24 x 7 Water Supply in Achalpur an attempt is given for estimating the overall costs for various items as follows. It shows that Achalpur will require minimum funds of Rs. 23 Crores to be raised from various sources to implement continuous water supply. Calculations are carried out by taking into consideration ongoing projects. In case of absence of funds, the ULB 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.

Table 12-24X7 Water Supply Cost estimates for Achalpur

HEAD	BLOCK COST	UNIT	Rs. Lakh
Satellite Image	90000	Up to 64 sq.km.	1
	1350	Beyond 64 sq. km. for each sq.km	
Supply and installation of GIS software	195000	Each	2
Digitization of satellite image-	6250	Per sq.km.	1
Physical Surveys- GIS Network Survey and Base Map Survey	3000	Rs./ km	0.48
Consumer Surveys	36	Rs. / HH	10
Water Audit	4700000	Rs. For towns of pop. 2 Lakh	50
	15000	Rs. Additional for per 1000 pop. above 2 Lakh	
Energy Audit		L.S	30
Cost of preparing DPR			170
Hydraulic Model (4140 nodes- with 10 nodes/km)	600	Rs/ node	10
Billing Software + 1 year maintenance	1000000		10
Bulk Flow Meters (24)	30000	Rs. Per bulk flow meter	250

HEAD	BLOCK COST	UNIT	Rs. Lakh
Replacement of House Service Connections	5000	Rs/ connection with mechanical meter	633
New ESRs			150
Cost of 100% coverage			400
Rehabilitation of Distribution Network- 100% (102 Km) to be replaced and around 20% to be added	7300000	Rs. / sq. km	1400
TOTAL (1+2+3+4+5+6+7+8+9+10+11+12) Rs. Lakh			3189
Including 20% Contingencies			637.8
TOTAL ESTIMATED COST FOR 24 X 7 WATER SUPPLY IN ACHALPUR (Rs.)			38.33Cr

Table 13 – 24X7 _ Water Supply_ Cost Estimation

Technical improvements: Given that the Council currently operates its water supply which is ground water only and 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;
- There is virtually no metering of bulk water produced, its transmission or distribution at any point;

Some of the technical and commercial constraints mentioned by MoUD guidelines are resolved through the implementation of GoM's reform program of MSNA. AMC has submitted proposals under UIDSSMT that will enable its progress to 24X7 water supply.

Reliable data on distribution network and customers is achieved through:

Consumer end survey: 100% consumer survey will help in identifying and subsequent regularization of illegal connections. It will provide data on household consumption which will help in assessment of augmentation of water sources, if required.

Interlinked distribution network can be restructured through:

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.

Proposal submitted and sanctioned under UIDSSMT:

Water Augmentation Project is proposed the scheme is designed with 135lpcd as AMC in the near future envisaged underground drainage scheme. The proposed scheme is designed for ultimate stage population of 233397 likely to be reached in 2040. The source of proposed scheme is canal water which will be conveyed to conventional WTP of capacity 31.5 MLD through gravity mains of 750mm diameter D.I.K 7 pipes of length 2.2 kms. The treated water will be conveyed to total 7 nos. of ESRs.

Achalpur municipal Council has received Rs 40 Crores for this project from the state and central government. The project has started in 2012 and is 30% complete. The project is estimated to be completed by 2015.

This project will ensure 100% metering and 2hours of water supply per day.

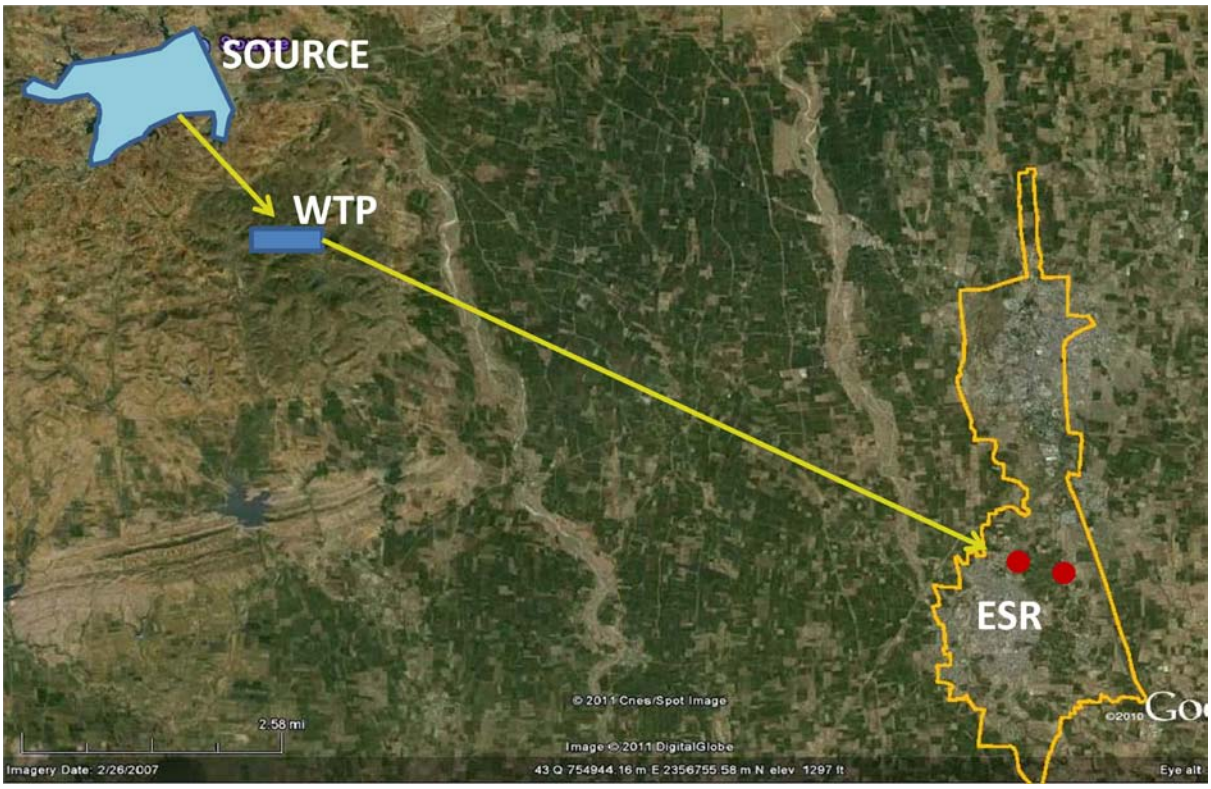


Figure 10- Schematic diagram of proposed water supply scheme in Achalpur

Strategy for cost optimization: the council has also ensured the optimization of manpower and capacity building of its staff for this project.

AMC needs to work out a strategy for recovering cost of the project while estimating the present cost of the various inputs and likely increase in their unit rates should be adopted. AMC has decided to optimize its staff by reducing the requirement of manpower by having management contracts for various tenders. The available manpower shall be utilized for revenue collection to improve efficiency.

Achalpur Municipal Council plans to implement the following prior to the implementation of this project

- AMC plans to adopt and implement various tax reforms and levy new tax reforms and levy new taxes/charges to ensure full cost recovery.
- Adopt the new policies /bye laws of revision in the tariffs of various taxes as may be set from time to time.
- Undertake various measures to minimize cost by optimizing design (WTP); minimizing excavation etc. this same should consider the topographical features.

Optimizing recurring expenses by exploring various options such as building operation into construction contract.

AMC should form sub districts to ensure effective implementation of scheme. The implementation of network within these sub districts should commence upon acceptance of 40% the people and their contribution towards the project.

The scheme should be extended to developing/ under developed area. This should be executed as Phase II of the project.

Some of the problems faced in the city will overcome once the project is in place.

IMPACT OF THE PROJECT ON THE KPIs:

The Water Augmentation project aims at providing 100% coverage with full metering and the Per capita supply of water is expected to increase to 135 lpcd. This will provide 135lpcd to the 75% population and the remaining 25% which is the rural population will be supplied with 40lpcd. Water will be supplied 2hours per day.

Table 14-Issues and Solutions in Water Supply

Sr. No	Issues	Solutions
1	Overage of existing tube wells and the yield varies seasonally. High energy charges and maintenance staff required because of scattered position of tube wells. Problem of saline water as the wells are in the vicinity of saline track.	Scheme with canal of Chandrabhaga Dam as a source is proposed which being a surface source is assured one. Conveyance of water from source to consumer is proposed by gravity which requires negligible energy charges only for treatment.
2	Increase in population and development of town	The town is divided into six districts. At present there are six districts. At present there are four ESRs and after complete of scheme, water will be distributed through existing net work through seven ESRs.

Sr. No	Issues	Solutions
3	Availability of water to the tune of 80 lpcd in normal season and 65 lpcd in summer season	Augmentation scheme is proposed with 135 lpcd

Commercial improvements: Given that the technical improvements need to be financially sustainable, the conversion to 24X7 water systems requires advanced commercial systems and procedures. While AMC has computerized billing and collection system with updated consumer records, the 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 Council as well as private operator 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.
- The billing process is lengthy in AMC. The time given for payment of the bills to the consumers is less and there are no other alternative of bill payments. This process needs to be restructured.
- 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 operational, maintenance and customer services tracking. Staff at AMC needs to be augmented in order to ensure smooth functioning of the 24X7 system.

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

Table 15-Summary of Actions and Costs for Water Supply

Activity	Description	Status
Network and Customer database	Detailed network maps in AUTOCAD	To be Proposed
	GIS mapping and hydraulic modeling for entire city	Need to be proposed under MSNA
	100% Consumer end survey, including identifying and regularizing illegal connections	
Network Restructuring	Laying network in the areas where the network is not present currently.	Proposed and sanctioned under UIDSSMT.
Leakage control	Conduct water audits and leak detection studies, and repair existing leakages in the system	Need be proposed under MSNA
Implementation of 24X7 in whole city	Augmentation of entire network in the city	Requirements are partly taken care under UIDSSMT project.
	Water Augmentation from Chandrabhaga dam to start use of surface water	

Photo Plate no 2: Sanitation Scenario of Achalpur

Community toilet in Achalpur

Community toilet in Achalpur

Community toilet in Achalpur

Community toilet in Achalpur

Water Storage outside Community Toilet

Open defecation site

Community toilet in Achalpur

Community toilet in Achalpur

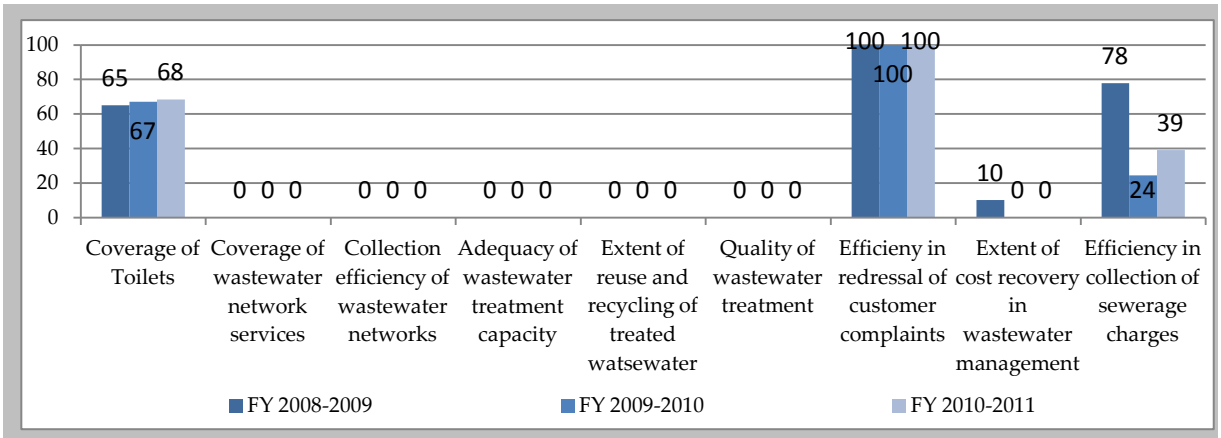
4 ASSESSMENT AND PROPOSALS FOR SANITATION

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

Situation of sewerage and drainage is almost similar to other municipal councils in same class. There is no underground sewerage network in the city. It is estimated that approximately 11MLD waste water is generated in the city. Waste water generated in Achalpur is collected in open drains which run along major roads. Open drains near market area and in some newly developed residential areas are properly lined. But there are some areas where the condition of open drains needs immediate attention. Since the drains are open, often they are clogged with plastic wrappers and other solid waste which is generated.

4.1 COVERAGE OF TOILETS

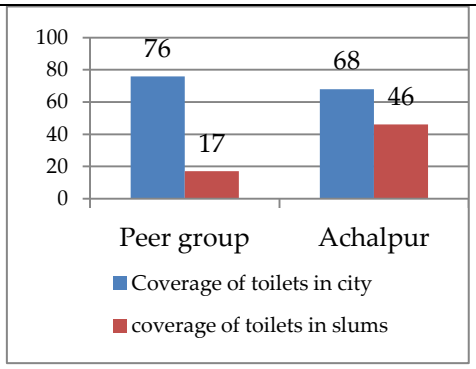
SANITATION_KEY PERFORMANCE INDICATORS of ACHALPUR_ 3 YEARS



Graph 5- Sanitation_ Key Performance Indicators

Coverage of toilets in the city has increased marginally in the last three years but the reliability of the indicator is D. Achalpur Municipal council does not have an underground sewerage system. The records of customer complaints in Sanitation are kept manually and the indicator value has remained constant at 100%.

In Achalpur 50% of the HHs have individual toilet facilities whereas 68% have access to individual or community toilets. There has been a marginal increase in percentage of HHs with individual toilets. In Achalpur 69% of the HHs have individual toilet facilities whereas if community toilets are also considered the coverage is 88%. There has been a marginal increase in percentage of HHs with individual toilets. Majority of the HHs which do not have access to toilets are located in slums, where they either do not have land for construction of toilets or they are not financially sound so that they could build it on their own.



Graph 3- Coverage of toilets in city and Slums

There are 21 Community toilets out of which only 9 are functional. Out of the total 303 seats only 123 can be used with proper maintenance. Based on the discussion with slum dwellers it was observed that there was no proper maintenance of community toilets. Some community toilets did not have electricity connection, no water connection. 19 out of 32 slum pockets do not have access to function community toilet The ULB levies nallikar which is 5% of the property tax (Rateable value). ULB also take Rs30 per year as a part of Safsafaikar under Solid Waste Management. The community toilets are maintained by the ULb itself.

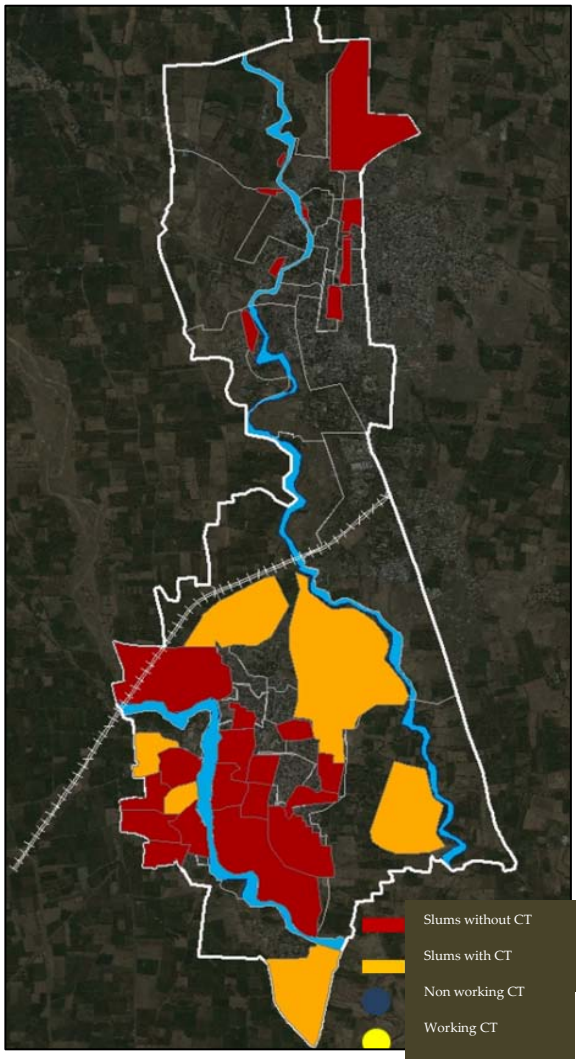


Figure 11- map indicating slums with access to toilets

Source: CEPT University 2011

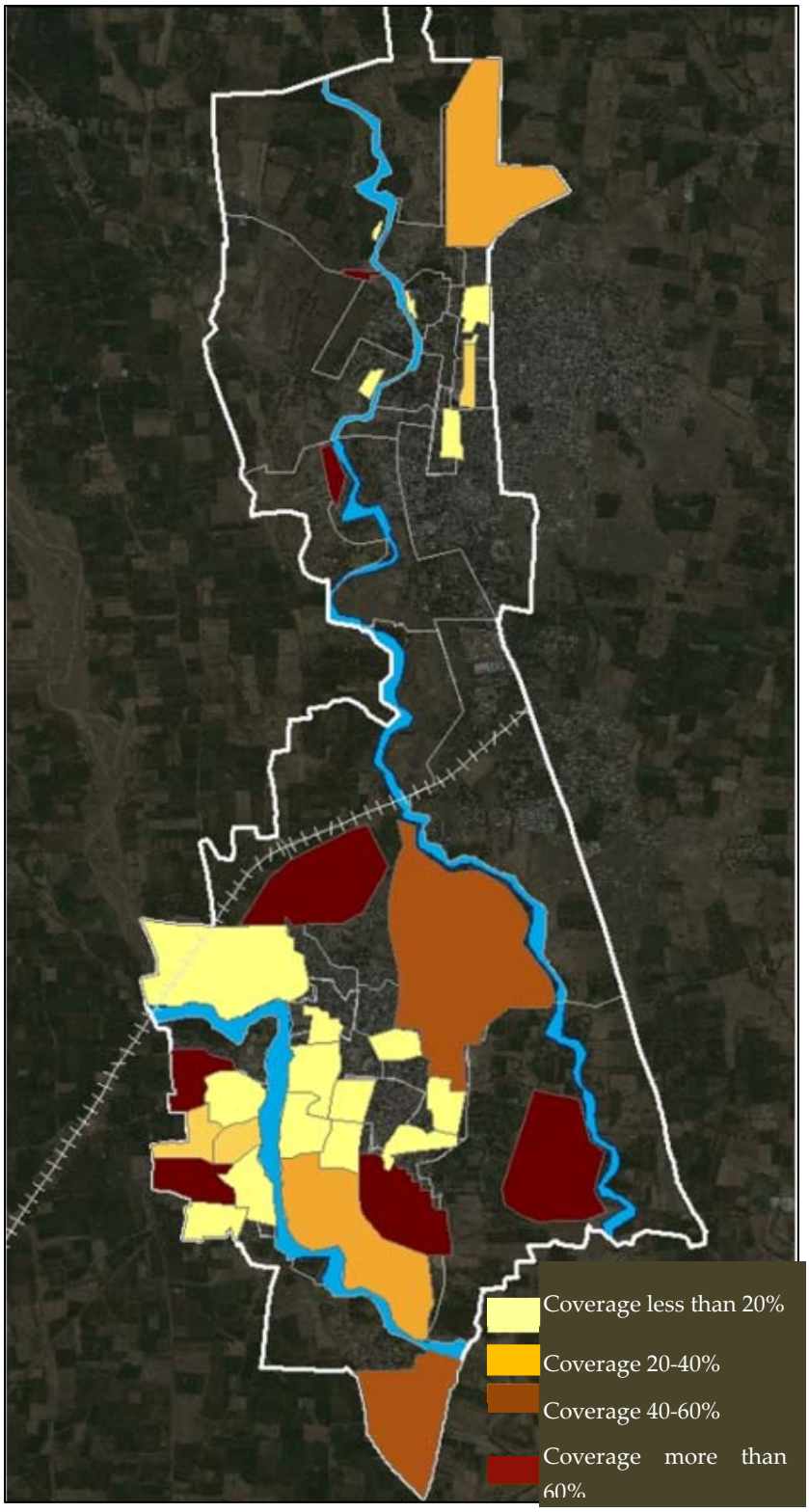


Figure 12- Map showing slum wise coverage of toilets

Source: CEPT University 2011

Figure -11 shows the location of slums and the coverage of toilets in them. Highlighted in red are the slums that do not have access to toilets. There are few slums in the city that do not have any access to toilets. In the Achalpur Municipal Council the coverage of individual toilets is 50% whereas the

coverage of toilets including community toilets is 65%. Indicating that many households do not have any access to safe sanitation. Accordingly to available data the 23% of people defecating in open. Figure 12 indicates the range of toilet coverage in slums. We can observe that only 7 slums have coverage of toilets more than 60%. Most of the slums fall into the range of 20%-60% coverage of toilets.

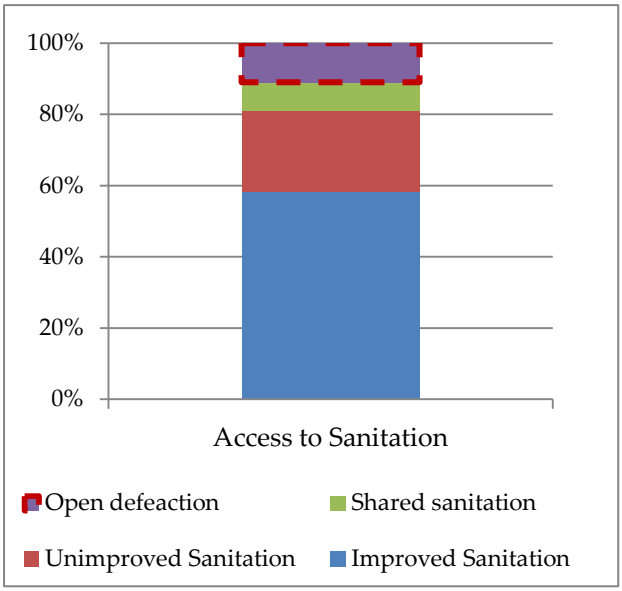
Table 16-Total number of properties with access to toilets

Total Number of properties in the City	**29972**
Total Number of properties with individual toilets	15520
Households dependent on functional community toilets	4965

As per the recent figures from census 2011, 71% of the households have access to safe sanitation implying latrine facilities within premises and connected to pipe sewer, septic tank and ventilated improved pit latrine. However, 28% of households do not have access to any sanitation (improved/shared/unimproved) and thus resort to open defecation. The Council has also received funding to provide additional toilets for slum settlements under the IHSDP and ILCS programs.

Open drains: Figure 12 indicates the outfall locations in the city. All the open drains drain out into the two rivers that flow through the city.

The above graph (Graph 6) indicates the coverage toilets in the notified slums of the city. Only three slums out of the total notified slums in the city have 100% coverage of toilets. The non notified slums do not have access to individual or community toilets.

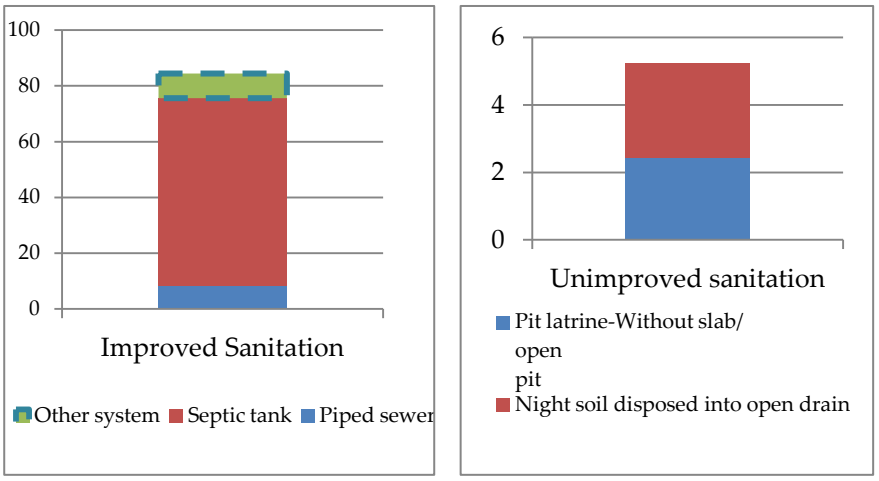


Graph 6-Access to sanitation in Achalpur: Improved and unimproved sanitation.

4.2 Septage and Sullage Management

Within the current system, all the toilets are connected to septic tanks, and hence properties having access to safe sanitation is 88%. The Council also provides a subsidy of Rs. 5000/- to all citizens, to construct septic tanks and thus avoid connecting toilets to open drains. Grey water is collected through covered and open drains, and finally drained downstream in the Sapan and Bichan River.

Collection of septage: Waste water disposal system in Achalpur comprises of open drain network, which are not cleaned on periodic basis. The network length of open drains is 122 Km which covers only 50% of the total area of the city. In areas where there are no open drains, the waste water from toilets/bathrooms and kitchen is directly disposed on land. Most of the toilets in Achalpur have septic tanks, but in some cases it was observed that the outlet of toilets is directly connected to the open drains.



Graph 7-Breakup of improved and un-improved sanitation in AMC. Source: (CENSUS, 2011)

The Council has only one suction emptier and on an average empties around 200 septic tanks annually). There are no private septic tank emptiers service providers in AMC. 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.

Disposal/ treatment of septage: The septic tank waste is transported and dumped near the open disposal site at the outskirts of the town. The Council charges Rs. 200 per trip for emptying within city limits. Currently the Council does not treat its septage.

Collection of grey water: The city has a good network of open and covered drains and is relatively clean of garbage/debris in most places. The Council presently has strength of 156 karamcharis in the department against the sanctioned 60 posts.

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: The Council 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.

4.3 MOVING TOWARDS OPEN DEFECATION FREE IN AMC

In Achalpur 5200 HHs do not have any sanitation facility. Estimated population resorting open defecation in Achalpur is approximately 35000. OD sites were marked based on the field survey. It was observed that majority OD spots were along the two river basins basins. Small children defecate in front near the non functional toilet premises. A railway track cutting across the city also serves as open defecation sites. The figure below indicates the major areas of open defecation.

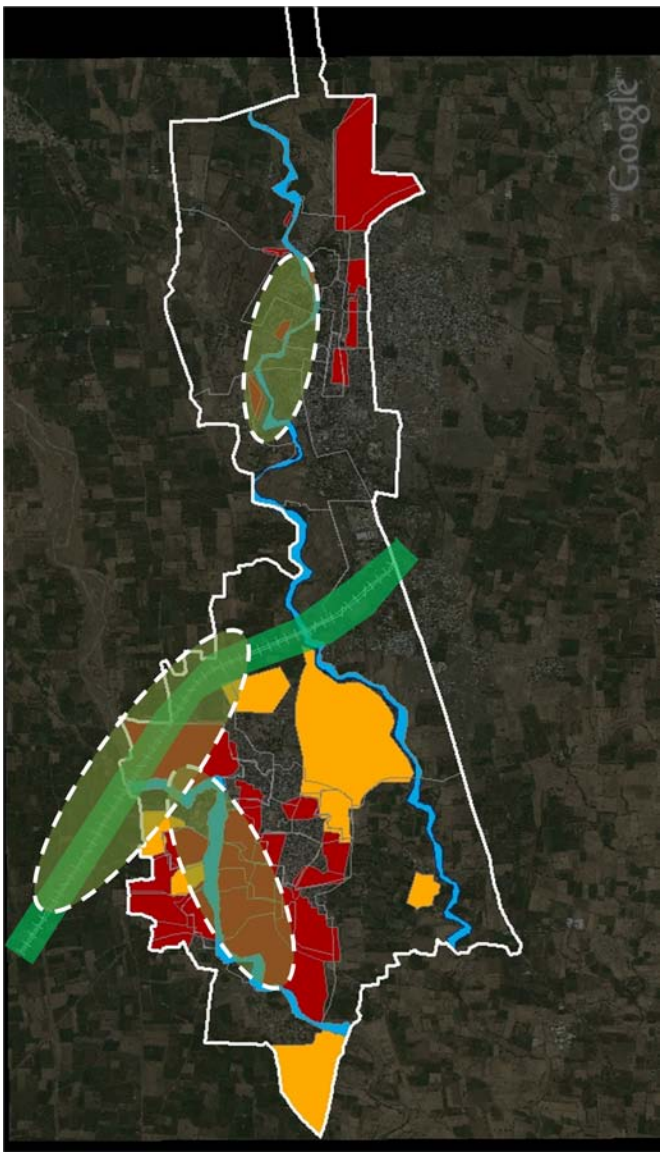


Figure 13-Figure indicating major OD sites

Source: CEPT University 2011

The Government of Maharashtra has decided to focus on open defecation free cities as one of the themes for performance improvement planning in Class A cities of Maharashtra. For making Achalpur Open Defecation Free city, it is imperative to provide regular water supply which will help maintain the community toilets in a better way and make them usable. Other than additional water supply, the second priority is to provide additional individual, shared and community toilet seats, along with the required infrastructure, to meet the existing gap in demand and supply.

Taking into consideration, the existing situation of community toilets and their maintenance, two options were explored for making Achalpur ODF. First option to be considered on an immediate priority shall be construction of more individual toilets. The second priority can be given to group / shared toilets. Only where individual toilets are not feasible because of space constraint shared toilets can be considered.

Table 17-Sanitation Cost Estimates

	OPTION 1: IF INDIVIDUAL TOILETS ARE TO BE PROVIDED			OPTION 2: IF COMMUNITY TOILETS ARE TO BE PROVIDED		
	Block Costs/ seat (Rs.)	No of toilets required	Rs. (Crores)		Block Costs/ seat (Rs.)	Rs. (Crores)
Construction of Individual toilet seats	25000	6257	15.6			
Construction of Individual toilet seats with shared septic tanks	15000	6257	11.1	**Construction of Community Toilet seats**	100000	9.1
Total	11.1			Total	9.1	

Block costs: (Per Seat) 1. 2. New com toilet seat: Rs. 100000/- 3. New Ind. Toilet with septic tank: Rs 30000/-

In Achalpur there are slums which can accommodate individual toilets at household level, hence the first option should be considered. Where there is no space available option of group toilets can be explored. Option of community toilets could be explored after the on ground surveys are done and precise data required for carving out spaces for group toilets in the community is made available especially in slums where there is a space constraint.

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. 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.

It is proposed that the AMC will move towards achieving ODF status within the next five years. The detailed phasing and implementation plan are 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.

5 SUMMARY OF PERFORMANCE IMPROVEMENT PLAN FOR ACHALPUR

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

Taking into consideration both cost estimations, estimated cost for Achalpur for moving towards 24 x 7 and making it ODF by providing individual toilets is around Rs. 56 Cr. Total Performance Improvement Plan cost for Achalpur including underground sewerage system is 341 Cr.

Table 18-Summary of proposals

ACTION	COST IN CRORES	CURRENT STATUS
WATER SUPPLY : Towards 24 X 7 system		
24X 7 Water Supply	Rs 39	Water Augmentation Project under UIDSSMT sanctioned and work started. Majorly covers the actions required for 24X7 WS. (30% work is completed.)
Other minimal cost actions (Water supply - plugging of leakages replacement of pumping machinery)	Rs 0.2	Need to be done under MSNA or DPR to be prepared
SANITATION : Towards ODF		
ODF city. (Construction of individual toilets)	Rs 15.6	Preparation of DPR required
Other minimal cost actions -Sanitation - construction of septic tanks for existing toilets)	Rs 0.3	
Total Cost Achalpur Municipal Council - Rs 56 Cr		

Other costs for other actions which require minimal cost for Water supply and Sanitation is 0.5 Crores.

Policy Interventions like removal of entry barriers and making the new water supply connection procedure easy will encourage more people to take new Water Supply connections. In the Sanitation department maintenance of open drains and septic tanks till the underground sewerage system is completed should be taken on first priority.

Further detail surveys and technical studies will be required to arrive at exact cost for up-gradation in Achalpur's performance in terms of service delivery.

5.2 PHASING AND STEPS TO IMPROVEMENT

In order to carry out the improvements suggested above, AMC has to improve its current financial position. The suggestions for improvement are based on analysis of the BAU and interventions required to improve the BAU scenario.

The business as usual scenario is based on the hypothesis that the past trends in key financials of AMC 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.

Table 19-Investible surplus for AMC (BAU) (Rs in Cr.)

	Revenue surplus (other than WS, WWS, MSW and Slum)	Debt service of existing debt	Surplus after capital receipt and expenditure	Revenues (WS, WWS, MSW and Slum)	Revenue Expenses (WS, WWS, MSW and Slum)	Balance available for investment in performance improvement actions
2010	10.63	0.34	9.07	3.11	5.47	6.71
Projected						
2011 (Budgeted)	25.17	0.34	24.52	3.69	6.05	22.16
2012 (Budgeted)	(5.87)	0.33	(6.17)	3.66	6.57	(9.08)
2013	(5.50)	0.32	(5.70)	3.88	7.14	(8.96)
2014	(5.03)	0.32	(4.77)	4.12	7.76	(8.41)
2015	(4.45)	0.31	(3.63)	4.36	8.43	(7.70)
2016	(3.73)	0.30	(2.27)	4.63	9.17	(6.81)
2017	(2.87)	0.29	(0.65)	4.90	9.96	(5.71)
2018	(1.84)	0.28	1.25	5.20	10.84	(4.37)
2019	(0.62)	0.28	3.50	5.51	11.07	(2.05)
2020	0.81	0.27	6.13	5.84	12.07	(0.08)

From the above table it is clear that unless Achalpur Municipal Council 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.

Investment capacity after revenue enhancement measures:

As discussed earlier, AMC levies all the taxes it can under the Municipal councils, Nagar Panchayats and industrial townships act, to improve the cost recovery it is critical to improve the coverage and the collection efficiency of the charges being levied.

It is thus extremely critical that Achalpur 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:

- Increase in property tax collection efficiency
- Levy of appropriate sewerage charges to induce self sufficiency

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	Increase in property tax collection efficiency	Current collection efficiency: 54 % Targeted collection efficiency: 90%
2	Levy of appropriate sanitation charges to induce self sufficiency	At rates calculated as per state government recommendations Targeted collection efficiency: 90 %

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

Table 21- Investible surplus after revenue enhancement actions (Rs. In Cr)

Year	Investible surplus	Increment due to improvement in property tax collection	Increment due to tariff revision and improvement in sewage charges collection	Net investible surplus
2010	6.71			
Projected				
2011	22.16	0.97	0.68	23.83
2012	(9.08)	1.63	1.03	(6.41)
2013	(8.96)	1.83	1.54	(5.57)

Year	Investible surplus	Increment due to improvement in property tax collection	Increment due to tariff revision and improvement in sewage charges collection	Net investible surplus
2014	(8.41)	2.05	1.73	(4.62)
2015	(7.70)	2.29	1.94	(3.46)
2016	(6.81)	2.75	2.33	(1.72)
2017	(5.71)	3.09	2.61	(0.01)
2018	(4.37)	3.46	2.92	2.00
2019	(2.05)	3.87	3.27	5.09
2020	(0.08)	4.34	3.67	7.92

There is significant scope for improvement in the augmentation of revenue sources. It can be seen from the above simulation of the revenue enhancement measures, the investible surplus can be gradually improved. The investible surplus can be observed after 2018.

Table 22-Phasing of Actions- PIP Phase 1

Proposed improvement areas	2013	2014	2015	2016	2017	2018
Water Supply						
Consumer surveys for entire city						
Periodic surveys at source, treatment and consumer end						
Identification and regularization of illegal connections						
Water augmentation and improvement in water supply mechanism						
Refurbishment of old network, detection and plugging of leakages						
Additional connections by expanding distribution network						
Conduct water audit and leak detection surveys						
Undertake hydraulic modeling for entire water supply network						
Policy level Improvement Areas						

Policy level interventions (pre/post improvement in Water Supply						
Levy telescopic rates for water supply						
Sanitation						
Preparation and Implementation of Septage Management Plan						
Preparation of DPR						
IEC Campaigns etc						
Policy level Improvement Areas						
Improve collection efficiency of sanitation tax						

Phase 1 of PIP in AMC: 2013 to 2018

- Augmentation of Water supply in Achalpur improvements will help AMC move towards 24X7. AMC has augmentation proposals under UIDSSMT which is sanctioned and the work has started for network refurbishment and augmentation. This will be completed by 2015. This will ensure 100% metering and 2hrs of supply per day.
- Nagorathan and SJSRY is the major grant that the ULB will be expecting that can be used for water audits, hydraulic modelling and other low cost interventions simultaneously.
- In order to realise the targets set for improving water supply and sanitation in AMC, 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. AMC has to focus its attention on improving policies related to services, financial sustainability, and accountability to the consumers.

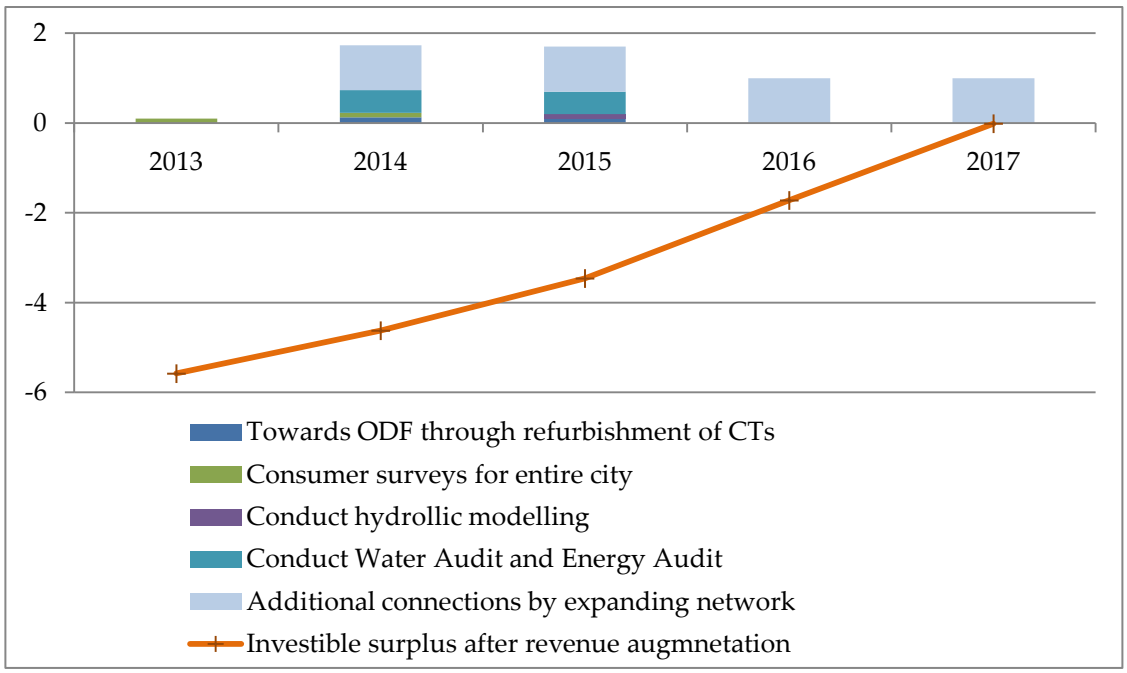


Figure 14-Phase 1: Proposed phasing of water and sanitation projects, after undertaking revenue enhancement measures

Phase 2 of PIP in AMC- 2018 to 2022:

- Starting from 2018, AMC can begin construction of individual and community toilets as the investible surplus is from 2018. As issues in existing community toilets were observed in terms of operation and maintenance, it is proposed that AMC refurbishes these community toilets before initiating construction of new community toilets.
- Existing community toilets can be refurbished and the maintenance of the same can be given to NGOs and CBOs. 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. 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.
- AMC can go in for construction of individual toilets simultaneously. Construction of individual toilets will be completed in five years, while community toilets will be completed by four years.
- The other actions like IEC campaigns etc can take place before 2018.

Table 23-Sources of revenue to fund ODF in AMC (in Rs. Crores)

Implementation of ODF in AMC	2018	2019	2020	2021	2022
Total cost	**16 Crores**				
Investible surplus after implementation of other projects	**2.0**	**5.7**	**7.0**	**Requirement of 2 Crores**	

5.3 INSTITUTIONAL IMPERATIVES TO ACHIEVING PROPOSED IMPROVEMENTS

In order to realise the targets set for improving water supply and sanitation in AMC, 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. AMC has to focus its attention on improving policies related to services, financial sustainability, and accountability to the consumers.

The financial analysis of AMC showed that overall capital utilisation is poor, with only 47% of capital income utilised in 2009-10. This points to the need for better project conceptualisation and management; if need be additional staff recruited for the same.

Mobilisation of external support: Additionally, AMC 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, AMC needs to also bring external support through Project Management Consultants (AMC). Arrangements should be made with AMCs for continued support throughout implementation of the 24X7 project, both immediate and long term.

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

Table 24-Institutional improvements proposed for AMC

Area of improvement	Suggested improvements
Across all sectors	
Human resource management	AMC needs to employ additional resources, either internal or external.
Equity in service delivery	AMC needs to introduce policies to improve water supply and sanitation services. Some incentives and schemes should be introduced for slum dwellers to avail new connections.
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.
Consumer redressal system	Methodical management of the consumer redressal system should be maintained.
Sector specific	
Water supply	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: 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. The Council 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.

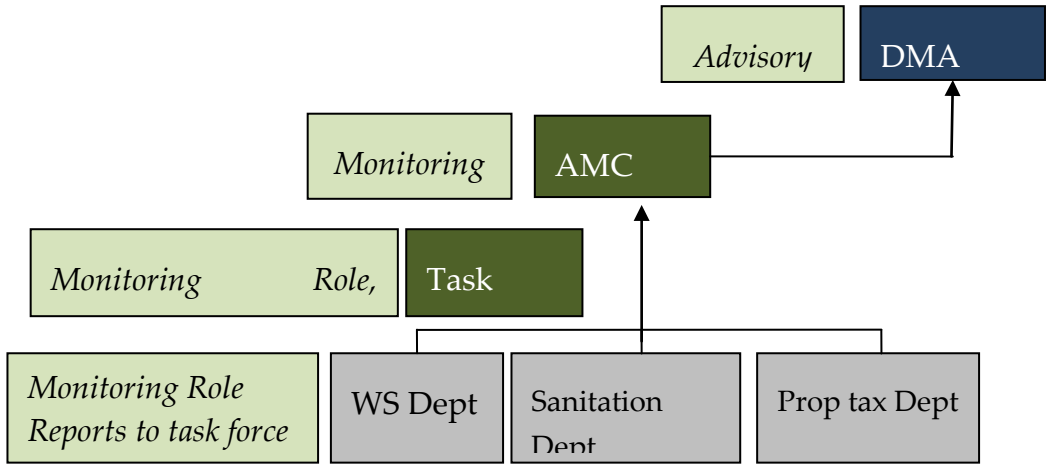


Figure 15- Institutional Structure

Performance monitoring through regular setting of targets and use of performance indicators: In order to ensure that AMC 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

As the performance improvement proposals are phased from 2013 till 2023, it is necessary for AMC 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 AMC 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 below.

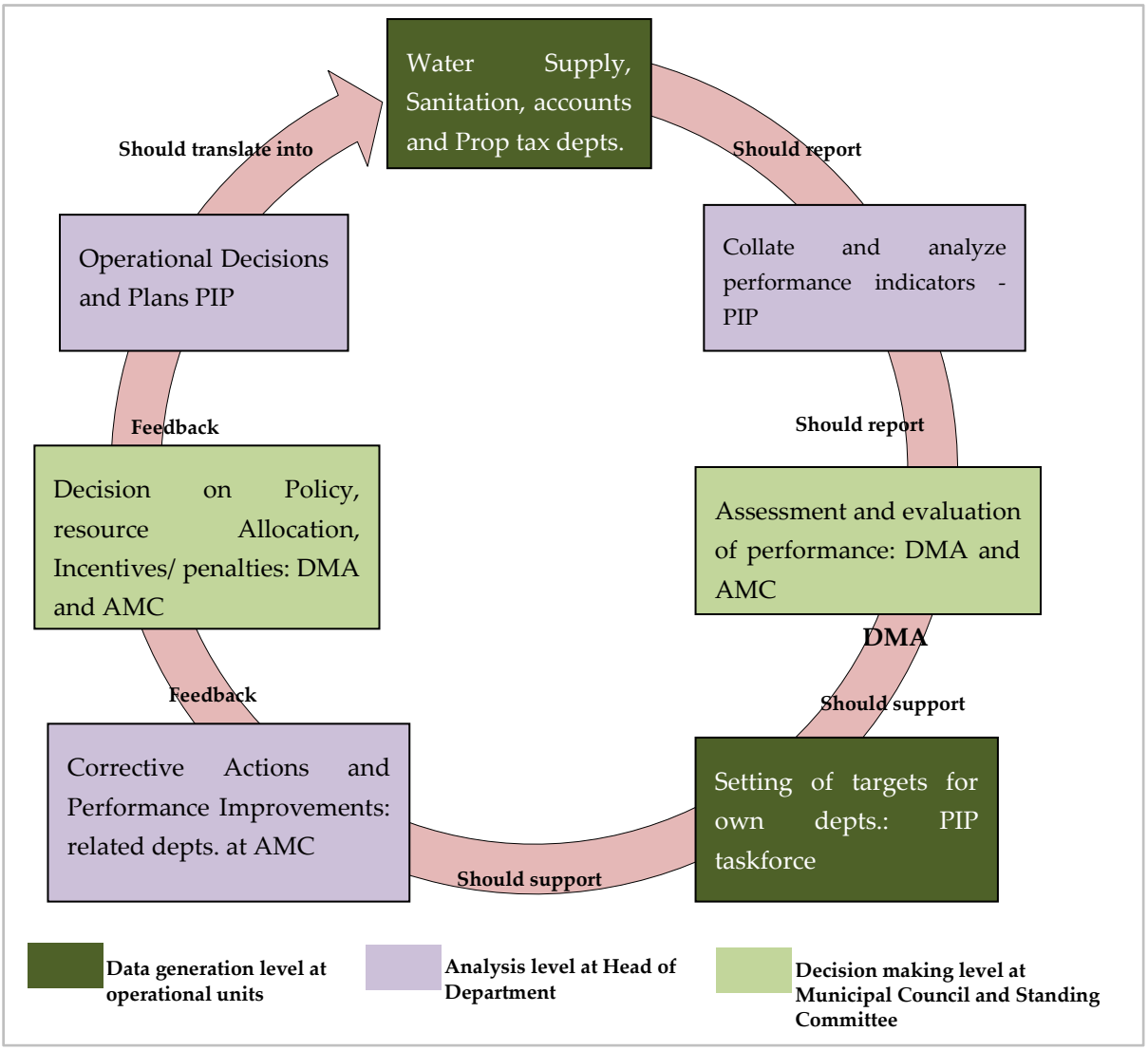


Figure 16- Performance monitoring framework proposed for AMC. ***Adapted from MoUD website: http://www.urbanindia.nic.in/programme/uwss/slb/slb.htm***

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ANNEXURES

ANNEX 1: SLUM DETAILS

Sr. No	Name of Slum	Notified/ Non Notified	Population 2001	Population 2009-10	Population increase	No of HH
1	Malweshpura	Y	1852	2545	693	388
2	Vilaypura	Y	1973	2613	640	417
3	Raipura	Y	1550	2053	503	325
4	Meherabpura	Y	2149	2846	697	450
5	Mughlaipura	Y	2026	2682	656	424
6	Kalkadipura	Y	1108	1467	359	232
7	Sultanpura	Y	1060	1404	344	219
8	Mominpura	Y	1807	2393	586	379
9	Abdalpura	Y	1077	1441	364	228
10	Begumpura	Y	1282	1698	416	269
11	Jivanpura	Y	1685	2246	561	353
12	Azadnagar	Y	306	405	99	63
13	Parmanpura	Y	1962	2598	636	414
14	Killa Ward	Y	1957	2592	635	419
15	Ashrafpura	Y	1897	2512	615	397
16	Sawaipura	Y	1792	2373	581	379
17	Abaspura	Y	1992	2638	646	417
18	Sarmaspura	Y	1920	2546	626	401
19	Nawbagpura	Y	1801	2385	584	377
20	Sarayward	Y	2041	2703	662	427
21	Hirapura	Y	2169	2872	703	454
22	Part of Mahal	Y	983	1302	319	206
23	Jagadambadevi	Y	1907	2526	619	399
24	Gusnak Ward	Y	338	448	110	67
25	Pensionpura	Y	3054	4045	991	610
26	Sitlamata Ward	Y	429	568	139	89
27	Shivaji Ward	Y	873	1156	283	183

Sr. No	Name of Slum	Notified/ Non Notified	Population 2001	Population 2009-10	Population increase	No of HH
28	Kalankamatadevi	N				
29	Gulabbaba	N				
30	Bhiopura	N				
31	Kasadpura	N				
32	Joheripura	N				

ANNEX 2: WARD WISE TOILETS

Ward no	Ward name	HH	No of individual toilets	Chattisgarh toilet (Single pit latrines)	Total
1	Shri ganesh nagar	720	250	33	283
2	Maulani azad	693	233	52	285
3	Chandrashekhar azad	539	251	52	303
4	Sandeep line	476	448	23	471
5	Shri bidulmandir	607	372	38	410
6	Tilak	765	105	45	150
7	Peshenapura	460	335	35	370
8	Rani laxmibai	592	188	45	233
9	Sant gadgebaba	832	140	32	172
10	Dasra maidan	586	258	128	386
11	Sitlamata	812	90	65	155
12	Shri maharana pratap	817	176	121	297
13	Chatrapati shivaji	917	333	0	333
14	Duggibhala	986	428	4	432
15	Gurumanaf	787	248	118	366
16	Lahasil	758	395	0	395
17	Vidhrabh bil	890	436	26	462
18	Jeevanpura	333	400	200	600
19	Abdalpura	669	460	40	500
20	Bilnapura	1041	435	0	435

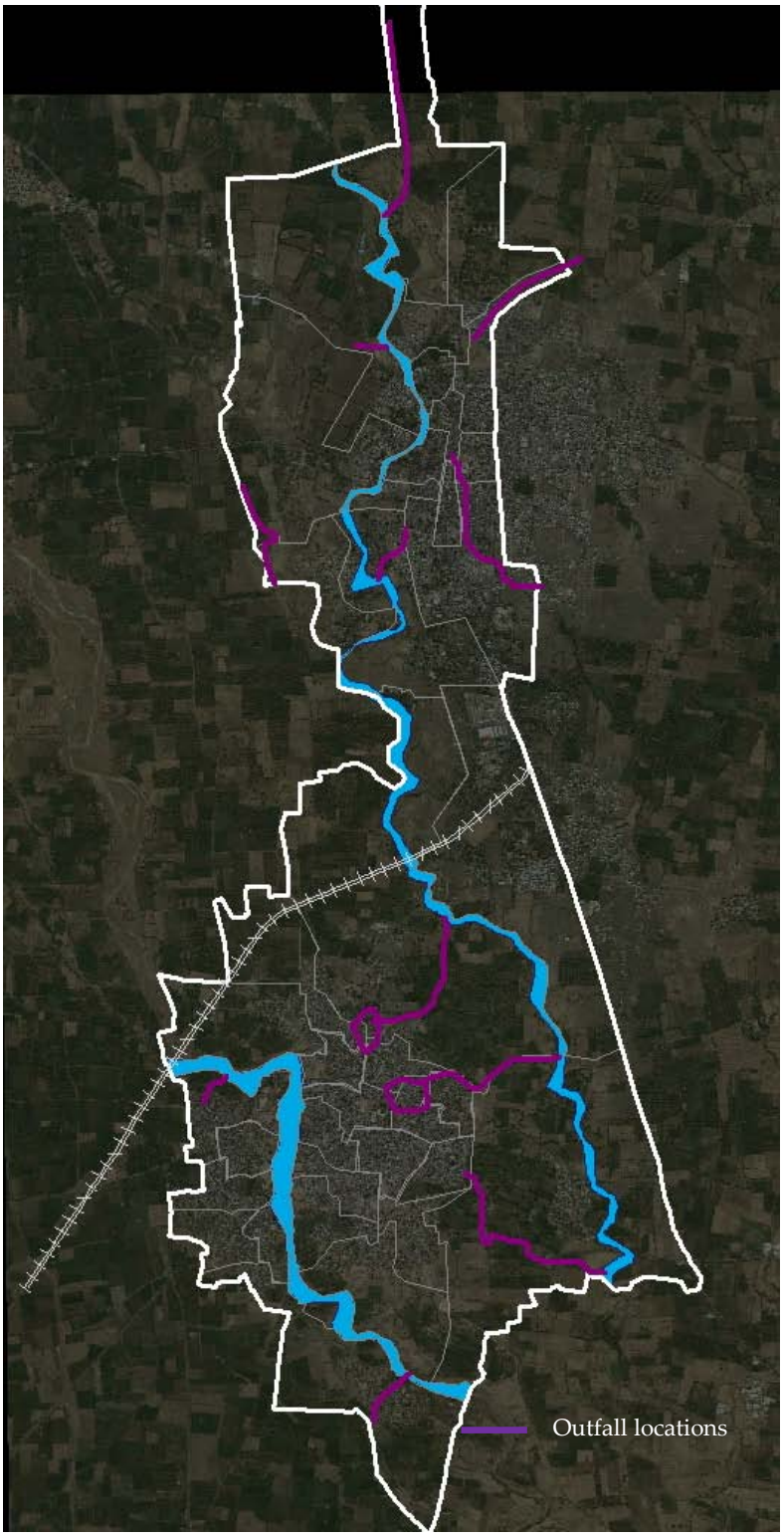
Ward no	Ward name	HH	No of individual toilets	Chattisgarh toilet (Single pit latrines)	Total
21	Mominpura	874	400	55	455
22	Begampura	900	186	220	406
23	Saraipura	997	400	0	400
24	Meharabpura	901	450	150	600
25	Chaudari maidan	985	425	0	425
26	Biyabani	882	352	0	352
27	Buddhelpura	858	400	115	515
28	Filla	919	325	120	445
29	Purmanpura	923	450	20	470
30	Manjurpura	975	425	70	495
31	Abrapupura	788	459	0	459
32	Vilamshpura	1092	450	110	560
33	Hirapura	596	426	400	826
34	Rampura	784	450	145	595
35	Abbaspura	No Data	442	100	542
36	Sarmaspura	No Data	350	50	400
37	Kalahanuman	No Data	394	25	419
38	Sultanpura	No Data	200	140	340

ANNEX 3: SLUM WISE INDIVIDUAL TOILETS

Sr. No	Name of Slum	Notified/ Non Notified	No of HH	No individual toilets VAMBAY	Govt scheme	NBA	LAY	Total no of toilets
1	Malweshpura	Y	388					0
2	Vilaypura	Y	417		103	20	88	211
3	Raipura	Y	325		105	20		125
4	Meherabpura	Y	450					0
5	Mughlaipura	Y	424	192		20		212
6	Kalkadipura	Y	232					0
7	Sultanpura	Y	219		126	10		136

Sr. No	Name of Slum	Notified/ Non Notified	No of HH	No individual toilets VAMBAY	Govt scheme	NBA	LAY	Total no of toilets
8	Mominpura	Y	379			10		10
9	Abdalpura	Y	228			20	122	142
10	Begumpura	Y	269		303	20		323
11	Jivanpura	Y	353		260	20	29	309
12	Azadnagar	Y	63		202		66	268
13	Parmanpura	Y	414					0
14	Killa Ward	Y	419					0
15	Ashrafpura	Y	397			20		20
16	Sawaipura	Y	379		531	20		551
17	Abaspura	Y	417	100		45		145
18	Sarmaspura	Y	401					0
19	Nawbagpura	Y	377					0
20	Sarayward	Y	427			10		10
21	Hirapura	Y	454	429		40		469
22	Part of Mahal ward	Y	206					0
23	Jagadambadevi ward	Y	399					0
24	Gusnak Ward	Y	67			10	49	59
25	Pensionpura	Y	610	227		20		247
26	Sitlamata Ward	Y	89					0
27	Shivaji Ward	Y	183		336			336
28	Kalankamatadevi	N						0
29	Gulabbaba Sansthan	N						0
30	Bhiopura	N						0
31	Kasadpura	N						0
32	Joheripura	N						0

ANNEX 4: LOCATION OF DRAINAGE OUTFALLS IN ACHALPUR



Source: CEPT University, 2011

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.

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PAS Project

CEPT University

Kasturbhai Lalbhai Campus, University Road, Navrangpura, Ahmedabad - 380 009, Gujarat, India
Tel: +91-79-26302470
Fax: +91-79-26302075
www.pas.org.in

All India Institute of Local Self-Government
M.N. Roy Human Development Campus, Plot No.6, F-Block, Bandra Kurla Complex
Bandra (East), Mumbai - 400 051, Maharashtra, India
Tel: +91-22-26571713/14/15
Fax: +91-22-2657 2286
www.aiilsg.org

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