



# City Sanitation Plan Sinnar Municipal Council

## Summary Report

January 2015



# सिन्नर नगर परिषद, सिन्नर

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## Foreword

Sanitation has received increased attention in recent years in India. It is an important agenda for Government of India as evident through the launch of Swachh Bharat Mission. For the Sinnar Municipal Council, keeping the city clean has always been an avowed goal, towards which both the elected members and the officers of the council have strived to work hard.

Sinnar Municipal Council was selected by the Maharashtra Jeevan Pradhikaran (MJP), and the Department of Water Supply of Government of Maharashtra for preparing a city sanitation plan. Sinnar was supported by the All India Institute of Local Self Governments (AILSG) and CEPT University through the Performance Assessment System (PAS) Project.

During the course of preparation of this City Sanitation Plan, the officers of Sinnar Nagarpalika had many opportunities to attend workshops at MEETRA, Nashik and learn from experts about new sanitation technologies. Sinnar Council was also able to share its experience and learn from other cities in Maharashtra about good sanitation practices.

I am particularly thankful to CEPT University and AILSG, for their continuing support in implementing our plans to make Sinnar a open defecation free city with a well functioning onsite sanitation system for waste management. We hope that within the next three years, we are able to achieve this goal. I am hopeful that Sinnar will become a role model for other towns in Maharashtra.

  
Shri Sanjay Jadhav  
Chief Officer  
Sinnar Municipal Council



January 2015

## Acknowledgements

The City Sanitation Plan (CSP) for Sinnar was prepared by the PAS team as a part of its support to the Government of Maharashtra (GoM) on sanitation related activities. The focus of CSP was identifying appropriate sanitation solutions in small and medium towns. This initiative was taken in partnership with the Water Supply and Sanitation Department (WSSD, GoM) and Maharashtra JeevanPradhikaran (MJP).

We would like to thank the Principal Secretary, WSSD (GoM) and Member Secretary, MJP, for their support. The training institution of the MJP, the Maharashtra Environmental Engineering Training and Research Academy (MEETRA) in Nashik also hosted a series of consultative workshops where draft plans were discussed among the stakeholders. We would like to thank MEETRA for their support and cooperation in convening the workshops.

We would like to thank the President and elected representatives of the Sinnar Municipal Council (SMC) for their active participation and support during the entire process of this CSP preparation. This CSP has not remained on paper; it is being implemented, largely due to the efforts of the Chief Officer of the SMC, Mr Sanjay Jadhav. Support from other officials of the SMC, particularly Mr Patil, City Engineer, and Mr Deshmukh, Sanitary Inspector, was valuable in the preparation of this report.

The initial field work and data collection for this CSP was carried out by Micro Cloud Computing (MCC), Pune. The PAS team at CEPT and the All India Institute of Local Self Government worked further on analysis of information. The team worked closely with SMC officials in identifying various options and developing the final action plan.

Meera Mehta and Dinesh Mehta

January 2015

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## Acronyms and Abbreviations

AIILSG	All India Institute of Local Self Government
CPHEEO	Central Public Health and Environmental Engineering Organisation
CSP	City Sanitation Plan
CSR	Corporate Social Responsibility
DMA	Directorate of Municipal Administration
ESR	Elevated Service Reservoirs
GoI	Government of India
GoM	Government of Maharashtra
GSR	Ground storage reservoir
IFSM	Integrated Faecal Sludge Management
lpcd	Litres per capita per day
MIDC	Maharashtra Industrial Development Corporation
MJP	Maharashtra JeevanPradhikaran
MMCNPIT	Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships Act
NMAM	National Municipal Accounting Manual
NUSP	National Urban Sanitation Policy
O&M	Operation and maintenance
PIP	Performance Improvement Planning
PPP	Public-private partnership
SMC	Sinnar Municipal Council
SWM	Solid waste management
SWM	Solid waste management
ULB	Urban local body
WSSD	Water Supply and Sanitation Department
WTP	Water treatment plant

*Note:* 1 lakh = 100,000

## Introduction

The Sinnar City Sanitation Plan (CSP) has been prepared as a part of the PAS Programme at the CEPT University which provides support to small cities in Maharashtra for improving sanitation services. CEPT University has worked in partnership with the Water Supply and Sanitation Department (WSSD), Government of Maharashtra (GoM), Maharashtra JeevanPradhikaran (MJP) and the Sinnar Municipal Council (SMC).

## Background

To address the situation of sanitation in small and medium towns and in the context of the National Urban Sanitation Policy (NUSP) 2008, it is important to explore new technologies other than conventional underground sewerage systems. This requires assessing appropriate technology and business models that can be operated and managed well in these towns.

The CSP for Sinnar focuses on city-wide sanitation solutions that are affordable for both users and municipal governments. It uses an outcome-oriented approach that promotes assessment of different technology options. This approach is based on the framework for Performance Improvement Planning (PIP) and a decision support tool (SANIPLAN) developed at CEPT University. The framework focuses on assessing outcomes of various technical options and demonstrates the possibility of achieving similar service levels with a less capital intensive option.

The city-wide sanitation assessment builds on new thinking in urban sanitation that goes beyond household-level access to an assessment of the full service chain, that is, from user interface to storage, conveyance, treatment and disposal or reuse. The Sinnar CSP also covers dimensions beyond excreta management, and includes management of greywater, stormwater and solid waste as these are interlinked closely in the small city context. The CSP is also based on an assessment of options for low-cost sanitation and decentralised solutions for wastewater management that are more appropriate for small towns.

Several meetings and consultative workshops were held with State and City representatives over a period of 15 months to discuss and debate solutions, technologies and policy provisions for sustainable sanitation plans. Financing plans are an integral part of these CSPs to review affordability of solutions and to explore different sources of funds. The CSP has been developed for a 10-year action horizon. However, a longer planning horizon is considered for some of the large capital intensive projects.

After the CSP preparation, the SMC has selected key priority areas for implementation. CEPT University is supporting the Council to: ensure universal access to own toilets and preparation of an Integrated Faecal Sludge

Some glimpses of the consultative workshops for City Sanitation Planning held in Maharashtra (2012–13).



Management (IFSM) Plans as an immediate solution to tackling blackwater containment, transport and safe disposal. Specific studies have been initiated to explore use of service-level agreements and performance-based contracts with private sector partners as a way to ensure the city-wide delivery of sustainable sanitation services, generating benefits to users as well as in terms of public health.

## About SinnarMunicipal Council

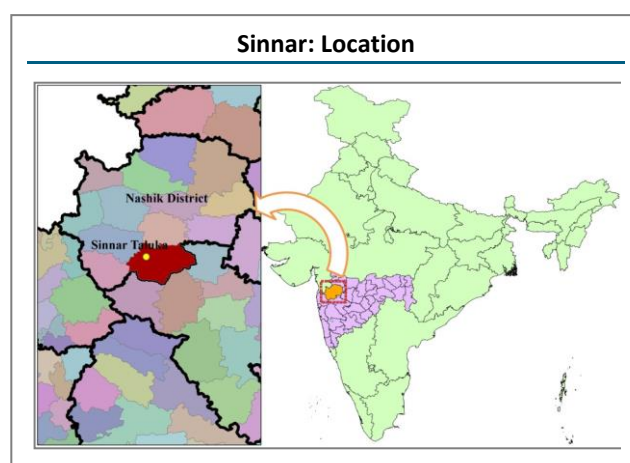
Sinnar is a town in Nashik district (Maharashtra, India) and it gets its mention in Maratha history as the headquarters of Sangamner sub-division and as the headquarters of the Chief Officer of the Emperor of Delhi. The town lies on the northern banks of Saraswati river and is located on the 'golden triangle' of Mumbai-Pune-Nashik. Given its strategic location, the Maharashtra Industrial Development Corporation (MIDC) has developed two industrial estates, Malegaon and Musalgaon, which house 174 medium and large industrial units and employ more than 75,000 people. The growth of industrial estates and proximity to the religious town of Shirdi (less than 60 km away) has resulted in a large influx of population, making Sinnar one of the fastest growing towns in the state. The city limits were expanded from 5 sq km to 51.4 sq km in 2009.

The SMC is governed by the Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships (MMCNPIT) Act 1965. In terms of topography, the river Saraswati passes through the centre of the city and flows from west to east. Altitudes range from 825m above mean sea level (MSL) near the northern periphery to 632 m above MSL at river banks on the eastern boundary. Inhabited areas are towards the north of the river. The old city exhibits high density development with properties sharing a common wall and predominantly exhibit mixed use of commercial and residential functions; the new areas have more spaced out layouts with appropriate side margins, and demarcated and segregated residential and commercial areas.

The population grew from 43,699 (in 2001) to 65,251 (in 2011), in which the central city area grew by almost 4,000 while the newly developing regions, largely in the western and eastern areas of the town, grew by about 30,000. This major demographic change is attributed to industrial zones in the East and North West regions of the town. The Development plan of Sinnar also proposes new residential areas in the western and eastern parts of the city.

**Table 1: Salient features of Sinnar**

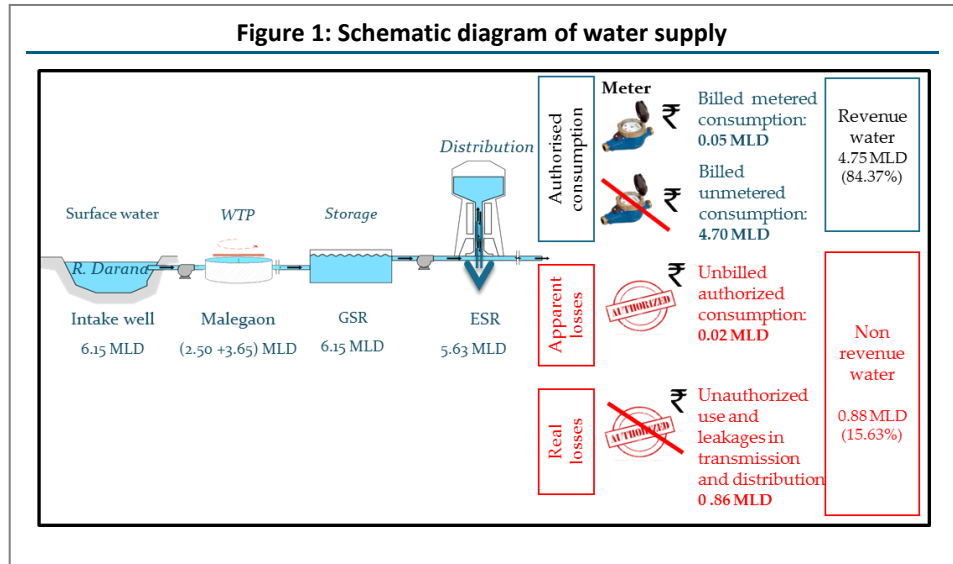
City	Sinnar
District	Nashik
Location	Latitude 19°51'N; Longitude 74°00'E
Connectivity	NH-50 to Nashik
Civic status	'C' Class municipal town
Total Area	51.40 sq km
Inhabited Area	1.54 sq km (3% of the total area)
Population	65,251 (in 2011)
Slums	Population 6,650 (10% of the total population)
Wards	23 electoral wards managed through 6 Prabhags



## Sectoral Assessment

### Water Supply

Sinnar is dependent on the river Darnaas the major source of its water supply scheme. The first water supply scheme was designed in 1976 for 35,000 population (for design year 2001) with 72 litres per capita supply. In 2012, about 4.77 MLD water was supplied from the Darnaat 70 litres per capita per day (lpcd). The percentage of households provided with water supply connections has remained around 40 per cent between 2008 and 2012. Due to expansion of municipal boundaries and a sudden influx of population, several new schemes have been initiated. Recently, a scheme has been designed for population 141,900 (in year 2042) at 135 lpcd. Its implementation has been prioritised in newly developing areas that did not have water supply network. Such efforts have already increased coverage to more than 60 per cent, and per capita supply to 80 lpcd, in 2013–14.



In Sinnar, around 6.15 MLD of water is treated at the water treatment plant (WTP); from here water is distributed through ground storage reservoirs (GSRs) to various elevated service reservoirs (ESRs) for distribution in seven zones of the city, through a distribution network of 50 km. Water is supplied to more than 9,000 connections in the city for 45 minutes every alternate day. About 10 per cent population of the city lives in slums, which includes 1,417 households in eight slum pockets. Apart from a few individual connections, there are 18 standposts located in slum areas.

### Access to Toilets

#### Access to Household and Community Toilets

Over 63 per cent of households in Sinnar are dependent on individual household-level toilets; about 24 per





centrally on community toilets and 13 per cent practice open defecation. As per the 2011 Census of India, open defecation is observed both in slums and non-slum areas. Of the households with individual toilets, 74 per cent have septic tanks and 14 per cent rely on pit latrines.

The central city in Sinnar is characterised by densely located old residential buildings and market places. Mostly, houses have individual toilet facilities with septic tanks and effluent from them is let off into open/closed drains. The toilets are usually located on the external face of premise/front yard, closer to the access road, and are either detached or semi-detached from dwelling units. The newly developed areas in the city largely comprise group housing schemes/apartments or individual bungalow colonies and generally have properly constructed septic tanks which are connected to soakpits in the absence of drains. In some cases, effluent from septic tanks is let off into the open.

Surveys conducted to assess the conditions of household-level toilets revealed that in areas characterised by high density, like the central city area, septic tanks and pits were constructed below the superstructure due to lack of space, whereas in the newly developing areas the septic tanks were easily accessible. The sizes of septic tanks varied (from 3'x3' to 4'x5'), as did the depths (from 4' to 6'). While these toilets are well maintained by house owners, the emptying of septic tanks/pits that collect blackwater is not done periodically as recommended by Central Public Health and Environmental Engineering Organisation (CPHEEO) guidelines.

The condition of some community toilets in Indiranagar slum in Sinnar.



The coverage of household-level toilet facility is considerably high in non-slum areas. In slum areas, people rely on community-level toilets. Community toilets are unhygienic and not properly maintained, which also contributes to the slum population resorting to open defecation. There are 10 community toilet blocks in slums with 164 seats. Field surveys reveal that most of the blocks are in use and in working condition in terms of infrastructure but poor operation and maintenance (O&M) leads to unhygienic conditions that render them unusable. Two toilet blocks (with 40 seats) are also available in Ambedkar Nagar (previously classified as a slum).

In the primary survey, it was observed that most of the community toilet blocks in the city are located near the slums. The SMC is responsible for their cleaning and maintenance. In most of the community blocks, the water storage tanks are filled only once in a day. Whenever water is not available, people are required to carry their own buckets. The small quantity of water that users carry is often not enough to keep the toilet usable. Fixtures like taps, doors, latches, etc, are prone to theft and their absence too renders toilets unusable. For these reasons, despite availability of community facilities, slum residents resort to open defecation.

## Public Sanitation

The city has six public toilet blocks located in important public places like central markets, public hospitals, important administrative offices, etc. During the field survey, most of the public toilets were found to be unclean and unhygienic. Public toilets located on the government hospital premises are in a good condition; water and electricity are available all the time. However, due to the large number of users, they are sometimes unclean. In the public toilet in Nehru Chowk, unavailability of water has rendered the urinals unusable. The surrounding areas have become a dumping site for solid waste generated in its vicinity. The septic tank was also observed to be broken.

The public toilet within the premises of the bus terminus was constructed recently and is managed by a private operator who charges user fees. The toilet block is clean and well maintained. The public toilet in the market area, near the Council's office, lacks water and electricity and the doors are not functional. During the survey, the block was observed to be unhygienic and unfit for public use.

A public toilet block near Nehru Chowk in Sinnar.



The toilet blocks in the market and Nehru Chowk are also rendered unusable due to lack of maintenance. Educational institutes and government institutions in Sinnar maintain their own toilets. Most schools and educational premises have toilet blocks with adequate number of seats. Field surveys indicate that, largely, school toilets in Sinnar are periodically cleaned and well maintained.

### Sanitation in Slums

About 17 per cent of the population (or 1,417 households) live in eight slum pockets in the city. All these settlements are located within the old municipal boundary. For CSP purposes, a primary survey was conducted in slums with 4 per cent of sample size. The survey revealed that there are hardly any slum dwellers with individual household-level toilets; almost 42 per cent of households resort to open defecation in slums. There is no sanitation facility available in Devi Road and Satpirbhatil slums.

Figure 2: Location of slums, community toilets and open defecation spots

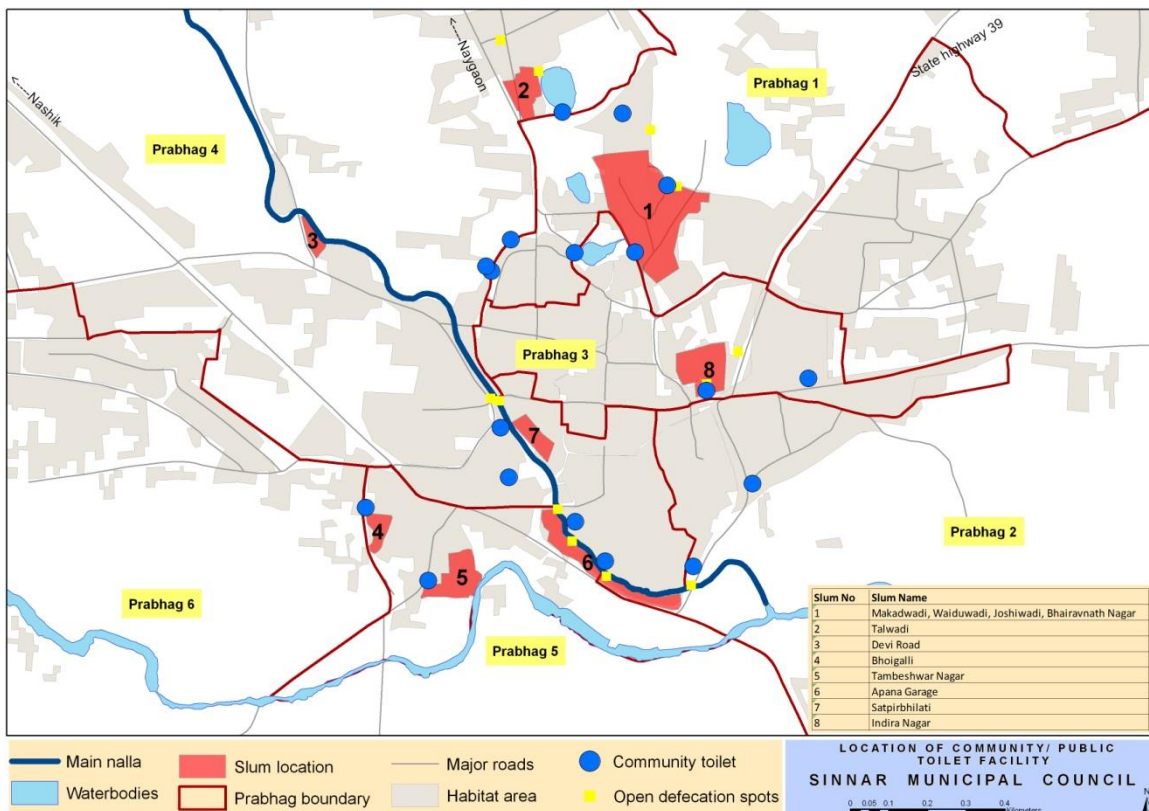
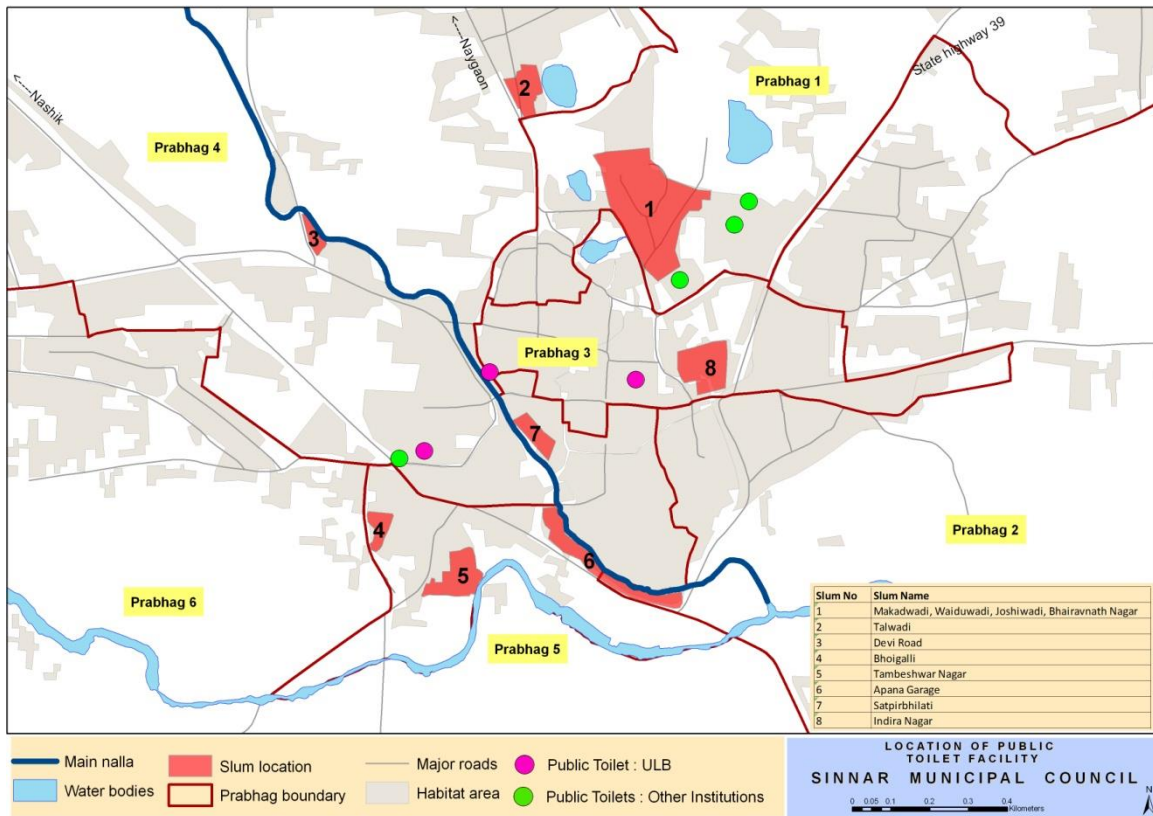


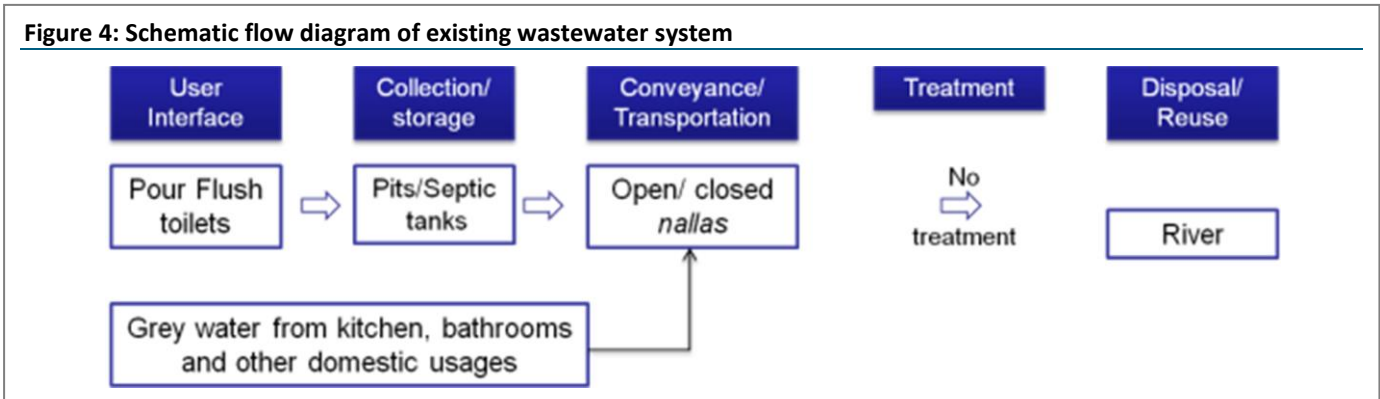
Figure 3: Location of public toilets



### Wastewater and Septage Management

The PAS project has developed an outcome-based framework for city-wide assessment of sanitation service across the entire value chain. The framework builds on new thinking in urban sanitation monitoring that goes beyond household level facilities to encompass wider dimensions of equity, public health and natural environment. It advocates assessment of the full value chain from the user interface to storage, conveyance, treatment and disposal or reuse. Accordingly, the framework has been applied in CSP for Sinnar; it incorporates other sanitation dimensions beyond excreta management, especially management of greywater, stormwater and solid waste, as these are often interlinked on the ground. The CSP adopts an approach to develop sanitation zones or clusters based on topography to analyse the liquid waste management in a more spatial context. Delineation of three wastewater clusters has been done with reference to the topography, natural drainage pattern and homogeneity of urban development characteristics and human interventions.

Figure 4: Schematic flow diagram of existing wastewater system



### Blackwater Management

Sinnaris totally dependent on on-site sanitation system. Effluent from septic tanks/pits of individual, community and public toilets is directly discharged into open or closed drains along the streets. In the old town area, toilet pits or septic tanks are located exactly below the superstructure and have no provision for easy access for emptying.

In newly developing areas, septic tanks are located in margins off-centred from the superstructure. There is no periodical cleaning of the existing pits and septic tanks and they are usually not cleaned before five to eight years. Effluent, in all cases, is discharged into drains. Surveys and field investigations revealed that lack of knowledge about functioning of septic tanks as an on-site primary treatment translates into irregular sizes of septic tanks. These samples of wastewater collected from various points across the town proved these problems with efficiency of primary treatment mechanisms through improper septic tanks.

Blackwater/effluent from septic tanks is discharged into natural drains.



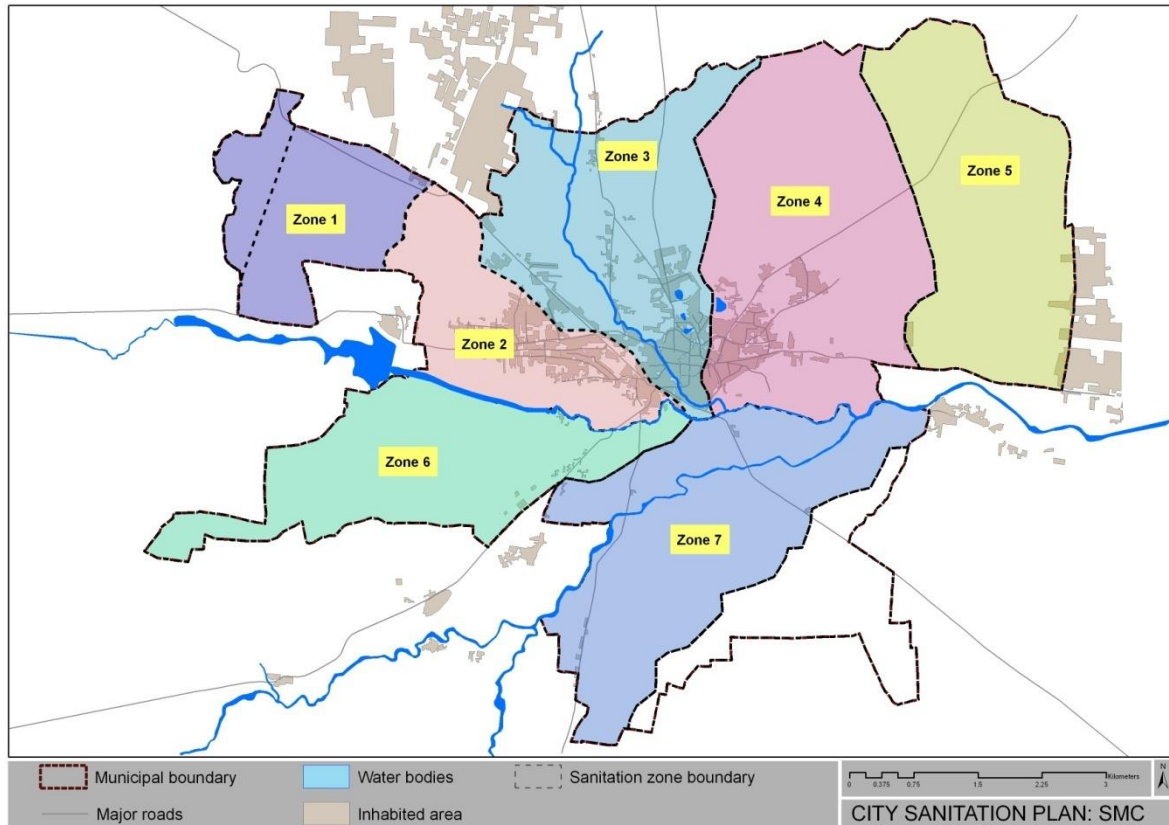
The SMC provides services for desludging of septic tanks with a suction emptier truck and charges Rs 400–800 per septic tank cleaning. As per records available with the local authority, on an average about 260 septic tanks are cleaned in the city on an annual basis. The service provision is demand-based and varies significantly upon the demand generated by the local population. Currently, the septage so collected is dumped at the solid waste dumping site without any treatment.

### Greywater Management

The SMC currently supplies 6.15 MLD water to the city. Considering 80 per cent of water supplied, the total amount of wastewater generated is about 4.9 MLD. The wastewater collected from drains is carried to the Saraswati river (south of the town) through its tributaries and natural drains flowing across the town.

However, in the absence of city-wide coverage, only about 55 per cent of the wastewater is conveyed to the river; therest is discharged into open areas and depressions along the road. The drain channels have been constructed in some colonies but they lack continuity across town, which results in improper collection and conveyance. Only 23 per cent of the total habitat area has covered drains, which include central market areas, commercial areas near the market and some residential colonies. The central old city area has open drains along the roads while newly developing areas like Sharadwadi and Vijaynagardeveloped outside the old municipal limits do not have any conveyance system. Field investigations also reveal that about 45 per cent of households do not have any type of drainage system for conveying their wastewater.

**Figure 5: Sanitation clusters (zones) based on wastewater generation and conveyance**



Greywater from kitchens and bathrooms is also discharged into the drains/channels.



Figure 6: Zones of conveyance system coverage

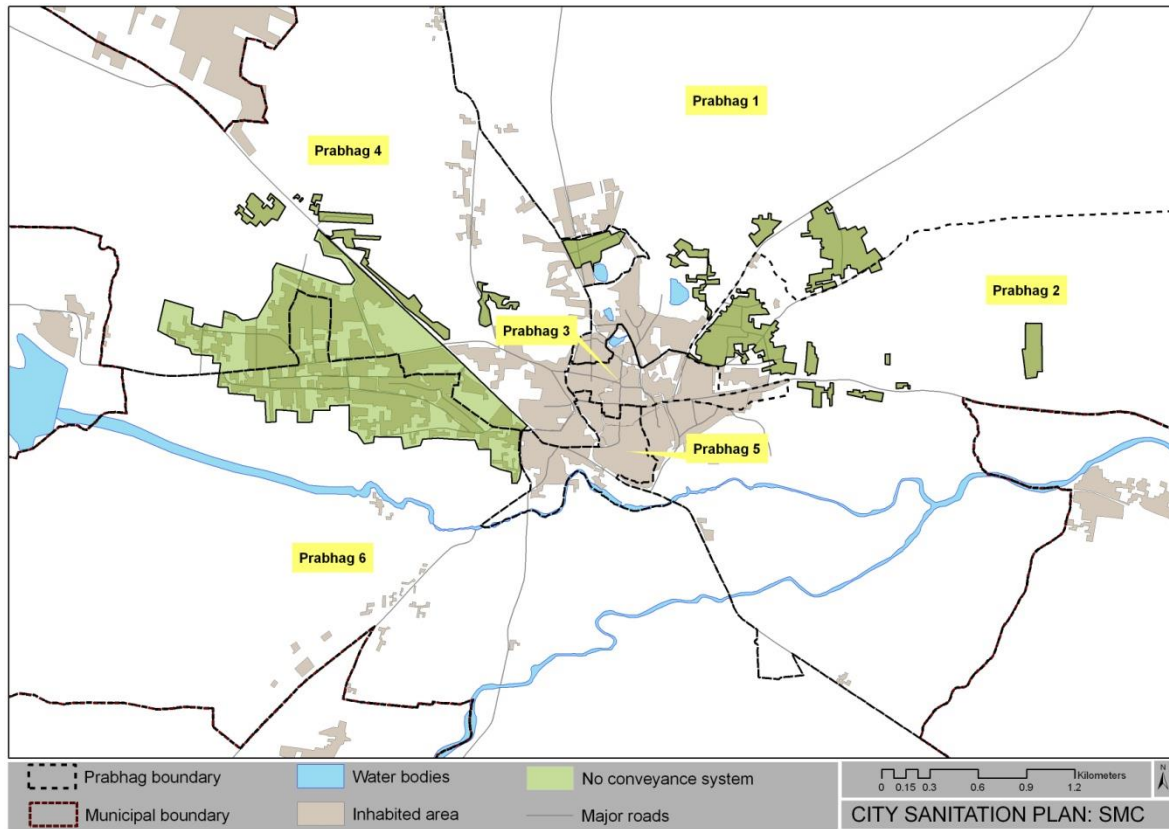
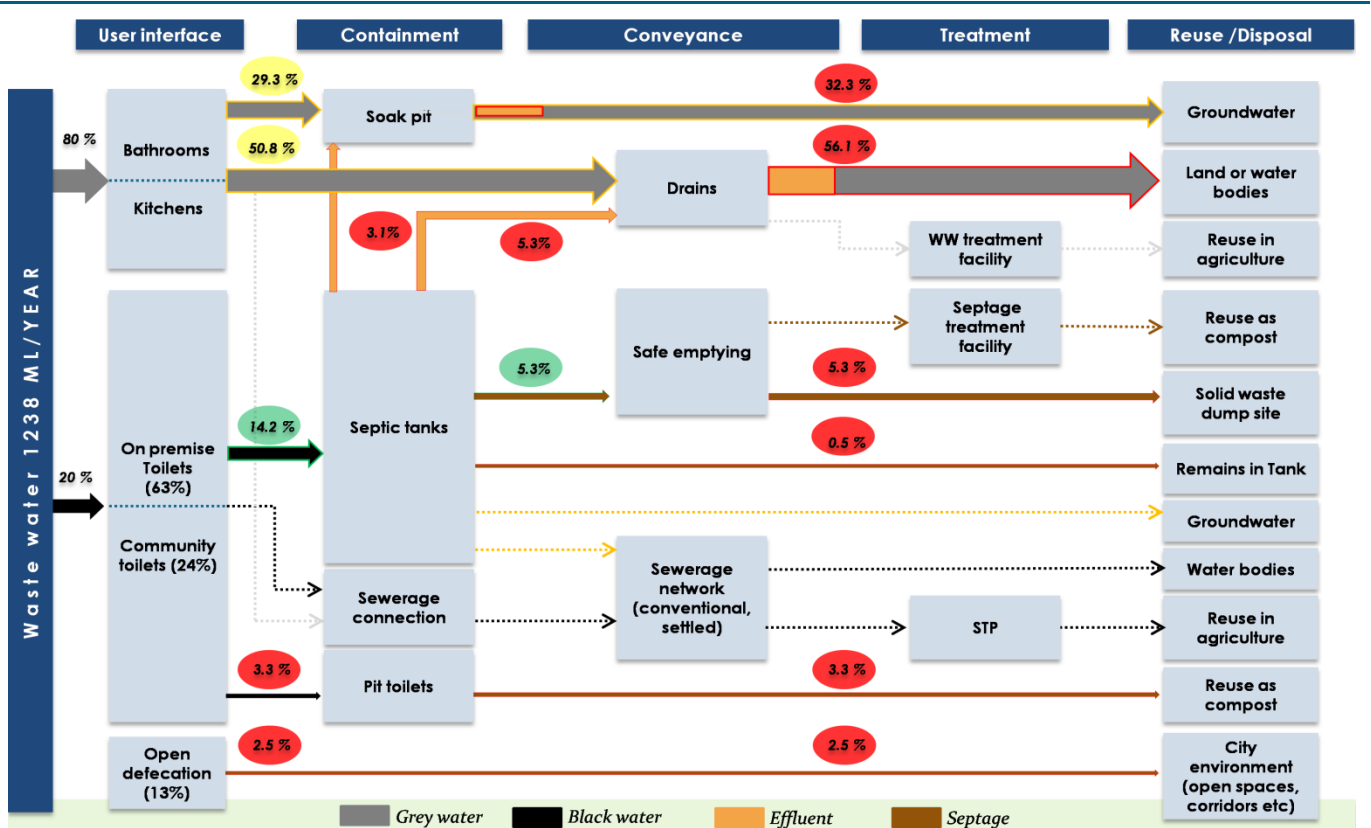


Figure 7 shows the wastewater flow diagram for Sinnar. The flow diagram illustrates stages of the value chain and also shows the volumes of waste flowing through the chain. The untreated volumes and partially treated volumes are shown as red and yellow traffic lights, respectively. The fully treated volumes are shown as green traffic lights.

Figure 7: Existing wastewater flows



As Figure 7 shows, a large part of greywater currently flows through drains and is discharged into land/water bodies without any treatment; nearly 56 per cent of the volume of greywater gets discharged without any treatment. The soak pit route is used only for 29 per cent of greywater and it ends up being untreated. Regarding blackwater volumes, the septic tanks (in case of household toilets) are able to primarily treat 14.2 per cent of the volume but this entire volume does not get safely emptied. Less than 6 per cent of blackwater volume is safely emptied, but even this does not go through proper treatment procedures. Thus, a very negligible volume of blackwater gets partially handled across the value chain. Building bye-laws state that it is necessary to develop an on-site treatment facility of septic tanks, followed by soak pits. However, very few buildings (especially newly developing ones) follow the system.

### Septage Management

Septage management is a crucial component of wastewater management where on-site systems are prevalent. The faecal part settles at the bottom of septic tanks and needs to be removed regularly. The local authority provides emptying services through a suction emptier truck and charges Rs 400–800 per cleaning. In Sinnar about 260 septic tanks are cleaned by the suction machine annually. Often septic tanks are cleaned only in case they overflow. Instead of regular cleaning, the cleaning of septic tank is based on demand generated by the local population. The septage collected from septic tanks is transported to a solid waste dumping site and is dumped in the open without any primary treatment with solid waste.

### Stormwater Management

Sinnar has developed in a west-south direction, in which a nalla flows from the north to the south, dividing the city into two parts; the river Saraswati flows along the southern boundary of Sinnar. The overall slope of the city is towards the south (that is, towards the Saraswati).

Topographically, the city is situated on mostly rocky terrain gradually sloping towards its southern boundary's limits. Saraswati river and its tributaries collect waste and stormwater from almost 75 per cent of the inhabited

area. Apart from the river and its tributaries, there are three lakes in northern Sinnar. The stormwater collected from the city flows towards the south through the river’s tributaries and natural drains flowing across the town.

The total length of open drains in the city is about 10.38 km, whereas total road length is about 126 km. Thus, stormwater is carried via roadside drains along with wastewater and flows through natural drains/nallas and rivers. The stormwater mixed with waste and pollutants is

Some natural drains in Sinnar.

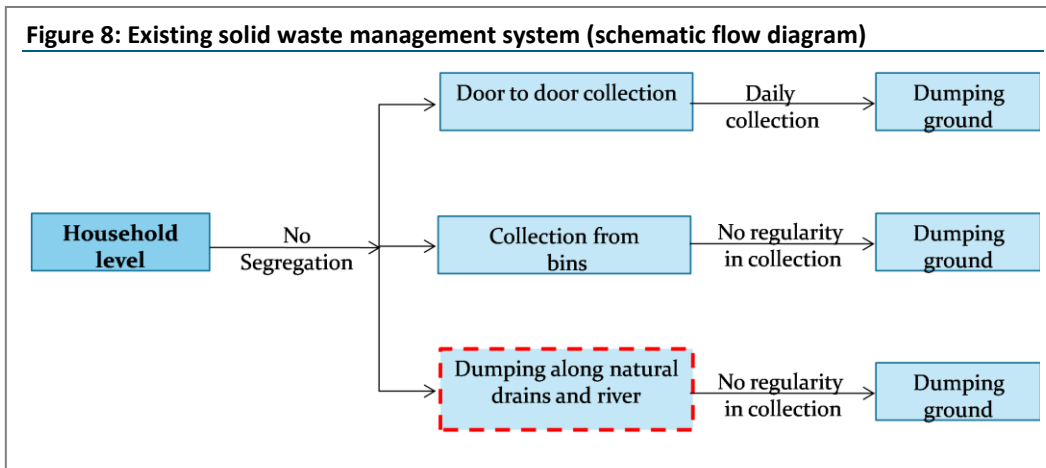


disposed off directly into three lakes without treatment or filtration. Therefore, gross lack of both treatment and proper conveyance system characterises stormwater management in Sinnar.

### Solid Waste Management

In Sinnar, as in other inhabited areas, solid waste is generated primarily from residential areas, commercial/market areas, institutional buildings/campuses and through nalla cleaning and road sweeping. The total waste collected by available vehicles and resources is about 10MT/day (about 80 per cent of total 12.5 MT/day generated). The details of source-wise waste generation of waste are not available with the local authority. Being an Industrial town, Sinnar caters to a large number of people staying in nearby areas that work in the industrial sector and thus depend on the town for their daily requirements and demands. This adds to the generation of solid waste in the city.

### Door-to-door Collection



In Sinnar, solid waste is currently collected through three methods: door-to-door collection through ghantagadis; collection of waste from community bins; and collection of waste through street sweeping and cleaning of roadside drains/nallas. About 80 per cent of the

waste is collected through door-to-door collection; it is done by different vehicles, such as ghantagadis, auto tipper or tractors. The city is divided into four divisions for the purpose of door-to-door collection of waste. There are certain peripheral areas which are not covered under the process of daily collection of municipal solid waste.

The contract for solid waste collection has been in operation since 2008 and is renewed on an annual basis. The ULB provides necessary equipment and the contractor engages labour for door-to-door collection. The ghantagadis are owned by ULBs and operated by private operators; they are emptied at the existing dumping ground which is 3 km away in the north of the town. There is no scientific method adopted for disposal and the waste is openly dumped.



### Community Bins and Open Dumps

The rest of the city is covered through 181 community bins of 0.3 MT capacity. Field visits revealed that due to limited resources the bins are not cleaned regularly and thus create foul smell and unhygienic environment in the surroundings. A tractor is used for collection of waste from bins. About 30 community bins are of concrete and fixed to the ground. Hence, it is difficult to clean and collect waste from these bins. Often, the practice of burning waste in such bins has been observed in the city.

### Street Sweeping and Nalla Cleaning

ULB tractors collect waste through street sweeping and drain cleaning; this is a daily activity and about 35 workers are engaged in it. Contractual staff is occasionally hired through yearly contracts. The tasks allotted to hired staff include collection of waste, cleaning of nallas, waste material, debris, dead animals and transportation to compost depot, removal of weeds, digging of kutchha gutters, etc.



During pre-monsoon and festivals, the ULB hires JCB machines and labour on a contractual basis to clean and collect solid waste from the major nallas.

**Figure 9: Collection routes for solid waste**

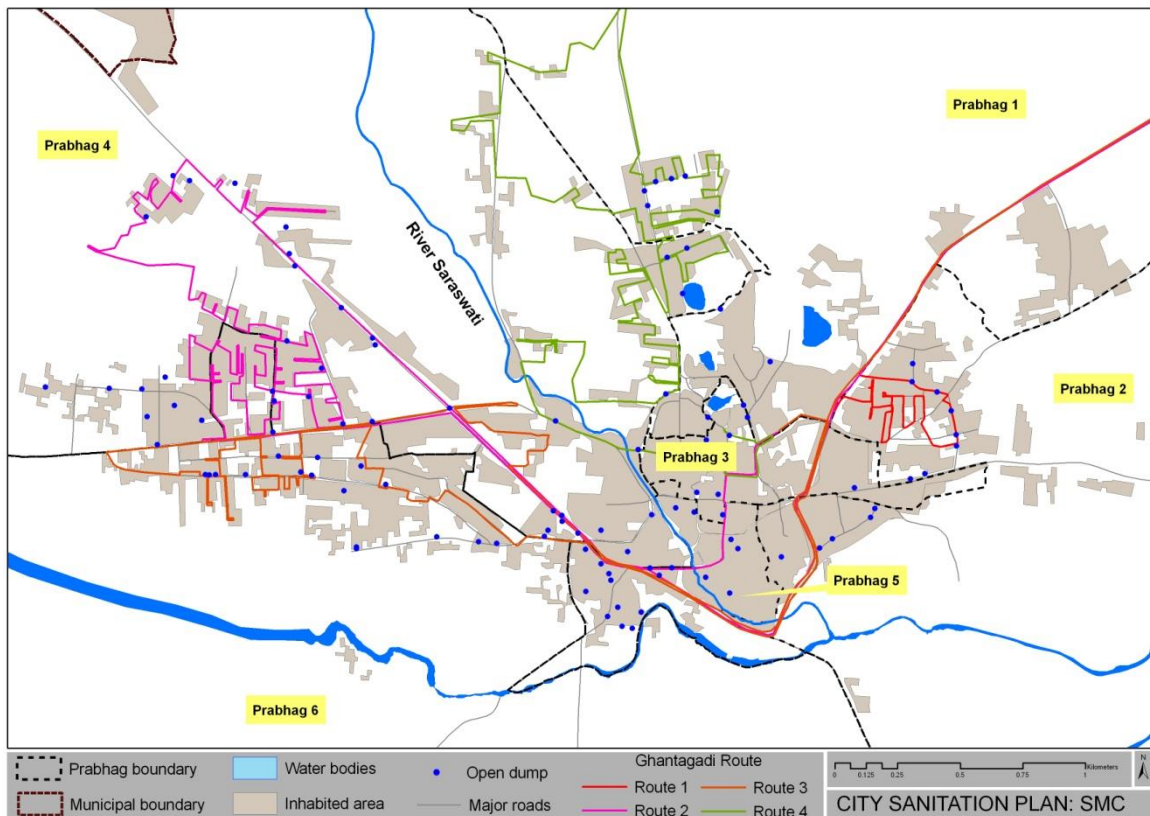
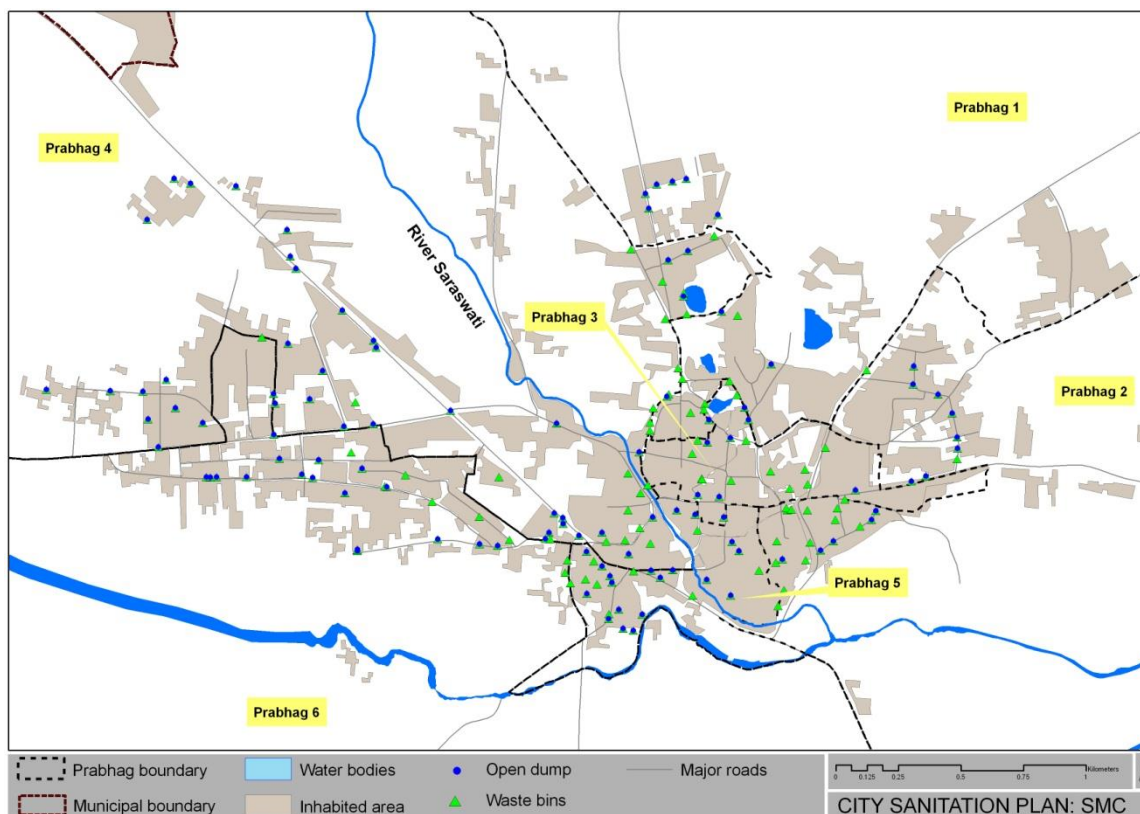


Figure 10: Location of community waste bins and open dumps



## Capacity Assessment

### Municipal Finance

Section 101 of the MMCNPIT Act mandates all municipal councils in the state to make provision for expenditure through their budget and maintain accounts of their receipts and expenses. The SMC follows a cash-based accounting system. It maintains a consolidated budget that includes all its functions. The budget is presented in three parts: revenue, capital and extraordinary accounts. No separate budget is maintained for services for water supply, sanitation and solid waste management. Thus, though budget documents were available for the last five years, it was necessary to recast these budgets to properly capture service details. This also helped to better align the revenue and capital accounts. The recasting was done as per the accounting guidelines provided in the National Municipal Accounting Manual (NMAM).

Table 2 presents a summary of the municipal finances of the SMC based on the recast budgets for six years. Over 2006 to 2011, the overall budget size has ranged from about Rs 1 crore to 5 crore. Table 3 shows details of sources of revenue income. The SMC is mainly dependent on grants from the GoM with an average contribution of 49 per cent of its revenue receipts over the past six years. The major grants received by the SMC include: dearness allowance grants, Nagar Parishad assistance, mudranshulka (stamp duty), entertainment tax grants and the Central Finance Commission grants. Most of these grants are transferred by the GoM on a regular basis and are predictable sources of income for the SMC. Amongst its own sources, property tax and other local taxes are the major sources of revenue which contribute 25 per cent and 8 per cent, respectively, to total income. The major non-tax source (21 per cent) comprises rents from municipal properties.

**Table 2: Summary of municipal finances (recast budgets)**

Items	2006	2007	2008	2009	2010	2011
	Actual	Actual	Actual	Actual	Actual	Actual
Opening Balance	177.1	236.8	326.7	237.9	360.8	268.5
<b>Revenue Account</b>						
Revenue Receipts	412.0	451.1	428.7	461.6	465.0	843.8
Revenue Expenditure	342.3	408.2	374.8	399.9	596.6	683.5
Operating ratio	0.8	0.9	0.9	0.9	1.3	0.8
<b>Capital Account</b>						
Capital Receipts	110.5	164.7	219.4	62.3	182.6	275.4
Capital Expenditure	251.4	193.3	198.9	194.6	238.3	269.3
Capital Utilisation Ratio	2.3	1.2	0.9	3.1	1.3	1.0
<b>Extraordinary Account</b>						
Extraordinary Receipts	101.5	71.3	74.9	50.1	68.1	137.7
Extraordinary Expenditure	91.3	73.1	62.2	37.1	49.8	97.3
<b>Summary</b>						
Total Receipts	624.0	687.1	723.0	573.9	715.7	1,256.9
Total Expenditure	685.1	674.5	635.9	631.5	884.7	1,050.1
Closing Balance	116.1	249.3	413.8	180.3	191.9	475.3

Note: Amounts are in Rs lakh.

Source: Budget books of the SMC.

**Table 3: Sources of revenue income**

Source of revenue	2006	2007	2008	2009	2010	2011
Property tax	43.0	56.7	50.2	53.8	46.1	133.1
Other taxes	47.6	48.6	48.3	45.3	44.9	55.1
Other own sources	121.0	138.1	132.9	151.4	156.4	161.0
Grants	200.4	207.8	197.4	211.1	217.6	494.6
Total	412.0	451.1	428.7	461.6	465.0	843.8

Note: Amounts are in Rs lakh.

Source: Budget books of SMC.

**Property tax** is applicable on all properties in the city. It is calculated using the rateable value method in Sinnar that takes into consideration function, carpet area, type and age of the structure. Assessment of properties is carried out every four years and was last done in FY2010–11. It found 14,667 properties liable for property tax within SMC limits. Between two assessments, annually a supplementary list of new properties is prepared. In FY2013–14, the SMC raised a demand of Rs352.79 lakh from these properties, averaging Rs 2,405 per property, of which it collected Rs102.7lakh, achieving a collection efficiency of only 29 per cent. It could also collect only 29 per cent of Rs443.9lakh due in arrears.

**Watertax** is collected from all the individual water supply connections on a flat rate basis. The rates are Rs 960 per connection per annum for domestic and Rs 3,900 for non-domestic connections. In FY 2013–14, the SMC raised a demand of Rs70.7 lakh from 9,423 connections. It collected almost all of the new demand raised, and only Rs69.8lakh of the Rs158.7 lakh due in arrears. The SMC thus needs to improve on collection of arrears.

The total revenue expenditure of the SMC increased by nearly 75 per cent between FY2006–07 and FY2011–12. In 2011–12, 37 per cent of the SMC revenue expenditure was on administration and establishments. In 2010-11 its expenditure on establishment increased by nearly 85 per cent because of adoption of the 6th Pay Commission recommendations. For 2013-14 the SMC has budgeted Rs 310 lakh for this. As a consequence its expenditure on

General Administration department increased from roughly 25 per cent to more than 30 per cent. The SMC spends more than 40 per cent of all its revenue expenses on services related to water supply, sanitation and solid waste management (SWM). Its combined per capita expenditure in these three services was Rs 461 in FY2011–12 compared to Rs 1,447 suggested by a recent GOI Committee<sup>1</sup> that laid out norms for municipal expenditure of basic services.

**Table 4: Main categories of revenue expenditure**

Main head of expenditure	2006	2007	2008	2009	2010	2011
General Administration department	99.5	102.8	95.0	97.8	204.2	221.2
Water supply, sanitation and SWM	131.0	159.8	189.0	166.9	246.5	290.3
Other departments	161.7	145.6	90.8	135.2	145.9	172.0
Total	392.3	408.2	374.8	399.9	596.6	683.5

Note: Amounts are in Rs lakh.

Source: Based on budget books of the SMC.

The capital account shows considerable volatility, largely due to the fact that the SMC mainly depends on grants from the GoI andGoM. These grants are subject to acceptance of proposals submitted for various schemes. The major capital grants availed by the SMC are for slum development and for the construction of its office. In recent years, some of the central and state schemes require at least a 10 per cent contribution by the ULB. It is thus essential for the SMC to maintain adequate surplus to avail the benefits of these schemes.

**Table 5: Grants received by SMC for Capital works**

Sector	2006	2007	2008	2009	2010	2011	2012*	2013**
<b>Slum Improvement &amp; Housing</b> (DalitwastisudharYojanaAnudaan, Alpasankyankbahutkshetra)	33.1	42.0	48.0	4.1	11.2	50.0	182.1	30.0
<b>Implementation of DP</b> (Development fund, UD 6 Anudaan, VadhivHaddhaVikasYojanaVisheshAnudaan)	0.0	0.0	47.0	3.0	8.9	53.3	71.1	660.0
<b>Roads</b> (Road fund grant)	34.2	7.3	31.0	0.0	100.3	42.1	49.3	75.0
<b>Water Supply, Sanitation and SWM</b> (12th FC -SWM,Watermeter special grant, DalitwastipanipurawathaYojanaAnudaan, Nagaridalitwasti(NavBaudha) Individual water connection & latrine construction, SujalNirmal scheme, SaradwadiWater Supply project, UIDSSMT, Kadwa Water Supply,water and electricity audit)	22.7	32.7	18.9	55.2	1.6	19.9	831.7	3080.1
<b>Unspecified</b> (Viashistyapurnaanudaan, District level SuvarnajayantinagarotthanAbhiyaan)	0.0	55.0	70.0	0.0	60.7	67.4	278.5	400.0
<b>Others</b>	3.0	5.5	0.0	0.0	0.0	42.6	303.9	311.1
	93.0	142.5	215.0	62.3	182.6	275.4	1716.5	4556.2

Note:

\* Revised estimates for 2012–13.

\*\* Budgeted estimates for 2013-14

Sources: Based on SMC budget books.

<sup>1</sup>The High Powered Expert Committee (HPEC) was constituted by the Ministry of Urban Development (MoUD), with DrIsher Ahluwalia as Chair, in May 2008. The Report of the Committee was published in March 2011.

The analysis for 2006 to 2011 suggests that the SMC had a revenue account surplus ranging from Rs 20 lakh to Rs160 lakh. A part of this surplus was also utilised for capital expenditure as evident from capital utilisation ratio of more than 1 over this period.

To calculate the SMC's internal investment capacity, estimates of revenue surplus are derived on the basis of revenue income and expenditure forecasts. These are based on past trends with the latest data on 'actuals' for FY2011–12 used as base. For taxes, the tax base (number of properties for property tax, number of connections for water tax) is projected and multiplied by respective growth rate of average tax per property. For revenue expenditure in water supply, sanitation and solid waste management, past trends of key budget items were assessed and projected. For example, for water supply, revenue expenditures were projected separately for administrative expenses, bulk water, O&M expenses, energy bills and contingencies. For other revenue sources, as well as revenue expenditure of other departments, projections are based on growth trends over the past five years. For revenue expenditure, projections are based on past trends for each department.

Based on these forecasts, over the 10-year period till 2025, the SMC will be able to invest about Rs1,000lakh based on its internal surplus. If appropriate measures are taken to improve collection efficiency of local taxes to 90 per cent, it will be possible to increase the investment potential by overRs 1,100 lakh. The SMC can also explore further expenditure control measures to generate additional investible surplus.

**Table 6: Revenue surplus of SMC over 10 years in various scenarios**

	Estimated revenue surplus over 10 years
Trend-based projections (Business as Usual, or BAU)	1,075
<b>Financial improvement actions</b>	
Improving collection efficiency of property tax (current tax to 90% and arrears – 75%)	1,161

Note: Amounts are in Rs lakh.

Source: Based on trend based projections of SMC revenue income and expenditure.

## **Institutional Assessment**

Sinnar has 23 wards divided into six Prabhags for administrative purposes. Three nagarsevaks are elected to the Council from each Ward. The Council is led by the President (Nagaradhyaksha) elected by the nagarsevaks from amongst themselves. The Council, through the President, the advisory committees for different departments and consultative committees appointed by the General Body, is responsible for the administration of the town. The executive wing for this elected body is led by Chief Officer (CO), an officer belonging to the State Services (Executive Cadre). The CO is supported by officers heading various departments. The key departments include Public Health, Revenue and Accounts, Administration and Water Supply. The sanctioned staff strength of the municipality is 149, of which 134 posts are filled. Key positions like the sanitary inspector and mukadams in Sanitation department and Junior Supervisor in Water Supply department are currently vacant.

The Directorate of Municipal Administration (DMA) sanctions establishment posts of the Municipal Councils; a revision is done every five years. Cadre-related posts are filled by the DMA directly and the rest of the posts are filled by the ULB. Discussion with ULB officials revealed that the qualification requirements were changed in 2006. Hence, staff members appointed prior to 2006 may not meet the current prerequisite qualifications.

## Strategies for Performance Improvement

### Objectives and Sectoral Proposals

The overall goal of Sinnar's CSP is to move towards a fully sanitised city that ensures universal and affordable services, as well as achieves improved environmental quality of the Saraswati river and land in the city as well as its periphery. The improvements are envisaged across the full service chain for sanitation: access, wastewater management and solid waste management.

The key objectives of Sinnar's CSP include:

1. An open defecation free city through access and use of 'own' toilets, and public toilets.
2. Safe conveyance of wastewater and faecal sludge through affordable infrastructure and regular services.
3. Universal solid waste management services using a bin-free approach.
4. Appropriate treatment of collected wastewater, faecal sludge and municipal solid waste along with their safe disposal or reuse.
5. Evolving appropriate public-private-community partnerships and ensuring ULB institutional capacity for monitoring and management.
6. An affordable and feasible financing plan to meet both capital and recurrent (O&M) costs of main proposals.

To meet these goals and objectives, detailed proposals have been developed in the following areas:

1. **Household and public sanitation:** Proposals for 'own' toilets, interim refurbishment of existing community toilets, and public toilets that provide services in markets, public institutions and other public areas.
2. **Wastewater and faecal sludge management:** Refurbishment of existing septic tanks, conveyance of faecal sludge from septic tanks through a regulated emptying service, a system of drains or sewerage network for safe conveyance of wastewater (greywater and septic tank effluent), and appropriate treatment facilities for wastewater and faecal sludge.
3. **Solid waste management:** Affordable and universal services for primary collection of solid waste from all properties in Sinnar and its transfer to treatment facilities for appropriate treatment.
4. **Awareness generation and community mobilisation:** Awareness about need for improved sanitation, hygiene and a clean city, and community mobilisation to ensure access and use of improved toilet facilities, on-site sanitation and practices related to keeping the city clean.
5. **Strengthened implementation mechanisms:** Design and procurement of public-private-community partnerships, monitoring and related capacity building of ULBs.
6. **Policy initiatives:** Building permissions for toilets, fines for release of untreated wastewater and littering and levying appropriate charges for provision of sustainable services,

Specific strategies and activities in these areas are elaborated here.

### Household and Public Sanitation

The CSP envisages complete elimination of open defecation and universal access to improved sanitation through individual or 'group' owned toilets over the 10-year period. Group toilets are privately owned but shared among two or three households who know one another and are willing to share its maintenance. Such toilets will help address space constraints and affordability. Promotion of improved sanitation will be done through awareness campaigns as well as partial subsidies as incentives to unlock the latent demand for toilets. Efforts will also be made to facilitate credit for toilets, using that as a lever to also mobilise demand.

In the short term, however, it will be necessary to refurbish the existing community toilet blocks. The condition of most of the new community blocks in the city is not satisfactory as they lack water, electricity and proper on-site collection and treatment facilities. Appropriate measures will be needed to improve these aspects. In Satpirbhilati, a slum where a majority of the people defecate in the open, space constraints and affordability will

not immediately allow adoption of individual household level or group toilets. Therefore, a community facility is proposed to end the practice of open defecation in the slum. The existing maintenance contract by the private contractor should be continued with proper monitoring measures by the municipality. The same contract should also include the new facility.

**Table 7: Strategies for household, community and public sanitation**

Component	Interventions	Achievement
<b>Household sanitation</b>	Promote household sanitation (individual and group toilets) through awareness campaigns and partial incentive subsidies	Reduction of dependency on CTs and improved sanitation levels in the long run
<b>Community level sanitation</b>	Upgrade all the 12 community toilet blocks for improved on-site collection-treatment-disposal system; add doors, taps and electricity connections	Improved functioning and hygiene level of existing toilet blocks in the interim period
	It is assumed that in next 8–10 years, all households will have individual/group toilets. Therefore dependency on community toilets will be reduced and these will be closed down	
<b>Public sanitation</b>	Refurbish both the existing public toilets in market areas and involve private sector/NGO/CBO in O&M	Improved functioning and hygiene level of public spaces and offices
	Provide a toilet block in Tehsildar office	

### Public Sanitation

It has been noticed that unavailability of hygienic, well-maintained public facilities near market and commercial areas is a major concern. In addition, government institutions such as Tehsildar’s office also have no toilet for the public. It is suggested to construct public toilet at the Tehsildar’s office at the earliest. The proposed toilet block will also serve the police headquarters and other commercial establishments in its vicinity. Additionally, the two toilet blocks at Nehru Chowk need to be rehabilitated with water, electricity and hand washing facility. Functioning of their septic tanks also needs to be assessed. On a pilot basis, private contractor/local SHGs/CBOs could be involved for O&M of public toilets.

### Wastewater and Faecal Sludge Management

The CSP included an extensive analysis of the existing practices in the city. Most of the toilets are connected to well-designed septic tanks. Therefore, the CSP has suggested a settled sewer network that incorporates existing septic tanks rather than abandoning them. Given the narrow streets in the old town area, it will also be more feasible and mean lesser capital investment compared to conventional sewers. The SMC will have to ensure that all septic tanks maintain a regular cleaning cycle of three years as suggested by the Ministry of Urban Development’s (MoUD) advisory<sup>2</sup> and create a treatment facility for the septage collected. The treated septage can then be disposed or reused in agriculture or for filling in new constructions.

To maintain a cleaning cycle of three years, the SMC will have to ensure that one-third of the septic tanks are emptied annually. It may either procure additional emptier trucks or involve the private sector in providing emptying services. A considerable number of septic tanks will need to be provided with removable covers to increase ease of emptying. The ULB will have to ensure that the new septic tanks constructed in the city conform to CPHEEO guidelines and are easily accessible from the street.

Considering Sinnar’s experience in involving the private sector in providing SWM services, septic tank emptying services could also be provided by involving a private service provider. Instead of collecting user charges, the ULB should levy tax towards sanitation and provide a free cleaning once in three years. This will also encourage households to periodically avail of the service. The private player will then be paid from the tax collected.

<sup>2</sup>Advisory on Septage Management, published by the MoUD (GoI), in January 2013.



The proposed improvement of the wastewater management system in Sinnaris depicted in Figure 11. It shows that the entire wastewater will be managed by providing safe access to toilets to all households along with a safe containment system as a first step. Further, city authorities will provide clean drains as an interim solution and settled sewer network as a long term solution for safe conveyance of greywater and septic tank effluent. A well-functioning and regulated service for desludging septic tanks will help to improve quality of septic tank effluent. This faecal sludge from septic tank emptying will be treated at a dedicated treatment facility. Wastewater collected through the drains and settled sewer network will be treated and reused further for irrigation purposes. Treated faecal sludge will be reused as compost in agriculture. Thus, all the wastewater will be treated as per standards with increase in reuse of treated waste.

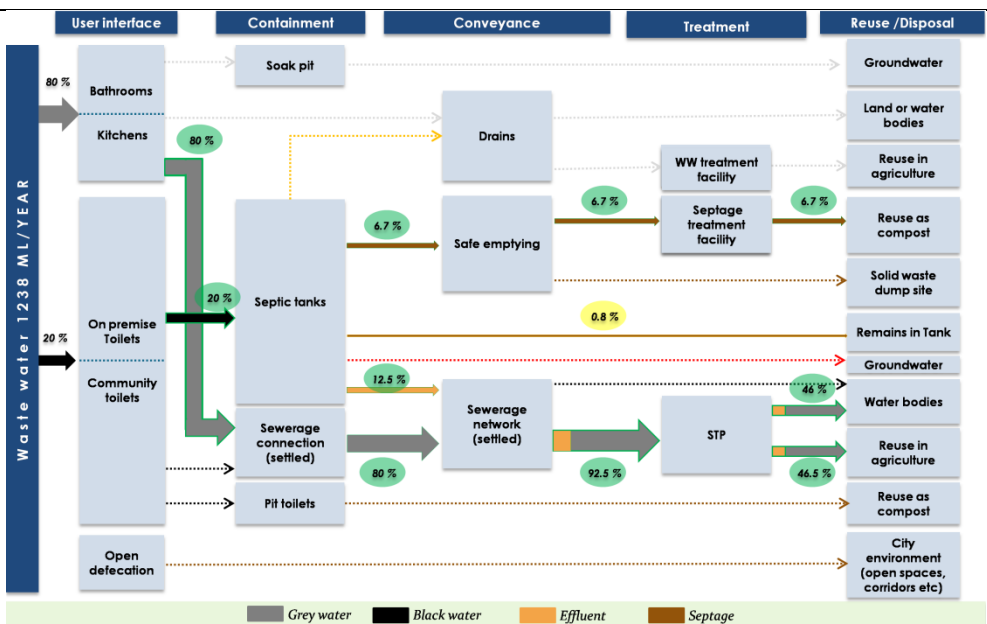


Figure 11: Improved wastewater flow with CSP interventions

Table 8: Strategies for wastewater and faecal sludge management

Component	Interventions	Achievement
Wastewater management	A city-wide settled sewer network to collect and convey greywater and effluent from septic tanks	Ensuring collection and safe conveyance of wastewater collected from households/properties and its appropriate treatment before reuse/disposal
	A wastewater treatment plant	
Integrated Faecal Sludge Management	Refurbish septic tanks by providing access covers	Providing a regulated emptying service which ensures that all septic tanks maintain an emptying cycle of three years and all septage so collected is treated and safely disposed off or reused
	Procure suction emptier truck	
	Septage treatment facility	

### Stormwater Management

Considering the current situation, the CSP has proposed rehabilitation of existing open drains to a desired section and to close them to carry stormwater only. This will also ensure that solid waste is not dumped in them. The CSP has also proposed desilting, dredging and rehabilitation of natural drains within the city to a desired cross section, such that the drains can cater to the stormwater load. The three lakes in the northern part also need to be desilted in the long run.

Table 9: Strategies for stormwater management

Component	Interventions	Achievement
Stormwater management	Desilting of the natural drains	Developing an effective way for conveyance of stormwater load
	Desilting of natural water bodies	Reusing stormwater/recharge groundwater

## Solid Waste Management

The CSP envisions making Sinnar a bin-free and zero-waste city. This will need efforts to increase service coverage, improve services and enhance awareness among citizens. The proposed programme covers the full service chain from waste collection to its safe conveyance, treatment, reuse and safe disposal. Strengthening the ongoing practice of private sector participation as well as a comprehensive awareness campaign will be the cornerstone of the programme.

Given the limited capacity of the municipality, it will not be possible to improve all the sub-sectors of SWM immediately. Interventions will, therefore, have to be phased. The first priority of the city will be to extend the regular door-to-door collection of solid waste to unserved areas and to make it universal in scope. This will be done through procurement of additional vehicles as well as outsourcing to the private sector. The ULB has already modified the routes of gphantagadis (collection vehicles) to maximise coverage: 75 per cent properties were covered in 2013–14 compared with 63 per cent in 2011–12. Gradually the service will ensure that these areas are made bin-free. A separate contract will also be developed for regular collection from the market areas. Bins will be needed in such areas but a separate contract will ensure regular collection. Many of these bins are made of concrete, which makes them immobile and difficult to clean. Replacement of 30 such bins with metal ones (1MT capacity each) is also proposed.

In addition, to initiate segregation at source, a pilot project will be prioritised for testing the idea of segregation at source for a delineated area. After its successful implementation, a policy decision will be taken to undertake city-wide segregation of waste at source.

The next priority of the city is to ensure safe treatment and reuse/disposal of solid waste in a scientific landfill. The regional plan of Nashik district is currently under preparation. In the plan, a regional landfill site, with Nashik as the centre, has been proposed. When developed, Sinnar will be able to use the site to dispose its solid waste.

**Table 10: Strategies for solid waste management**

Component	Type of intervention	Achievement
<b>Door-to-door collection and segregation of solid waste</b>	Increase coverage of door-to-door service to 100%, including in new developments and slums through augmentation of vehicles and private sector engagement	Developing an effective service for regular door-to-door collection of segregated solid waste at household, property, neighbourhood and city levels
	Replace 30 concrete bins with metal ones	
	Contract for waste collection in central commercial area	
	Initiate pilot for segregation at source for a delineated area	
<b>Treatment, reuse or disposal of solid waste</b>	Develop inert landfill site	Ensuring safe treatment and reuse/disposal of solid waste

## Implementation Strategy

### Phasing and Financing Strategy

The financing plan for a 10-year (2015–24) sanitation improvement strategy in Sinnar is based on an analysis of its municipal finance as well as an assessment of the possibility of accessing funding from other sources. It is developed for both new capital investments and O&M expenditure needed to sustain new services. Ongoing SMC projects are taken into account.

Based on the assessment and actions needed to achieve improvement in sanitation across sub-sectors and the value chain, seven specific projects have been identified that will be implemented in the next 10 years. These projects will be supported by ongoing activities for awareness generation among leaders and residents of Sinnar as well as capacity building of the local council.

**Table 11: Projects for urban Sanitation – Implementation Strategy for Sinnar CSP**

Sr No	Project	Base cost (2012 prices)
<b>Access to toilets</b>		
1	Household toilets with partial subsidy as incentive	14.60
2	Community toilets: New blocks and refurbishment of existing ones	0.32
3	Public toilets: New blocks and refurbishment of existing ones	0.11
<b>Wastewater and stormwater management</b>		
4	Wastewater conveyance (settled sewer network) and treatment	47.23
5	Desilting and rehabilitation of natural water bodies (phase 1)	0.63
<b>Integrated Faecal Sludge Management</b>		
6	Provide regular IFSM service with sludge treatment	1.25
<b>Integrated solid waste management</b>		
7	Tipper trucks, replacement of concrete bins, extension of waste collection contract	0.53
<b>Awareness Generation</b>		
8	Awareness generation and IEC campaigns	0.30

Note: Amounts are in Rs crore.

Source: CSP analysis, Simulation of improvement options through SANIPLAN.

The Financing Plan was developed in an iterative manner to incorporate three key aspects:

- **Identifying potential sources of funds for capital investment:** Based on an assessment of opportunities for capital finance, the first step was to identify a number of possible sources of funds for capital expenditure of all major projects identified.
- **Priorities, phasing and project development:** Develop appropriate phasing of projects over the 10-year CSP period based on local priorities, SMC's implementation capacity, as well as expectations of availability of grant resources and local financial capacity. This phasing can be modified iteratively based on expectations of capital financing. Appropriate steps will be needed to develop more detailed project proposals for each of the projects in relation to technical design as well as financing. Steps related to implementation will need to be identified based on appropriate plans to engage private sector contractors for service delivery. Phasing and implementation details will also help to identify total project costs, incorporating both price increases and management costs.
- **Municipal finance assessment:** The financing strategy will require the SMC's contribution, which will need to be made from its internal surplus. This depends on availability of such surplus either on the WSS account or from general ULB resources. The extent of transfer from such surplus depends on the priority

the ULB places on capital expenditure for water and sanitation. As reviewed above in Municipal Finance assessment, the SMC does generate internal surplus and this can be enhanced by improving collection efficiency of taxes and charges. The SMC can also explore mobilising debt from local banks or financial institutions. However, it is likely that to meet the full costs of all projects over a 10-year period may require some tariff revisions either in property taxes or for water and sanitation. The local viability of such tariff increases will need to be assessed for a financially feasible plan.

### Exploring Sources of Funds for Capital Investment

Traditionally most CSPs are developed to avail grants from state or national governments. However, the approach in this plan was to assess potential sources of funds for all projects in Table 11 using both conventional sources (such as grants from state/national governments) and assessing new sources. Five main sources are identified:

**Household and community contributions:** First, is the use of a demand-led partial incentive subsidy scheme for on-premise or group toilets where each eligible household will get a fixed subsidy. While this is about 20 per cent of the cost of a toilet, with more households sharing a group toilet the share of subsidy will increase. However, households will meet between 20 per cent and 80 per cent of the cost of a toilet. In case of refurbishment of existing septic tanks, households will meet the full costs.

**Private sector contribution through a PPP model:** A second strategy is to develop a business model around activities where it is possible to involve the private sector through a public-private partnership (PPP) contract. This is possible when revenues from a service are adequate to cover the returns on capital investment. In Sinnar, two areas have been identified for a PPP arrangement: the emptying service component of an IFSM service, and provision of new blocks of public toilets which generate adequate revenue from fees. For IFSM, the ULB will have to meet the costs of a septage treatment facility as no private contractors are likely to take this up on a PPP basis. A PPP strategy will need to be backed by appropriate risk management, including escrow accounts for payment by ULBs. ULBs will also need to develop capacity and set up good monitoring systems.

**Grants from state and national governments:** The third strategy is to explore the use of grants for some activities where it is not possible to meet the full costs through local contributions or to develop a business model for a PPP approach. This will also require that there are some programmes or schemes which would provide grants. While ULBs will meet some share of these costs, grants from either state or national government grants will need to be explored for this. A new source of grant funding that the city can start to explore is grants or contributions from corporate sectors and local benefactors who want to contribute to the development of their cities. Corporate Social Responsibility (CSR) funds are likely to be available due to the new provision in the Companies Act that mandates large companies to spend 2 per cent of their profits towards CSR.<sup>3</sup> As sanitation is included in CSR rules, this could be a potential source.

**Grants from CSR and other donors:** Grant funds are also likely to be available through other sources such as from local benefactors, other corporate sector donors through the requirements of CSR as per the Companies Act provisions, etc. Sinnar Municipal Council, with possible support from civil society organisations and academic institutions, will need to be proactive and identify such possibilities. Projects such as the ones for provision of toilets through incentive subsidy, construction and management of community and public toilets, procurement of vehicles for solid waste collection and septage, as well as awareness campaigns may receive funding from such sources.

**SMC own funds:** Besides exploring other external funds, the SMC should also explore the possibility of using its own funds to meet a part of the capital costs. It can directly use its own revenue surplus for this purpose. It can also leverage additional funds through borrowing from local commercial banks and other financial institutions, if this appears financially viable. An assessment of the SMC's finances discussed earlier suggests that it will be able to meet funding requirements for some of the CSP projects. In addition, however, the SMC will need to explore external funds. Table 12 provides potential sources of funds to meet capital costs for projects. While many

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<sup>3</sup> Section 135 of the 2013 Act seeks to provide that every company with a net worth of INR 500 crore or more, or a turnover of INR 1,000 crore or more, or a net profit of INR 5 crore or more, would be required to spend at least 2 per cent of the average net profits of the immediately preceding three years on CSR activities

options seem possible, considerable efforts will be needed to explore and mobilise these for timely implementation of the projects identified in the CSP.

**Table 12: Potential sources of funds for various CSP projects**

Sr No	Project	Potential sources for Capital finance
<b>Access to toilets</b>		
1	Household toilets with partial subsidy as incentive	a) GoI's new <b>Swachh Bharat Mission</b> which provides subsidy to incentivise households; b) <b>special funding</b> from the state; c) <b>MP and MLA</b> under local area development scheme; d) <b>CSR</b> funding; and e) households can use <b>own savings</b> or <b>borrow</b> from financing institutions.
2	Community toilets: New blocks and refurbishment of existing ones	a) ULB <b>own funds</b> ; b) <b>CSR funds</b> ; and c) <b>Swachh Bharat Mission</b>
3	Public toilets: New blocks and refurbishment of existing ones	a) <b>PPP arrangements</b> for new public facilities or refurbishment; b) <b>CSR funding</b> for construction and handover O&M by private player with user charges; and c) explore Viability Gap Funding (VGF) under <b>Swachh Bharat Mission</b>
<b>Wastewater and stormwater management</b>		
4	Wastewater conveyance (settled sewer network) and treatment	a) GoM's <b>Maharashtra Sujal Nirmal Abhiyan</b> ; and b) <b>Maharashtra Nagarotthan Yojana</b> . In such state schemes, ULB has to <b>contribute</b> a part ranging from <b>10% to 20%</b> of the project cost; c) As this project makes an impact on a wider area, funds available <b>with District Planning Committee</b> could also be accessed
5	Desilting and rehabilitation of natural water bodies (phase 1)	
<b>Integrated Faecal Sludge Management</b>		
6	Provide regular IFSM service with sludge treatment	For suction emptier trucks: a) <b>private player</b> ; b) <b>GoM</b> grant under Maharashtra Sujal Nirmal Abhiyan/Maharashtra Nagarotthan Yojana; c) <b>CSR</b> funds; and d) ULB <b>own funds</b> to meet a part of the cost For treatment plant: a) GoM's <b>Nagarotthan Yojana</b> ; b) GoM's <b>Vaishyapurna Kaama Yojana</b> ; c) <b>CSR</b> funds; and d) <b>borrowing</b> For septic tank access refurbishment: <b>Households</b> to bear these costs themselves
<b>Integrated solid waste management</b>		
7	Tipper trucks, replacement of concrete bins, extension of waste collection contract	a) GOM's grants for <b>purchase of equipment</b> ; and b) <b>CSR</b> funds.
<b>Awareness generation</b>		
8	Awareness generation and IEC campaigns	a) <b>SBM</b> funds for IEC campaigns; and b) <b>CSR</b> funds

## Priorities, Phasing and Project Development

Based on local priorities and capacity for implementation, a phasing plan has been developed to implement the CSP proposals over a 10-year period. Table 13 presents the proposed phasing of all projects taking into consideration local priorities, urgency of the project, availability of financial and human resources and logical sequence of actions. For example, those projects that can be funded through ULBs own resources or from household contributions are phased early while those which need grants are taken up later. However, as most projects require some grant funding, as a strategy the SMC will need to treat this as a rolling plan that can be adapted to match its efforts at mobilisation of capital funding. The SMC also plans to initiate pilot projects with its own funds to test project modalities as well as demonstrate implementation capacity to mobilise more innovative funding, such as from CSR funding. While a number of local corporate sector firms have shown interest, they will need evidence that can be provided through implementation of schemes and through demonstration pilots.

**Table 13: Phasing of projects**

Sr No	Project	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Access to toilets</b>											
1	Household toilets with partial subsidy as incentive										
2	Community toilets: New blocks and refurbishment of existing ones										
3	Public toilets: New blocks and refurbishment of existing ones										
<b>Wastewater and stormwater management</b>											
4	Wastewater conveyance (Rehabilitate existing drains + settled sewer network) and treatment										
5	Desilting and rehabilitation of natural water bodies (phase 1)										
<b>Integrated Faecal Sludge Management</b>											
6	Provide regular IFSM service with sludge treatment										
<b>Integrated solid waste management</b>											
7	Tipper trucks, replacement of concrete bins, extension of waste collection contract										
<b>Awareness generation</b>											
8	Awareness generation and IEC campaigns										

## Financial Assessment

The proposed phasing will result in a total requirement of Rs 97.9 crore for the full CSP to be implemented over a 10-year plan period. Based on an assessment of financing sources in Table 12, Table 14 presents sources of financing all the CSP projects identified. The SMC will have to mobilise 75 per cent of the total costs as grants through central and state schemes, or from CSR sources. It will have to contribute Rs9.7crore as its own share. This can be met through its internal surplus or by borrowing from a commercial bank.

Table 14: Capital finance of CSP projects

Sr No	Project	Project cost	Grants	Private/PPP	Beneficiary	ULB
<b>Access to toilets</b>						
1	Household toilets with partial subsidy as incentive	1,680	252 (15%)		1,344 (80%)	84 (5%)
2	Community toilets: New blocks and refurbishment of existing ones	39				39 (100%)
3	Public toilets: New blocks and refurbishment of existing ones	13		13 (100%)		
<b>Wastewater and stormwater management</b>						
4	Wastewater conveyance (rehabilitate existing drains + settled sewer network) and treatment	7,758	6,982 (90%)			776 (10%)
5	Desilting and rehabilitation of natural water bodies (phase 1)	68	61 (90%)			7 (10%)
<b>Integrated Faecal Sludge Management</b>						
6	Provide regular IFSM service with sludge treatment	132	88 (67%)	33 (25%)		11 (8%)
<b>Integrated solid waste management</b>						
7	Tipper trucks, replacement of concrete bins, extension of waste collection contract	65	31 (48%)			34 (52%)
<b>Awareness generation</b>						
8	Awareness generation and IEC campaigns	35	18 (50%)			18 (50%)
<b>Total</b>		<b>9,788</b>	<b>7,431 (75%)</b>	<b>47 (1%)</b>	<b>1,344 (14%)</b>	<b>966 (10%)</b>

Besides capital financing, the new projects will also entail considerable additional O&M expenditure. Thus, to meet both capital and O&M expenditure requirements, the SMC will need to consider improvements in three areas: a) it will need to improve efficiency in collection of taxes to about 90 per cent (as discussed earlier); b) increase, or at least maintain, transfer of internal surplus to WSS sectors; and c) introduce sanitation and SWM taxes and consider some increase in tax levels (property tax as well as special taxes for water, sanitation and SWM). The SMC will also need to introduce new taxes for sanitation (Rs 300/annum) and SWM (Rs 180/annum) in 2015.

**Table 15: Percentage increase in average tariff/tax levels required in year 10 to implement the full CSP**

		Transfer of internal surplus to WSS account	
		No increase (60%)	Increased
Collection efficiency	No increase (51%)	113%	42% (86% transfers over 10 years, max 100%)
	Improved to (90%)	62% (54% transfers over 10 years, max 60%)	17% (68% transfers over 10 years, max 100%)

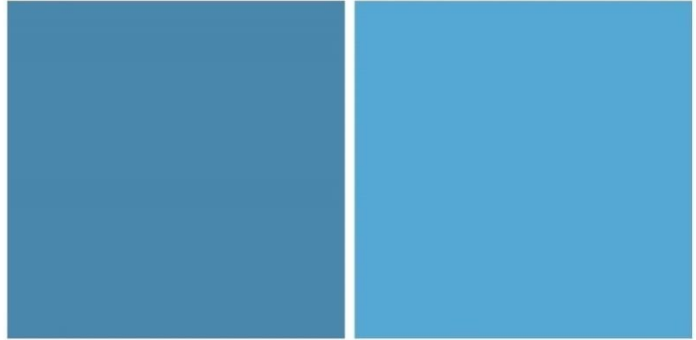
Based on its own priorities, and assessment of possible funding, the SMC has identified two projects for early implementation from the full list of 11 projects. These focus on the goal of making Sinnar open defecation free and to have a proper faecal sludge management system in place in the next three years. For the open defecation free plan, the Council plans to provide an incentive grant of Rs 5,000 per household for toilet construction. This will be made available to households to make their own toilets either as individual toilets or a group toilet shared by three or four families that know each other well. For integrated faecal sludge management, the SMC has decided to seek support of private sector contractors for the three-year scheduled cleaning service and a treatment facility to treat the collected faecal sludge.

The SMC receives support in design and implementation of these two projects from the CEPT University and All India Institute of Local Self Government (AIILSG) under the PAS Project.

A survey under way to assess group toilet possibilities in Sinnar.







## The Performance Assessment System (PAS) Project

The 'Performance Assessment System – PAS' is a five-year action research project, initiated by the CEPT University, Ahmedabad, with funding from the Bill and Melinda Gates Foundation. It supports development of appropriate tools and methods to measure, monitor and improve delivery of urban water and sanitation services in the states of Gujarat and Maharashtra. The PAS Project comprises three components of performance measurement, monitoring and improvement.

The PAS Project is supporting the development of City Sanitation Plans (CSP) to achieve open defecation free status for four small cities in Maharashtra, which are Wai, Hingoli, Ambajogai and Sinnar. These cities were selected by the Water Supply and Sanitation Department, Government of Maharashtra, and Maharashtra Jeevan Pradhikaran (MJP). A framework for city-wide assessment using the full value chain for urban sanitation has been developed, which is being used in developing these CSPs. Initial workshops were organised by the MJP with officials of these cities to discuss the CSP approach. Draft plans for these cities are ready and will be discussed with city officials.