



City Sanitation Plan

**JALGAON CITY MUNICIPAL CORPORATION
MAHARASHTRA STATE**

**DRAFT
(AUGUST 2011)**

Inspired & Guided By:



**ALL INDIA INSTITUTE OF LOCAL - SELF GOVERNMENT
Mumbai**



Pradeep Raisoni

MAYOR

Municipal Corporation of The City of Jalgaon

Foreword

In context of being a self reliant and socio-economically developed country upto year 2020, Govt. of India have chalked out Vision India 2020. In keeping terms with the ever growing urban population of India, aspects like proper sanitation play a key role. Ministry of Urban Development, Govt. of India under (UIDSSMT) intended to implement the preparation of City Sanitation Plan (CSP). Central Government is intended to prepare City Sanitation Plan for all mega cities in India.



Total 19 municipal corporations from Maharashtra State have been selected and asked to prepare CSP. Jalgaon City Municipal Corporation is one of them.

We are proud that Jalgaon City Municipal Corporation is the first among them to submit the CSP to Govt. for its approval. Looking from a broader perspective, preparation of CSP for a city like Jalgaon which is growing in leaps and bounds was of primary importance.

JalaSRI was shortlisted for preparing CSP for JCMC. Team of JalaSRI collected the baseline data through various surveys from the endusers. Personal interviews were conducted and sanitation related issues were taken into consideration.

City task force committees, experts from All India Institute of Local and Self Government and JalaSRI team members had interactions and final draft of CSP has come out.

I personally take this opportunity to thank all those involved in preparation of Draft CSP. Also I thank all my colleagues in JCMC for extending their support.

I reckon that Government will approve the plan and provide us grants for the shortfalls in existing infrastructure. We have done strenuous, integrated efforts to prepare the CSP and we do hope that Govt. will grant us wholeheartedly to make our plan a rewarding one to be a role model for all other towns.

Mr. Pradeep Raisoni

Mayor

Jalgaon Municipal Council &
Chairman, Task Force Committee,
CSP, Jalgaon



Prakash Bokhad

Commissioner
Municipal Corporation of The City of Jalgaon

From the Commissioner's Desk...

It is our pleasure to prepare & submit the Jalgaon City Sanitation Plan to Central Government in time. Being a Central Govt. funded (UIDSSMT) scheme, the CSP plays a major role in the development of Jalgaon City which is fast growing. In time, planning and application & use of optimum resources in the plan was a prime necessity for the CSP.



JalaSRI was shortlisted to prepare the CSP for Jalgaon City Municipal Corporation and City task force committee was formed. Under the guidance of All India Institute of Local Self Government, Jalgaon City Municipal Corporation conducted and coordinated meetings with the HOD's of Municipal Corporation, JalaSRI Team members and City task force committee and after going through all the aspects and attributes required, prepared the CSP for Jalgaon. Exhaustive socio-economic surveys were undertaken and community satisfaction response was analysed. These all culminated in the final outcome which will be submitted to the Govt. for its approval. I thank all the members of JCMC, City task force members, JalaSRI Project team and all those who contributed directly or indirectly in the preparation of CSP & last but not least the citizens of Jalgaon who cooperated in the preparation of this CSP.

Mr. Prakash Bokhad
Commissioner & Convener,
City Task Force Committee for CSP
Jalgaon

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Brand Ambassador - City Sanitation Plan



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Honours and Awards:

Padma Shri, D.Lit of North Maharashtra University, D.Sc of Konkan Krushi Vidyapeeth, Maharana Pratap Agriculture University and Tamilnadu Agriculture University, Honorary Membership of IIIE, FIE Foundation Award, Jamnalal Bajaj Award, 'Udyog Vibhushan' and Gandhi Ambedkar Social Justice Award, 'Samajratna' by Jain Community, 'Water conserver of India' award by UNESCO and Water Digest. Total 30 awards.

Crawford Reid Memorial Award by Irrigation , Association of USA

Areas of Contribution:

Agriculture	: High-tech agriculture, Agro-forestry water conservation
Industry	: Plastic, Solar energy, Bio-energy, Fruit and vegetable processing
Social	: Sports, Cultural, Health and Education.

Valuable Contribution

- Improved living standards of small farmers
- Increased industrial activity
- Indirect employment for Empowerment & Self-reliance
- Water & Energy conservation
- Developing integrated Agri value chain

Jalgaon City Sanitation Plan

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List of Abbreviation

CDS	Community Development Society
CPCB	Central Pollution Control Board
CO	Community Organizer
CPHEEO	Central Public Health &Environmental Engineering Organization
CSP	City Sanitation Plan
DUDA	District Urban Development Agency
EPCO	Planning & Coordination Organization
GoI	Government of India
GoM	Government of Maharashtra State
HH	House Hold
IECC	Information , Education and Campain Communication
ILCS	Integrated Low Cost Sanitation Scheme
IUSP	Integrated Urban Sanitation Programme
JCMC	Jalgaon City Municipal Corporation
LPCD	Litres per Capita per Day
M&E	Monitoring And Evaluation
MLD	Million Litres per Day
MoUD	Ministry of Urban Development
NGO	Non - Governmental Organization
NRCP	National River Conservation Programme
NUSP	National Urban Sanitation Policy

ODF	Open Defecation Free
O&M	Operation and Maintenance
PPP	Public Private Partnership
SD	Sludge Drying
STP	Sewage Treatment Plant
ULB	Urban Local Body
WC	Water Closet
WHO	World Health Organization
WSP-S	Water and Sanitation Programme, South Asia

Executive Summary

The summarization of this City Sanitation Plan and Evolution base is enumerated in this executive summary. Primarily, National Urban Sanitation Policy 2008 (NUSP) is the cause and reason to prepare this integrated City wide Sanitation Plan. The vision envisaged in the NUSP is given as ;

"All Indian cities and towns become totally sanitized, healthy and livable and ensure and sustain good public health and environmental outcomes for all their citizens with special focus on hygienic and affordable sanitation facilities for urban poor and women."

To prepare this sanitation plan, elaborative guidance has been given by The All India Institute of Local Self Government, Mumbai. Numbers of meetings have been conducted to crystallize and prepare City Sanitation Plan, as well as exhaustive guidance and discussions were carried on every element and aspects as evaluated by the Institute Office bearers. Questionnaires on various elements that is toilets, sewerage, storm water, solid waste, water supply, environment, IEC, etc. have been provide by the Institute, which covers each and every details and scope of the relevant topic. Similarly, standards, guidelines, norms, service level benchmarking, etc. have been discussed and specified to include and considered while preparing City Sanitation Plan.

Ultimately, with the help of Institute, a format have been evolved to present this City Sanitation Plan, which itself is self explanatory i.e. to say it navigates and evolves chronologically.

Therefore, to overcome the gaps & to make The City totally sanitized, healthy & liveable for all citizens specially the urban poor, the City Sanitaion Plan provides the necessary framework for urban sanitation in an integrated manner. The City Corporation requires support in terms of funds in order to develop sanitation strategies & implementation of city sanitation plan.

Present CSP for Jalgaon city, constitutes the present sanitation status of the city & the present infrastructural & other facilities availed by the city, the citizens' demands & perceptions about sanitation arrangements, outcomes & health & environmental linkages is also emphasized. Exhaustively demand & gap analysis is done & given in current & projected figures. In pursuance with the policy locally well suited, up grading difficult existing situations, community based, integrated, sustainable & eco friendly technological options are taken into consideration.

The chapter no.1 covers the objectives and vision of the Jalgaon City Municipal Corporation. It also describes the mission of the Jalgaon City Municipal Corporation and gives the strategies of the same.

The chapter no.2 describes the general overview of the Jalgaon City with the overall facilities and detailed profile of the city.

The chapter no.3 is about the use of integrated approach and methodology for preparation of the present City Sanitation Plan. How the plan is prepared and which are the steps involved in finalization of the present City Sanitation Plan.

The chapter no.4 explains the City Sanitation Plan elements and their impact and importance with respect to City Sanitation Plan.

The chapter no. 5 describes the present status and existing situation of all the seven elements in the City.

The chapter no. 6 gives the overview about the future requirements of all the elements to be fulfilled in order to make the city 100% sanitized.

The chapter no.7 gives the gaps in all the elements to be fulfilled in order to make the city totally sanitized.

The chapter no.8 describes the projected population of the city based on predictions. This will help us to know about the future requirements related to sanitation facilities.

Chapter no.9 gives the framework designed for taking the actions to make city totally sanitized as per the service level benchmarking.

The chapter 10 describes the provisions for various elements to be completed under the Jalgaon City Municipal Corporation budget.

Chapter no.11 describes the limitations and problems in execution of the City Sanitation Plan.

Chapter no. 12 gives the conclusion, suggestions and recommendations in the City Sanitation Plan.

Basically sanitation programme is undertaken as per guideline & policies issued by Govt. from time to time. Jalgaon City Municipal Corporation have prepared, submitted, implemented and under process of compliance to fulfill obligation of 100% city sanitation by year 2030. Some of the steps are already taken up for planning & implementation in health /sanitation by ULB, such as DPR including provisions of core services to be provided by JCMC, Solid waste-management DPR (with Bio-medical waste handling), Environment Management Plan DPR, Water Supply DPR & Under Ground Drainage DPR. The current CSP is prepared in consideration with the above mentioned schemes and their costing in DPR.

In parallel with the other tasks, Corporation has collated the primary database on sample condition. An exhaustive survey was conducted in 69 wards of the Jalgaon city on sanitation & its related issues

like community personal hygiene & public health behavior & practices; current sanitation arrangements, disposal & treatment systems; community participation on willingness to pay for different options; customer satisfaction for the provided sanitation services etc.

The key findings of the analyzed data give us the findings that in 6 wards of JCMC open defecation is acknowledged by all > 66% household lacks sufficient public sanitation facility; 11% are disposing solid waste on the open space; 40% households do not have drainage system in their homes & some other important results are mentioned in the report which seeks attention.

Corporation has adopted the eco friendly technological options of city wide nature to fulfill the gaps to achieve the NUSP vision. According to technical findings, around 0.5 Crore needs to be invest in constructing urinals; gaps assessed (against the DPRs already prepared and referred) in sewerage system can be bridged by investing Rs. 60.65 Crore; proposed storm water drainage arrangement can be achieved by investing additional Rs. 8 Crore; although the JCMC has already implemented MSW micro level plan, to cater 226 MT/day waste generated, additional Rs. 8.85 Crore will have to be invested further to improve existing condition; gap assessed for shortfall provision in water supply is Rs. 81 Crore & besides CDP provision on environmental preservation, additional provision of Rs. 2 Crore is proposed for plantation & improvement.

Thus the prepared CSP is a comprehensive & collaborative effort of various expert teams especially, experts from The All India Institute of Local Self Government, Mumbai worked on holistic & integrated city wide approach for betterment of existing sanitation, public health & hygiene in the upcoming years.

Chapter 1: Objectives and Vision

Out of total India's population, 29% is urban, residing in class I cities. This urban population is again classified into 37.8% which lives in metro cities. This trend is in growing status.

Despite intensive economic growth during last ten years and appreciable increase in living standards of the middle classes, urban poverty poses serious challenge like shortage of water supply, sewerage and sanitation, housing, developed land, transportation, communication etc. causes deteriorating health and environmental facilities.

Integrated urban sanitation programme (NUSP) was Launched by GOI, to bring all issues related to urban sanitation under one umbrella. Frame work for city sanitation plan is provided in Annexure II of the policy, which is line of work of present CSP to be prepared by urban local Bodies (U.L.B.) on guidelines and foots steps to comply for further obligation. Under this policy a goal is given to achieve 100% sanitation in cities by year 2033. Minimum goals declared under National Urban Sanitation Policy are as under:

- Open defecation free city
- Safe collection, treatment & disposal of sewage
- Maintenance of all water bodies, drainage, & storm water drains
- Promoting community planned & managed toilets
- Promoting sanitation plans with public participation
- Strengthening every institution to accord priority to sanitation provision
- Extending sanitation facilities to poor and unserved

Mission: National Urban Sanitation Policy

- To achieve 100% sanitation in the city
- To create a community driven system
- Integrated city wide sanitation

City sanitation programme touches to different legal obligations on health, epidemics, water and environmental issues, preservation of water bodies, employment programmes, maintenance of work done, social framework, proper authorization, financial burden, climate change, technical option and so on.

Jalgaon Municipal Corporation Vision:

The vision for Jalgaon was drafted based on an understanding of the state of the city and stakeholder consultations. Citizens and various stakeholders vocalized how they envisaged Jalgaon to develop in the next 25 years. Also, officials' perspectives on how they would like to develop Jalgaon were taken into account. Accordingly, the mission statement for was formulated.

Important Aspects

During individual discussions and the workshops, the stakeholders discussed and articulated several factors that should be taken into consideration while formulating the vision. These statements are listed below and have been used in drafting the vision statement.

- Industrial growth to be revived and sustained
- Able, efficient and economically developed
- Develop Jalgaon as an Trade Hub
- Jalgaon as Agri-Business
- Jalgaon as a Open Defecation free city
- Multi-sector economic approach to ensure sustainability
- Green Jalgaon: An environment-friendly city with excellent infrastructure
- Efficient use of energy
- Logistics Hub of Maharashtra
- A tourist transit hub
- Good connectivity with the region
- Education centre of the country

- Best City of Maharashtra
- Slum-free and pollution-free city

Vision statement:

Based on the city's strengths, futuristic aspirations, perspectives and potential of Jalgaon, the following Vision Statements have been sketched - A futuristic vision has to be adopted by the city for sustainable development of the City.

Jalgaon will be the future trade, industrial and logistics and transit tourist hub of Maharashtra with best infrastructure. A planned and people friendly City, with safe environment, growing economies, social equity and best sanitation practices.

Mission Statement:

The JCMC is the principal service provider of all municipal services. Through the involvement of the private sector and delegated functioning, the JCMC intends manage services efficiently in a cost-effective manner; JCMC would function as a coordinator and facilitator for provision of services, which promote socio-economic development, but are not under its umbrella.

The mission strategies of JCMC for each sector are:

- Provide all core municipal services.
- Prepare a comprehensive infrastructure plan for water, sewerage and storm water drainage.
- Improve road network and beautify all major junctions.
- Ensure efficient and environment friendly solid waste management.
- Conserve city environment by developing gardens, conserving and protecting water bodies, etc.
- Provide a clean, green and pollution-free environment.
- Preserve city's heritage value.
- Promote tourism through tourism development plans.
- Maintain the coverage of toilets.

Chapter 2: General (City profile)

Jalgaon City

Jalgaon city is situated in north-west Maharashtra bounded by Satpuda mountain ranges in the north and Ajanta mountain ranges in the south. City Jalgaon is the headquarter of Jalgaon District. Jalgaon City is considered as the agricultural and commercial capital. The Jalgaon railway junction serves routes to Mumbai, Nagpur, Delhi and Surat. The city is well developed with good roads, shopping centers and residential areas with a moderate infrastructure in communication and transport. Modern Jalgaon now boasts of vast industrial areas, educational institutes and good hospitals. Jalgaon is also the hometown of Her highness Smt. Pratibha Patil, Honourable President of India.

Geographical Setup: Jalgaon city lies between 75° 31' 36.39" to 75° 36' 5.30"E Longitude and 20° 58' 22.40" to 21°01'26.35"N Latitude. The average rainfall of the city is 700-750 mm which categories it as semi-arid region. Temperature extends from 10° to 46° C. City has a total of 5 lakh population during 2008 with a literacy rate 76.06%.

Linkages and Connectivity

Road Linkages: Jalgaon city is well connected by road linkages to important places of the State. The National Highway No. 6 from Mumbai – Nagpur passes through the length of the city and is the central axis of the city of Jalgaon. Further, the State Highways are Jalgaon – Ajantha and Jalgaon – Pachora that pass through the South side of the City and the Jalgaon – Mamurabad State Highway that passes through the North of the city. Major district roads are Pimprale – Avhane towards the North – West, Jalgaon – Saokhede on South - West, Pimprala – Mamurabad on North and Jalgaon – Pimprala towards the West.

Rail Linkages: The city of Jalgaon is situated at the centre of the district geographically, and is well connected by the broad gauge lines of Central and Western Railway to Bombay, Delhi, Ahmedabad, and Calcutta. The major railway junction is located about 22 km away from the city (at Bhusawal) which is a major junction of Central & Western railway of the Mumbai – Delhi and Mumbai – Howrah line.

Air Linkage: The nearest airport is situated at Aurangabad, which is 155 km away from the city. A tender has been floated for the proposed development of the Jalgaon Airport on BOOT basis³ or through Public Private Partnership basis.

Regional Linkages: Jalgaon and Bhusawal are the most important towns as far as economic, administrative and educational facilities are concerned. Therefore, they are, termed as regional center for first order settlements. The four towns such as Amalner, Chopda, Pachora and Chalisgaon are the settlements having second level importance and are termed as sub-regional centers or second order settlements. Twelve settlements both in urban and rural categories are having third level importance with both agricultural as well as non-agricultural base

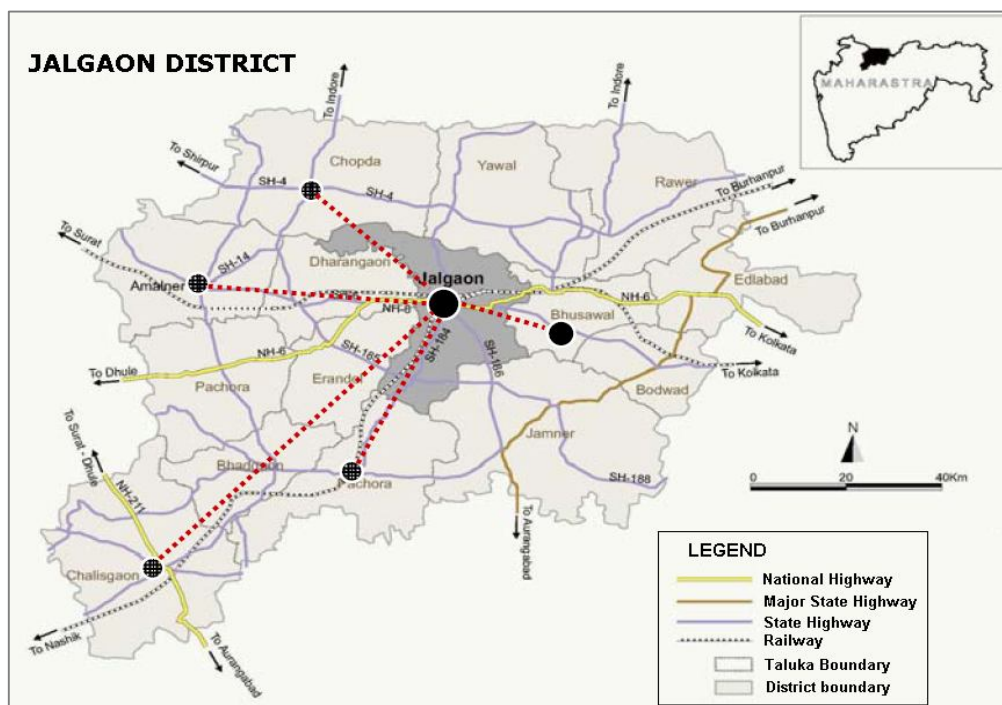
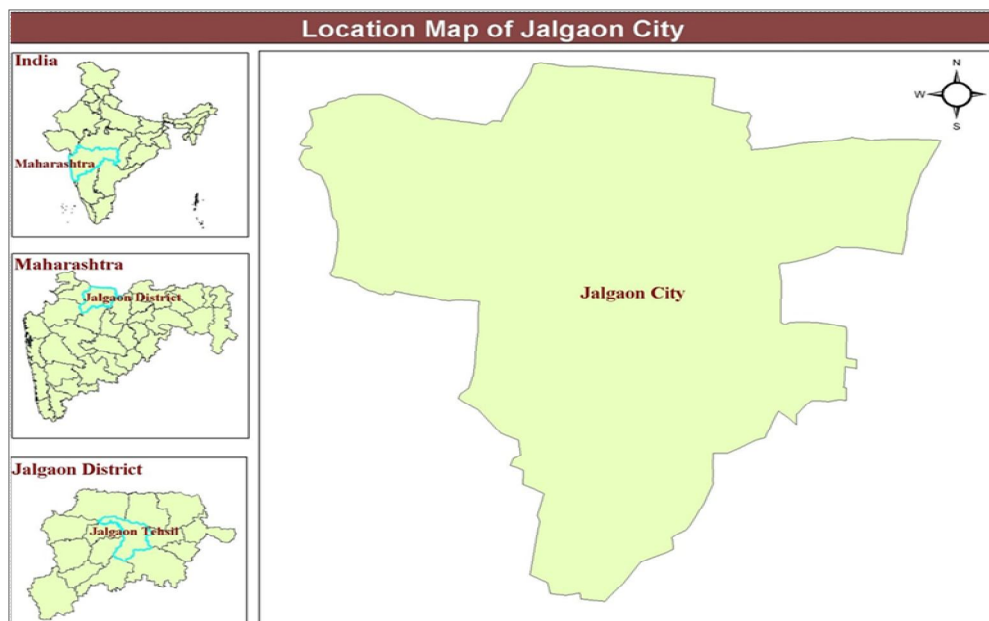


Fig.: Jalgaon District Map showing Connectivity



Jalgaon Municipal Council was established on 24th November 1864. The State Government in its notification has announced the formation of Jalgaon City Municipal Corporation (JCMC) with effect from 21st March 2003. Jalgaon City Municipal Corporation was formed as a corporate body under the Bombay Provisional Municipal Corporation (BPMC) Act, 1949.



Fig.: Jalgaon City Municipal Corporation

Jalgaon City Municipal Corporation serves an area of approximately 68.24 sq. km including the city and its peripheral areas and provides a range of civic services to citizens of the city of Jalgaon. The BPMC Act entrusts the authority with responsibility for administering of duties to the city. The Jalgaon City Municipal Corporation has divided the city into 69 wards. It consists of 69 Councilors who are elected representatives of the city (ward wise) and 5 persons nominated by the councilors. The councilors are elected every 5 years. The Mayor is the first citizen of the city and is elected by the councilors and holds office for a period of two & half years. The elections to the municipal body are held every five years. The city is classified under major urban zone.

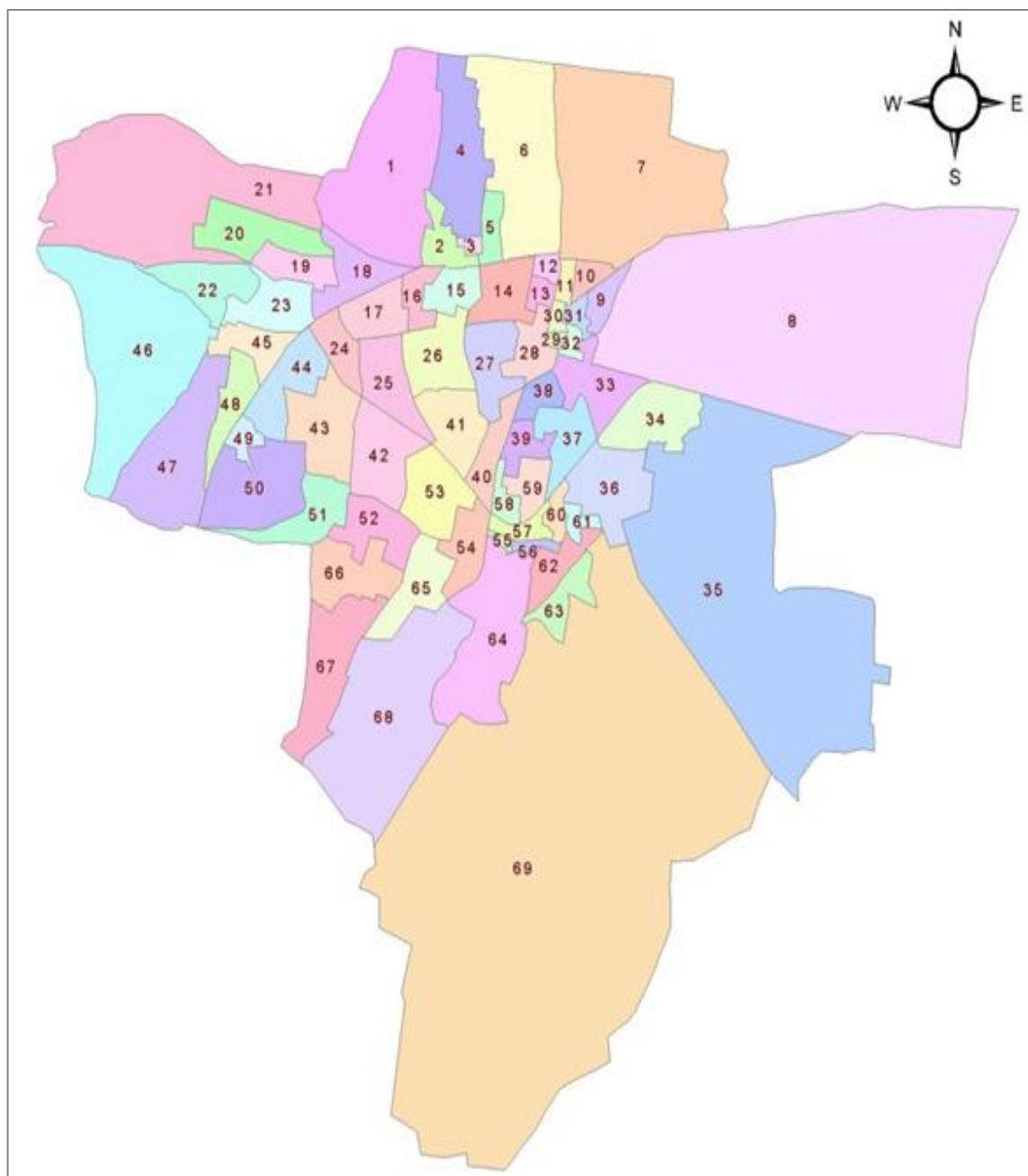


Fig.: Wardwise Map of Jalgaon City

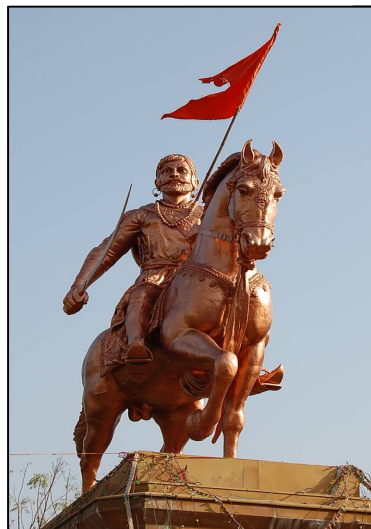


Fig.: Photographs of Jalgaon City

Climate

Jalgaon has a diverse climate. The climate of the town is hot and dry (except in the monsoon period) with the temperature reaching as high as 47°C. It is exceptionally hot and dry during summer that lasts from the month of March to May. The summer is the driest part of the year. Monsoon starts from June to September, which is followed by winter. The monsoon months of June to September receive about 99% of the annual rainfall with an average of 700 mm rainfall here. The amount of rainfall received per year does not vary greatly. The relative humidity is highest i.e. 92% in August and lowest i.e. 16% in April. Winters are quiet pleasant in Jalgaon city. The winter season lasts from December to February.

Topography:

Situated at 201 meters above mean sea level, Jalgaon city is bounded by the Satpuda ranges in North and Ajanta, Satmala and Chandur ranges in south. The town is situated in a generally flat terrain. A gentle slope is present towards the south as hilly areas are present along the Shirsoli and Mohadi roads and towards south-west along Girna Pumping Station road. The Girna River runs in the north - south direction along the western boundary of Jalgaon city near Nimkhedi village. The Mehrun tank is situated at the southern side of the city. The southern and northern sides of the city are rich agricultural lands.

Demography:

Year	Population	Growth decade	% Growth	Growth in Annual	Growth in Decade
1951	75,303	--	--	--	--
1961	88,452	13,149	17.46	1.74	--
1971	1,17,312	28,860	32.63	3.26	15,711
1981	1,65,507	48,195	41.08	1.1	19,335
1991	2,42,193	76,686	46.33	4.63	28,491
2001	3,68,000	1,25,807	51.94	5.19	49,121

(Source: - Census of India, CDP – Table. 3)

Table: Population Growth of Jalgaon City

The population growth of Jalgaon city according to census 2001 is given in following table 3. The city has expanded due to increase in boundary alos & it is observed that, population

density is 53.94 habitants /hectare, the core density in city is on higher side. The city is presently divided in 69 wards by City Corporation.

Population Projection

The Population Growth can be assessed by geometric rate of increase and compounded average growth rate

Method	2001	2006	2011	2021	2031
Geometric rate	368000	430903	530607	693214	855821
Compounded annual	368000	423694	509312	692664	94849
Average projected growth	-----	427298	519959	692939	948949

Table: Population Projection of Jalgaon City

Floating population:

Jalgaon being district place and business centre, floating population is assessed on basis of influx through mode of transportation like railway, bus (M.S.R.T.C and Private bus), private vehicle etc. It is estimated that 25000 person/ day is floating population.

Literacy and sex ratio:

As per census 2001, literacy rate is 86.9% [male 92.6 % & Female 80.6 %] This literacy rate is higher to state literacy rate [i.e. male 82.40 % Female 77.27%]

Scheduled caste and scheduled tribe population:

As per census 2001 the scheduled cast population is 22,128 i.e. 6% of total population and scheduled tribe population is 16,448 which contributes 4.5% of total population of Jalgaon city.

Issues:

The reason for high growth rate of population is due to influx of people from the rural areas in search of employment, work, business, education etc. Hence planning in terms of infrastructure especially water supply, sanitation facility etc for such an incremental & floating population is required.

Landuse analysis & efforts taken for planning

Efforts for planned development:

The Jalgaon Municipal Council has also prepared three Town Planning Schemes for the implementation of the Development Plan. The first Town Planning Scheme was prepared in 1978 which covered an area of 19.0 hectares mainly for road widening within the Jalgaon Gaothan area. Town Planning Scheme – 2 was prepared in 1979 which covered an area of 120 hectares and included implementation of civic amenities as proposed in the Development Plan. The third Town Planning scheme situated to the South of NH.6 covers an area of 65.68 hectares also prepared for realizing Development Plan roads and public amenities as per the Development Plan. The JCMC successfully implemented TP Schemes II and III while TP Scheme I still remain unrealized.

Apart from these developments, many private developers have also been developing layouts after obtaining the requisite license; permission/ exemption from the Town Planning Department of Jalgaon. The private developed layouts maintain by the developers for an initial period of one year; subsequently, these are handed over to JCMC for their upkeep, future growth and maintenance.

City Development plan is prepared by JCMC as per MRTP Act in year 1993 .with anticipated population of 4 Lakh in year 2006 and extendable area of 11.67 sq km and new development plan as per MRTP act for new extended limits.

The new city limit has gone beyond the extended gross area (68.24 Sq. Km.) which includes Pimprala, Khedi, Nimkhedi villages and part of Avhane, Manyarkheda villages. It must be noted that due to various reasons the development in semi urban zones in Tarsod, Asoda, Avhane, Kusumbe, Mohadi, Bambhori villages are also in progress . For preparation of CSP Jalgaon main objectives to consider are as follows:

- To plan for optimum utilization of land in the interest of the public
- Check unplanned and haphazard development
- Ease communication and transport networks by designing proper road systems
- To make provisions for urban amenities and services to meet future requirements
- To preserve historic and natural heritage.

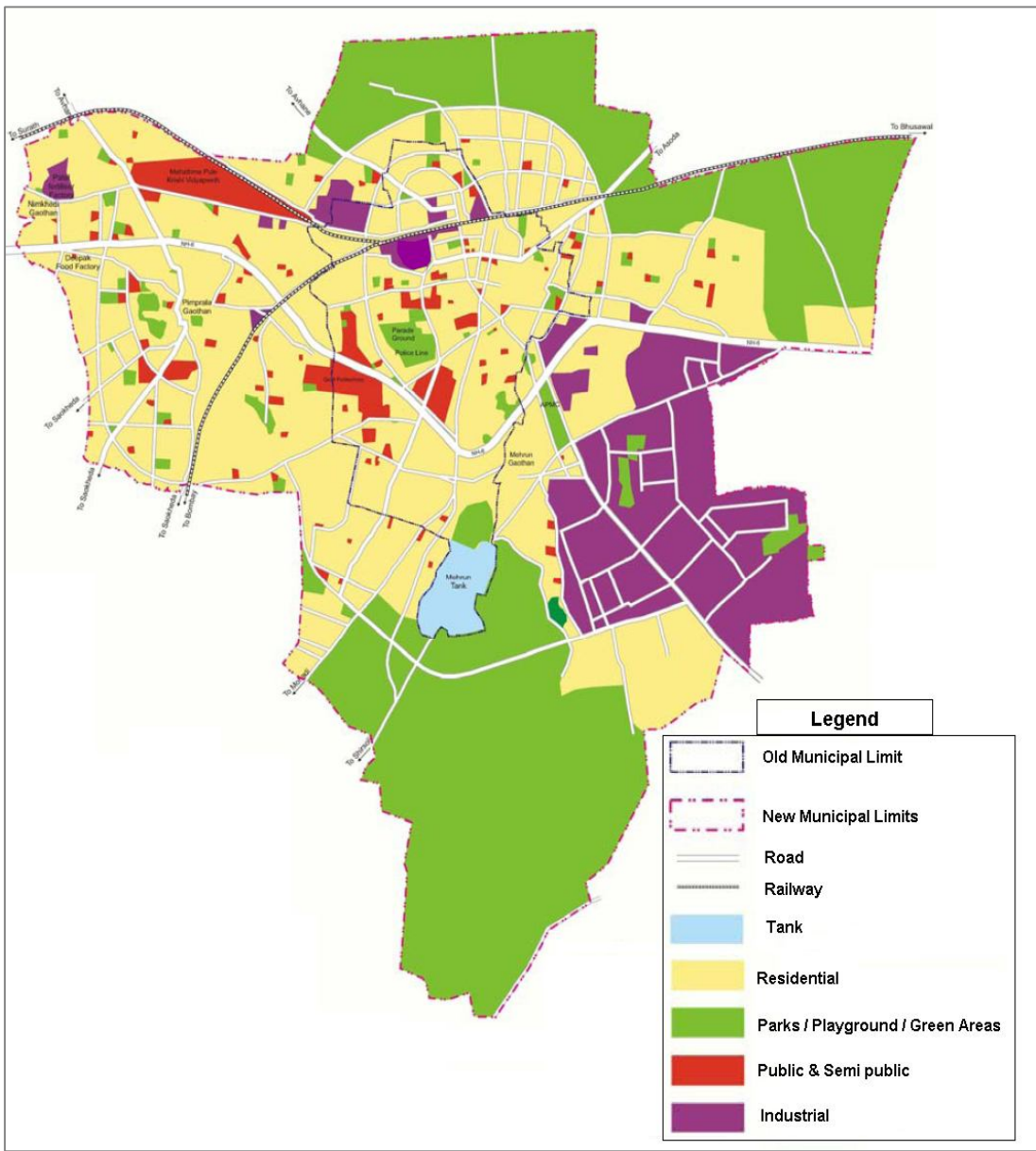
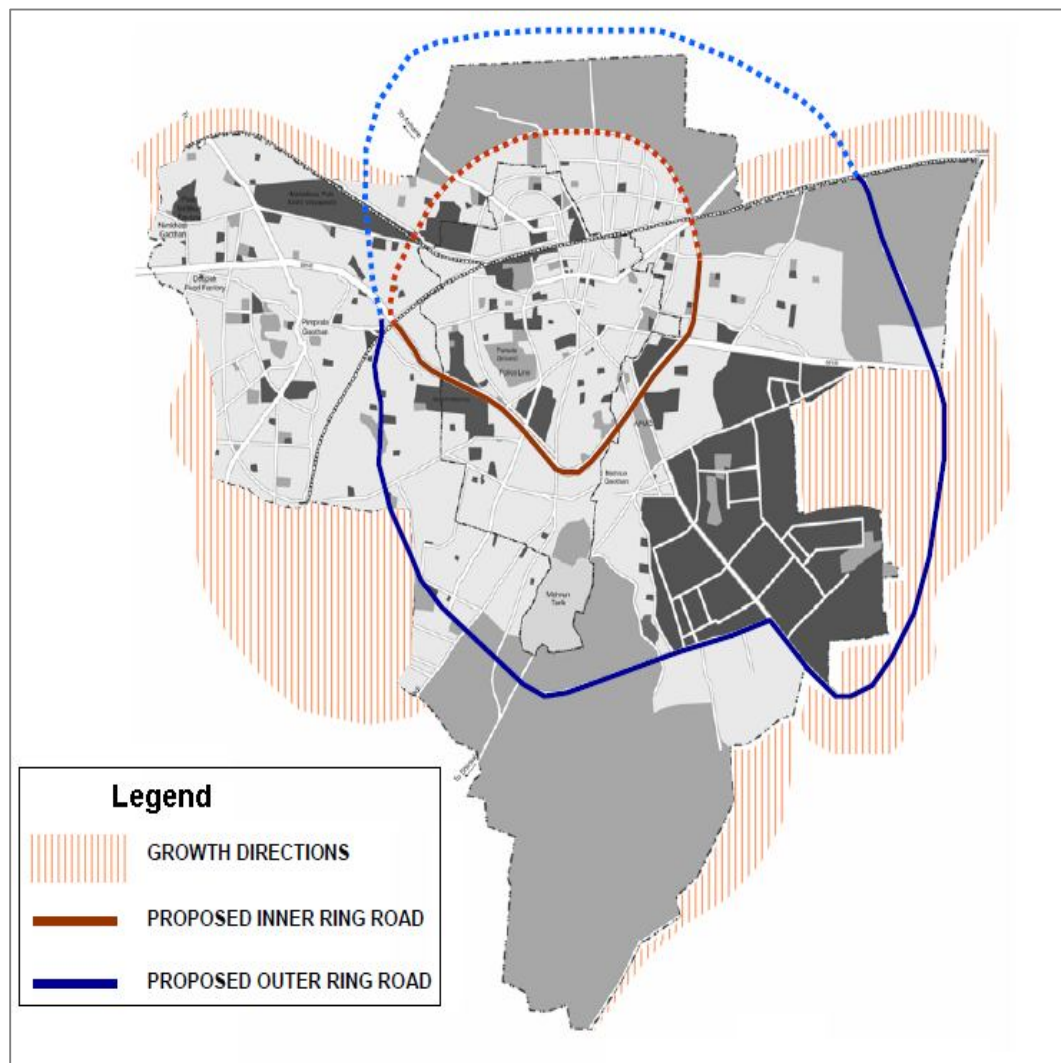


Fig.: Jalgaon Municipal Limits



Existing Landuse of Municipal Corporation area is as designated further:

Land Use	Area in Hect.	Percentage
Residential	3080.13	45.13
Commercial	77.36	1.13
Industrial	829.98	12.16
Public / semi Public	318.45	4.67
Transport & Communication Road / Railway	719.40	10.54
Garden, Playground and Fair Ground	155.68	2.28
Agricultural Land	1200.87	17.60
Public Utility	37.98	0.56
Vacant Land	260.25	3.81
Wall's Bodies Natural Stream	144.18	2.11
Waste land / lines etc.		
Forest land		
TOTAL	6824.28	100%

(Source: - City Development Plan pg-13)

Table : Existing Landuse of Municipal Corporation Limits

Important crucial areas / classified areas:

Gaothan area: Gaothan Areas are original Habitant centers in city comprising Jalgaon Gaothan (0.25 sq km), Pimprala Gaothan (0.17sq km), mehrun Gaothan (0.131 Sq km), Khedi Gaothan (0.025 Sq. km)

Gunthewari area: Nearby to old gaothan periphery and at few other places, unplanned, development is in existence which is covered under Gunthewari Vikas Rules.

Central business areas: Navipeth & Shivajinagar, Polan Peth, Baliram Peth, Saraf Bajjar, Dana Bajar are the old business centers of city (Area 7 to 8 sq km)

Town Planning Scheme: As per provision in MRTP Act. Town Planning Scheme I, II, & III has been approved and partly implemented.

Regional Plan: Under MRTP Act. a regional plan has been prepared with certain objectives up to 2001, which is not fulfilled till now and needs revision and implementation by Govt. and ULB.

Encroachment & Hurdles: At few Places on roads & open spaces, unauthorized occupancies and random constructions, electric & telephone poles exists.

Declared and Undeclared Slums in City

As per 2001 census about 62,696 Jalgaon populations lives in slums & constitutes about 17% of the total population of the city. The Municipal Corporation has notified Tambapura, Bhimanagar, Ambedkarnagar, Mangwada, Bhilwada & Old Cattle Bazaar for slum improvement. According to the survey conducted by the JCMC about 25 slum settlements have been identified as declared slums and about 5 settlements have been identified as undeclared slums in Jalgaon City. More than 75 % of the slums are concentrated within core area and rests are located in suburban areas. About 10240 hutments are located in Jalgaon city, comprising of about 51157 people living in slum area.



Fig.: Tamabapura Slum

List of Ongoing Schemes and Programmes

EWS Housing Project

JCMC has under taken the constructions of 11424 houses for following slum population

No.	Name of Slum	No of Houses to be Constructed	Tender cost with T.P	Present Status
1	Tamba pura	1616	1342.26	Not yet started
2	Phukat pura	380	303.72	At plinth level
3	Shivaji nagar	808	747.21	726 completed & allotted
4	Mehrun Goathan	916	737.44	RCC framed structure Completed
5	Samata Nagar	2390	1913.90	At GF slab level
6	Khandrao Nagar	1912	1536.22	588 completed & allotted at GF- Slab & some are all FF lintel level
7	Harivittal Nagar	2234	1780.98	156 completed & allotted other are at GF slab level
8	Khedi	480	388.28	80 completed & allotted at GF lintel level
9	Asoda Road Valmiki Nagar	688	521.52	GF lintel level
Total		11424	9271.53laks	

Table : EWS Housing Project

This housing project was started in the year 2000 and the project was completely financed by HUDCO. However due to litigation the project has been stopped. JCMC is now planning to complete this project through the IHSDP scheme, with an additional 10,000 new units. Before this scheme, JCMC had already completed 3710 units & 1550 units from the proposed 11424 units. In all 5260 units were constructed & allotted to slum dwellers.

No	Name of Slum	Name of School	Primary Schools	Secondary Schools
1	Gendala Mill	MNC No.15	1	-
2	Tambapura	MNC No. 08, 16, 41 and 2 Urdu Schools	3+2	1
3	Harivitthal Nagar	MNC No. 23, 42 and 2 Jijamatha Primary	2+2	1
4	Jainabad	MNC No. 41 New Balvikas Primary	1	-
5	Shahu Nagar	MNC No. 09, 12	2	-
6	Samata Nagar	MNC No. 21	1	-
Total			14	2

(Source: Education Dept. Jalgaon City Municipal Corporation)

Table : No. of Schools in Slums

Slums with health unit provision:

1. Shahunagar Dispensary, Chattrapathi Shahu Maharaj Ruganalaya in Shahu Nagar Jhopadpatti
2. Division Dawakhana at Shivajinagar, Dada Sahib Bhikamchand Jain Ruganalaya. It covers Shivajinagar, HUDCO housing and Genda Lal Mill areas
3. Chetan Das Mehta dispensary covers Tambapura and Kanjarwada
4. Prathamik Aarogya Kendra Dispensary located in Suresh Dada Jain Nagar. It covers Pimprala and HUDCO areas
5. Mohammad Yusuf Aryurvedic Dawakhana

For a total population of about 62,696 people (Census 2001) that lives in slums in Jalgaon, there are 18 community wells, 82 bore wells and 280 public water tap connections in all. This means about 380 points from which the urban poor have access to water, viz. 1 access per 164 people. While this itself suggests an uncomfortable living condition.

With respect to sanitation, the total number of public toilets is 826.00 and the total number of personal toilets is 153.00 giving a total figure of 979 toilets for 62,696 people (Census 2001) living in slums in Jalgaon. Per person, availability of seats of public convenience is 1seat availability for 64 people. This also indicates the general inadequacy of basic services to slum dwellers in the city.

Institutional Area: Institutional area is covered by school, colleges, offices, bus stands, markets, hospitals and any public places etc.

Market Area: There are commercial complex of large area e.g. corporation shops/market, A.P.M.C. market, co-op industrial estate, shops/markets, stadium complex, Zilha Parishad market, few private markets.

Hotel & Restaurant: There are large numbers of small and medium hotels & restaurants. (Two star hotels about 23 rooms and other 42 hotels)

Hospital & Clinics: There are private hospital & clinic as well as civil hospital with about 2137 no. of beds (Multispecialty -4 no., Govt. hospital - 1 no., dispensaries - 4 no., PHE- 4 no., private hospital 203 no.)

Slaughter house & Mutton market: There is one mutton market and few other staggered premises are used for this business.

Other areas: Abandoned quarry site, natural waters course, unused lands, agricultural land, forest, railway land are other areas of significant quantum.

D.P Plan Area: New developing plan areas are marked for specific use permitted according to Development Plan under MRTP Act. Objective of services like water supply, electric supply, sanitation, drainage, internet/cables services, parking, civil utilities etc. is not considered with due importance to the extent it is required. These Services are provided through narrow, inadequate & approved road network which needs attention.

Industrial areas: It is divided in private area & M.I.D.C area. These areas have its own arrangement as per rules (i.e. Industrial policy & pollution control board)

Gardens and open spaces: Large segment is covered under this area, which needs attention

Municipal Services

Road Infrastructure

Roads are utilities basically designed for surface communication. It is observed that original road layout and Govt. administrative buildings were earlier planned by then architect of Bombay & by Bharat Ratna sir Vishveswaraya, around year 1910. They were planned for 100 years traffic projection. However new road network although overloaded by other services, do not reflect same vision as being planned on basis of guidelines issued under development control rules as a mathematical parameter.

The National Highway No. 6 and State Highways SH-6, SH-184 and SH-186 pass through Jalgaon city. The available road length in Jalgaon city is 430.0 km. (This includes the National and State Highways within the city area) & the road density is 1.16 meter per person. The types of roads cover the whole spectrum from mud surface, WBM to bitumen surfaced and cement concrete category. There is a variation in the degree of usage of different roads within the city. Roads such as the ones in the Gaothan area (small lanes and by lanes) are today the least frequently used and fall into the category of least maintained roads in the city. The average speed on the roads is between 15-30 kmph and fall into the safe zone as today. Majority of the delays are caused at interchanges/junction that requires improvement.

Sr.No.	Road Categories	Carriage Way Width(m)	Capacity (PCU/hr)	Directional Road Length in Km
1	Six lane	19.0 - 21.0	5400	34.40
2	Four lane	14.0 - 18.0	3600	64.50
3	Three Lane	7.0 - 11.0	2200	163.90
4	Two Lane	5.5 - 7.0	1100	64.50
5	One Lane	3.0 - 5.5	600	103.20
Total				430

(Source: Comprehensive traffic and transportation study, Tata Consultancy Services)

Table : Roads - Width & Length

45% roads have bitumen but not as per the standard. 40% roads having average surface quality and only 15% roads are having good quality.

Parking:

Growing industry, trade and commerce and most importantly the rapid growth of private vehicles has increased the need for more parking spaces especially in the central areas of Jalgaon City. This is also due to the fact that Jalgaon City is the head quarter of the Jalgaon District. Both on street and off street parking practices are prevalent in the city; however, majority of the parking facilities falls in the on street category. Critical locations like that of the central business areas and areas near commercial complexes experience insufficiency and inadequate parking provision.

Morning and afternoon hours see a larger parking demand, which decreases towards the evening. The Tata Consultancy Services report indicates that crucial areas of the city are already parking grid locked and the necessity of parking is an issue of concentration in the future.

Parking is also provided in areas in proximity to intersections. This practice is in violation of accepted norms; and need to be rectified in future with certain areas being demarcated as parking free zones and the introduction of offsite and pay and use parking policies.

Long-term comprehensive plan for road, traffic and transport sector and off street parking facilities have not been implemented or planned yet. Also parking is required to be planned for National Highways.

Street Lighting:

The Jalgaon City Municipal Corporation (JCMC) is responsible for the provision of street lighting in the city. More than 80% of the city is lighted by streetlights and work is in progress in the remaining 20% areas. Maintenance costs are about Rs. 4Lakh per month. 14,200 street poles, 12,000 poles with lighting fixture, 10,000 tube lights, and 3347 sodium vapour lamps are provided for the streets. The NH – 6 has 200 poles with sodium light fixtures on them. 4 high mast street lights at a height of 21m exist in the city at Court Chowk, Swatantra chowk, Akashwani Chowk and Nelson Mandela Chowk. They have 48 lamps and are all metal halide lamps with 800wattage.

Sanitation & Public Health:

The city recorded 1768 public & community toilets during 2005-06 these are mainly located in the area of Shivajinagar, Tambapura and core area of the city. Presently 2084 toilets are provided and functioning. Part of infrastructure needs capital repair.

As per National urban sanitation policy, City ranking is done in the year 2009-10. Jalgaon City is listed at 135 rank with total city score to be 38.565.

Economic Base:

Maharashtra is one of the most developed economies in the country. The per capita income in the state stood at US\$ 621 in 2003-04. Jalgaon city is the trade and commercial center of North Maharashtra Region and the base of the Agro- based industries. Favorable government policies and facilitation of infrastructure have seen the industrial development of the city change through various departments such as the Maharashtra Industrial Development Corporation (MIDC). Other than the agro base of the economy some of the other prominent industrial players in the

district include Marico, Jalgaon District Co-operative Milk Producer's Union, Jain industries, VIP, Supreme, Orient Cement, Nilons, Wipro, Raymond, K B Brakes and Kwaliti Ice Cream etc.

Employment Profile

The Workforce Participation Rate (WPR) in the city has slightly increased from 1991-2001. Although, there has been a growth in the absolute number of total workers, the proportion of non-workers has reduced. In 1991, 87.92% of the workers were male with only 12.08% of workers being women. However, in 2001, 87.05% of the workers were male and 12.95% were women indicating increased female participation in work.

Occupational Structure:

The occupational structure of the city is divided into the Primary, Secondary and the Tertiary sectors. Primary Sector includes cultivation, agriculture, livestock, fishing, hunting, mining and quarrying. Secondary Sector includes workers from manufacturing and processing industries, household industries and others. Construction industry is part of the secondary sector as well as tertiary sector. Tertiary Sector includes commerce, trade, transport, storage, communication and other services. The workforce force participation rate in primary, secondary & tertiary sector is 4.7%, 3.2% & 92.10% respectively.

Industrial Sector:

Maharashtra Industrial Development Corporation (MIDC) is responsible for the development of industrial estates / facilities in the State, Region and City. It includes major industrial developments in the three Districts of North Maharashtra region. In 1985, a separate industrial area was established in the southeastern part of city, 1200 industries were established, and 30% of this land is yet to be occupied. There are 24 large and medium scale industries (agro, textile and engineering) supporting about 4,500 employees. The total investment of these units is about 151.55Crores as of 2003-045.

Trade and Commerce:

The city's economy is driven largely by trade and commerce. It receives about 40% of the total market arrivals in the District. The per capita income of Jalgaon city is Rs. 2,666 in constant price and about 22.12 % of the workforce in the city is engaged in trade and commerce. There are 8466 commercial establishments in the city out of which 4534 is municipal establishments and the

rest owned by the private. The city acts as a base for exchange of agriculture products & commodities within the region.

The Jalgaon region is well known for the production of jawar, dal, bajra, cotton, groundnuts etc. The bulk of this produce is marketed by the Agriculture Product Market Committee. The chief export commodities of the district are bananas, vanaspathi ghee, milk and milk products, corn, cotton etc. and import commodities are food grain, tea, cloth, oilseeds, fertilizers, medicines, machinery, electrical equipments etc. About 33.49% of total workers were engaged in Spinning and Weaving and about 21.38% of workers were engaged in Ginning and Weaving. It shows that, more than 54% of total industrial workers are engaged in textile-oriented industries and rest of it is agriculture oriented industrial workers.

Best Practices:

Major trade	: Gold & Pulses, Agriculture produce
Major industry	: Plastic Processing, Drip irrigation, Blankets, PVC pipes, Plastic mats & Pulses process
Major crop	:Banana (18 % of India's banana cultivation is from Jalgaon District), Mango, Guava, Onion & Cotton
Health care	:Apart from Government hospital, the city has 60 private hospitals
Education	:North Maharashtra University has its headquarters at Jalgaon

No. of Colleges	Jalgaon city	Jalgaon district
Arts, Commerce, Science, Fine Arts & Social Science colleges	12	48
B.Ed. & B.P.Ed colleges	3	10
Law , Medical , Ayurveda , Pharmacy & Engineering colleges	9	15

IT & computer	:BSNL, Tata Indicom and Reliance provide internet service
Facilities	:BSNL has started its broadband & 3G facility
Phone connection	:STD Code 0257; BSNL, Tata Indicom & Reliance services; Mobile services of BSNL, Airtel, Vodafone, Idea, Docomo, Uninor

Postal service	:Jalgaon has Head Post Office [Pin -425001], Speed Post, e-Post Business Post, Express Parcel Post, Data Post, International Money Transfer, Satellite Money Order Scheme, Mail on Phone, Greeting Post
Transport	:Jalgaon city is situated on central & western railway. Jalgaon junction is major rail station. Bhusawal, 28 kms away from Jalgaon, is a major divisional headquarters of Central Railway & is well connected to major destinations like Mumbai, New Delhi, Kolkata, Chennai, Ahmadabad, Pune, Nagpur, Nasik, Aurangabad, Surat, Indore, Solapur by rail and road. Jalgaon will very soon have air connections, the work is underway, expected to start by first quarter of 2010
Banking	:SBI and important nationalized banks, private banks likes ICICI, HDFC, Axis, Std. Chartered & some other are functional in Jalgaon city. Almost all important banks have their ATMs and Net banking available here.
Sports Facilities	:Cricket grounds, stadium, swimming pools, badminton court are available. Also North Maharashtra University has its own Sports Complex.
Cultural events	:Many organizations regularly hold cultural events performed by nationally reputed artist. All India Radio station also performs cultural programmes.
Tourism	:Ajanta caves are approximately 50 km. away & Ellora caves are approximately 150 km away from Jalgaon city. Some of the historical and heritage sites in the district are Changdev and Muktabai mandir, Padmalaya Ganapati mandir, Yawal Was mandir, Unapdev/Sunap dev hot water stream, Pandav wada at Erondal, Patanadevi and Bhaskaracharya place at Chalisgaon. However there are no specific tourist places in proper Jalgaon City.

Chapter 3: Approach & Methodology

Approach:

The integrated approach was adopted for the preparation of the present City Sanitation Plan for the Jalgaon City Municipal Corporation in which the Councillors and the representative 11,000 citizens from the all wards of the Jalgaon Municipal Corporation were taken into consideration.

Methodology:

The most important first step to begin with is establishment of task force as generic element is notified. This has been adopted at Institutional of level (ULB Level) by creating a Task force. This task force in general is to approve all subjects of city sanitation plan as primary navigator ultimately to initiate, guide & act as observer on all subjects of C.S.P. as per guide lines. The Meetings are held at two months interval and extra meets on need base are called for. The separate meet was arranged at Alpabachat Bhavan and Mr. Orape, Advisor of All India institute of Local Self Government have guided to the members of task force committee, Trainers and motivators on various issues related to development of City Sanitation Plan. One subcommittee is formed to watch over the wards. A coordinator is selected between task force and ULB as implementing agency is formed out of task force members from ULB & other members of task force. Minutes of meeting of task force and committee are circulated to all members and heads of ULB. ULB (implementing agency) have entrusted official duty of C.S.P. to Dr. Bhangale, Dy. commissioner health as head of C.S.P. further action is proposed to establish /delegate the charge as permanent officer in charge for this head. Presently the post is rather coordinating administrator rather than administrator-in -charge for accountability.

ULB (implementing agency) have been assigned to work on following aspect.

- a. ULB (Implementing Agency) has been instructed to frame up "Manual and Guidelines for management of CSP". Manual and guidelines are to cover up all activities independently in asserted manner, with delegation of power and limitation of duties to implement in given time frame & legal framework. "Manual and Guidelines" will be modified to avoid conflicting issues to achieve goals, by prior approval from task force. It is proposed to delegate this preparation of manual from expert agency and ULB to abide to it in strict manners within provision of the Bombay Provincial Corporation Act for administrative action by pinpointing responsibility.

- b. ULB (Implementing Agency) have been consented to prepare CSP from already approved agencies, as per framework of CSP in National Urban sanitation policy.
- c. Task force have asked U.L.B. to follow framework by itself as well as with stakeholders and agencies, with deviation if any to fulfill the requirement on immediate basis. Any difficulties arising should be brought to records and include for resolving further in CSP.

Motivators and trainers from various colleges in the city have worked to collect the data from household surveys in all the 69 electoral wards of the city. The respective **Councillors** were also actively involved in the present surveys. The **motivators and trainers** collected the data from near about 11,000 households. The data in the Questionnaires contains various elements that is **toilets, sewerage, storm water, solid waste, water supply, environment, IEC**, etc. which covers each and every details and scope of the relevant topic. In addition to this grass root level information various standards, guidelines, norms, service level benchmarking, etc. have been discussed and specified to include and considered while preparing City Sanitation Plan.

To prepare this sanitation plan, elaborative guidance has been given by The All India Institute of Local Self Government, Mumbai. Numbers of meetings have been conducted to crystallize and prepare City Sanitation Plan, as well as exhaustive guidance and discussions were carried on every element and aspects as evaluated by the Institute Office bearers. They have guided to the urban poor women regarding the social mapping aspect and elaborated the usefulness of the Social Mapping.

Also, the **Essay competitions, Slogan Competition** and **Poster Competitions** were organized on the theme of City Sanitation Plan. The **street plays** were arranged in various wards for public awareness with the help of Innerwheel Club & Disha Foundation Group, Jalgaon.

Ultimately, with the help of Institute, a format have been evolved to present this City Sanitation Plan, which itself is self explanatory i.e. to say it navigates and evolves chronologically.

Therefore, to overcome the gaps & to make The City totally sanitized, healthy & liveable for all citizens specially the urban poor, the City Sanitation Plan provides the **necessary framework for urban sanitation in an integrated manner**. The City Corporation requires support in terms of funds in order to develop sanitation strategies & implementation of city sanitation plan.

Present CSP for Jalgaon city, constitutes the present sanitation status of the city & the present infrastructural & other facilities availed by the city, the citizens' demands & perceptions about

sanitation arrangements, outcomes & health & environmental linkages is also emphasized. Exhaustively demand & gap analysis is done & given in current & projected figures. In pursuance with the policy locally well suited, up grading difficult existing situations, community based, integrated, sustainable & eco friendly technological options are taken into consideration.

Basically sanitation programme is undertaken as per guideline & policies issued by Govt. from time to time. Jalgaon City Municipal Corporation have prepared, submitted, implemented and under process of compliance to fulfill obligation of 100% city sanitation by year 2015. Some of the steps are already taken up for planning & implementation in health /sanitation by ULB, such as DPR including provisions of core services to be provided by JCMC, Solid waste-management DPR (with Bio-medical waste handling), Environment Management Plan DPR, Water Supply DPR & Under Ground Drainage DPR. The current CSP is prepared in consideration with the above mentioned schemes and their costing in DPR.

Methodology:

The following steps are involved in the integration of the present City Sanitation Plan for Jalgaon City Municipal Corporation:

- Primary data of all **69 electoral wards** was collected separately and analyzed (**Annexure I**)
- Separately collected **wardwise** data was analyzed for **itegration and quantification** as per **Prabhagwise (Annexure II)**
- Capital cost of all the elements was checked
- City Sanitation Plan was prepared separately as per Prabhags
- Prabhagwise City Sanitation Plans were integrated to prepare the City Sanitaion Plan for the Jalgaon City

Thus, we went for grass root to holistically Corporation City Sanitation Plan.

Chapter 4: CITY SANITATION PLAN ELEMENTS

a. Toilets :

Due to the lack of required toilets in the city, Open defecation sites are evolved. These are creating the various health problems in the citizens residing in the surrounding area. These open defecation site are identified, and are found near the slums in majorities. For this Open Defecation Free city development schemes are in operation. The development of the required quantity of toilets in the city is necessary for the proper functioning of the City Sanitation Plan or otherwise the city can't be sanitized 100 %.

b. Sewerage :

The proper sewerage system is not functional in the city. The entire city has an open sewage system with the absence of an underground drainage network. The present quantum of sewerage generated in the city is quantifiable based on population and water supply. Sewage from houses is being discharged into septic tanks and the effluent is passed either into soak pits or into surface drains creating are hazardous and unhygienic conditions in these areas.

c. Storm Water :

The existing drains within the city will be used exclusively for storm water runoff. These drains are open and needs to be constructed. In rainy season, due to excess run-off, there are problems related to traffic, water-logging, sewerage blocks, and this is the cause to affect the routine lifestyle in rainy season. As there is no separate drainage network for the storm water, it is getting mixed up with the grey water and black water drains. In heavy run-off situations, this mixed effluent is coming over the road which is quiet unhygienic and hazardous.

d. Solid Waste :

Door to door collection and segregation of the household and municipal waste is carried out. And the same is sent to treatment plant where reuse, recycling and treatment of the waste is carried out. Scientific land filling of the inert material residue is required to be carried out. Environmental sustainability demands the maximum amount of waste should be recycled, reused or processed. While processing, recycling and reuse should be carried out without creating any health and environmental hazards, the total quantum of waste recycled itself is a key performance parameter. The proper treatment of the solid wastes is required to attain

100% sanitation. If solid waste treatment facilities are failed to treat, recycle or reuse of the wastes, the sanitation could not be attained.

e. Water Supply:

Daily water supply to the citizens is required in the city. There is a water supply system for provision of the water to all wards of the city. The system is having underground network for the water supply. If this network is not proper and the water is not provided, due to inadequate water supply and due to inefficient water supply system the leakages are observed which may create ditches and water gets accumulated where mosquitoes and other microorganisms may be surviving and creating the health problems in the surroundings.

f. Environment :

Healthy environment is the need of the healthy city. So as to keep the city pollution free, mass tree plantation programmes are necessary. There must be certain restrictions over the tree cutting in the city. As the city should be green and clean to provide the fresh air and oxygen to the city population. The environmental pollution causes various health related problems in the citizens. To avoid these problems and to make city totally sanitized, environment must be clean.

g. IEC & Social Mapping :

I.E.C (Information, Education & Communication) plays a very important role in City Sanitation Plan. As information regarding these issues will create awareness in the citizens and education and communication also plays a major role to change the mindset of the people residing in the city. Due to public awareness the implementation of the City Sanitation Plan becomes quite easy. Also, social mapping is having the importance in making the city totally sanitized. If the social mapping is not taken into consideration while preparing the plan, it causes conflicts and the sanitation will not be achieved 100 %.

Chapter 5: EXISTING SITUATION (All Elements)

a. Toilets :

There are 17 public toilet blocks having 220 gents and 230 ladies toilet seats in the Zone no. 1.

There are 52 public toilet blocks having 517 gents and 459 ladies toilet seats in the Zone no. 2.

There are 18 public toilet blocks having 195 gents and 139 ladies toilet seats in the Zone no. 3.

There are 22 public toilet blocks having 167 gents and 166 ladies toilet seats in the Zone no. 4.

In addition to this, there are certain open defecation sites observed in each of these four zones. There are total 58 open defecation sites comprising of 15, 26, 8 and 9 in these four zones respectively. Out of 58 open defecation sites the public toilets have been constructed at 8 sites, 3 are in process and 4 are proposed for the recent future.

b. Sewerage :

A sewerage system proposal was prepared by Environmental Engineering Department of Maharashtra in 1965 for an estimated flow of 20 mld. The proposed sewer network system was laid on the main roads and no branch sewer in the side streets to pick house connection was provided. At present existing sewerage system is non-functional. The entire city has an open sewage system with the absence of an underground drainage network. The present quantum of sewerage generated in the city is quantifiable based on population and water supply. Sewage from houses is being discharged into septic tank and the effluent is passed either into soak pits or into surface drains creating hazardous & unhygienic condition in this areas.



Fig.: Sewage System of Ramdas Colony

Therefore in absence of any Sewerage system, sewage primarily treated at septic tank in developed area and untreated from slum area, along with waste water from kitchen and bathroom, flows through constructed /unconstructed gutters on surface, ultimately leading to four major natural nallas /streams flowing through cities.

c. Storm Water :

The storm water drainage system in Jalgaon comprises primary, secondary and tertiary drains. There are five main nallas connected to city & its periphery. These are Lendi, Khedi, Pimprala, Gujar and Harivittal nallahs and covered by the secondary & tertiary drains within the city. The general slope of the area is from south to north sloping towards the Mamurabad Nallah. Hilly areas are present along the Shirsoli and Mohadi Roads and also along the south -west side along Girna Pumping Station Road. The Girna runs in the south - north direction along the western boundary of Jalgaon town near Nimkhedi village. The Meherun tank is situated at the southern side of the city, the Lendi nallah feeds into it. Total network of storm water drains is about 190.025 km in length out of which about 3.86 % is covered within the city & rest is open. There is a system of primary & secondary nallas where household let out sullage, effluents and storm water enters by a network of existing pucca gutters which then leads in the 5 main nallas.

d. Solid Waste :

The solid waste generated in the city mainly consists of domestic refuse (including slum area), wastes from commercial areas, vegetable and fruit market, slaughter houses, bio-medical waste, waste from hotels and restaurants and industrial solid wastes. The waste generation is large in the high - income groups followed by middle and low - income group. JCMC has implemented “M.S.W. micro level management project” as per DPR, which brought details of the provisions in DPR, which are as follows:

Sr. No.	Physical Composition	Income Groups (%)		
		LIG	MIG	HIG
1	Compostable	4.5	72.2	68
2	Paper	4.5	4.25	5.5
3	Plastic	3.5	2.9	3.6
4	Glass	0.9	0	09
5	Metal	0.5	0	0.5
6	Rag	5.4	0.13	1.7
7	Earthen matter	40	20.3	11.4
8	Leather	0.2	0.22	0.3

(Source SWM DPR)

Table : Physical Composition of Solid waste in Jalgaon City

The municipal area has been subdivided into sixteen health units for collection purpose. Waste generation account for about 226 tons/day, i.e. average per capita waste is 0.491 kg//day & the collection is 80 %. JCMC currently provides door to door collection system only for some parts of the city. Presently 719 sanitary workers are working in sweeping, collection & transportation activities. The collected waste is being transported through 28 vehicles to dumping ground.

The Present status of the MSW management in the Municipal Corporation of the Jalgaon is outlined on the basis of DPR (2008) for MSW. The status cover sweeping of roads, public awareness efforts ,collection and transportation of waste, prohibition of littering and manual handing of waste processing and finally disposal of waste , all in relation with MSW Rules 2000. Gaps between the desired levels as per MSW rules and the present systems have been analyzed.

The outcome of the analysis focuses on the all remaining aspects of MSW management since a new collection & transport system compatible to the Rules is proposed.

The areas now need attention are:

- Public awareness for separate collection of all types of waste at source and making use of the collection and transportation system regularly
- Processing of all category and disposal of waste in a manner which ensure separate collection & as far as possible centralized processing and land filling of only inert waste (Construction work under process and partly functioning)
- Developing the new landfill site
- Public awareness & enforcement of discipline regarding laws for MSW management is the main achievement addressed after back up physical system are in place. Enlightened citizens, elected representatives, non government organization, industries & industrial houses and other concerned agencies will come forward to help the Corporation for implementing improved systems.
- The infrastructural provision made in project is procurement of vehicles & containers with GPS tracking system. Up gradation of existing service stations, approach roads to landfill site & MIS system for monitoring and evaluation

MSW Components approved in DPR and present status
ABSTRACT

Sr. No.	Particulars	Quantity	Rate (In Rs.)	Amount (In Rs.)
A	Street sweeping			
	Pushcart	150	4000	600000
	Mechanical sweeper	05		16700000
	Nala cleaner	02		3200000
B	Primary collection			
	Litter bins	584	4000	2336000
	Tata ACE Hopper	27	450000	12150000
	4.5 Cum container	15	70000	1050000
	Construction of PCC platform, for placing containers on it	12	10000	120000
C	Transportation			
	Compactor	5	3000000	15000000
	Vacuum Emptier	1	1600000	1600000
	Jet machine	1	250000	250000
	Fogging machine	1	1000000	1000000
	G.P.S. tracking system	62	30000	1860000
D	Others			
	Slaughter house treatment plant	1	650000	650000
	Upgradation of existing service station			200000
E	Approach road to the processing plant			9000000
F	MIS system for monitoring & evaluation			500000
	Grand Total			66226000

Table : Capital cost required for proposed system in year 2008

No	Particulars	Amount (in Rs) per month	Amount per year
1.	Salaries of the SWM staff including PF	2218820	26625840
2.	Maintenance of containers, litterbins and PCC slab	10000	120000

3	Maintenance of dumper placers @ Rs. 1000.00 x 12	12000	144000
4	Maintenance of Ghantagadi 27 x 600	16200	194400
5	Conducting meetings and awareness Program		500000
6	Uniforms for workers @ Rs.599/- x 1000		599000
7	Fuel Charges	335952.08	4031425
8	Street sweeping vehicle maintenance	6000	72000
9	Cost of treatment and landfill site @ Rs. 250 per ton of waste	342187	4106250
10	Long handle brooms with 4 months once replacement 270 x 3 = 810	-	12960
11	Metal tray with 6 month once replacement 648 x 240	-	155520
12	Gloves with 4 month once replacement 280 x 75	-	21000
13	Baskets with one year once replacement 55x200	-	11000
14	GPS Tracking System expenses 62 x 500	31000	372000
15	MIS system for monitoring & Evaluation	20000	240000
	Total		37205395.00
	Miscellaneous say 5%		1860269.75
	Grand Total		39065664.75
	Say		39066000.00

Table : Annual Recurring Cost for Jalgaon in year 2008

Vehicles	No.	Avg. Running / Day	Fuel Consumption	Rate Rs.	Cost / Day	Cost/ Month	Cost/ Year
Door to Door collection							
1. Tata ACE Hopper	25	20 km	20x25/15	35	1170	35587.50	427050
2. Tata 407 dumpers placer Bulk Carrier	12	20 km	20x12/6	35	1400	42583.33	511000
3. Compactors	5	30 km	30x5/3	35	1750	53229.17	638750
4. Tippers Street Sweeping	6	30 km	30x6/3	35	2100	63875.00	766500
5. 6m3 sweeper	3	80 km	80x3/3	35	2800	85166.67	1022000

6. 1 m3 sweeper	2	90 km	90x2/15	35	420	12775.00	153300
7. Nalla cleaners	2	100 km	100x2/15	35	460	13991.67	167900
8. Jet vehicle	1	30 km	30/15	35	70	2129.17	25550
9. Vacuum Emptier	1	15 km	15/3	35	175	5322.92	63875
Fogging machine	1	100 km	100/3	35	700	21291.67	255500
Cost of Fuel / Day					11045	335952.08	4031425

Table : Fuel expenses for MSW work vehicles projected for year 2008



Fig.: Compactor while loading

Implementation strategy and Executive summary in DPR:

- The municipal corporation has reviewed its existing system of solid waste management and decided to revamp the collection and transportation system in tune with MSW Rules – 2000
- In proposed system, JCMC has planned for house to house collection of generated waste through Ghanta Gadis. The total vehicle required for house to house collection is 37
- Mechanical sweepers will be used for cleaning of all cement concrete roads and asphalt roads. Sweeping of remaining roads will be managed by existing manpower. 150 push carts are proposed for the collection of waste on these kaccha and narrow roads. Two mechanical sweepers are brought by JCMC recently on contract basis, which may get function by the start of year 2011. JCMC is the first corporation in Maharashtra to take this step, which is highly appreciable
- At busy and crowded market places 15 no. of containers will be kept for collection of waste

- For primary collection of waste from road side & market places 584 litter bins are proposed
- All the waste ,from house to house collection ,from mechanical sweeper, manual sweeping will be transferred to the four secondary collection points from where, the waste will be finally transported to the processing plant through five compactors for the final disposal
- Two approach roads to the processing plant at Avhane are proposed
- Slaughter house treatment plant, up gradation of existing service station and MIS system &GPS tracking system for monitoring and evaluation are also proposed
- The total capital expenditure is Rs. 6,62,26,000/- as per cost of year 2008. Which is updates by Rs. 1,80,50,000 /- and works out to Rs. 8,42,76,000, out of which financial assistance of Rs. 3,08,90,744 is already received from Govt. under the twelfth finance commission and par machinery is purchase. The corporation earnestly request to the Govt. to provide additional amount of Rs. 5,33,85,256 /- as per special grant under thirteenth finance commission.

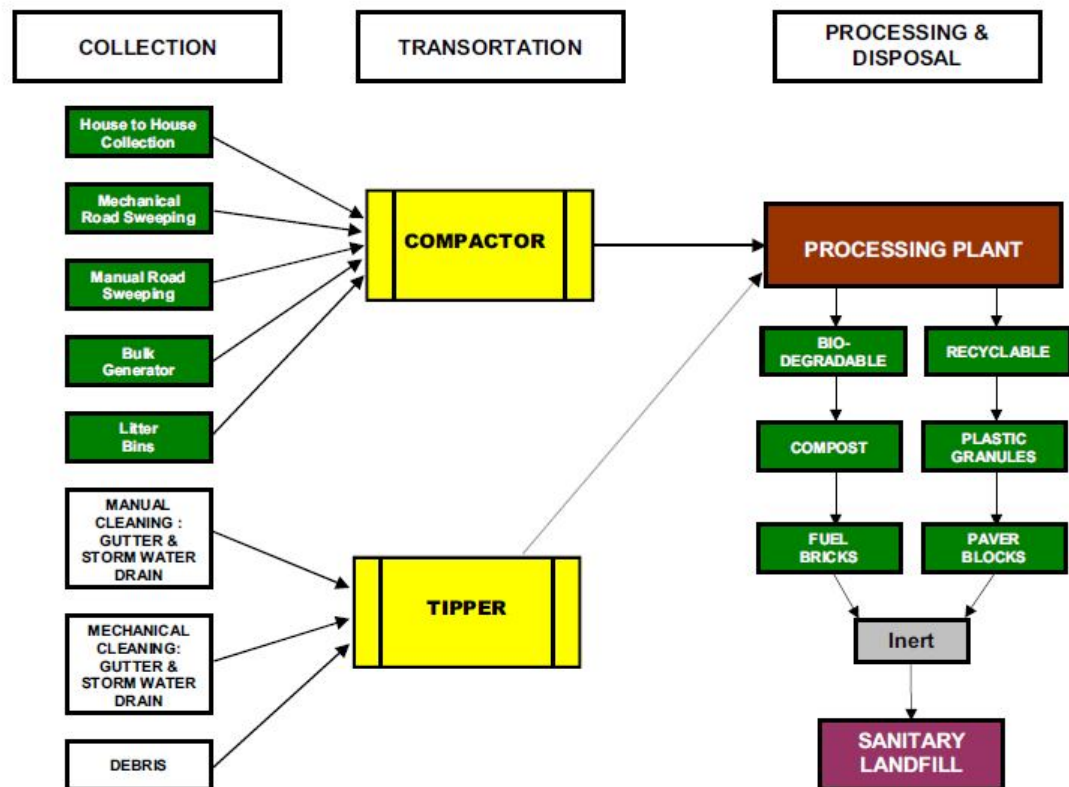


Fig.: Solid Waste Collection and Transportation Model Jalgaon

JCMC has appointed Ms. Hanjeer Bio-Tech Energies Pvt. Ltd. for the processing and disposal of solid waste. The Solid Waste generated in the city shall be managed and handled in accordance with the compliance criteria and procedure laid down in the Municipal Solid Wastes (Management and Handling) Rules 2000.

The waste processing and disposal plant is being setup at Avhane Shivar Gat No. 864 on



BOOT basis by Ms. Hanjer Biotech Energies Pvt. Ltd.

Waste processing and disposal plant by Hanjer Biotech Energies Pvt. Ltd., Jalgaon



Kribhco Compost



Fuel Brick

Manufactured by Hanjer Biotech Energies Pvt. Ltd., Jalgaon from Solid Waste collected from Jalgaon City

Unsegregated Solid Waste will be deposited on the tipping floor, the material will be transferred to the segregation section where the wet waste, dry waste, recyclable waste and inert waste will be segregated.

Segregating of MSW will be done as following:

- | | | |
|-------------------------|---|---------------|
| a. Wet organic material | — | Composting |
| b. Dry organic material | — | Fuel brick |
| c. Recyclables | — | Plastic items |

- | | | | |
|----|----------------------------------|---|---------------|
| d. | Construction wastes | – | Paving blocks |
| e. | Scrap materials | – | Recycling |
| f. | Inert & other building materials | – | Landfill |

Wet waste is transferred to the windrow platform where the process of composting is being done with the help of bio-culture. Recyclable material will be transferred to the recycle plant and inert material along with debris will be transferred to the landfill. From the composting they have made agreement to supply this compost to various units such as Zuary Agro (Goa), Deepak fertilizer in the brand name of Mahadhan and to Krushak Bharati Co-operative Ltd. (Delhi) in the name of Kribhco, which is very effective output from waste. Also they used to manufacture fuel bricks which reduces burden on tree cutting and helps to



improve greenery and environment.

Fig.: Mansai Bio-Medical Treatment Plant

Biomedical waste is also already covered as per rules on B.O.T. model in city with the treatment capacity of 750 kg/day and expected to 1.5 tons/day and this work is allotted to Mansai Bio-medical treatment plant. There is income source to Corporation from this project. From this plant treatment is done on plastic material and that is also reprocessed and utilize for by-product helping to reduce the cost of project. This is also effective and important plan available in Jalgaon City.



Fig.: Mansai Bio-Medical Treatment Plant

c. Water Supply:

Water supply in this area at present is mainly served by three water supply schemes viz, Girna water pumping station and Dapora filtration plant on Girna River. The Girna Dam is located 140 km away from Jalgaon. The Dapora filtration plant is situated 5 km away from the city in proximity to Girna water pumping station. The water source to this filtration plant is through the Dapora weirs schemes viz, Girna water pumping station and Dapora filtration plant on Girna river tank through the rising main.

Details of water supply schemes for the town

	Scheme-1	Scheme-2	Scheme-3
	Girna Intake Wells	Dapora K.T. weir	Waghur Dam
Year of Commissioning	1927	1987	2008
Capacity of scheme (MLD)	20.00	30.00	108.20
Financial assistance and amount	-	Govt. Grant and Municipal Funds	Govt. Grant and Municipal Funds through Hudco loans
Components added	Infiltration wells	Water treatment plant	Water treatment plant, pure water gravity main

Augmentation to Jalgaon Water Supply Scheme Stage V, Phase –I is an ongoing project from the water source of Waghur dam, located 16 km southeast of Jalgaon city. The scheme proposes to serve as a secondary source of water supply to the city whose population by 2030 is projected to be 8,76,700 persons, with a water supply requirement of 149 MLD. The scheme is planned at a total cost of Rs. 159.25 Crore (Rs.25.00 Crore-Govt. of Maharashtra, Rs. 47.55 Crore - State Government – Department of Irrigation and remaining Rs. 84.26 Crore - JCMC through a loan from HUDCO).

There are 10 Elevated Storage Reservoirs (ESR) & 4 Ground Level Storage Reservoirs (GLSR) in Jalgaon city, out of which 9 ESR's are spread around the city such as:

1. Genda Lal mill located at Shivajinagar ,with a Capacity of 2 million Litres
2. Akash Wani Located Behind Collectors Office with a capacity of 2.5 million Litres
3. DSP Chowk with a capacity 2.8 million Litres

4. Daulat Nagar Tank with a capacity of 0.3 million Litres
5. Pimprala with a capacity of 0.175 million Litres
6. Mehrun with a capacity of 0.125 million Litres
7. Tambapurawith a capacity of 0.1million Litres
8. Khanderao Nagar with a capacity of 28 MLD
9. Nithyanand nagar with a capacity of 28 MLD
10. Girna taki with a capacity of 3.5 million Litres

There are 5 GLSR reservoirs of which two are combined; they are the Hari Vittal Nagar with a capacity of 0.05 million Litres, Girna Taki 1 & 2 located behind M J College with a capacity of 2.25 million Litres, Girna Taki No. 3 with a capacity of 4.5 million Litres and Girna Taki No.4 with a capacity of 3.5 million Litres. Water supply is provided on alternate day covering 50 % area daily.

Water Requirement:

Particular	Year		
	2001	2015	2030
Polulation	326500	541000	876700
Per capita supply (LPCD)	200	200	200
Gross Water Requirement	65.3 mld	108.2 mld	175.34 mld

(Source: Jalgaon Water Supply Scheme Stage-V, Phase-I, Volume-I by J.V. Sharma, Engineers & Contractors)

Table: Water Requirement

Proposed Water Supply Scheme:

- Pure Water Leading Gravity Mains: Pure water leading mains ranging from 600 mm to 1500 mm diameter. Total length of PSC and MS pipes is about 7772 meters. Pure water will be supplied to the existing GSR at Girna Taki, and proposed new 10 ESRs.
- New GSR, Sump, Pumping Machinery & Rising mains: Ten ESRs have been proposed in this scheme with the capacity of 31.3 million litres
- Water Treatment Plant: The total capacity of water treatment plant is 130 MLD
- Distribution System: Reframing & redesigning the estimates based on the location of Elevated Storage Reservoir (ESRs) and capacity

d. Environment :

The Corporation has already prepared “Environmental Report “where detailed study and informative data has been compiled and classified on various issue and parameters. This information will be utilized and of great help while taking decision on related issues. The project evolves a strategy for health risk reduction and estimate the burden of disease and injury due to different environmental pollutants.

To keep up the healthy environment, road sweeping, cleaning drains & fogging to stop generation of mosquitoes and other micro insects is necessary in routine manner. Also bio – waste handling, solid waste handling, hotel waste handling & cleaning of public toilets in daily process to maintain healthy environment is an on routine process, Municipal Corporation maintain hospital at five places as health care units for citizens. JCMC also takes vaccination program time to time for children's of various age groups.

It is mandatory to Municipal corporation that Environment Management plan is to be prepared yearly as per rules and guidelines. Accordingly JCMC is preparing Envirionmental plan regularaly every year and put up it to general body meeting for approval, in accordance to that tree plantaion, rooftop rain water harvestion, waterbody preservation etc proposals are got prepared assessed and implemented.

Environment, Health Effects and development of Lakes:

Background:

Environmental health comprises those aspects of human health including quality of life which are determined by physical, biological, social and psychological factors in the environment. Each of the effect is associated with a variety of aspects of economic and social development. To investigate possible effects of environmental pollutants on human health, it is of prime importance that accurate exposure assessment techniques and validated biomarkers are available. It is, therefore, essential to have completely fledged and accurate Environmental Health Impact Assessment procedures in place. Undertake application-oriented research such as occupational and environmental cohort studies to define single or mixture of pollutants and their impacts on health. Ministry of Environment and Forests (MoEF) constituted a Committee on Environment and Health in July, 1999 and the report was submitted in May, 2000. The report of the “Committee on Environment and Health” has brought out issues requiring attention of various stakeholders. The “Conference on Environmental Health” organized by

Ministry of Environment and Forests in November, 2002 has brought out thrust areas and action points that need to be implemented for protection of public health.

The problems:

The environment in which we live greatly influences our health. The most important issue in Jalgaon is Attributed to pollution, the various types of pollutions are:-

- Air pollution
- Indoor air pollution
- Water pollution
- Ground water pollution
- Noise Pollution
- Soil Pollution
- Sanitation and Hygiene

Air pollution:

The main sources of air pollution are vehicles and industries and to some extent domestic sources. Air pollution from combustion sources is associated with a broad spectrum of acute and chronic health effects. Particulate air pollution may cause the most serious effects on lungs, including lung cancer and other cardiopulmonary mortality. Burning of low-grade fuel in urban areas for various purposes is one of the causes of air pollution. In addition tire, rubber, plastic, garbage etc. are also burnt. Such combustion emits toxic pollutants including dioxins and furans, which are quite harmful to the human beings. Children are more susceptible in contracting diseases due to exposure to air pollutants and hazardous chemicals, ingesting contaminated water, food and soil. These problems are magnified due to lack of access to safe drinking water and sanitation, haphazard disposal of hazardous and bio-medical wastes.

Growing number of diseases in children have been linked to environmental exposures. These diseases range from traditional water borne, food borne and vector borne ailments and acute respiratory infections to asthma, cancer, arsenicosis, fluorosis, certain birth defects and developmental disabilities. Children from the foetal stage through adolescence are in a dynamic stage of growth as their immature nervous, respiratory, reproductive and immune system start developing.

The industrial area covers more than 1,500 acres of the city area with 2000 small and middle scale industries. It occupies with mainly small-scale industries. Air quality and noise levels of adjoining residential and commercial areas are affected due to industrial activities. Though, the pollution levels are not alarming at present, it may reach threshold levels with further expansion of the industrial belt. Pollution control measures need to be formulated and enforced.

Indoor air pollution:

Cooking and heating with solid fuels such as dung, wood, agricultural residues or coal are the largest source of indoor air pollution. The poor people in the developing nations use unprocessed fuels in their houses. The product of incomplete combustion of biomass includes carbon monoxide, hydrocarbons, suspended particulate matter and Polycyclic Aromatic Hydrocarbon (PAH), etc. Indoor air pollution may manifest respiratory ailments such as cough, dyspnea and abnormal lung functioning, if proper ventilation does not exist.

Note: Special efforts are done for tree plantation & desiltation of Mehrun lake.

e. IEC & Social Mapping :

I.E.C. & social mapping is done by corporation on need basis as and when required or promoted by Government. e.g. Gadage Baba Abhiyan, O.D.F.sites , slum data, publicity etc. At this moment O.D.F. sites and slum improvement programmes are adopted.

Institution roles & responsibilities:

As discussed in earlier pages, the whole issue related to health & sanitation has been entrusted or obligation of State Govt. which have been consecutively shifted on shoulders of ULBs. Over all it can be seen that "lame person is to contest marathon" means U.L.B is weak on financial and manpower resources to bridge / compensate this shortfall. Central and state Govt. have formulated this policy, so that participation and responsibilities have to be examined at base level mechanism, against the resource crunch, to come up with self commitment and fixing up responsibilities. In policy issue it is stated that "there is considerable gaps & overlaps in roles and responsibilities at national, state & city levels"

As per present legal frame work in state, the whole issue of health and sanitation, have been attended on need base as responsibility of health department. The sanitation plan in modern days is multidisciplinary, which touch individual to society ,water supply to waste

water consumption, production to solid waste generation, personal to epidemic land use and environmental issues etc.

Hence in this sanitation programme emphasize is given to bridge this gap by highlighting on role and responsibilities at institution level to mitigate the gaps by adopting proper manpower, fixing up responsibilities at administrative level head to achieve the goal in given time frame with assigned resources.

Gaps can be classified as:

- In proper legal frame work
- Lack of resources (e.g. funds, manpower ,capability and knowledge)
- Non-interactive system
- Lack of accountability
- Re-define sanitation and meaning there to.
- Lack of element of sustainability
- Infrastructural short fall

These gaps can be abridged by

- Adopting frame work of generic element
- Restructuring techno-legal frame work by providing “Manual &Guideline”
- Prior contingency and reassessment of limited resources

Awareness generation for changing mindset:

It is observed that, most of the time a follow-up is necessary to keep up the awareness & mindset of every person. At present no such activity is taken up on its own by ULB unless and until special funding / programme is taken up by Govt.

This gap is due to crunched resources and lack of mechanism at Institutional level

Most of the time awareness programme, campaign, publicity is to target member of society, who are unaware of health & sanitation issues. It is essential to note that there is paradox involved i.e. To say that person carrying out this duty themselves are, not involved, casual by knowledge and poor in duties , this gap of tertiary involvements is also need to be addressed

City wide approach:

Presently most of the issue related to health and sanitation are not attended on platform at techno - legal, socio-economic, health - sanitation & life cycle consideration etc. It is done by piece-meal manners. This short fall has resulted in difficulties to achieve 100 % sanitation and assess the various parameters of programme.

Technology choice:

Technology choice is the main question arises for treatment of the solid waste, liquid waste, bio medical waste, environmental issues, air pollution, flooding zones, storm water drainages, control for health and hygiene issue, media choice for awareness programme; depending upon the cost benefit ratio and target options etc. In present scenario, solid waste handling is done by corporation, by adopting D.P.R prepared in year 2008, prepared according to MSW 2000 guidelines; for design period of 25 years with year 2008 as base year i.e. to say up to year 2033. Present SWM Is for 226 T/ day, which is anticipated as 450 T / day in year 2033. Treatment adopted through m/s Hangeer Bio-Tech Energies Pvt. Ltd. (Boot Project) is composting by Bio-culture, Fuel Bricks, Recycling and land fill with waste generated at slaughter house, hotel and restaurants, market etc. have been taken care.

Bio-medical waste is handled by another Boot project by M/s Mansai Biomedical Pvt. Ltd. by own collection and Incinerator for years. Sewage is Primarily treated at user septic tank and public toilet septic tank and overflow with household wastewater which is drained through open gutters to nallas in city. These gutters serve as storm waste drain also. Shortfall of review and monitoring, along with periodical up-gradation is required to be attended for all technological options of various parameter.

Reaching the Unserved and poor:

The unserved communities and individuals can be classified as persons at public place and on street, outsider / visitors in city .These peoples can be served by providing clean toilet facilities either free ,paid and subsidized. At present there are 2084 public toilets and few public urinals at random places. Public buildings have poor unhygienic toilet facilities. Regarding poor class in the city, which stays for considerable period in city in slum areas and on streets? These are provided with 2084 common community toilet facility at different locations. These are free of cost means affordable but unhygienic, unsafe for children and not at proper

places. In the slum locality narrow access, dense population, lack of open land, puts constrain on implementation of good scheme. The shortfall of providing 100 % sanitation of safe and affordable nature needs to be attended in phased manner for un-served and poor by providing accessible toilet facility.

Client focus and generation of demand:

Lack of Interaction with subject to public, has created a Gap between Institutions as facilitator. Focus on “demand generation” for user as client, which is not possible due to absence of any system / mechanism.

This platform can be created along with:

1. Awareness programme and mindset improvements.
2. Interactive responsive and responsible ULB
3. Compliance with of short fall of norms

Sustained improvement:

To achieve the 100% sanitation programme it is very important and essential, to strengthen and upgrade the responsive and responsible governance. After achieving the goal and in the period of up-gradation & post achievement, an important factor is sustenance. Many times provocation is suitable for achieving target area, of short duration, but it fails for longer and perpetual evolving target.

Therefore responsive, responsible and capable hands are key word for sustenance. Beyond above referred frame work other constrains ,short fall gaps to achieve and struggle for 100 % sanitation plan by year 2033 need to be attended e.g. Health concept and programme

This can be attended by:

- Budget concept and funds constraints
- Economies involved
- Annual burden
- Environment watch
- CRZ (Costal regulation zone) watch
- Attending storm water related issue

- Watch and improve mechanism
- Shift to cost-benefit system

Institutional Responsibilities:

Implementation of CSP is responsibility of ULB to achieve 100% sanitation plan by year 2033.

ULB will first prepare "manual & guidelines for CSP" by outsourcing which is to be adopted by ULB for administration & responsibility fixing. Manual & guidelines shall cover all elements to implement & negotiate targeted goal. Till then ULB shall carry out CSP with available infrastructure, manpower & constraints.

Subsequently to prepare CSP it is decided to prepare this report with outsourcing the required manpower & skill through "JalaSRI" a- NGO. The CSP is primary version of sanitation plan; however a permanent review system is proposed which shall report prospective need & changes to task force & ULB to ask further evaluation. Review group shall be visionary of different generic element & will interact with objectives of proposal under consideration. Priority in proposal shall be to the element of urgent obligation and covering maximum generic element.

ULB have been already functional to achieve some mile stones in Generic element of framework, either on its own domain or under different govt. scheme and guide lines. The action taken is summarized as below:

1. Solid waste management micro level plan as per (MSW rule 2000) has been fully and successfully implemented in year 2009-10.
2. Augmentations of water supply by sourcing from Waghur Dam have been done, to sustain for present and future needs. Water supply scheme has been fully implemented for present need (BOOT basis for sewage treatment may be considered along with water supply)
3. Environmental report has been prepared & updated regularly
4. City development plan is prepared and approved at state level
5. Underground sewerage system DPR has been prepared with target year 2033
6. Sant Gadgebaba Nagari Swachata Abhiyan is participated.

7. To abate open defecation timely steps are taken by ULB & have constructed 2084 W.C. seat toilet block and new proposal are in consideration.
8. To provide new affordable toilets & improve old or provide new toilets / septic tanks, ULB have constructed some & few are under proposal for central Govt. sponsored programme of cost effective personal toilet. ULB have approved own contribution of Rs.61,14,960/-Against total proposal of Rs.7,22,70,960/-under Ministry of Housing and Poverty Alleviation (HUPA) scheme for integrated cost effective sanitation.(ICES).
9. ULB have yearly programme of plantation to improve environment
10. Bio-medical waste has been already functional as per pollution control norms on BOOT basis.
11. Presently working whole heartedly on city sanitation plan as per NUSP framework- First step of task force formation is complete & preparation of CSP is under process.
12. One of the dynamic step taken by ULB is constructing free of cost, affordable payout accommodation to slum dwellers. Successful implementation of 2000 no. of houses were completed and 10000/-nos. of housing project is in conflict.[In year 1997 -12585 nos. slum houses were in existence. Now which are assess to 18000 no. (Refer to news dated 2/10/10 in Lokmat news paper)
13. Agency is finalised & detailed project report on storm water management is under preparation

The project aim is to create sanitized, healthy and livable city and assure constitutional obligation of dwelling, health and environment to urban poor women & child. Obviously the project includes personnel toilet and community septic tank as primary treatment.

The NUSP key principles which can be attended in housing project for poor are:

- Institutional role & responsibilities
- Awareness generation for changing mindset
- City wide approach(slum free city & ODF solution)
- Reaching the unserved & poor
- Client focus
- Sustained improvement

This herculean task have been taken where Matter of financial implication are probably overlooked. This shall be meticulously observed in future in other area of activities. Bipolarity has surfaced & contrast prevails over the different policies & aims like Scheme of ILCS under

HUPA programme, HUDCO housing finance, I.H.S.D.P/JN-NURM scheme, city sanitation programme. As Jalgaon HUDCO finance can be covered up in parallel funding programme. It is emphasized to include this housing scheme in appropriate scheme, (P1. refer pp 12 of NUSP coordination at national level)

That means to avoid such conflict in CSP under NUSP (refer pp 12 of NUSP) a timely corrective measure is important in national monitoring and evaluation; means it must be effective with proper authority and not hierarchical/conventional door to door knocking methodology. Proposal for slum improvement under Rajiv Gandhi Awas Yojana is under progress by M/s Shunya consultancy Akola, for Jalgaon city. Baseline data collection & concurrent use of data in initial action.

i) I.E.C. campaign and detailed planning

Baseline data is collected from the existing data report facilities & services, which is proposed under different categories to consolidate, further to view for concurrent use in NUSP framework for CSP. New baseline data have been collected additionally to account for CSP preparation by adopting I.E.C (Information, Education & Communication) route as well some physical data.

This aforesaid data & information is covered in chapter of city sanitation plan independently. So that in future iteration & evaluation will follow the route through "CONTENTS" i.e. chapter wise in CSP. Present plan can subsequently modify, add on new challenge to be faced and incorporate for effective achievement

I.E.C. campaign will be continuous effort initially which will turn up in active associate to participate, watch & ward the 100% sanitation status.

Elaborate plan scheme & guide will be part of "manual & guidelines of CSP".

One enthusiastic public relation officer (P.R.O) shall deal with different I.E.C. campaign groups and associates/participants on full time basis, preferably qualified in health/sanitation/environment.

ULB is already in process of collecting various data on its own & through other sources, which is compiled and effect of data in CSP is considered & processed as stage I data, stage II data, stage III data (refer NUSP/pp 20)

Multi-stakeholder meeting public resolution & I.E.C. campaign

i) Multi stakeholder meetings have been conducted in following sample/group categories:

- 1) Slum dwellers
- 2) Housing societies
- 3) Colonies
- 4) Commercial complexes
- 5) Educational institutes
- 6) Floating population
- 7) Elected members
- 8) Administrative staff
- 9) Official Institutions
- 10) Various class of educated faculties
- 11) Self help group
- 12) Rag pickers, to derive public resolution

As mentioned in NUSP most of the individuals/groups have primary approach and requirements towards city sanitation. Initially considering social-economic status, all of them being involved full time in day to day activities have little time & information to consider city level approach. It is duty of officiating person to collect précised data required to draft city sanitation plan to serve citizens from primary to mature and 100% sanitation programme within limitation.

Most of the requirements are summarized as further:

- Open defecation free city
- Dust free odor/smell free locality & ambience
- Clean air, water for health & temperature control measure if any
- Clean localities, free from bio-degradable waste, waste material & mosquito menace free area
- Encroachment free facilities & proper maintenance & interactive, compliance prone, accountability
- Vigilance on the matters
- Accountability & responsibility fixing on authority / proper delegation

- Well maintained paid/unpaid toilet facility
- Shortage of green belt/gardens, absence of jogging track in proximity. Developed play ground etc.

ii) I.E.C campaign programme

It is proposed on regular interval basis for different stake holder addressable at yearly rotation method with further expectation to evolve; interactive and participant forum with library and literacy available at P.R.O meeting hall/or at some NGO/institution.

Special approaches for sanitation for poor

As elaborated in institutional responsibility, ULB have taken exceptional measure to mitigate most of the grievance of sanitation for poor over and above tried to give them permanent/ pakka accommodation to enjoy good healthy life.

Already Government have provided subsidized food programme for all below poverty line citizens. ULB have secondary level school in approachable distance for free/ subsidized education to all. ULB also have subsidized/ free primary health treatment at municipal/hospital. Whereas with these facilities probably every poor should not have any financial problems to lead healthy life, only issue of self employment for minimum earning for new immigrant are not dealt at city level which puts constant pressure.

If central and state government targets each and every person under "Adhaar" unique identification code and allow C.S.P to participate in poverty alleviation & group insurance, employment programme, this also may be dealt effectively.

Here the poor is defined as persons below poverty line with no own house and resource to meet extraordinary needs. Most of the own revenue of ULB in Maharashtra i.e. about 81.60% expenditure is done on core services means water supply street lighting, sanitation and roads.

Eventually special approach for sanitation for poor is timely, need basis and outstretch beyond perspective due to variety of restrains.

It must be recorded here that as per situation personnel toilet unit for one household needs Rs.20,000 to 25,000/ No. which means it is about 10 to 15% of IHSDP house block. These house block programme is held up and slowed down at number of places due to various reasons and inflation rate jeopardized the element.

Therefore action taken by ULB to construct free & affordable houses at Jalgaon, if possible may be taken up in IHSDP scheme to complete the same for the effective CSP. The any other legal issues may be resolved by official, and then scheme may not suffer and give effective solution for poor's. The suggestion is because; the process is virtual whereas life & projects are realistic.

Capacity building

As most of the resources of ULB are spent on core services, capacity building on financial front is possible by availing state / central govt. funding. Borrowing has many obstacles as well as negative impact on sustained growth as spontaneous mitigation by borrowing hampers future needs due to limited resources.

Increase in revenue is mostly physical growth of city and partially due to rise in taxes. When stable economical parameters are present then only servicing debt is possible. ULB is not an office of profit, but body to provide service. Cost of services should be within economical justice granted by the constitution of India.

Thereby capacity building on fund should be done in passive manner. Funding capacity building is possible by adopting some modern methodology like BOOT or PPP project, adopting new technology to reduce present expenses, contribution by new development, sourcing funds from national and state programme and adoption by corporate Institute etc.

Capacity building for CSP can be improved by re-orientation of revenue and expenditure pattern by creating independent head for CSP and reorganizing administrative structure as per "manual and guideline" for CSP.

Capacity building can be done by collecting, willing contribution and donation, with tax exemption. Self help group can enhance capacity building, if proper financial solution is derived. Self help group have flexible working pattern and supported by Govt. scheme. Self help group of unorganized rag pickers also can be developed, who shall draw benefits as health worker and incentives.

In line with bio-medical waste (handling on BOT. basis) recyclable waste/scrap centre with appropriate technology can be developed, considering future environmental problem

Capacity building in NUSP is primarily considered as (HRD) Human resource ability to deliver job efficiently. It is suggested that "Manual and guidelines for CDP" will domost of the job. Other

programmes like bulk training, differentiated and specialized training will be done on need base and refreshing course, as per modern administrative strategy of Continued Education Programme.

Technology choice, up gradation, new investment, O&M management

i) Technology options

The options are target oriented and specific in nature. They also vary with reference to specific provision / standards .e.g. if emphasis is given on CPHEEO hand book for sewage treatment then prima facia underground sewerage system is necessary to achieve 100% CSP, which may result in 10 years waiting, with hindrance in traffic, dusting, road reconstruction in developed zone with no immediate benefits. Another view is considered that, if treatment to present effluent by adopting new anaerobic treatment is considered & U.G. sewerage system is worked out from outer zone to city centre as one option.

Technological options also needs to be considered for proposed sewerage treatment plant on grounds of economy, O&M , M&E basis.

No option for Biomedical waste and solid waste management as it is already implemented. No Improvement/growth need to be addressed as and when issue arises.

New proposal for household recyclable scrap & waste generated should be planned for new millennium challenge.

Improvement in environmental aspects like air quality , water quality, plantations, over flooding due to storm water, ambience, temperature parameter, ground water measures, lake & water course development, monitoring quality of air/ water/ waste/ temperature/ rainfall, to find out impact on 100% sanitation and technical option need to be addressed.

Operation & maintenance (O&M) & service delivery system

In this regard, existing system is examined and difficulties are overcome, new options and provisions are considered on basis of O&M cost.

Degrading sewerage system & immediate remedies are considered on priority basis & then further evaluated for underground sewerage system. O&M, service delivery, O&M protocol are to be covered in "manual and guidelines." For CSP all issue like unhealthy and illegal practice to drain waste in nallas and drain, septage clearance service, complaints &

redressal feedback, user records, cleanliness in ward & nallas etc. needs to be attended in proposal as per manual & guidelines.

Citywide sanitation plan (CSP)

Planning, Financing & consultation

As outspoken agreed in NUSP/PP 23 planning, funding is domain of ULB. While planning & implementing agency will take assistance from consultants etc. to help in preparation of the comprehensive plan for different aspects like institutional, social, technical & financial etc. It is also mentioned that, Govt. of India's JNNUTRM, UIDSSMT and BUSP are having key programs to source funding for ULB. Beyond this B.O.T. route, PPP pattern, own funding, user charges, contribution, donations & loans are other sources to raise funds.

It is also guided that investment must be financially sustainable, so options are needed to be considered, which will avoid getting in trap of high loan repayment & overrunning in O&M expenses

Implementation management & monitoring & evaluation

It is accepted that plan implementation and delivery mechanism of each component must be independently attended. At implementation stage, in house execution is not possible therefore monitoring and evaluation agencies will be appointed to achieve delivery mechanism with specific skills

- Administrative data it is collected from implementing agencies, consultants & contractors and then processed.
- Task Force field visits to different parts of the city
- NGO working in certain slum pocket may be able to monitor changes in relevant settlement, since they work there and visit and interact people regularly.
- Independent third party assessments is done to ask community group to provide structural feed back to the implementing agencies and task force.
- Concurrent evaluations by a survey agency
- NGO with capability to monitor & evaluate CSP aspect is proposed

Evaluation of 100% sanitation status

Proposal in city sanitation plan are targeted to achieve 100% marks as per city reward schemes for wards, colonies, institutes, market and bazaar communities, public institutions and other localities. For evolution of 100% sanitation and to achieve miles stone, number of tools to be considered are -

- A self assessment by the city sanitation task force based on implementation agencies data, citizen's group feedback and primary field visit.
- Independent Report Card and Evaluation Mission, commissioned by the city task force
- Cross city monitoring with participation of state level and other city stakeholder
- Adopting CSP parameters & provisions

Monitoring 100% sanitation

Multiple stake holders needs to be involved in this process, while the ULB or the Task Force may take the lead in doing so, the mechanism of sustenance prevails over adversity.

- Monitoring will be through expert committee as project management support system, to look and provide remedies. The function may be carried out by NGO
- The role of citizens group in monitoring on day to day basis is valuable and should be mobilize specially for the protection of neighborhoods, incremental improvements as well as immediate reportage of any deviance that needs solution.
- Regularly collection of formal data, informal information & feedback. There is pressure created equally on public agency, private service provider, as well as household and community to keep best method of sustained practices.

State level & city level reward scheme

Reward scheme helps to keep individual / group in self assessment and competition, which ultimately result in acknowledgement in competitive world. Government has already specified the format for rating on various components, for city ward, Institute and Establishment. City ULB to participated in reward rating; similar pattern is proposed at city level, institute level and individuals to promote 100% sanitized city.

S. No	Indicator	Benchmark	Figures	Existing Situation
A	WATER SUPPLY			
1	Coverage of Water Supply connections	100%	76593 Nos 55172 Nos	72.03%
2	Per Capita Supply of Water	135 lpcd	2128500000 liters/ month 542246 Nos 30 Nos NIL LPCD	130.84 LPCD
3	Extent of Non-revenue Water	15%	2128.50 MLD/ Month 1277.10 MLD/ Month	40%
4	Extent of Metering of water connections	100%	55172 Nos 36 Nos 0 Nos 0 Nos	0%
5	Continuity of Water supplied	24 Hours	1 hour	1 HOUR
6	Efficiency in redressal of customer complaints	80%	11 Nos 10 Nos	90.90%
7	Quality of Water Supplied	100%	118 Nos 117 Nos	99.15%
8	Cost Recovery	100%	12.85 crores 7.46 crores	58.05%
9	Efficiency in Collection of Water Charges	90%	4.73 crore per annum 5.74 crores per annum	82.54%
B	SEWERAGE			
10	Coverage of Toilets	100%	63099 nos 24190 nos	72.28%
11	Coverage of Sewerage Network	100%	87289 nos. 0	NA
12	Collection efficiency of Sewerage Network	100%	90 MLD 0 MLD 0 MLD	NA
13	Adequacy of Sewage Treatment Capacity	100%	72 MLD 0 nos 0 nos	NA
14	Quality of Sewage Treatment	100%	0 nos 0 nos	NA
15	Extent of Reuse and Recycling of Sewage	20%	0 MLD 0 MLD	NA
16	Extent of cost recovery in waste water management	100%	0 crores 0 crores	NA
17	Efficiency in redressal of customer complaints	80%	0 Nos 0 Nos	NA
18	Efficiency in Collection of Sewage Water Charges	90%	0 per annum 0 per annum	NA

C	SOLID WASTE MANAGEMENT			
19	Household Level Coverage	100%	76593 nos 76593 nos	100%
20	Efficiency in Collection of Solid Waste	100%	3690 tonnes / month 3540 tonnes / month	95.93%
21	Extent of Segregation of MSW	100%	3540 tonnes / month 3540 tonnes / month	100.00%
22	Extent of MSW Recovered	80%	2832 tonnes/ month 3540 tonnes / month	76.74%
23	Extent of Scientific Disposal of MSW	100%	0 tonnes / month 0 tonnes / month	0%
24	Extent of Cost Recovery	100%	Rs.14.02 Crores Rs.1.78 Crores	12.69%
25	Efficiency in Collection of SWM Charges	90%	Rs.1.74 Crores Rs.1.76 Crores	98.86%
26	Efficiency in Redressal of Customer Complaints	80%	65 per month 62 per month	95.38%
D	STORM WATER DRAINAGE			
27	Coverage	100%	410 KM 190 KM	46.34%
28	Incidence of water logging 0 numbers	0 NUMBERS	0 0	0

Fig.: Existing Status of Service Level Benchmarking

Chapter 6: Future Requirements (All Elements)**Toilets, open defecation sites and housing for poor**

It is observed that, there is strong relationship in matter of lack of housing for poor, slums development land, open defecation sites due to lack of convenient toilet facility. In Jalgaon city limits, nearly 58 places are identified as open defecation sites as on today. Beyond open defecation site requirement of toilet facility is essential site for floating population and public toilet location also. The floating population in city is assessed as 25,000 persons as per information sourced from other D.P.R and Municipal Zone wise survey.

The slum population is assessed as 70000 person as per information sourced from other D.P.R and Municipal Zone wise survey.

It is understood that population on move in city have toilet facility at place of visit like offices, institutions, Bus stand, Markets , Gardens and other public places. However it is noted in ward wise survey that, there is considerable shortfall in provision for toilets and urinals against norms. This will be taken care by requesting them to upgrade the facilities.

It is noted that no “street dwellers” are present in the city.

The houses with no individual toilets also need to be provided with toilets. Presently as per ward wise survey $[2200+2700+4970+4587 = 14,467]$ household do not have toilets. Out of 1,08,072 households. At present in integrated low cost sanitation programme (ILCS) 5960 NM individual toilets are proposed at cost 7.22 Crore, balance $14,467-5960=8507$ No. also need to be provided. This means, about 42,500 populations require individual toilet facility.

At present 2084 W.C seats are provided as public toilet facility at locations.

Sewerage**Wastewater generation, collection, treatment and disposal**

JCMC report daily water supply level of 140 Litres per person at consumer level . In 2001 the population of Jalgaon was 3,68,681 Considering annual growth of percent (observed in 1991-2001decade) , the population in 2010 is expected to be about 5,10,130 Assuming a sewage return factor of 0.80 (80 %) ,the current wastewater generated can be estimated to 57.13 MLD

Sewage return factor is the unit quantity of Sewage (wastewater) generated, expressed as a percentage (or proportion) of water supply. E.g. sewage return factor of 0.80 indicates that sewage generation is 80% of water supplied.

Jalgaon has industrial area where waste water is treated and utilized as per the industrial norms. The Municipal wastewater primarily consists of sullage and overflow from septic tanks. Waste water is mainly disposed through roadside drains of which some sections are covered in a few cases, latrines discharge is directly into the drainage. This, therefore causes a situation where the drainage system serves a dual purpose of carrying domestic waste water (mainly sullage and overflow from individual septic tanks) as well as rainwater runoff. This is not a desirable situation and needs to be improved. The proposal contained in this report considers safe containment, treatment & disposal of human excreta and community liquid waste.

The topography of Jalgaon city and the surrounding is such that the natural drainage system generally slopes towards South-North as shown in plans of UGD project & city development plan. Domestic wastewater from the city is discharged into four major nallas. This is not a desirable situation.

Considering the above fact, JCMC has prepared detailed underground drainage proposal covering 69 wards of the city except, few wards are partly covered.

As per CPHEEO manual, the design period of 30 years is considered from the year of commissioning of the project. The commissioning year is considered 2013. The scheme is designed for 2043 population viz. 11,64,298 no's.

The Jalgaon city is divided in to four zones, based on the topography and the availability of location for sewerage pumping station and sewerage treatment plant. Each zone is generally related to four major water courses i.e. natural nallas flowing through the city.

Zone I :- The zone I contains ward no's 34, 35 area is completely covered and ward no. 7,8,9,10,36 & 69 are partly covered.

Zone II :- The zone II contains ward no's 6, 11, 12, 13, 14, 27, 28, 29, 30, 31, 32, 33, 37, 38, 39, 40, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63 & 64 are completely covered. And ward no's 5, 7, 8, 9, 10, 36, 41, 53, 65, 68 & 69 are partly covered.

Zone III :- The zone III contains ward no's 1, 2, 3, 4, 15, 16, 17, 18, 19, 20, 24, 25, 26, & 42 are completely covered and ward no's 21, 23, 41, 43, 44, 52, 53 & 66 are partly covered.

Zone IV:- The zone IV contains ward no's 22, 45, 46, 47, 48, 49, 50, 51 & 67 are completely covered. And ward no's 21, 23, 43, 44, 52, 65, 66 & 68 are partly covered.

Out of the above wards, some of the wards are repeatedly covered under consecutive zones according to topography of wards and the zones proposed. The components of the sewerage scheme are designed for the peak flow 289.21 mld in 2043 year. The sewer lines are designed for the year 2028 population and pumps and Sewage treatment plant are proposed and designed for the population in year 2043. However, construction is proposed in phase manner.

The sewer lines are not respected to receive storm water. The trunk sewers are proposed along the side of nalla to which mains are proposed to be connected. Property connections are proposed to connect branch sewer and branch sewer to trunk sewer. The connection cost of property connection is not included in this proposed scheme. Minimum size of sewer is 150 mm for gravity pipe line section, concrete pipes proposed. And for rising main D.I. K-9 pipe are proposed. Two conventional sewage treatment plants each having the capacity of 50 mld and in immediate step two plants of 20 mld are proposed design period of population up to year 2043. The sewage from low line is proposed to be lifted with submersible pump. The expected efficiency of these conventional sewage treatment plants is considered as 85 to 87%. The treated effluent from these treatment plants are proposed for irrigation purpose and the methane gas liberated will be used in the premises of the plants for running the machinery and purpose of lighting. The total cost of the sewage scheme work out is Rs. 183.77 Cr. Net and Rs. 224.20 Cr. (as per DSR- 2007) Gross including 5% contingencies plus 2% work charge establishment.

As per CPHEEO norms, conventional activated sludge process which is having 95% efficiency is adopted for the sewerage treatment.

Storm water

As such there is no planned arrangement for storm water drainage in the city mostly open gutters scarcely covered at few places carries storm water along with effluent from septic tank & household sewerage water to four main nallas in the city. These nallas are not lined to avoid seepage & maintain gradient.

In The Jalgaon City Development plan, provision is made for the storm water drain which is as below

Solid Waste Management:

The MSW micro level plan has been implemented attending all relevant provision like door to door collection, provision of bins, vehicular fleet, treatment plant on BOT basis, land fill site, approach roads, O&M staff provision etc. complete for today's need in the year of 2010. Although the system is adequate today, assessment provisions detailed in DPR are for 25 years duration which needs constant upgrading yearly and same has been incorporated in the city development plan 2009.

Table Health unit wise breakdown of solid waste Disposal Practices Adopted by Jalgaon in MSW DPR – Nature of generators & expected quantity in Kg. = 0.491 /capita/day

Health unit	Residents Families		Commercial property		Hotels		Road sweeping & debris	
	Nos.	Qty. of waste generated in Kg	Nos.	Qty. of waste generated in Kg	No.	Qty. Of waste generated in Kg	No.	Qty. of waste generated in Kg
1	7555	14221	22	5.87	4	72.28	21.37	1942.11
2	7020	10377	265	70.76	10	180.70	39.49	3588.85
3	5821	10474	2704	721.97	44	795.08	24.26	2204.75
4	5012	9019	4569	1219.92	45	813.15	15.60	1417.73
5	4456	8020	163	43.52	1	18.07	9.06	823.37
6	5714	10286	589	157.26	40	722.80	31.52	2864.54
7	3766	6639	1490	397.83	75	1355.25	16.81	1527.69
8	6166	11096	747	199.45	30	542.10	27.12	2464.67
9	3905	8604	379	101.19	5	90.35	22.07	2005.72
10	11565	20277	1354	361.52	18	325.26	30.62	2782.75
11	6633	11939	209	55.80	11	198.77	28.81	2618.25
12	8374	14653	372	99.32	40	722.80	34.67	3150.81
13	3430	6173	766	204.52	27	487.89	23.05	2094.78
14	10726	19307	383	102.26	9	162.63	29.23	2656.42
15	2375	3816	823	219.74	14	252.98	27.76	2522.83

16	6070	12066	144	38.45	9	162.63	38.12	3464.35
Total	98588	176967	14977	3999.39	382	6902.74	419.56	38129.61

Total Waste generation in tons 226/day

- **Drain cleaning**

The total length of the small drains in the city is 190 kms. In addition, there are 8 major storm water drains (SWDs) with a total length of 22 km. The cleaning of the smaller drains is done manually, periodically and the collected waste is dried in the open by the side of the drains before it is taken to the dumping site. The larger SWDs are cleaned with the help of a JCB owned by the JCMC Jalgaon City. As, present drains serve sewerage and storm water, it is necessary to ascertain adequate location requirement so that no over flooding and back surge occurs.

- **Road sweeping**



Jalgaon City has a total road length of 430 km including major roads (Mukhya Marg) of 99 km length and medium /minor roads of 331 km length. All roads are swept manually. Recently five mechanical road sweepers are engaged by JCMC on contract basis. Street sweeping is carried out in the entire areas early in the morning between 6 am to 8 am in addition; four or five major streets are swept twice (morning & late evening)

- **Disposal of solid waste**

At Gat No. 864 of Avahane shiwar waste treatment plant is provided. The JCMC also use abandoned quarries and ditch as dumping site. At present, JCMC has identified land fill site at Avahane shivar, 16 Acres Kanalda Road & Mohadi Shivar 7 Acres, Bio Medical Plant with treatment capacity 750 kg per day.

- **Septage management**

The Jalgaon City Municipal Corporation has two septage clearance vehicles to serve more than 1,08,072 household septic tanks. Septage clearance service is provided on request of the household. The JCMC is requested to clean septic tank ever year It is assumed that private cleaners also cater to the demand from residents to clean individual septic tank. Though, not much is known about private septic tank cleaner, it can be safely interpreted that most of the septic tanks are not cleaned periodically. Hence, they may not be functioning appropriately thus further aggravating the precarious sanitation situation of the city. The JCMC does not

maintain record of septic tank user households, there is no monitoring of septage clearance. The septage removed from the tanks is reportedly disposed on the disposal site of solid waste. However this type of disposal is hazardous to the environment.

The provisions of two septage clearance vehicle are inadequate. So addition in fleet is proposed, with regular vigilance over the private septic tanks and proper scientific disposal.

MSW Performance Indicators:

- 1. Household coverage:** The Household coverage of MSW services in terms of percentage of Household covered the door-to-door collection is 100%.
- 2. Efficiency of collection of MSW:** The efficiency of MSW collection in the city is estimated at about 70% of MSW being collected per day on an average out of 226 of waste generated.
- 3. Extent of scientific disposal of MSW:** There is scientific disposal of MSW in the city through BOOT projects and treated waste is resorted to open dumping.
- 4. Extent of cost recovery of MSW Services:** The extent of cost recovery is almost negligible as there are no direct fees being collected by JCMC for SWM services. In few wards, the door-to-door collection is being operationalised.
- 5. Redress efficiency of customer complaints:** According to JCMC over 80% of complaints related to MSW services are redressed within 48 hours.
- 6. Staff per 1000 Population:** The present indicators of Sanitary Staff per Thousand population in Jalgaon is 1.53 which is lower than the CPCB norm of 2.1 MSW Staff per Thousand of Population. The JCMC is understaffed if the compliance with MSW management rules is the overall objective.
- 7. Cost per ton of MSW:** The exact breakup of the Municipal Costs for MSW operations is not available. However, based on the discussions with the JCMC officials and the breakup cost figures arrived at from the Budget indicate approx. spent on MSW operation per annum .This translated into a figure of Rs. 1540 per ton of MSW handled (based on 30 TPD and 2 ;6 working days) in the existing scenario. Virtually very little compliance with the MSW management rules, this cost is on the higher side for a small city like Jalgaon

Table : The overall performance of MSW services vis-à-vis norm is presented in the table below:

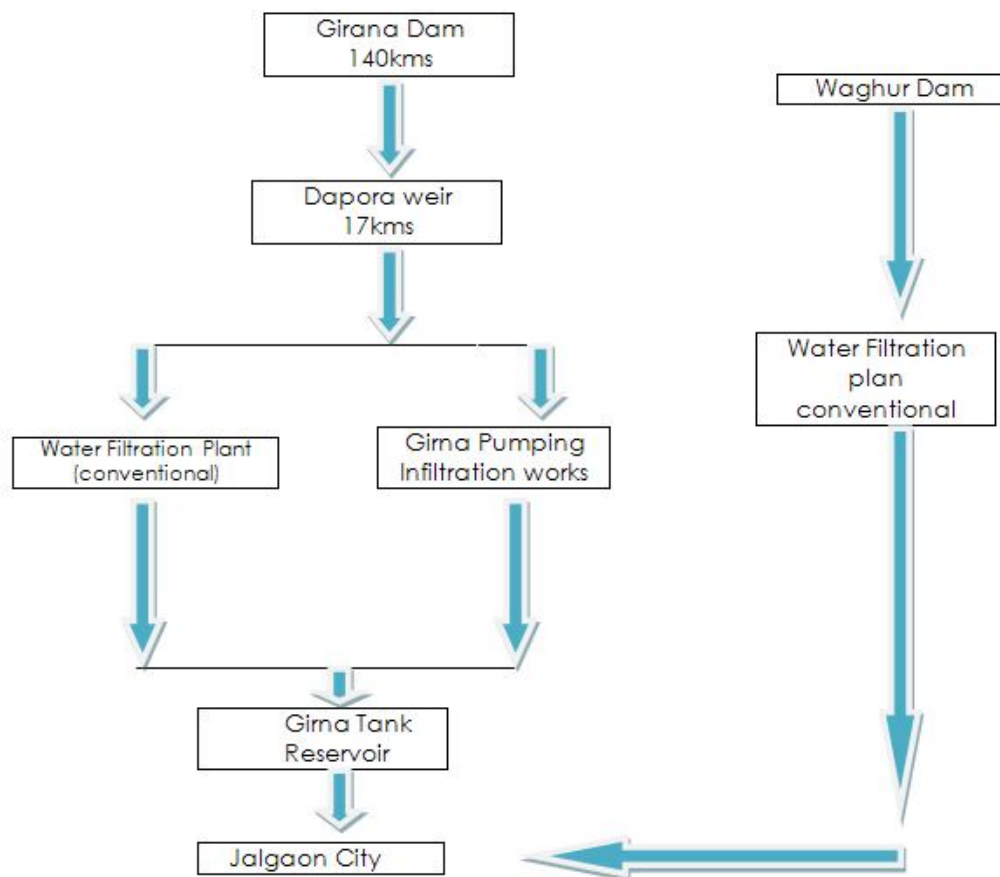
Indicator	Norm	JCMC
Door to Door Collection	100%	80%
Extent of Segregation of MSW	100%	80% At process plant
Road length per Sweeper	400-600m	1240
Sweeper per 1000 population	3	1.4
Adequacy of Secondary Collection/ storage System	100%	About 80%
Waste Collection Performance	100%	About 80%
Extent of Processing of MSW	100%	About 80%
Extent of Scientific Disposal of MSW	100%	About 80%

Water supply:

Recently a water supply scheme having source of Waghur Dam has been commissioned by JCMC. The per capita water supply level has been satisfactorily increased and is about 140Liter/Head/day at consumer end. At present water to the Jalgaon city is supplied from 3 sources i.e. Girna infiltration works, Dapora weir on river Girna and Waghur Dam. The source works, treatment and conveyance of water upto city with service reservoir have been completed for Waghur dam water supply scheme.

The water supply scheme from Waghur Dam is planned to supply requirement of 149 mld for projected population 8,76,000 in year 2030 and the cost of the project is Rs.159.25 crors. The water supply scheme up to city is nearly in completion stage. The reframing and redesigning of the distribution system in the city is yet to be taken up in hand.

Fig.: Schematic Diagram of Water Supply for Jalgaon City



In addition to above, there are number of open wells and bore-wells in the city from which occasionally water is supplied through as per the need. However, to cope up the demand in 2040 for about 10 Lakh projected population of the Jalgaon city, the following sub works (components) are proposed in the city development plan with their respective block estimate cost.

Infrastructure will need following project conceptualization

1. Implementing 24x7 water supply to the city
2. Energy and water audit
3. Unauthorized water connections- their detection and regularization
4. Laboratory setup for testing water samples

5. Automation and computerization in existing water supply system like Raw and pure water pumping machinery, water treatment plant
6. Raw and pure water rising main and leading mains to proposed GSR / ESR in above development plant
7. Raw and pure water pumping machinery required for lifting raw and pure water
8. Extensions to present raw water pump houses and allied works including additional intake of water

Environment:

- Implementation and enforcement of norms of the Pollution Control and monitor regularly quality of lake water;
- Protection of Natural Recharge Areas and prepare plans for creation of new waterbodies with participation of private sector for development and maintenance;
- Desilting of Lake implementing soil and water conservation measures like gully controls measures, construction of Check dams, etc to hold soil and reduce siltation;
- Implement comprehensive plan for ecological Conservation;
- Mass plantation program by the industries and adjoining local pollution will help to control the ambient air pollution levels;
- Plantation of noise absorbing plants especially on the roadside will help to lower the noise levels observed in the area;
- Awareness on pollution, health impacts of pollution and need for sustainable development amongst the industrial management, workers and population will help to improve the quality of environment in the area; and
- Use of lakes and parks for recreation.

I.E.C. & Social Mapping:

Proposed plans and options are derivatives of NUSP target of 100 % Sanitation plan in given time frame up to year 2033 with consideration of limiting factors. The Components are sequenced as per NUSP Consideration of support extended by Govt. of India to assess independently. Evaluation of plan is based on vision, policy issue, Base line data, generic elements, present status, time frame, constrains like finance and procedure, manpower, hampering due to random natural growth etc. Awareness and change in mindset is necessary for all category of persons, including those who maintain and

Administrate the sanitation Programme. Initially, Rigorous programme i. e. Certificate programme for workshop attendants and Award programme for special performance is proposed to be undertaken along with audio, visual education cum information, Interactive Workshops for different groups / categories of society in group of 50/100 no's. A permanent venue with printed literature to disseminate & reference library is proposed as I.E.C. Centre. At present topics of Health and Environment Social studies are included at school level, Audio visual lecture and visits targeting ,syllabus with no extra hours are also proposed in Schools & Colleges. Outcome expected is awareness, literacy, contribution, involvement, responsibility, social sense development and Group of Active Participants as permanents capacity providing and feedback, Critics to improve CSP.

Provision for fixture, furniture, computer, Audio visual display system, library, water purifier charts, Educational Information Books and literature, stationary etc. This expenditure can be done through JCMC income sources.

Reaching the unserved and poor household :

To fulfill these objective I. E. C. Programmed, providing community Toilets, Individual toilet etc. is essential so that NUSP important goal of open Defecation free (ODF) city and CSP is achieved Community toilets constructed till now are 105 Blocks with 2084 seats, Individual low cost toilet under government scheme already in process statistically speaking if 25 person / w.c. seats are considered, facility looks adequate.

But it is inadequate due to location accessibility and floating population and Growth Factor It is targeted with different option as follows.

Chapter 7: Gap in Existing Situation (All Elements)

Toilets, open defecation sites and housing for poor

Table: Total shortfall of W.C. seats and urinals in the city is as further

Sr. No.	Description
1	For open defecation site 58 nos which covers slum population 70000 Nos @ 35 person/seats
2	Floating population 25000 Nos @ 35 person/seats
3	Individual toilet facility to household shortfall provision to 8507 household for 42500 population
4	However above provisions being statistical in nature, short fall for location wise requirement, approachable distance, children and women differentiation 2% handicapped persons needs provision for 20% i.e 2200 seats Therefore at Rs. 35000/- seats for 11338 Nos including area development, lighting, water supply etc.
5	Urinals at suitable places needs to be provided say 500 Nos @ Rs 10000/- No.

Note: - Particularly in Jalgaon city it is to be noted that, Jalgaon City Municipal Corporation has taken up extensive program of rehabilitation of slum population. The nice objective is to provide affordable housing to the poor as well as clean and livable, environmentally clean city.

As slum housing rehabilitation is completed and houses have been distributed. However in city, 30 no. of slum locations are still existing accommodating 17676 families about 70,000 populations.

Now Municipal Corporation has incomplete construction of 8258 houses at this stage the work is with held due to litigation, out of total proposal of 11424 no. of units.

Presently to make city free of slums, JCMC have proposed slum development under Rajiv Gandhi Nivas yojana, for which a consultant is appointed. The process of approval is under progress. For all these housing projects, adequate land is reserved.

Though there are no existing national/state level standards, a couple of programs/scheme and filed surveys provide pointers for consideration while planning for community / public toilets. For planning purpose , GOI sponsored 'National Slum Development Programme ' suggest -35 users per day per seat. World Bank funded ' Mumbai Slum Sanitation Programme adopted - 50 user per day per seat. Findings of community public toilet loading observations

during evaluation of Mumbai SSP (TARU - WSP, 2005) indicate loading up to 100 persons per seat.

The baseline data regarding types of toilets, safe and unsafe, excreta quantity are compiled and the analysis of the same with the supportive data is clearly mentioned in the Annexure-I.

Sewerage Gap Assessment:-

- 1) For totally sanitized city, U/G sewerage scheme is essential. The proposed U/G scheme will not cover the entire city limits. Some of the wards are partly covered in this proposed scheme. These are need to be attended for at least main sewer required to be laid in those areas
- 2) The proposed sewerage scheme is not sanctioned till now and the experience shows that at least four to five years are necessary for the actual execution of work. Till this period some treatment is definitely required to reduce the BOD load of waste water which generates from households and flows through open gutter into the nearby nallas.
- 3) Conventional sewage treatment process is costly and the O&M cost of this system is high. New techniques have been introduced and proved better in improving on the issue of capital cost, over all efficiencies and O&M cost, e.g. techniques like C-tech Technology and Bio-remedial system.

No.	Component
1	Gravity Sewers for the area which is not covered in the propose sewage scheme(token provision)
2	Bio remedial measures for nalla drainage to avoid the pollution of the sources of drinking water.
3	Provision for property connection to sewer line 87293HH x Rs. 5000/- = Rs. 43.65 Crore
4	ECO-SAN & DEWAT pilot project 4 nos. X Rs. 1.25 Cr.

Note: - ECO-SAN means ecological sanitation and DEWATS means Decentralized Waste water Treatment systems recently are being considered at appropriate locations. Therefore is proposed to have pilot models in four zones of the city to evaluate further in due course of time, if found suitable and sustainable.

Storm water Gap Assessment:-

The Additional provision is essential for following essential provisions

Abstract

Sr. No.	Components Description
1	Flood line survey & preparation of Disaster Management programme
2	Rain water Harvesting of public Buildings
3	Recharging Ground water Table
4	Arrangement to Lift water from Rain Water Harvesting ponds & supplying to agriculture use

Table : Gap Assessment & additional provision of Storm Water

Solid Waste Management Identified Gaps:

- In spite of more than sufficient storage capacity, dumping of MSW in open spaces, roads, pavements as well as in the drains is practiced affecting the drainage system
- Lack of awareness programme regarding SWM system
- No training programmes are introduced
- No separate collection system for bulk generator & construction waste
- No User Charges are levied
- No user tracking system for Vehicle Tracking
- No GPS tracking system for Vehicle tracking
- No Recycling of biodegradable waste
- Vehicles carrying solid waste are not covered by tarpaulin
- No work shop for repairing vehicles carrying solid waste and hence many times these are under repaired
- No segregation of solid waste at source

Table : Block Estimates for Gap Assesment

Sr.No.	Component
1	Workshop for vehicle repairs
2	Purchase of vehicles, containers & bins
3	Purchase of white& green colored buckets for wet and dry solid waste segregation at source
4	Road sweeping and Nalla cleaning

Water Supply Gap Assessment:

1. To ensure Access to drinking and safe portable drinking water for all
2. To provide uninterrupted 24 X 7 water supply to the city and evenly water distribution.
3. To increase the efficiency of existing works or components of water supply scheme

Objectives

1. Safe water and equitable distribution
2. Reduction of losses.
3. Increase in revenue and self supporting of water supply system.

Infrastructure will need following project conceptualization

1. Implementing 24x7 water supply to the city
2. Energy and water audit
3. Unauthorized water connections- their detection and regularization
4. Laboratory setup for testing water samples
5. Automation and computerization in existing water supply system like Raw and pure water pumping machinery, water treatment plant
6. Raw and pure water rising main and leading mains to proposed GSR / ESR in above development plant
7. Raw and pure water pumping machinery required for lifting raw and pure water
8. Extensions to present raw water pump houses and allied works including additional intake of water

Environment:

The report of the “Committee on Environment and Health” has brought out issues requiring attention of various stakeholders. The “Conference on Environmental Health” organized by Ministry of Environment and Forests in November, 2002 has brought out thrust areas and action points that need to be implemented for protection of public health.

The environment in which we live greatly influences our health. The most important issue in Jalgaon is Attributed to pollution, the various types of pollutions are:-

- Air pollution
- Indoor air pollution
- Water pollution
- Ground water pollution
- Noise Pollution
- Soil Pollution
- Sanitation and Hygiene

Air pollution:

The main sources of air pollution are vehicles and industries and to some extent domestic sources. Air pollution from combustion sources is associated with a broad spectrum of acute and chronic health effects. Particulate air pollution may cause the most serious effects on lungs, including lung cancer and other cardiopulmonary mortality. Burning of low-grade fuel in urban areas for various purposes is one of the causes of air pollution. In addition tire, rubber, plastic, garbage etc. are also burnt. Such combustion emits toxic pollutants including dioxins and furans, which are quite harmful to the human beings. Children are more susceptible in contracting diseases due to exposure to air pollutants and hazardous chemicals, ingesting contaminated water, food and soil. These problems are magnified due to lack of access to safe drinking water and sanitation, haphazard disposal of hazardous and bio-medical wastes.

Growing number of diseases in children have been linked to environmental exposures. These diseases range from traditional water borne, food borne and vector borne ailments and acuterespiratory infections to asthma, cancer, arsenicosis, fluorosis, certain birth defects and developmental disabilities. Children from the foetal stage through adolescence are in a dynamic stage of growth as their immature nervous, respiratory, reproductive and immune system start developing.

The industrial area covers more than 1,500 acres of the city area with 2000 small and middle scale industries. It occupies with mainly small-scale industries. Air quality and noise levels of adjoining residential and commercial areas are affected due to industrial activities. Though, the pollution levels are not alarming at present, it may reach threshold levels with further expansion of the industrial belt. Pollution control measures need to be formulated and enforced.

Indoor air pollution:

Cooking and heating with solid fuels such as dung, wood, agricultural residues or coal are the largest source of indoor air pollution. The poor people in the developing nations use unprocessed fuels in their houses. The product of incomplete combustion of biomass includes carbon monoxide, hydrocarbons, suspended particulate matter and Polycyclic Aromatic Hydrocarbon (PAH), etc. Indoor air pollution may manifest respiratory ailments such as cough, dyspnea and abnormal lung functioning, if proper ventilation does not exist.

Water pollution:

It is estimated that 75 to 80% of water pollution by volume is caused by domestic sewage. The remaining is industrial wastewater, which could be more toxic. Only 60% of chemical fertilizers is utilized in soils and the balance is leached into soil polluting ground water. Excess phosphate run-off leads to eutrophication in lakes and water bodies. Adverse health outcomes are associated with ingestion of contaminated water, lack of access to sanitation, contact with unsafe water, and inadequate management of water resources and systems including in agriculture.

The surface water quality status of the city of Jalgaon shows that the pH varies from 7.998 to 9.558 during laboratory analysis. High electrical conductivity, and high COD, BOD and chlorides are also present.

Laboratory analysis of the water from Mehrun tank showed a pH variation of 6.24 to 7.45 and electrical conductivity varies from 0.495 to 0.510 mili mhos. High chloride concentrations and high BOD and COD values are also present. The reasons for these values are due to human activities such as bathing and washing at the banks of the lake.

Ground water pollution:

Due to improper drainage and lack of proper disposal facilities, industries and local bodies use large areas of land as mode of disposal of wastewater. Heavy metals and other toxic compounds present in the effluent may pose considerable health risks amongst the population using such contaminated water.

Noise Pollution:

Increase in vehicular traffic and commercial activities are major cause of noise pollution in urban areas. Use of loud speakers, diesel generator sets, high pitched music systems, bursting crackers, etc are adding to noise levels in cities. It has been reported that people living in noisy

areas have been found with impairment in their hearing system. In the city of Jalgaon surveys and analysis conducted at various locations shows a tremendous increase in noise levels. The morning and evening hours are always characterized by heavy traffic hours at Akashwani, Icchhadevi and Ajantha Chowk. At locations the noise levels range between 80-88dB.

There is increase in population and hence the number of vehicles has also proportionately increased and the presence of the National Highway No.6 passing through the city also contributes to the air pollution in the area and traffic levels remain at their peaks on the NH-6 throughout the year. These however are lower than the prescribed limit for residential areas of the city.

Soil pollution:

In Jalgaon city, the soil analysis samples were highly degraded in the Ganesh Colony Area as compared to samples from other parts of the city. Soil samples from Dadawadi area and Mehrun area show less impact on its chemical and biological properties. All the samples from the city show slight alkalinity, which may be a result of direct run off sewage water.

Sanitation and Hygiene:

Sanitation methods aim to decrease spreading of diseases by adequate wastewater, excreta and other waste treatment, proper handling of water and food and by restricting the occurrence of causes of diseases. Sanitation is a system to increase and maintain healthy life and environment. Essential part of sanitation is building and maintenance education on sewerage systems, wash up and toilet facilities.

I.E.C. & Social Mapping:

Table : Block proposal of I E C centre

No	Component	Capital Cost Rs. in Crore	O&M Cost Rs. in Crore
	Option -I ULB on its own		
1	Land and Building (500sqm)	1.00	0.05
2	Provision in centre	1.00	0.10
3	O and M Cost 1000person/PM 12000 person / year		0.60
4	Reward scheme		0.10
	Total	2.00	0.85

	Option II Delegation to NGO		
1	Delegation to NGO to run and administer the IEC Centre, with its own infrastructure and man power	NIL	1.00

Reaching the unserved and poor household (NUSP support sequence)

To fulfill these objective I. E. C. Programmed, providing community Toilets, Individual toilet etc. is essential so that NUSP important goal of open Defecation free (ODF) city and CSP is achieved. Community toilets constructed till now are 105 Blocks with 2084 seats, Individual low cost toilet under government scheme already in process statistically speaking if 25 person / w.c. seats are considered, facility looks adequate. But it is inadequate due to location accessibility and floating population and Growth Factor It is targeted with different option as follows.

S. No	Indicator	Benchmark	2010-11	2011-12	2012-13	2013-14	2014-15
A	WATER SUPPLY						
1	Coverage of Water Supply connections	100%	72.03%	7%	7%	7%	6.97
2	Per Capita Supply of Water	135 lpcd	135 lpcd				
3	Extent of Non-revenue Water	15%	40%	-7%	-7%	-7%	-4%
4	Extent of Metering of water connections	100%	0%	0%	35%	35%	30%
5	Continuity of Water supplied	24 Hours	1 Hour	Hours			
6	Efficiency in redressal of customer complaints	80%	90.90%	0%	0%	0%	0%
7	Quality of Water Supplied	100%	99.15%	0.85%	0%	0%	0%
8	Cost Recovery	100%	58.05%	10.48%	10.48%	10.48%	10.48%
9	Efficiency in Collection of Water Charges	90%	82.54%	1.86%	1.86%	1.86%	1.86%
B	SEWERAGE						
10	Coverage of Toilets	100%	72.28%	13.86%	13.86%	0%	0%
11	Coverage of Sewerage Network	100%	0%	0%	33.33%	33.33%	33.34%
12	Collection efficiency of Sewerage Network	100%	0%	0%	33.33%	33.33%	33.34%
13	Adequacy of Sewage Treatment Capacity	100%	0%	0%	33.33%	33.33%	33.34%
14	Quality of Sewage	100%	0%	0%	33.33%	33.33%	33.34%

	Treatment						
15	Extent of Reuse and Recycling of Sewage	20%	0%	0%	7%	7%	6%
16	Extent of cost recovery in waste water management	100%	0%	0%	33.33%	33.33%	33.34%
17	Efficiency in redressal of customer complaints	80%	0%	0%	30%	30%	20%
18	Efficiency in Collection of Sewage Water Charges	90%	0%	0%	30%	30%	30%
C	SOLID WASTE MANAGEMENT						
19	Household Level Coverage	100%	100%	0%	0%	0%	0%
20	Efficiency in Collection of Solid Waste	100%	95.93%	2%	2%	0.07%	0%
21	Extent of Segregation of MSW	100%	100.00%	0%	0%	0%	0%
22	Extent of MSW Recovered	80%	76.74%	1%	1%	1%	0.26%
23	Extent of Scientific Disposal of MSW	100%	0%	25%	25%	25%	25%
24	Extent of Cost Recovery	100%	12.69%	22%	22%	22%	21.31%
25	Efficiency in Collection of SWM Charges	90%	98.86%	0%	0%	0%	0%
26	Efficiency in Redressal of Customer Complaints	80%	95.38%	0%	0%	0%	0%
D	STORM WATER DRAINAGE						
27	Coverage	100%	46.34%	0%	20%	20%	13.66%
28	Incidence of water logging 0 numbers	0	0	0	0	0	0

Fig.: Existing Status of Service Level Benchmarking

Chapter 8: Population Projection upto 2030 & Requirement

The population growth of Jalgaon city according to census 2001 is given in following table. The city has expanded due to increase in boundary alos & it is observed that, population density is 53.94 habitants /hectare, the core density in city is on higher side. The city is presently divided in 69 wards by City Corporation.

Year	Population	Growth Decade	% Growth	Growth in Annual	Growth in Decade
1951	75,303	- -	--	--	--
1961	88,452	13,149	17.46	1.74	- -
1971	1,17,312	28,860	32.63	3.26	15,711
1981	1,65,507	48,195	41.08	1.1	19,335
1991	2,42,193	76,686	46.33	4.63	28,491
2001	3,68,000	1,25,807	51.94	5.19	49,121

(Source: - Census of India, CDP – Table. 3)

Table : Population Growth of Jalgaon City

Population Projection

The Population Growth can be assessed by geometric rate of increase and compounded average growth rate

Method	2001	2006	2011	2021	2031
Geometric rate	368000	430903	530607	693214	855821
Compounded annual	368000	423694	509312	692664	94849
Average projected growth	-----	427298	519959	692939	948949

Table: Population Projection of Jalgaon City

The current City Sanitation Plan is having the budget aspects upto 2015. For the growing population of the city further sanitation facilities will be developed through various schemes, grants and Public Private Partnership.

The gaps in the elements and quantification for the same have been marked out for 2011 conditions. The Jalgaon City Municipal Corporation has proposed to implement City Sanitation Plan by 2015. In this chapter the population projection in terms of temporal and spatial conditions has

been made upto 2015. The JCMC is aware that further work for the expected increase in population for all the elements will be required and in posterity, the JCMC will take necessary steps to carry out such work as and when required to phase up the proper sustainability for the implemented City Sanitation Plan.

Chapter 9: FRAMEWORK FOR ACTION

This chapter gives a clear cut idea about the framework for action of the City Sanitation Plan elements. It involves the measures to be taken to implement the present City Sanitation Plan in the Jalgaon City wardwise. It also shows the costing and the amount required and to be spent for making the city sanitized.

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Nature of work & Estimation

Sr.No.	Current condition & status	Corporation area	In zone (no.)	Solution	Approximate expenditure in each ward	Total expenditure (Crore)
1	Toilet	Places of open defecation		Construction of personal toilets		
	Z1	58	14	181	35000	0.63
				788 I.L.C.S	0.121 Lakhs	0.95
	Z2	58	25	1220	35000	4.27
				1560 I.L.C.S	0.121 Lakhs	1.88
	Z3	58	9	405	35000	1.41
				2114 I.L.C.S	0.121 Lakhs	2.53
	Z4	58	10	210	35000	1.81
				1498 I.L.C.S	0.121 Lakhs	0.73
TOTAL						14.21
2	Sewerage	Improper drainage of sanitary waste		joining of gutters		
	Z1	87289	33139	33139	5000 Rs/Connection	16.56

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	Z2	87289	19243	19243	5000 Rs/Connection	9.62
	Z3	87289	21628	21628	5000 Rs/Connection	10.81
	Z4	87289	17404	17404	5000 Rs/Connection	8.70
3		Improper drainage of septic tank		construction of recycling plant		
	Z1	581277	165697	165697*250	250 Rs/ Connection	4.14
	Z2	581277	157328	157328*250	250 Rs/ Connection	3.93
	Z3	581277	131290	131290*250	250 Rs/ Connection	2.67
	Z4	581277	121685	121685*250	250 Rs/ Connection	3.42
4		Generation of waste water				
	Z1	59 MLD	15.75 MLD	165697*7000*120	Approx.	18.26
	Z2	59 MLD	18.48 MLD	157328*7000*120	Approx.	20.35
	Z3	59 MLD	12.86 MLD	131290*7000*120	Approx.	12.80
	Z4	59 MLD	11.87 MLD	121685*7000*120	Approx.	10.11

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5		Length of waste water carrying pipes				
	Z1			165697*25000	25000	41.42
	Z2			157328*25000	25000	39.33
	Z3			136567*25000	25000	34.14
	Z4			121685*25000	25000	31.71
A		Shortage of length & requirement of extra taps (till 2011)		availability of extra taps		
	Z1	Nil	Nil	Nil	Nil	Nil
	Z2	Nil	Nil	Nil	Nil	Nil
	Z3	Nil	Nil	Nil	Nil	26.79
	Z4	Nil	Nil	Nil	Nil	26.79
6		Proper place for ECOSAN & population		planning for identification of proper place		
	Z1				Approx.	1.25
	Z2				Approx.	1.25
	Z3				Approx.	1.25
	Z4				Approx.	1.25

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7		Reuse of recycled waste water	-	-	-	-
	Z1	-	-	-	Approx.	2
	Z2	-	-	-	Approx.	2
	Z3	-	-	-	Approx.	2
	Z4	-	-	-	Approx.	2
TOTAL						334.55
8	Solid waste management					
A		Domestic waste from garbage				
	Z1	40 Ton in corporation area	10 Ton	-	Reserve Ghanta Gadi	0.04
	Z2	40 Ton in corporation area	9 Ton	-	Reserve Ghanta Gadi	0.04
	Z3	40 Ton in corporation area	9 Ton	-	Reserve Ghanta Gadi	0.04
	Z4	40 Ton in corporation area	11 Ton	-	Reserve Ghanta Gadi	0.04
B	Waste from garbage bins					
	Z1	70 Ton.	17 Ton.	-	140 Container x 35,000	0.49
	Z2		22 Ton.	-	126 Container x 35,000	0.44
	Z3		16 Ton.	-	126 Container x 35,000	0.44

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	Z4		13 Ton.	-	120 Container x 35,000	0.42
C	Carrying of solid waste from above a & b to SWM centre					
	Z1	110 Ton.	25 Ton.		Approx.	0.69
	Z2	110 Ton.	31 Ton.		Approx.	0.69
	Z3	110 Ton.	28 Ton.		Approx.	0.69
	Z4	110 Ton.	24 Ton.		Approx.	0.69
D	Soild waste generated in urban poor areas					
	Z1	13 Ton.	3 Ton.	131290	I.E.C expenditure	0.25
	Z2	13 Ton.	4 Ton.	131290	I.E.C expenditure	0.25
	Z3	13 Ton.	3 Ton.	131290	I.E.C expenditure	0.25
	Z4	13 Ton.	3 Ton.	131290	I.E.C expenditure	0.25
9	Solid waste processing centre					
	Z1	-	-	-	Boot	

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	Z2				Boot	
	Z3				Boot	
	Z4				Boot	
A	Processing centre					
	Z1	123 Ton.	28 Ton		Approx.	0.25
	Z2	123 Ton.	35 Ton		Approx.	0.53
	Z3	123 Ton.	28 Ton		Approx.	0.51
	Z4	123 Ton.	27 Ton		Approx.	0.25
B	Generation of fertilizes at processing centre			Generation of fertilizers from processed solid waste to be done		
	Z1	35%	35%	-	-	-
	Z2	35%	35%	-	-	-
	Z3	35%	35%	-	-	-
	Z4	35%	35%	-	-	-
C	Generation of electricity or fuel from processed			Minimum 5% fuel generated by solid waste to be used		

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	solid waste					
	Z1	Few Lbricks 5 Ton	5 Ton			
	Z2	Few Lbricks 5 Ton	5 Ton			
	Z3	Few Lbricks 5 Ton	5 Ton			
	Z4	Few Lbricks 5 Ton	5 Ton			
d	Reused of dry solid waste regeneration			Recycling or reused of all expected dry solid waste by rack pickers or by any other media.		
	Z1	3 Ton.	3 Ton.	-	-	-
	Z2	3 Ton.	3 Ton.	-	-	-
	Z3	3 Ton.	3 Ton.	-	-	-
	Z4	3 Ton.	3 Ton.	-	-	-
TOTAL						7.25
10	Storm Water	Drainage of rain	-	-	-	-

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c	Natural drains			Proper construction and increase in width and depth according to plan		
	Z1	-	-	165697*4500	4500	74.56
	Z2	-	-	157328*4500	4500	70.79
	Z3	-	-	136567*4500	4500	61.45
	Z4	-	-	121685*4500	4500	54.75
TOTAL						508.65
11	Potable water supply					
a	Amount of potable water supply			Planning for water supply network and vehicle according to demand		
	Z1	80 MLD	31.62 MLD	165697	4000	66.27
	Z2	80 MLD	21.23 MLD	157328	4000	62.93
	Z3	80 MLD	18.43 MLD	136567	4000	54.62
	Z4	80 MLD	16.42 MLD	121685	4000	48.67

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b	Water properly purified			Establishment of processing centers for pure water		
	Z1	80 MLD	31.62 MLD	-	-	Nil
	Z2	80 MLD	21.23 MLD	-	-	Nil
	Z3	80 MLD	18.43 MLD	-	-	Nil
	Z4	80 MLD	16.42 MLD	-	-	Nil
d	24/7 water supply(as per DPR)			Checking of water supply web and making necessary changes		
	Z1			165697*5000	5000	82.84
	Z2			157328*5000	5000	78.66
	Z3			136567*5000	5000	68.28
	Z4			121685*5000	5000	46.38
TOTAL						508.65
12	Environment					
	Z1	Over all City 3	Over all City 3		Approx.	2.05
	Z2	Over all City 3	Over all City 3		Approx.	2.05
	Z3	Over all City 3	Over all City 3		Approx.	2.05

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	Z4	Over all City 3	Over all City 3		Approx.	2.05
b	Places of air pollution			Establishment of proper processing centres for industries		
	Z1	2	Over all City 2		Approx.	3
	Z2		Over all City 2		Approx.	3
	Z3	2	Over all City 2		Approx.	3
	Z4	2	Over all City 2		Approx.	3
c	Places of maximum pollution			Vehicles and other logistics		
	Z1	6			Approx.	1.5
	Z2	6			Approx.	1.5
	Z3	6			Approx.	1.5
	Z4	6			Approx.	1.5
TOTAL						26.65
13	IEC & SOCIAL MAPPING	Awareness				
a	No. of public organisation			Encouragement and guidance to the		

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	in the area			institute if required		
	Z1				Approx.	1.25
	Z2				Approx.	1.25
	Z3				Approx.	1.25
	Z4				Approx.	1.25
b	Institute for awareness in public					6.5
TOTAL						11.50
GRAND TOTAL						1401.46

Summary sheet

Sr. No.	Element	Total expenditure (Crore)
1	Toilets	14.41
2	Sewerage	334.55
3	Solid Waste Management	7.25
4	Storm Water	508.65
5	Water Supply	508.65
6	Environment	26.65
7	IEC & Social Mapping	11.50
Grand Total		1401.46

Chapter 10: FINANCIAL OUTLAY, BUDGET & ANALYSIS

The financial budget of the Jalgaon Municipal Corporation is available for the coming year 2011-2012 and the fund provision to meet the Service Level benchmarking criteria is made. But as the financial situation of the Jalgaon Municipal Corporation is weaker, it needs the grants from the State and central Government to fulfill the SLB criteria. And if the funds are made available, the Jalgaon City Municipal Corporation will make the city totally sanitized.

The table given below shows the amount sanctioned in the Municipal Budget for various parameters to attain the 100% SLB.

As there is a provision of Rs. 6.5 Crores, the total shortfall of Rs. 1398.11 is needed under City Sanitation Plan to meet total sanitation.

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Fig.: Financial outlay of the Jalgaon Municipal Corporation as per the Budget sanctioned for year 2011-2012

S. No	INDICATOR	BENCHMARK	REQUIRED DATA	FIGURES	Present Status of Services in terms of Benchmarks	Provisions of Municipal Budget / govt. Funds to achieve the target
A	WATER SUPPLY					3.30 Crores
1	Coverage of Water Supply connections	100%	a) Total No. of house hold in the service area	76593 Nos	72.03%	
			b) Total No. of house hold with direct water supply connection	55172 Nos		
2	Per Capita Supply of Water	135 lpcd	a) Water supplied to distribution system	2128500000 liters/ month		
			b) Population served	542246 Nos		
			c) No. of days in month	30 Nos		
			d) Additional Information on areas where water is supplied at rate less than 70 LPCD	NIL LPCD	130.84 LPCD	
3	Extent of Non-revenue Water	15%	a) Total water produced and put into the transmission and distribution system	2128.50 MLD/ Month		
			b) Total water sold	1277.10 MLD/ Month	40%	
4	Extent of Metering of water	100%	a) Total No. of Direct service connections	55172 Nos		

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	connections		b) Total no. of public Stand post	36 Nos		
			c) No. of metered direct service connections	0 Nos		
			d) No. of metered public stand posts	0 Nos	0%	
5	Continuity of Water supplied	24 Hours	a) Avarage Hours of pressuried supply per day	1 hour	1 HOUR	
6	Efficiency in redressal of customer complaints	80%	a) Total No. of water supply related complaint received per month	11 Nos		
			b) Total no. of complaint redressed within the month	10 Nos	90.90%	
7	Quality of Water Supplied	100%	a) Total No. of water samples in a month	118 Nos		
			b) No. of samples that meet the specified potable water standards in the month	117 Nos	99.15%	
8	Cost Recovery	100%	a) Total annual operating expences	12.85 crores		
			b) Total annual operating revenues	7.46 crores	58.05%	
9	Efficiency in Collection of Water Charges	90%	a) Current revenues collected in given year	4.73 crore per annum		
			b) Total operating revenues billed during the given year	5.74 crores per annum	82.54%	
B	SEWERAGE					0.20 crores

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10	Coverage of Toilets	100%	a) No. of Properties with access to individual or community toilets	63099 nos		
			b) No. of Properties without individual or community toilets	24190 nos	72.28%	
11	Coverage of Sewerage Network	100%	a) Total No. of Properties in the service area	87289 nos.		
			b) Total No. of Properties with direct connection to sewage network	0	0	
12	Collection efficiency of Sewerage Network	100%	a) Total Water supplied	90 MLD		
			b) Estimated water use from other sources	0 MLD		
			c) Waste water collected	0 MLD	0	
13	Adequacy of Sewage Treatment Capacity	100%	a) Total Water consumed	72 MLD		
			b) Total No. of Properties with direct connection to sewage network	0 nos		
			c) Treatment plant capacity	0 nos	0	
14	Quality of Sewage Treatment	100%	a) Total No. of waste water samples tested in a month	0 nos		
			b) Number of samples that pass the specified secondary treatment standards	0 nos	0	
15	Extent of Reuse and Recycling of Sewage	20%	a) Wastewater received at STP's	0 MLD		
			b) Wastewater recycled or reused after appropriate treatment	0 MLD	0	

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16	Extent of cost recovery in waste water management	100%	a) Total annual operating expences	0 crores		
			b) Total annual operating revenues	0 crores	0	
17	Efficiency in redressal of customer complaints	80%	a) Total No. of Sewage- related Complaints received per month	0 Nos		
			b) Total No. of Complaints redressed within the month	0 Nos	0	
18	Efficiency in Collection of Sewage Water Charges	90%	a) Current revenues collected in given year	0 per annum		
			b) Total operating revenues billed during the given year	0 per annum	0	
C	SOLID WASTE MANAGEMENT					0.0
19	Household Level Coverage	100%	a) Total number of households and establishments in the service area	76593 nos		
			b) Total number of households and establishments with daily doorstep collection	76593 nos	100%	
20	Efficiency in Collection of Solid Waste	100%	a) Total waste that is generated and which needs to be collected	3690 tonnes / month		
			b) Total quantum of waste that is collected by the ULB or authorised service providers	3540 tonnes / month	95.93%	
21	Extent of Segregation of	100%	a) Quantum of waste that is segregated	3540 tonnes / month		

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	MSW		b) Total quantum of waste that is collected by the ULB or authorised service providers	3540 tonnes / month	100.00%	
22	Extent of MSW Recovered	80%	a) Amount of waste that is processed or recycled	2832 tonnes/ month		
			b) Total quantum of waste that is collected by the ULB or authorised service providers	3540 tonnes / month	76.74%	
23	Extent of Scientific Disposal of MSW	100%	a) Total waste disposed in 'compliant' landfills every month	0 tonnes / month		
			b) Total waste disposed in all landfills every month	0 tonnes / month	0%	
24	Extent of Cost Recovery	100%	a) Total annual operating expenses	Rs.14.02 Crores		
			b) Total annual operating revenues	Rs.1.78 Crores	12.69%	
25	Efficiency in Collection of SWM Charges	90%	a) Current revenues collected in the given year	Rs.1.74 Crores		
			b) Total operating revenues billed during the given year	Rs.1.76 Crores	98.86%	
26	Efficiency in Redressal of Customer Complaints	80%	a) Total number of SWM-related complaints received per month	65 per month		
			b) Total number of complaints redressed within the month	62 per month	95.38%	
D	STORM WATER DRAINAGE					3 crore

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27	Coverage	100%	a) Total length of road network in ULB (< 3.5M CW)	410 KM		
			b) Total length of primary,secondary and tertiary drains	190 KM	46.34%	
28	Incidence of water logging 0 numbers	0 NUMBERS	a) Identification of flood prone points within the ULB limits. The points may be named as A1, A2,A3,...An	0		
			b) Number of occasions of flooding/water logging in a year	0	0	

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Zone wise Block Estimates Prepared by Jalgaon Municipal Corporation Comparative Statements

Whole Corporation	Zone				
		1	2	3	4
Population- 581277	Population-	165697	157328	136567	121685
Area in Hectare- 68.24	Area in Hectare-	17.89	10.95	29.10 sq.km	10.3 sq.km
No. of houses-87289	No. of houses-	28714	19243	21628	17704
No. of families-116254	No. of families-	33139	31462	27313	24337
Property-87289	Property-	28714	19243	21628	17704
No. of huts-11942	No. of huts--	2177	2881	6070	3215
Urban poor population-85871	Urban poor population-	9294	30142	30359	16076

Zones	1	2	3	4	Total
Total Expenditure (Crore)	343.78	380.21	355.53	325.09	1404.61

Fig.: Nature of work & Estimation for CSP

Sr.No.	Current condition & status	Corporation area	In zone (no.)	Solution	Approximate expenditure in each ward	Total expenditure (Crore)
1	Places of open defecation			Construction of personal toilets		
	Z1	58	13	181	35000	0.63
				788 I.L.C.S	0.121 Lakhs	0.95
	Z2	58	24	122 New Proposed	Approx.	4.27
				1560 I.L.C.S		1.88
	Z3	58	8	2114	35000	2.53
				405 I.L.C.S		1.41
	Z4	58	9	1498 I.L.C.S	0.121	0.73
				210 BPL	0.35	1.81
a	No. of urban poors or slums(housing)			reconstruction plan		

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	Z1	11942	846	846	0.03 crores	25.38
	Z2	11942	6214	2515	0.03 crores	75.45
	Z3	11942	2238	2238	0.03 crores	67.05
	Z4	11942	2644	2644	0.03 crores	79.32
b	Road residents			construction of community toilets		
	Z1	Nil	25	Nil	Nil	Nil
	Z2	Nil	Nil	Nil	Nil	Nil
	Z3	Nil	Nil	Nil	Nil	Nil
	Z4	Nil	Nil	Nil	Nil	Nil
2	Improper drainage of sanitary waste			joining of gutters		
	Z1	87289	33139	33139	5000 Rs/Connection	16.56
	Z2	87289	19243	19243	5000 Rs/Connection	9.62

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	Z3	87289	21628	21628	5000 Rs/Connection	10.81
	Z4	87289	17404	17404	5001 Rs/Connection	8.70
3	Improper drainage of septic tank			construction of recycling plant		
	Z1	581277	165697	165697*250	250 Rs/ Connection	4.14
	Z2	581277	157328	157328*250	250 Rs/ Connection	3.93
	Z3	581277	131290	131290*250	250 Rs/ Connection	2.67
	Z4	581277	121685	121685*250	250 Rs/ Connection	3.42
4	Generation of waste water					
	Z1	59 MLD	15.75 MLD	165697*7000*120		18.26
	Z2	59 MLD	18.48 MLD	157328*7000*120	Approx.	20.35
	Z3	59 MLD	12.86 MLD	131290*7000*120		12.80
	Z4	59 MLD	11.87 MLD	121685*7000*120		10.11

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a	Recyclable waste water			construction of extra processing centres		
	Z1	Nil	Nil	Nil	Nil	Nil
	Z2	Nil	Nil	Nil	Nil	Nil
	Z3	Nil	Nil	Nil	Nil	Nil
	Z4	Nil	Nil	Nil	Nil	Nil
b	Proper drainage of recycling water			erection of proper plant for drainage		
	Z1	Nil	Nil	Nil	Nil	at present no drainage, propose in UIDSSMT
	Z2	Nil	Nil	Nil	Nil	
	Z3	Nil	Nil	Nil	Nil	
	Z4	Nil	Nil	Nil	Nil	
5	Length of waste water carrying pipes					
	Z1			165697*25000	25000	41.42
	Z2			157328*25000	5000	39.33

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	Z3			136567*25000	25000	34.14
	Z4			121685*25000	25000	31.71
a	Shortage of length & requirement of extra taps (till 2011)			availability of extra taps		
	Z1	Nil	Nil	Nil	Nil	Nil
	Z2	Nil	Nil	Nil	Nil	Nil
	Z3	Nil	Nil	Nil	Nil	26.79
	Z4	Nil	Nil	Nil	Nil	26.79
6	Proper place for ECOSAN & population			planning for identification of proper place		
	Z1				Approx.	1.25
	Z2				Approx.	1.25
	Z3				Approx.	1.25
	Z4				Approx.	1.25
a	Area			area to be decided		

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	Z1					
	Z2					
	Z3					
	Z4					
b	Population			preparation of abstract about actual population & expected population in area		
	Z1	-	-	-	-	-
	Z2	-	-	-	-	-
	Z3	-	-	-	-	-
	Z4	-	-	-	-	-
7	Reuse of recycled waste water	-	-	-	-	-
	Z1	-	-	-	Approx.	2
	Z2	-	-	-	Approx.	2
	Z3	-	-	-	Approx.	2

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	Z4	-	-	-	Approx.	2
a	for flushing	-	-	use of minimum 30% of the treated waste water	-	-
	Z1	-	-	-	-	-
	Z2	-	-	-	-	-
	Z3	-	-	-	-	-
	Z4	-	-	-	-	-
b	wetlands	-	-	-	-	-
	Z1	-	-	-	-	-
	Z2	-	-	-	-	-
	Z3	-	-	-	-	-
	Z4	-	-	-	-	-
c	For fertilizers	-	-	-	-	-
	Z1	-	-	-	-	-
	Z2	-	-	-	-	-

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	Z3	-	-	-	-	-
	Z4	-	-	-	-	-
d	For electricity					
	Z1	-	-	-	-	-
	Z2	-	-	-	-	-
	Z3	-	-	-	-	-
	Z4	-	-	-	-	-
8	Solid waste management					
	Z1	-	-	-	-	-
	Z2	-	-	-	-	-
	Z3	-	-	-	-	-
	Z4	-	-	-	-	-
a	Domestic waste from garbage					
	Z1	40 Ton in corporation area	10 Ton	-	Reserve Ghanta Gadi	0.04
	Z2	40 Ton in corporation area	9 Ton	-	Reserve Ghanta Gadi	0.04

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	Z3	40 Ton in corporation area	9 Ton	-	Reserve Ghanta Gadi	0.04
	Z4	40 Ton in corporation area	11 Ton	-	Reserve Ghanta Gadi	0.04
b	Waste from garbage bins					
	Z1	70 Ton.	17 Ton.	-	140 Container x 35,000	0.49
	Z2		22 Ton.	-	126 Container x 35,000	0.44
	Z3		16 Ton.	-	126 Container x 35,000	0.44
	Z4		13 Ton.	-	120 Container x 35,000	0.42
c	Carrying of solid waste from above a & b to SWM centre					
	Z1	110 Ton.	25 Ton.		Approx.	0.69
	Z2	110 Ton.	31 Ton.		Approx.	0.69
	Z3	110 Ton.	28 Ton.		Approx.	0.69
	Z4	110 Ton.	24 Ton.		Approx.	0.69
d	Soild waste generated in urban poor areas					

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	Z1	13 Ton.	3 Ton.	131290	I.E.C expenditure	0.25
	Z2	13 Ton.	4 Ton.	131290	I.E.C expenditure	0.25
	Z3	13 Ton.	3 Ton.	131290	I.E.C expenditure	0.25
	Z4	13 Ton.	3 Ton.	131290	I.E.C expenditure	0.25
9	Solid waste processing centre					
	Z1	-	-	-	Boot	
	Z2				Boot	
	Z3				Boot	
	Z4				Boot	
a	Processing centre					
	Z1	123 Ton.	28 Ton		Approx.	0.25
	Z2	123 Ton.	35 Ton		Approx.	0.53
	Z3	123 Ton.	28 Ton		Approx.	0.51
	Z4	123 Ton.	27 Ton		Approx.	0.25
b	Generation of fertilizers at processing centre			Generation of fertilizers from processed solid		

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				waste to be done		
	Z1	35%	35%	-	-	-
	Z2	35%	35%	-	-	-
	Z3	35%	35%	-	-	-
	Z4	35%	35%	-	-	-
c	Generation of electricity or fuel from processed solid waste			Minimum 5% fuel generated by solid waste to be used		
	Z1	Few Lbricks 5 Ton	5 Ton			
	Z2	Few Lbricks 5 Ton	5 Ton			
	Z3	Few Lbricks 5 Ton	5 Ton			
	Z4	Few Lbricks 5 Ton	5 Ton			
d	Reused of dry solid waste regeneration			Recycling or reused of all expected dry solid waste by rack pickers or by any		

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				other media.		
	Z1	3 Ton.	3 Ton.	-	-	-
	Z2	3 Ton.	3 Ton.	-	-	-
	Z3	3 Ton.	3 Ton.	-	-	-
	Z4	3 Ton.	3 Ton.	-	-	-
10	Drainage of rain	-	-	-	-	-
	Z1	-	-	-	-	-
	Z2	-	-	-	-	-
	Z3	-	-	-	-	-
	Z4	-	-	-	-	-
a	No. of places in the city where rain water gets stagnated			Planning for drainage of stagnated rain water		
	Z1	Nil	Nil	Nil	Nil	Nil

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	Z2	Nil	Nil	Nil	Nil	Nil
	Z3	Nil	Nil	Nil	Nil	Nil
	Z4	Nil	Nil	Nil	Nil	Nil
b	Length of road side or underground drainage			Completion of drains according to rainwater drainage plan		
	Z1	-	-	-	Plan proposed, DPR not ready	Nil
	Z2	-	-	-	Plan proposed, DPR not ready	Nil
	Z3	-	-	-	Plan proposed, DPR not ready	Nil
	Z4	-	-	-	Plan proposed, DPR not ready	Nil
c	Natural drains			Proper construction and increase in width and depth according to plan		
	Z1	-	-	165697*4500	4500	74.56
	Z2	-	-	157328*4500	4500	70.79
	Z3	-	-	136567*4500	4000	61.45

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	Z4	-	-	121685*4500	4000	54.75
11	Potable water supply					
a	Amount of potable water supply			Planning for water supply network and vehicle according to demand		
	Z1	80 MLD	31.62 MLD	965697	4000	66.27
	Z2	80 MLD	21.23 MLD	157328	4000	62.93
	Z3	80 MLD	18.43 MLD	136567	4000	54.62
	Z4	80 MLD	16.42 MLD	121685	4000	48.67
b	Water properly purified			Establishment of processing centers for pure water		
	Z1	80 MLD	31.62 MLD	-	-	Nil
	Z2	80 MLD	21.23 MLD	-	-	Nil
	Z3	80 MLD	18.43 MLD	-	-	Nil
	Z4	80 MLD	16.42 MLD	-	-	Nil

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c	Water supply and connections to urban poor areas			Additional connections for proper water supply		
	Z1	-	-	-	Nil	Nil
	Z2	-	-	-	-	Nil
	Z3	-	-	-	-	Nil
	Z4	-	-	-	-	Nil
d	24/7 water supply(as per DPR)			Checking of water supply web and making necessary changes		
	Z1			135697*5000	5000	82.84
	Z2			157328*5000	5000	78.66
	Z3			136567*5000	5000	68.28
	Z4			121685*5000	5000	46.38
12	Environment					

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a	Surrounded natural water bodies being polluted			Study and planning for maximum accomodation of pollutants and bring out some measures		
	Z1	Over all City 3	Over all City 3		Approx.	2.5
	Z2	Over all City 3	Over all City 3		Approx.	2.05
	Z3	Over all City 3	Over all City 3		Approx.	2.05
	Z4	Over all City 3	Over all City 3		Approx.	2.05
b	Places of air pollution			Establishment of proper processing centres for industries		
	Z1	2	Over all City 2		Approx.	3
	Z2		Over all City 2		Approx.	3
	Z3	2	Over all City 2		Approx.	3
	Z4	2	Over all City 2		Approx.	3
c	Places of maximum			Vehicles and other logistics		

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	pollution					
	Z1	6			Approx.	1.5
	Z2	6			Approx.	1.5
	Z3	6			Approx.	1.5
	Z4	6			Approx.	1.5
13	Awareness					
a	No. of public organisation in the area			Encouragement and guidance to the institute if required		
	Z1				Approx.	1.25
	Z2				Approx.	1.25
	Z3				Approx.	1.25
	Z4				Approx.	1.25
b	Institute for awareness in public					
	Z1	-	-	-	-	-

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	Z2	-	-	-	-	-
	Z3	-	-	-	-	-
	Z4	-	-	-	-	-
		-	-	-	-	6.5

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FINANCIAL OUTLAY								
(Rs in crores)								
S.No.	Element	Capital Cost of the element in FFA	Provision in budget 2011-2012	Financial support received through various projects	Financial support likely to be received for element from different projects	Expected budgetary support for next 4 years	viability gap funding	O/M Charges per year
1	2	3	4	5	6	7	8	9
1	Toilets	14.21	0.50	0.00	7.22	2.00	4.49	1.421
2	Sewerage	334.55	0.00	0.00	75.00	8.00	251.55	33.455
3	Storm water	261.55	5.00	0.00	0.00	20.00	236.55	26.155
4	Solid waste	7.25	0.00	0.00	0.00	2.00	5.25	0.725
5	water supply	508.65	1.00	0.00	112.00	6.00	389.65	50.865
6	Environment	26.65	0.17	0.00	0.00	1.00	25.48	2.665
7	IEC and Social Mapping	11.50	0.00	0.00	0.00	0.50	11.00	1.15
		1164.36	6.67	0.00	194.22	39.50	923.97	116.436
FFA :- Framework for Action								
O/M :- Operation and Maintainance charges								
Note : The Figures of viability gap funding are subjected to Financial support likely to received on various elements from different schemes (Cloumn No.6)								

Chapter 11: LIMITATIONS (Prabhag wise)

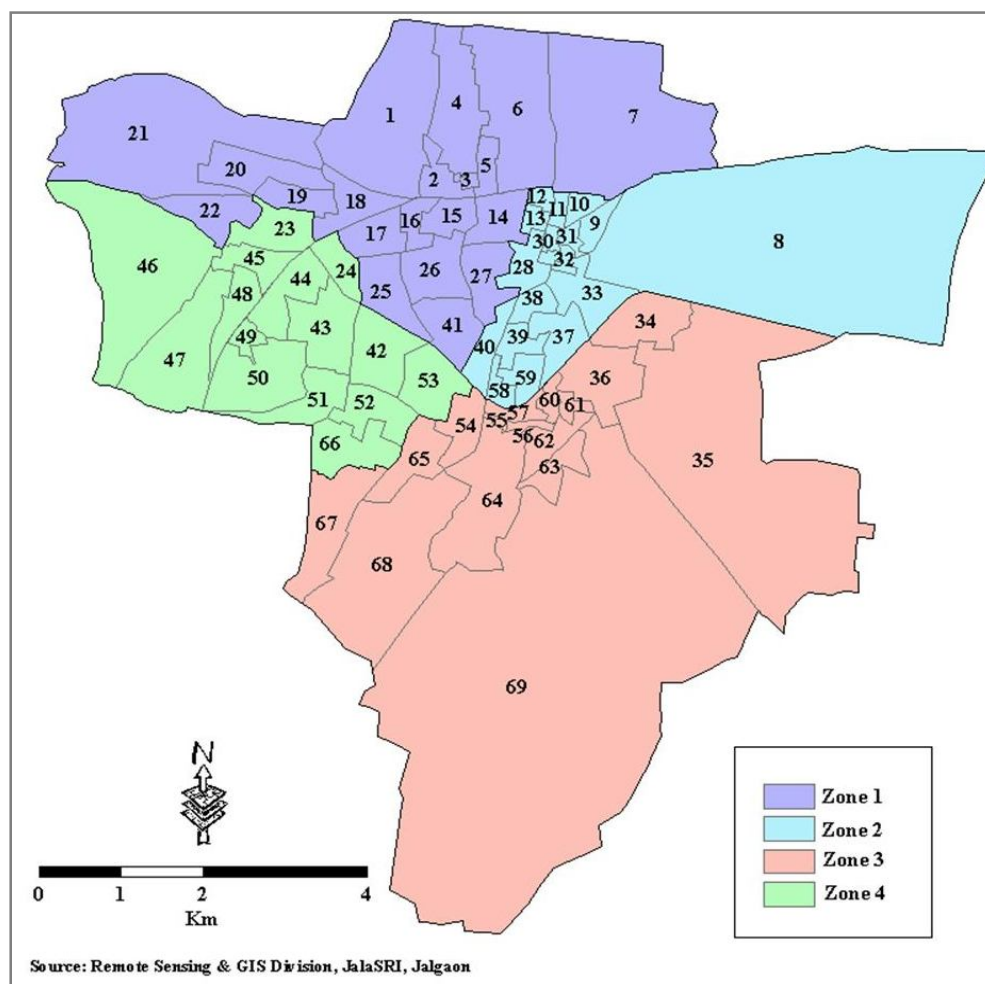


Fig.: Zone Wise Distribution of Wards in Jalgaon City

Zone #	Total no of Wards	Ward #	Total no of Households
Zone 1	22	1, 2, 3, 4, 5, 6, 7, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 41	3392
Zone 2	18	8, 9, 10, 11, 12, 13, 28, 29, 30, 31, 32, 33, 37, 38, 39, 40, 58 and 59	2632
Zone 3	16	34, 35, 36, 54 , 55, 56, 57, 60, 61, 62, 63, 64, 65, 67, 68 and 69	2307
Zone 4	13	42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53 and 66	2058
Total	69		10389

Table : Zone wise distribution of sampled households from 69 wards

The whole city area is divided into 69 wards for election purpose. However, city area is divided in four prabhag zones for Administrative purpose.

Prabhag I:-

This zone is fully developed congested zone of gaathan and commercial / market areaq. i.e. Old municipal limits. Being developed zone with convention infrastructure, the limitation to implement new infrastructure is there. All existing roads, gutters and other services will be disrupted and call for orderly execution with hardship to citizen.

Non availability of land for civic purposes, narrow roads, congestion of traffic, higher budget etc. are limitation for this zone.

Prabhag II:-

This zone is also 80% developed with most of the obligatory conventional services by corporation provided. This zone is lying in Old Municipal limit to New Municipal limit before formation of corporation.

This zone also havepartially same hardship and limitation as per Zone I.

Prabhag III & IV:-

This is mostly part of new corporation extended area which is under development. Where new roads, gutters, electrification, water supply, drainage system, etc. as basic element of city are yet to be provided or work is in progress.

This area has less limitation to hardship to provide new infrastructure of plan elements in city sanitation plan.

But this area being larger coverage zone, needs high capital deployment, whereas comparatively low revenue generation on the scale of cost / Sq.Km. basis.

Note: Detailed tabulation of wardwise& prabhagwise as provided by All India Institute of Local Self Government has been fully prepared under their guidance, which cover all elementwise requirement i.e. quantity and budget and shortfalls i.e. limitation of adopting City Sanitation Plan in integral manners.

Overall- Limitations can be summarised as further

1. Budget Allocation
2. Choice of technology
3. Hardship & work hazard to implement
4. Adequate revenue generation
5. Skilled manpower & Administration
6. There must be changes in the laws and present rules regarding the sanitation services.

Chapter 12: Conclusion, suggestions and recommendations

Conclusion:

The city sanitation plan, in short, is immediate and effective steps as well as remedies and solution to achieve environmental sanitation to every individual in the city for long term in sustainable manner.

The basic elements of the city sanitation plans are to be implemented in the following order:

1. Toilets, open defecation and housing for poor.
2. Water supply
3. Solid waste
4. Sewerage
5. Storm water
6. Environment
7. IEC & Social Mapping

The elements need to be attended in the light of NUSP policy Generic Elements of framework, Award rating chart and service level bench marking.

An effort has been done to discuss provide solution for all element for its present situation, long term requirement and immediate need to transcend the path.

The most important feature necessary is to establish/ initialize performance report card system and performance management system in the corporation with independent and accountable qualified officer in charge on basic element.

The city sanitation plan ultimately culminates in budgetary option I & II; the option I gives budget requirement as on today for 30 years duration, whereas option II gives budget requirement as on today for immediate need to fulfill the obligation to certain extent as per award rating and service level bench marking.

Suggestions and Recommendations

Step Recommends:-

1. Establish independent City Sanitation Cell
2. Step I:- Initialize performance report card system
3. Step II:- Reorganize/Appoint qualified officer in charge element wise
4. Establish M&E according to pre-decide benchmarking to active the targets as per NUSP, generic elements, indicator ward rating, service level benchmarking
5. Monitoring & Evolution should aim and consider overall limitation and options available for every issue related to city sanitation plan.
6. Proper documentation and data reports shall be prepared and results shall be considered for monitoring and evolution for various parameters
7. To adopt use of L.E.D lighting, eco friendly technology options available promotion of energy efficient buildings and infrastructure is recommended.
8. Possibility to avail carbon-credit due to use if bio-remedy treatment of sewage in lieu of energy intensive sewage treatment plant is to be called
9. Every provision shall be assessed for cost benefit ratio, life cycle cost affordability in view of legal obligation and budget of corporation
10. Municipal Corporation Act 1949 section no. 243B:

There is need to include Commissioner of respective Municipal Corporation as an authority for the following rules which are used in urban areas and formulated under Environmental Protection Act 1986.

- Solid Waste Management (Handling) Rules 2000
- Bio-Medical Waste (Handling) Rules 1999
- Industrial Hazardous Waste (Handling) Rules
- E-waste (Handling) Rule

To make the amendment in the rules for providing membership of Pollution Control Board to the Municipal City Health Officer /Engineer/ Medical Officer.

11. There is need to incorporate the road tax in municipal revenue income generating schemes as well as it is need to amend the rules for getting 10 % of the revenue income collected under VAT, Sell Tax, State Excise and Stamp duty by the state and Central Government.