Moving GEORAI towards ODF+

April 2018

Georai Municipal Council, Georai





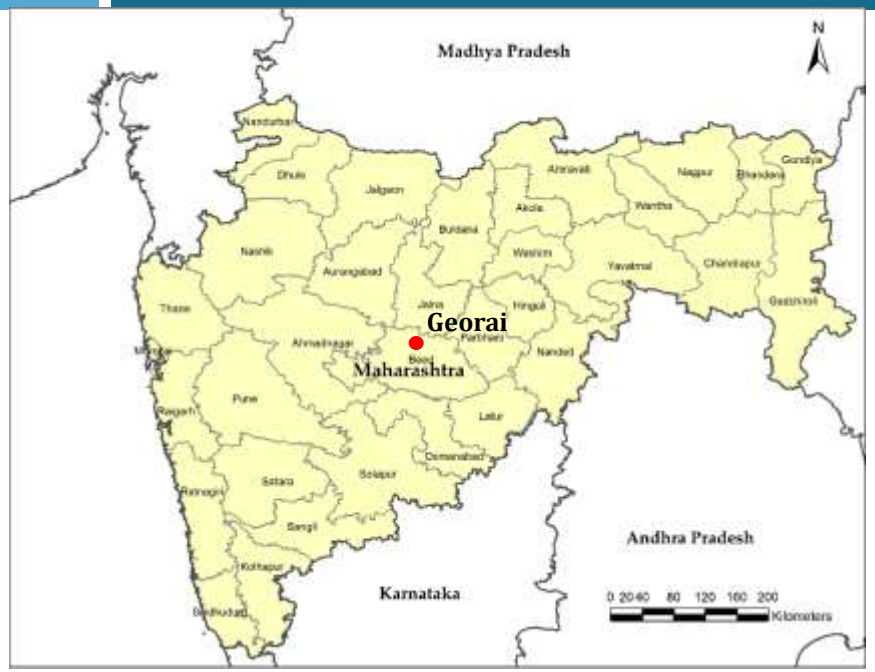
CEPT UNIVERSITY

Center for Water and Sanitation & AIILSG

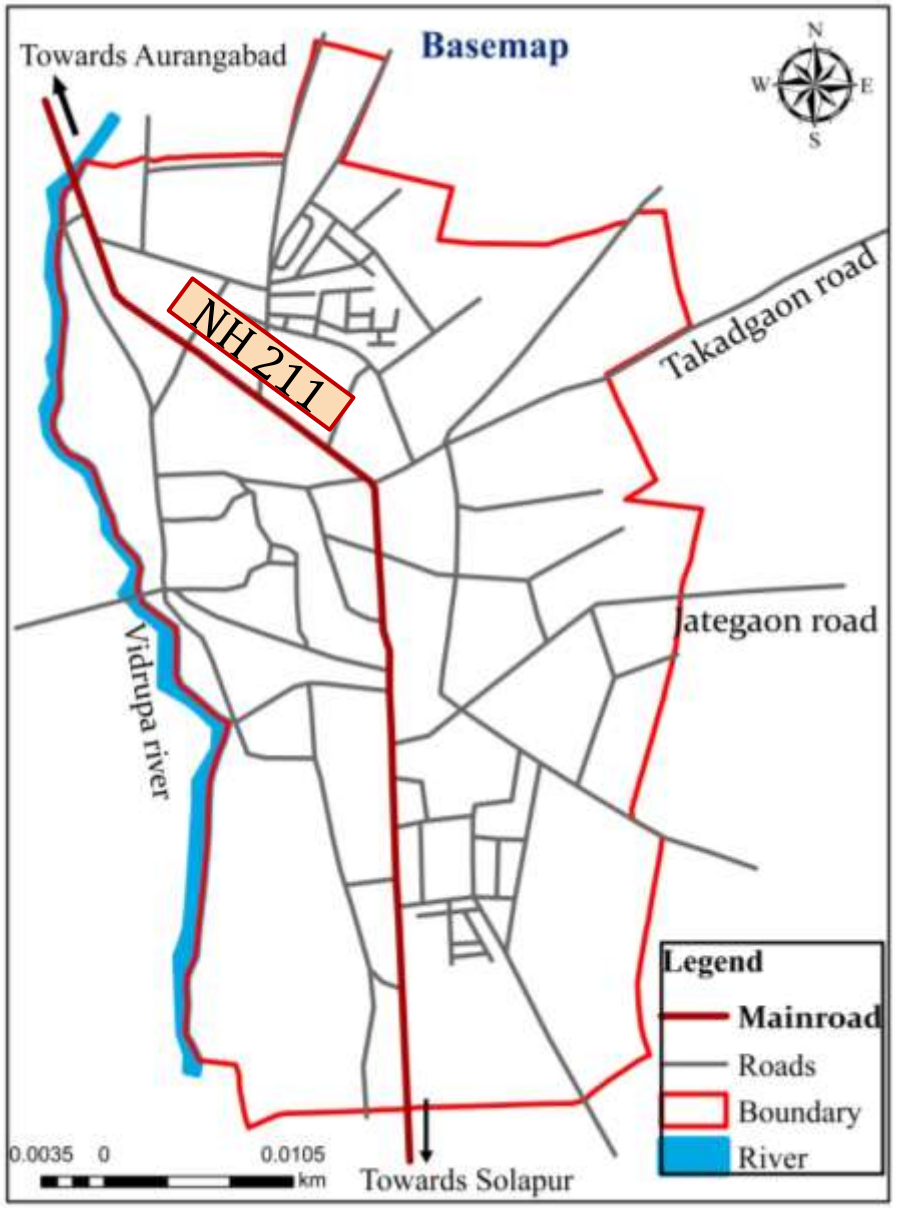
Content

1. Introduction

Introduction



- **Georai is a Class 'C'** council located 32 Km north to the city of Beed in Beed district of Maharashtra
- It is situated at a **latitude of the 19^0-16`** and **longitude of 75$^0$-45 `**
- Georai municipal council was established in year **1954** as a town committee.
- The Georai municipal council has **current population of 37160(till 2017)** and its **area is 4.3 sq km**.(*Source-QCI report-2017*)
- Economy of the city is dependent on **agriculture**.
- Georai has been declared as **ODF** by GOI in **June 2017.**



Introduction: Demographics & Topography

	2011	2017
Population	33557	37160
No. of HHs	6291	6396
Literacy Rate	83%	-
Slum Population	29%	24%

Georai town is situated in the basin of river **Godawari** which flows at a distance of **11 km** to the north of the town.

Total No. Of Properties in the city: 6029

	2001-2011	2011-2017
Growth Rate	15%	17.78 %

Literacy levels of the city is in line with the state literacy rate of 88.69% for urban areas

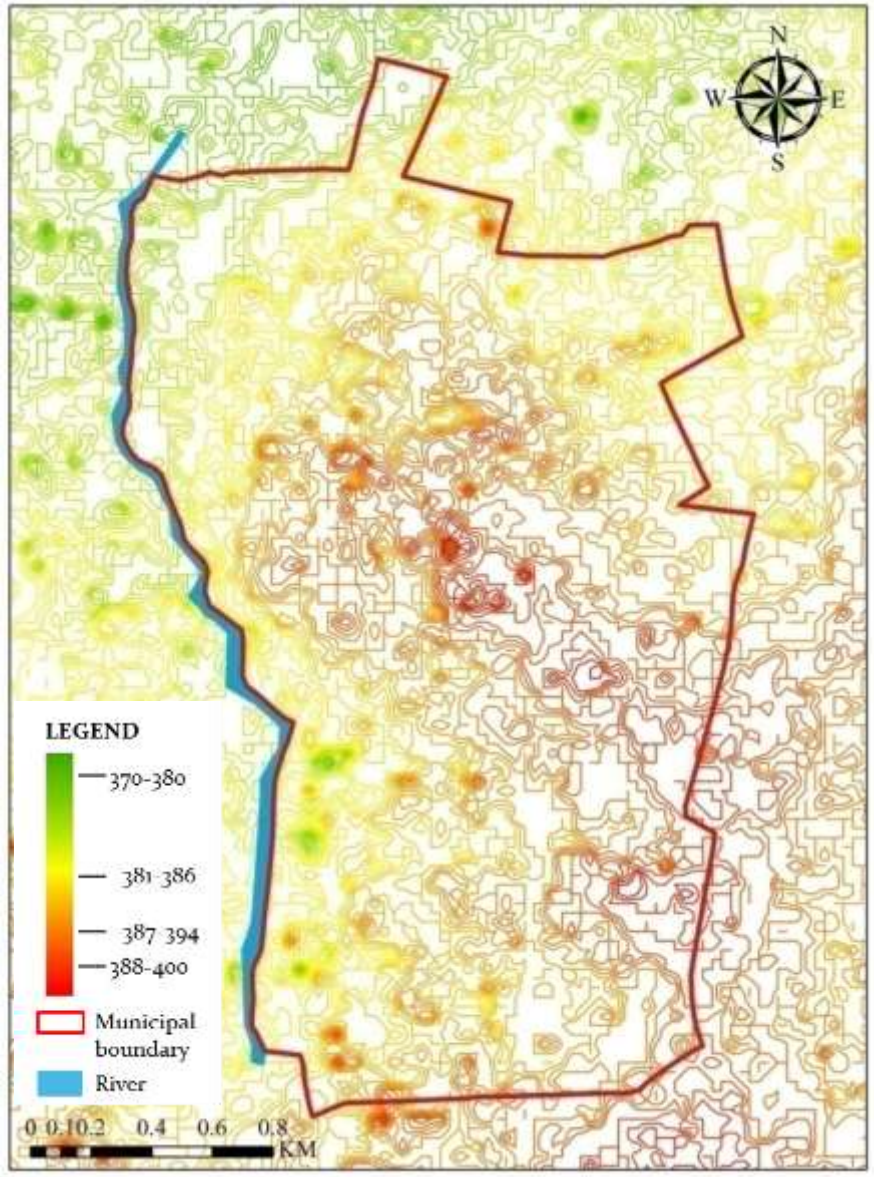
River **Vidrupa** flows from **south to north** and along the western side of the gaothan.

Area is gently sloping in **western direction** towards the river.

The city is at an **altitude of 458m** above MSL

Soil type is **black cotton soil** and Ground water level is **12 m** and **Flooding** is not observed in the city.

Topography & Terrain



Slum Details

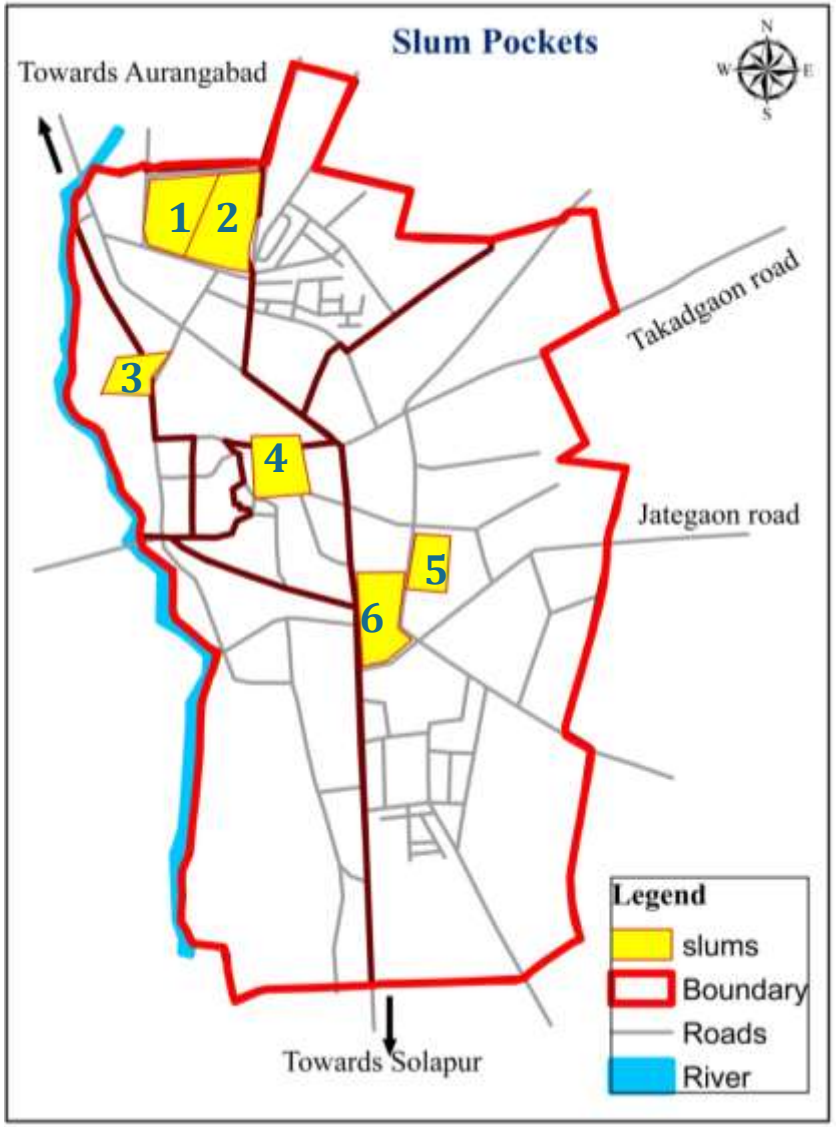
S. No.	Entities	Data
1	% of Slum Population	24%
2	Population in Slums	8953
3	No of Slum HHs	1780
4	No of Slums	6
5	Total no. of Slums Notified by State	0

Source: Field visit (2017)

Sr No.	Slum list	Ward No
1	Sanjaynagar 1	4
2	Sanjaynagar 2	4
3	Islampura 1	6
4	Bhim nagar	5
5	Sathenagar 1	2
6	Santhenagar 2	2

Source: Field visit (2017)

24% of the total population lives in these 6 slum areas



Ongoing and past programs for slums and slum like areas

Rajiv Gandhi Awas Yojana (2014)

Total **14 beneficiaries**
10 houses constructed , 4 are ongoing.
Subsidy – 1.5 lakh

Ramai Awas Yojana (2014) –

77 - Total beneficiaries (SC under BPL)
50- houses with toilet are constructed
27 – ongoing construction
Subsidy – 1.5 lakh

PMAY

Under PMAY **2000 applications** are received but the construction is yet to begin.

Under construction toilets – Ramai Awas Yojna

Apartments in Georai

- There are 3-4 apartments in Georai.
- There are total 36 flats in these apartments.
- Apartments have been constructed in last 5-6 years.
- These apartments are located in north-eastern part of the city.
- Approximate size of septic tank in apartments is 15’ x 12’ x 10’.

Administrative Boundary

For administrative purposes, Georai is divided into 6 prabhags

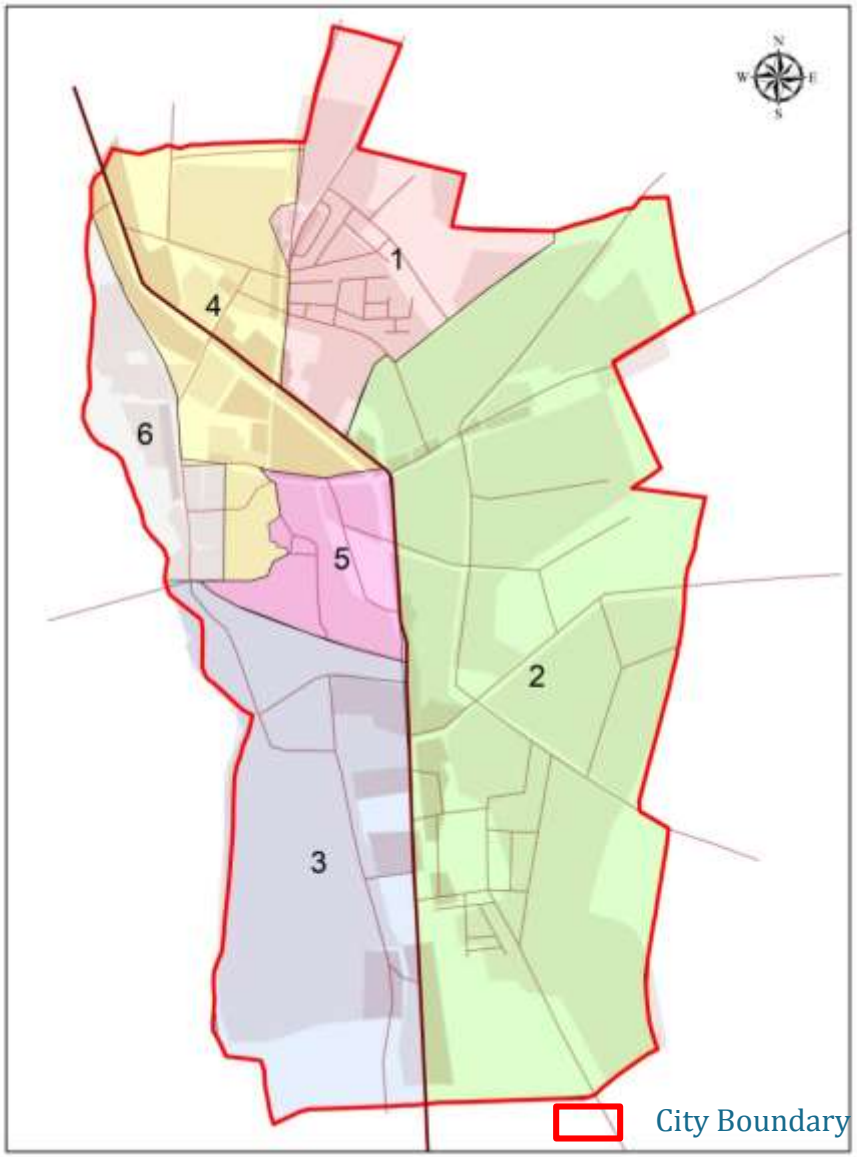
- **Ward 1** has mostly residential area which includes bungalows and upcoming many new constructions .
  - **Low density area**
  - **Total HH- 817**

- **Ward 2** includes slum like areas which are dense. On the northern side of the ward there are houses with bungalows as well as many public amenities like banks, shops, weekly markets are located in this area
  - **High density area**
  - **Total HH –1473**

- **Ward 3** mostly includes agricultural land
  - North side of this ward includes slum like area (Korgu galli).
  - **High density slum area**
  - **Total HH - 817**

- **Ward 4** includes both slums and bungalow typology area.
  - **Medium density area**
  - **Total HH -766**

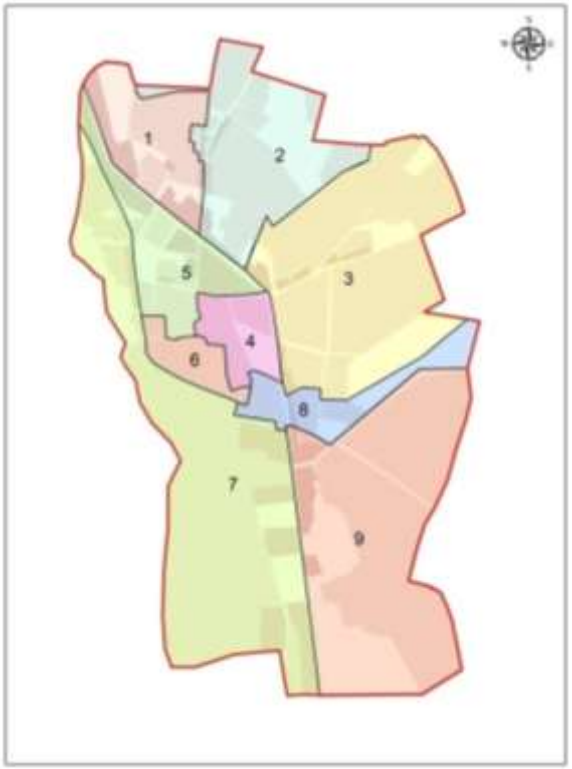
- **Ward 5** and **6** includes mostly slum like area and wholesale markets.
- Slum bhimnagar is present in ward 5 area.
- **High density**
- **Total HH - 1617**

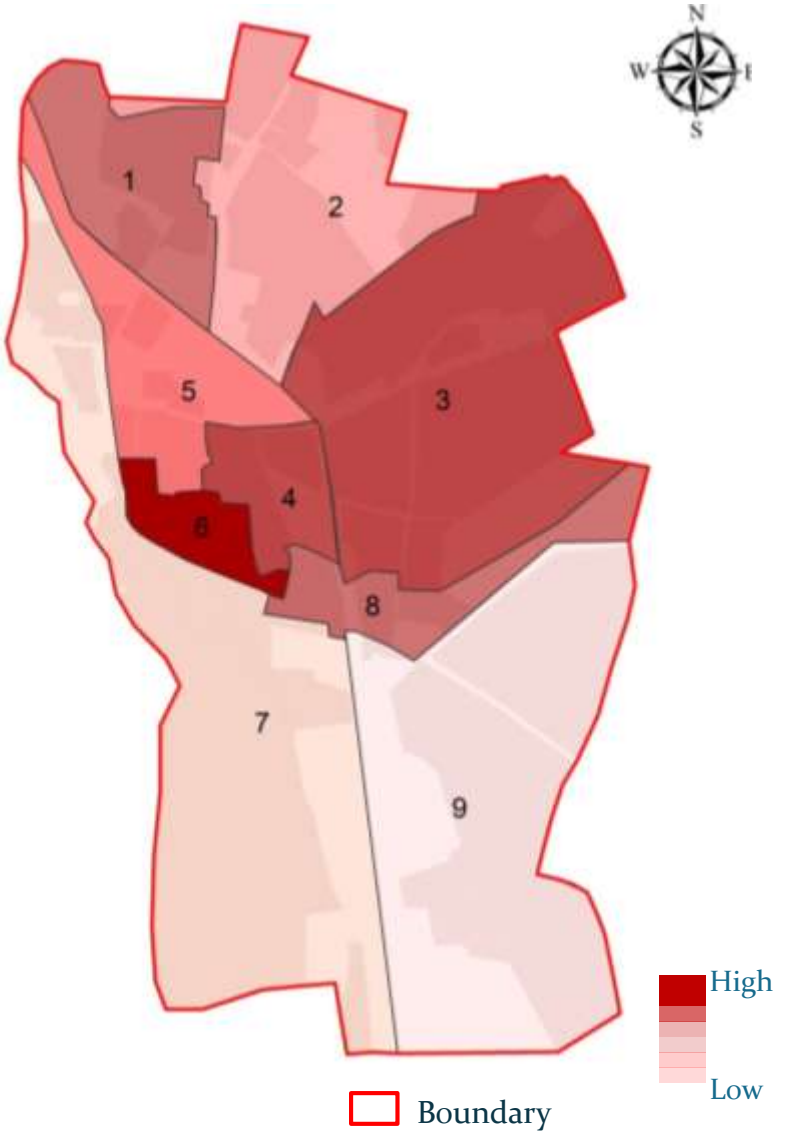


Electoral wards and Density Map

There are 9 electoral wards

Ward No.	Population (2011)
1	3653
2	5109
3	3358
4	3497
5	3486
6	3351
7	3719
8	3789
9	3600

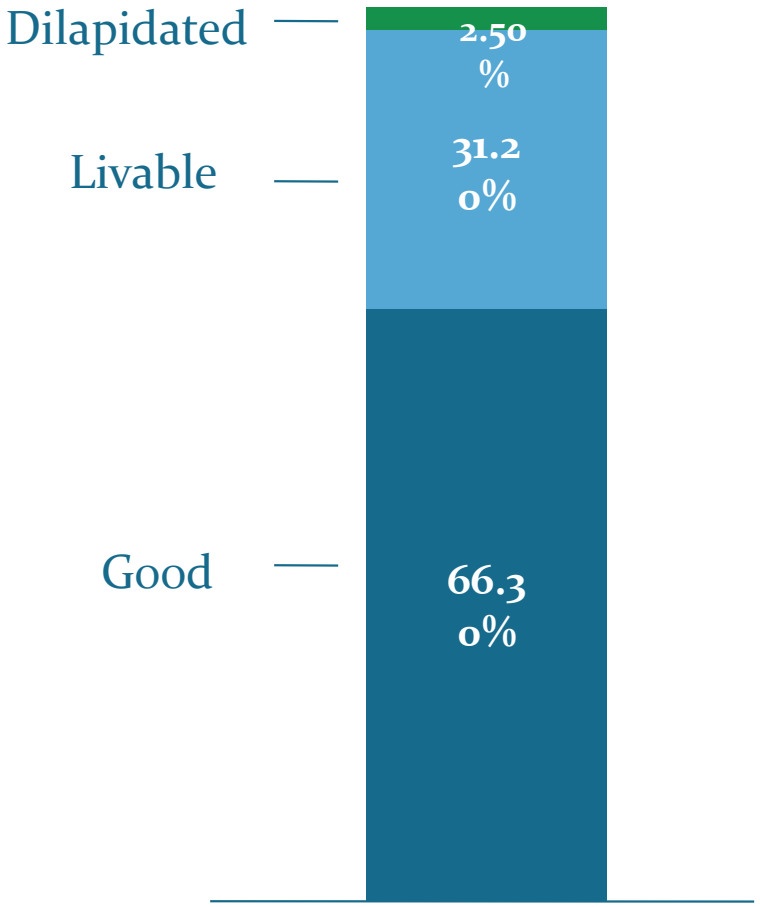




Density Map

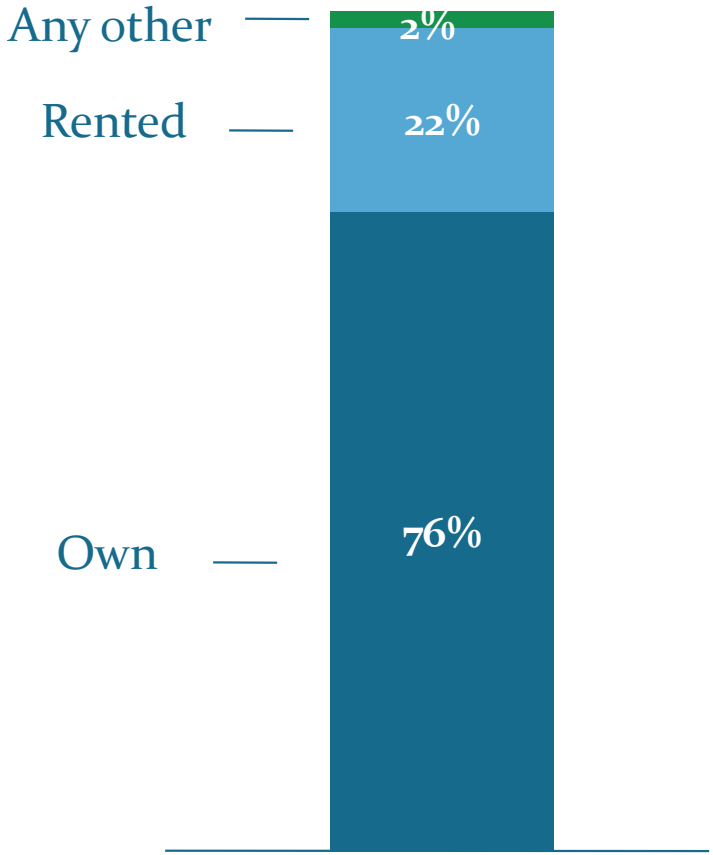
- The main core of the city centre is densely populated which consists of gaothan areas
- Ward 7 and 9 have low density due to presence of non residential areas (agricultural fields)
- Ward 1 has medium density due to compact slum settlement
- Ward 3 has medium density with dispersed development

Housing Condition



Housing Condition

Source: Census 2011



Housing Ownership

Source: Census 2011

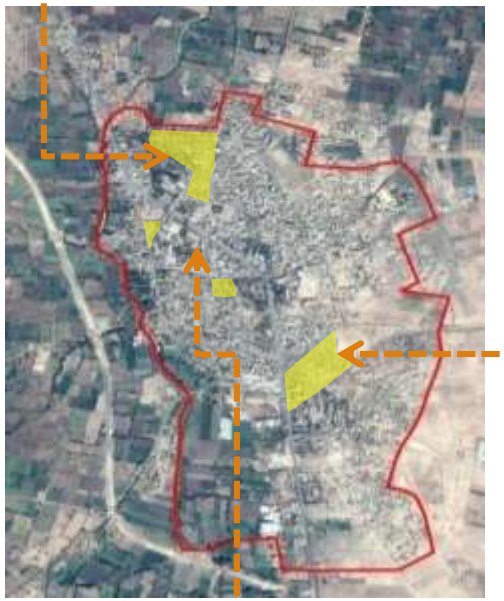
- Good means those houses which do not require any repairs and are in good condition.
- Livable means those houses which requires minor repairs.
- Dilapidated means those houses which are showing sign of decay and require major repairs.

Housing Typology- Slums

Sanjaynagar Slum Area

- Mostly single storied kaccha ,semi pakka and pakka houses are present in sanjaynagar area .
- Few new housing constructions are observed in this sanjaynagar area .
- Accessibility to this area is 3-4 m wide road.



Sathenagar Slum Area

- Mostly single storied houses are present in this area.
- This houses are pakka and some are semi pakka.
- 2-3 double storied houses also present in this area.
- Accessibility to this area is wide road .



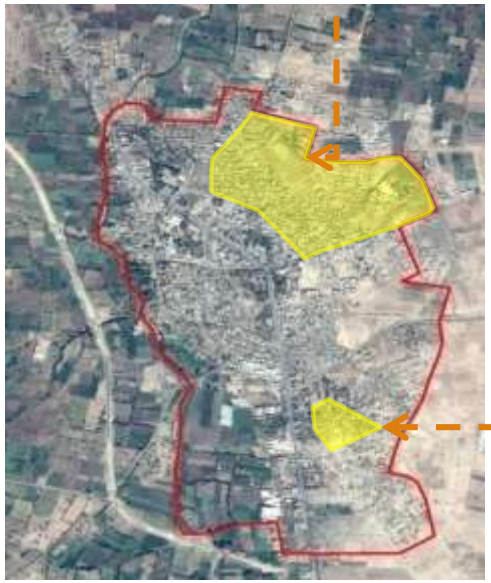
Islampura Slum

- This area is Islampura slum area.
- Housing in this area is mostly pakka and semi pakka .
- Many new housing construction are going in this area
- Few double storied and remaining single storied houses present.

Housing Typology- Colony type area

Sidhivinayak, Saraswati Colony ,Naik Nagar

- Individual double storied house constructed in Sidhivinayak, Saraswati colony ,Naik nagar and so on.
- These houses have of 3-6 m wide tar roads.
- Few new housing constructions are also going in this area.



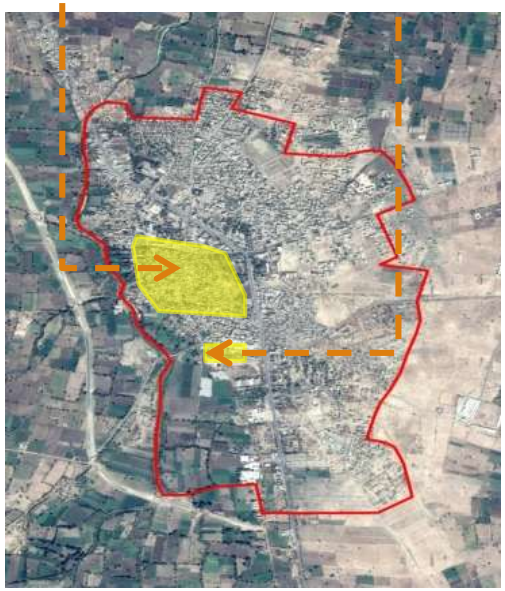
Teachers Colony

- All pakka housing with single and double storied observed in this teachers colony area.
- This houses constructed recently within 4-5 years.
- Also new housing constructions are observed in this area.

Housing Typology-Mixed Use & APMC

Korbugalli Mixed Use Area

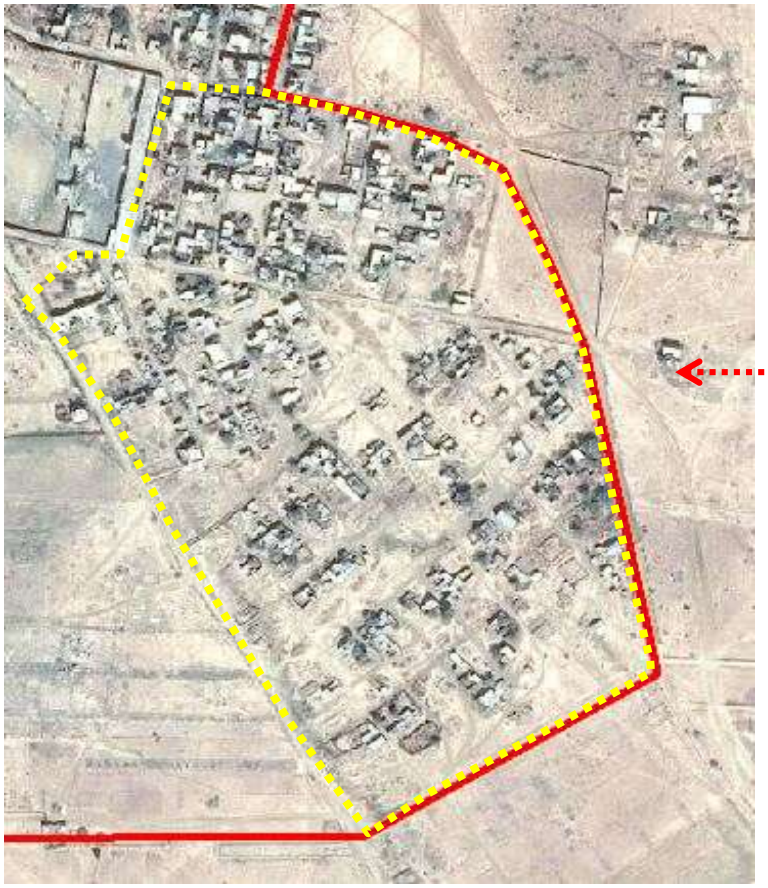
- Main market area along with the korbugalli area.
- Includes mixed land use of residential and commercial buildings.
- Single storied and double storied housing.
- Old houses observed in this area.
- They area is densely populated
- Pakka, semi pakka housing present.
- Road accessibility is good.



APMC

- The Agricultural Produce market Center (APMC) is located at the center of the city.
- All the surrounding villages are dependent for the selling and purchasing of agricultural products.

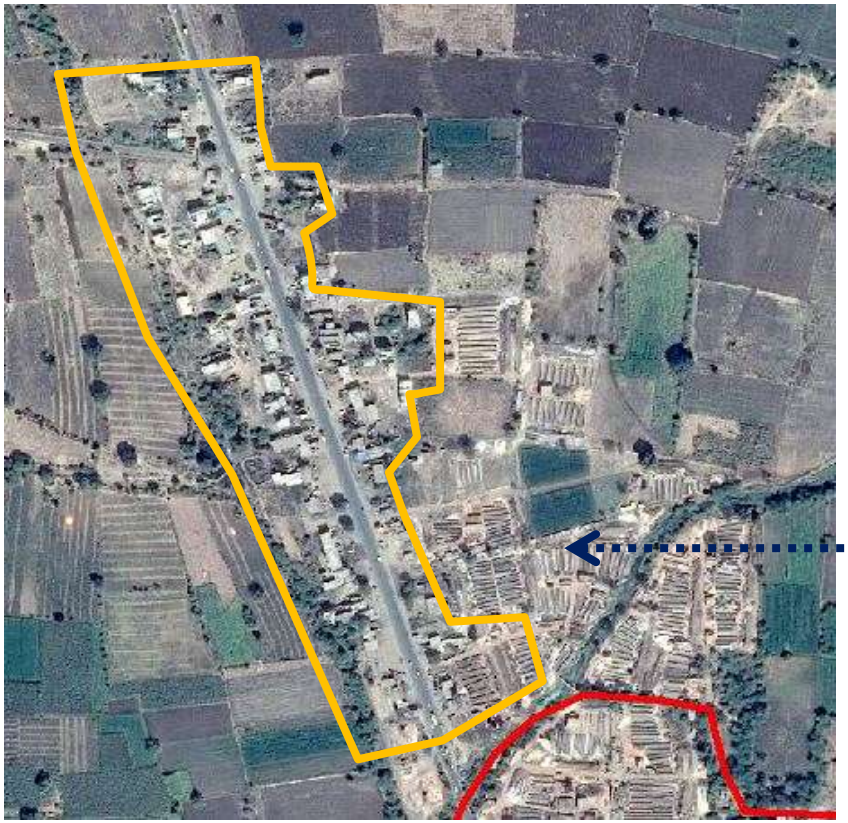
Housing Typology- Tayyabnagar area



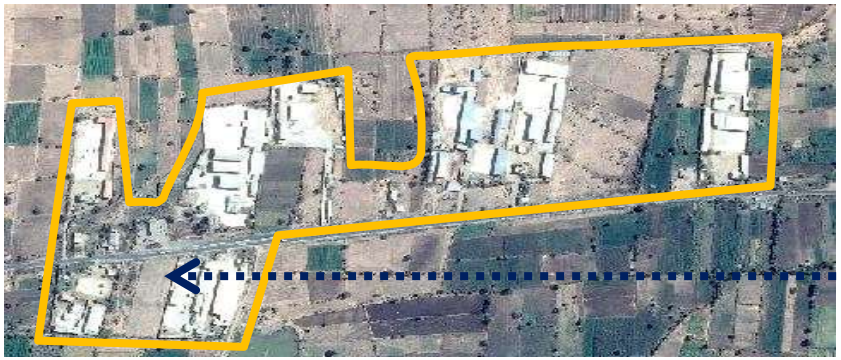
Tayyab nagar area

- Pakka ,semi pakka and some kaccha houses present in this area.
- Accessibility to this area is 3-4 m wide road.
- Few new housing constructions are also going in this area.

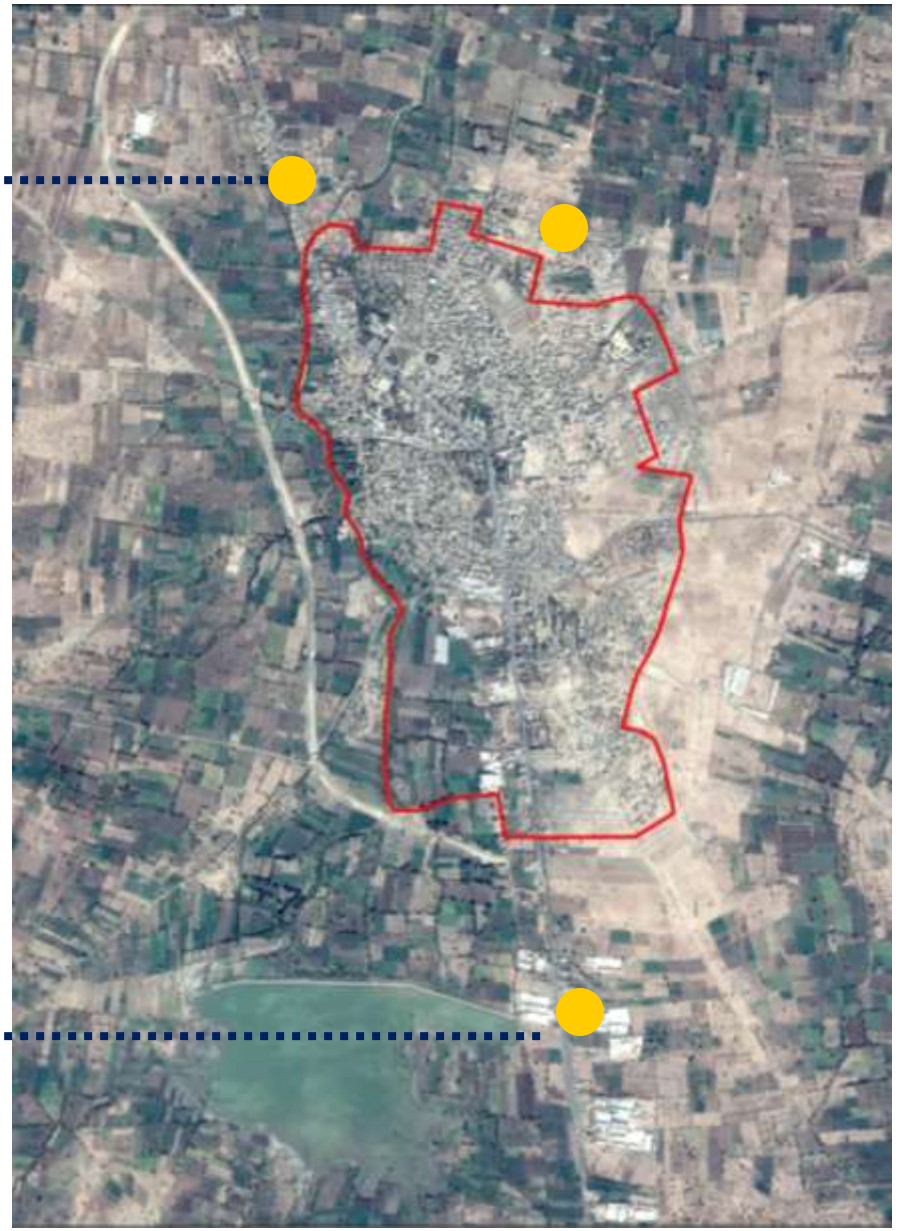
Outgrowth Areas



Commercial development along the road



Commercial development along the road



Boundary

Outgrowth Areas

Houses constructed in Basveshwar Colony .
Governing body - Grampanchayat namely Kolher.

Total Population	1500	HHs	300

Type of sanitation system – On site(Septic tanks)

Septage generation: There is no regular demand for desludging from the outgrowth areas of the city.
Demand is once in 3 to 6 months

- Pakka, double storey houses observed in this area with scattered development.
- Few flats constructed in recent past present

Summary – Housing typology

- Generally Ground floor ,G+1 , G+2 housing structures are observed in the city.
- Kaccha, semi pakka housing is observed only in slum area, rest of the city has mostly pakka houses.
- In ward number 6 area , old type of housing is observed.
- Many new housing constructions are being constructed in different areas.
- Also incremental housing constructions are also observed.
- Mostly double storied pakka houses are present in outgrowth area of the city.

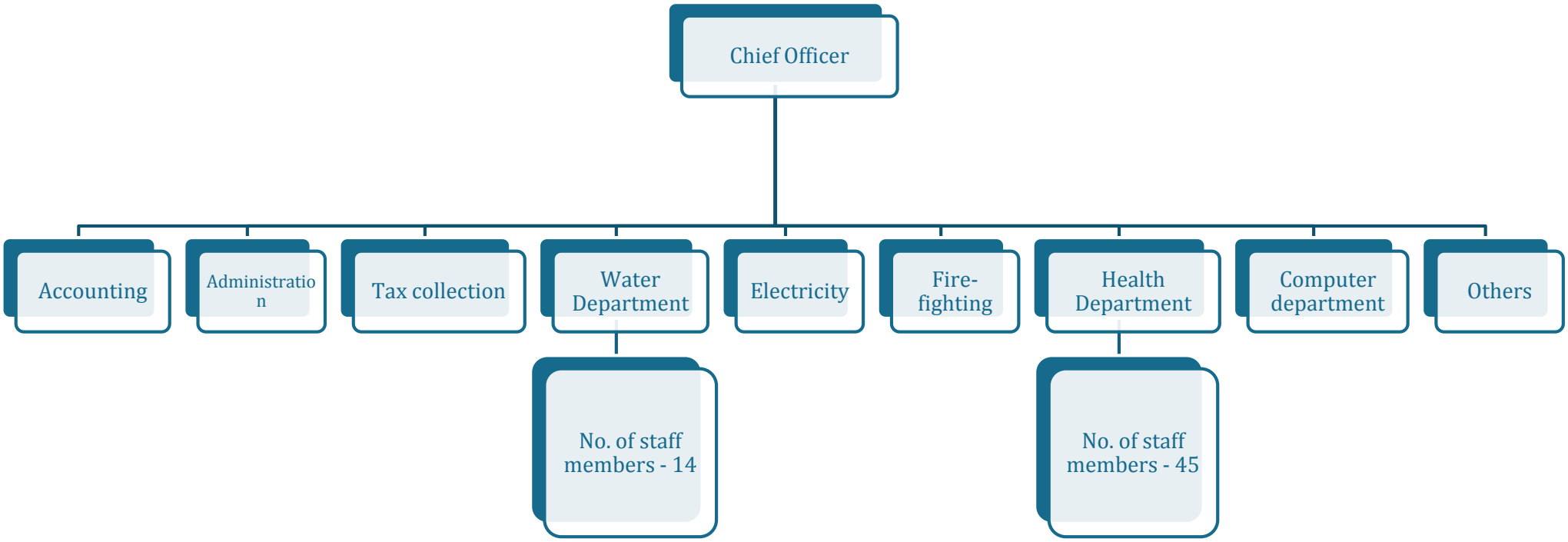
Organogram

Local government structure

President	Mr. Sushil Javanjal
Chief Officer	Mr. Bhagwat Bighot

Number of Electoral Wards	9
Number of Administrative Wards	6

Organogram of Administrative Wing of Council and Departments Concerned with Sanitation



Total strength - 98

Water Supply

Water Supply Status

Water supply: 92 LPCD

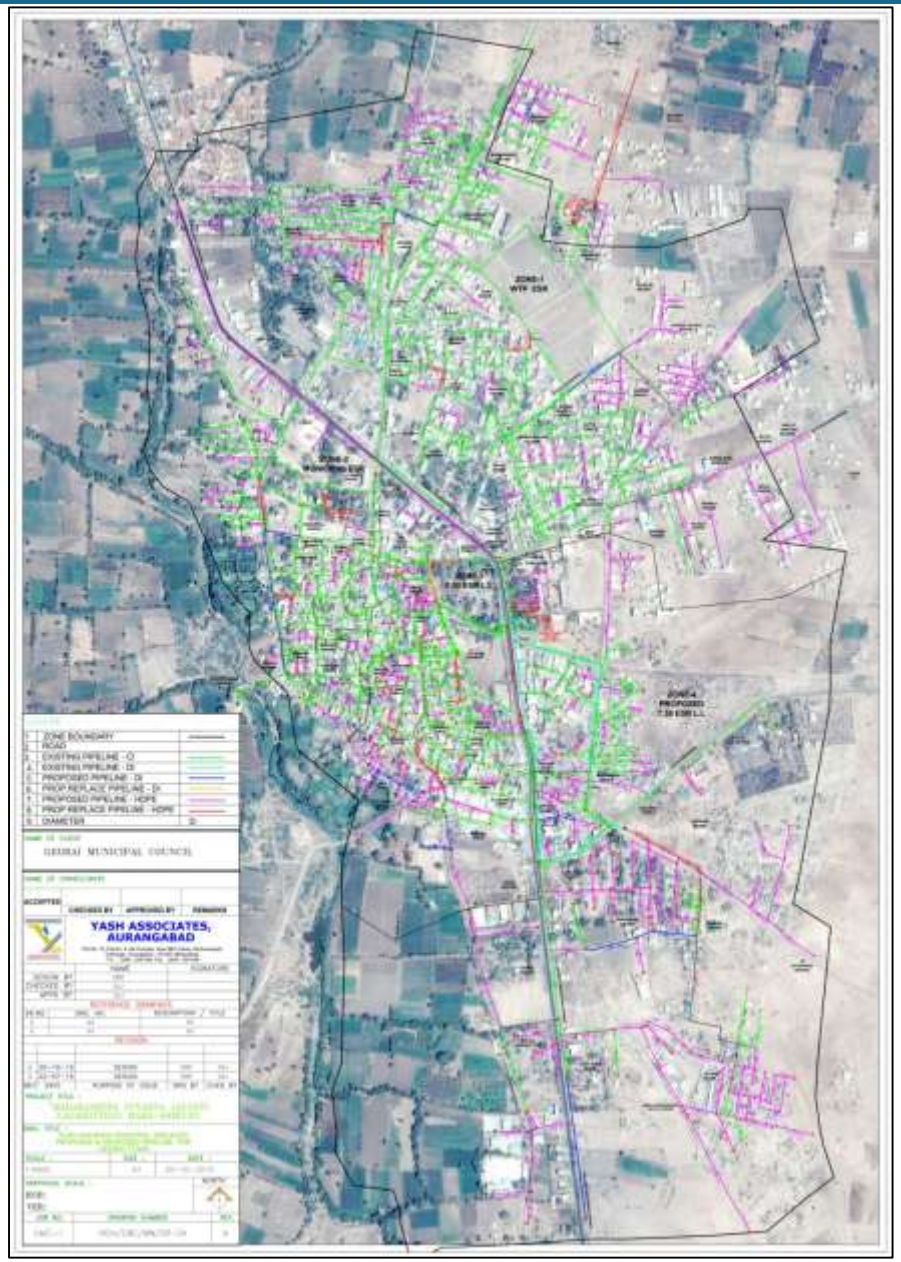
- Main source of water is **Godawari river** which is 11 km from Georai.
- There is Bandhara (dam) on bank of river Godawari and water is purchased and pumped from this Bandhara (dam) for Georai. Bandhara is 30-35 years old.
- No ground water supply.
- Water is treated at treatment plant in Georai which has capacity of **8.5 MLD**
- There is **45 Minutes alternate day** water supply. (SLB data 2017)
- **Extent of non- revenue water in 2016-17 (SLB Data): 9.95%**

(SLB data 2017)

Water supply lines map

- **85 % of HHs** have water supply connections.
- All slum settlements have internal water supply network.
- 75 new water connections were given in slums in last year.

- New Water connection costs - Rs. 1250
- Water charges
  - Residential- Rs 130/ month
  - Commercial- Rs 260/month
  - Industrial- Rs 520/month



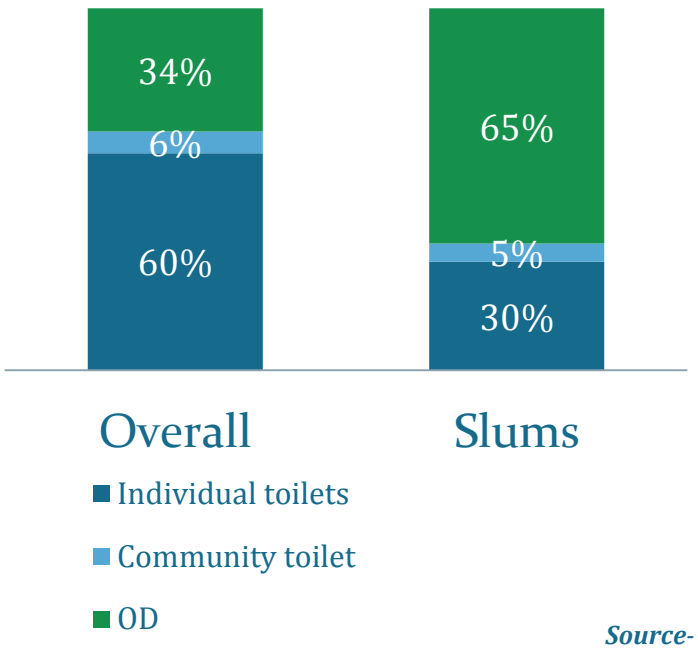
Existing lines

Newly proposed lines

2. Current Sanitation Situation:
Access to Toilet

Access to Toilets

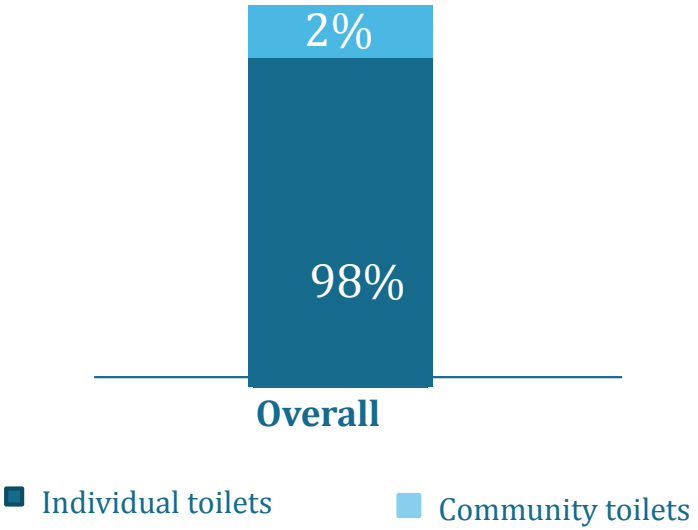
Access to types of sanitation facility (2011)



Source- *Census 2011*

	Total HH	HH with Individual toilet	HH depends on CT	OD
Overall	6291	3759	372	2160
Slum	1839	555	97	1187

Access to types of sanitation facility (2017)



Source- *Field visit (2017)*

Total HH	HH with Individual toilet	HH depend on CT	OD
6396	6296	100	0

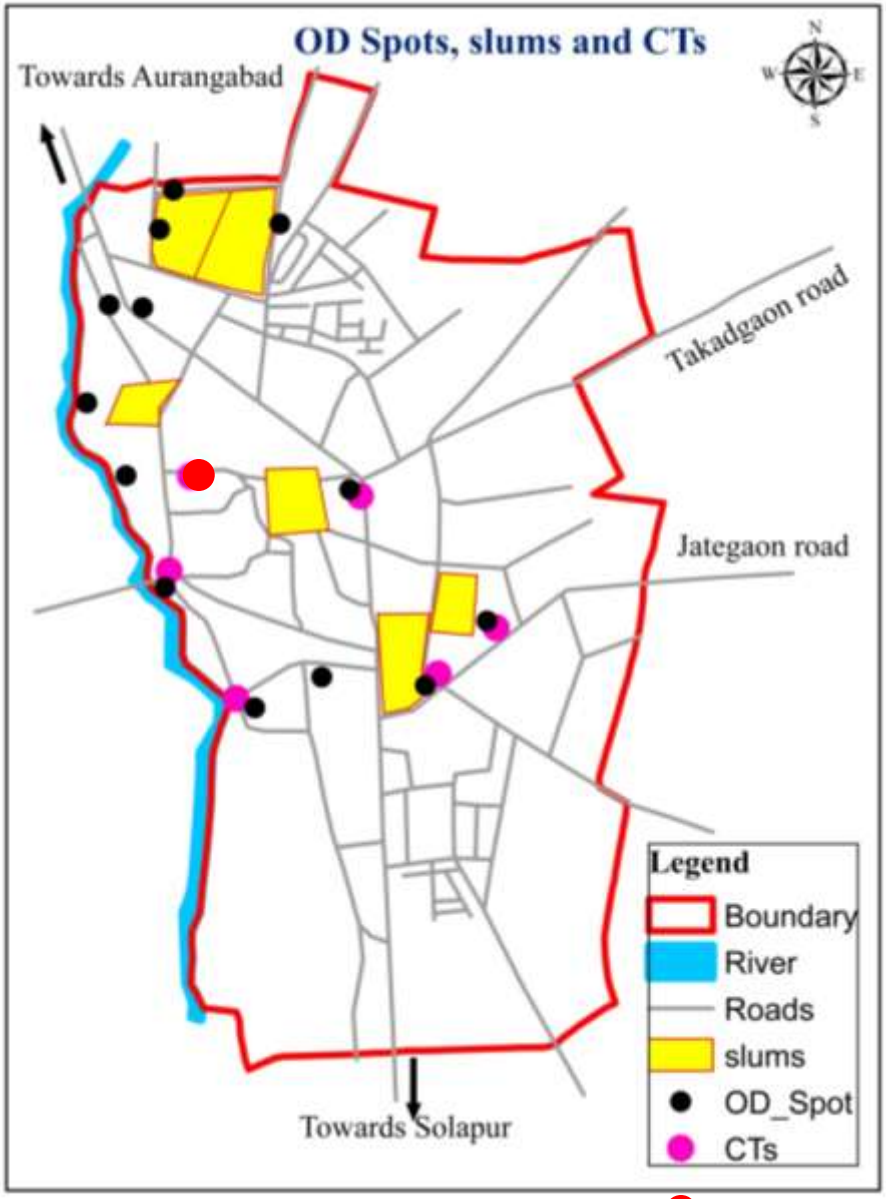
Source- *Field visit (2017)*

Community Toilets

Total CT	5
PT	1
Total seats (CT+PT)	78
Functional seats	78
Dependency per seat	2 HHs

Source- QCI report – 2017

- All community toilets are located in slum and slum like areas and are **7-8 years old.**
- CT`s have common water tanks. Tap for individual toilet seat absent.
- Cleaning frequency of the septic tanks of the CT and PT are after 2-3 months.
- All CTs/PT**are free to use** and maintained by ULB where they have appointed workers to clean CT .They clean toilet twice in a day.



Community Toilets

Bazartal PT

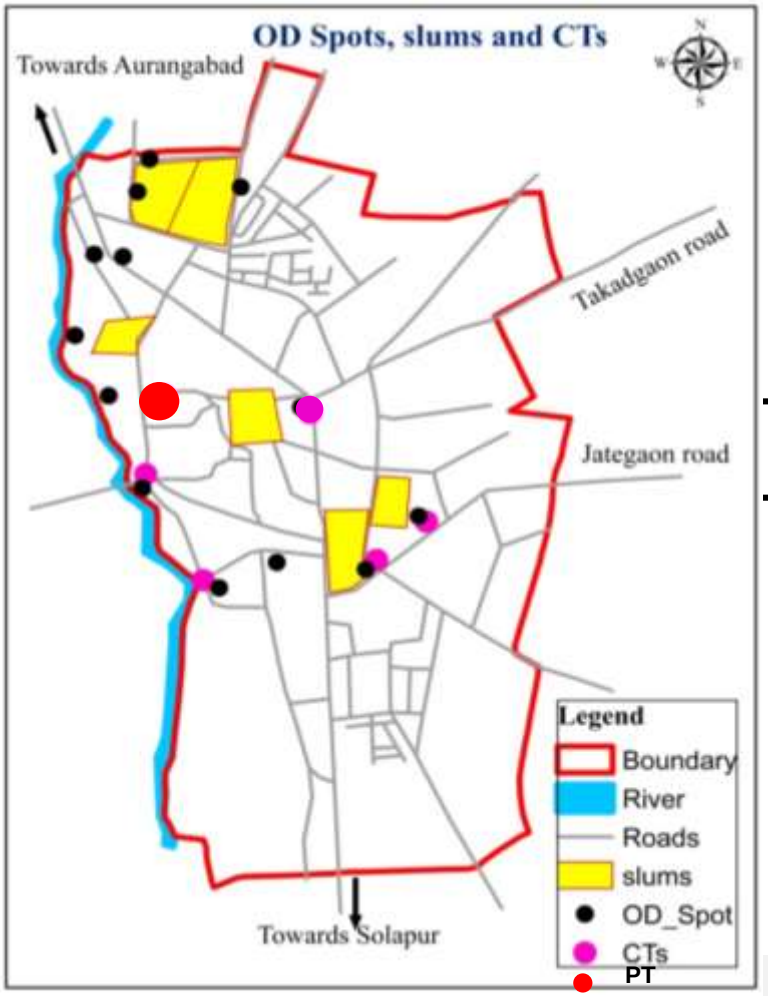
Total seats – 20 seats
Septic tank size – 8 x 6 x 6 feet
Septic tank location -Outside the toilet

Chintamani Road CT

Total seats – 8 seats
Septic tank size – 8 x 5 x 6 (feet)
Septic tank location - Outside (Back side of the toilet)

Korbugalli CT

Total seats – 13 seats
Septic tank size – 8 x 5 x 6 feet
Septic tank location - Outside the toilet



Bhimnagar CT

Total seats – 13 seats
Septic tank size – 8 x 4 x 6 feet
Septic tank location - Outside (In front of the toilet)

Sathenagar CT

Total seats – 14 seats
Septic tank size – Circular precast
Septic tank location -Outside the toilet

Sathenagar CT

Total seats – 10 seats
Septic tank size – 6 x 3 x 5 feet
Septic tank location - Outside (Left side of the toilet)

OD Spots and Efforts for ODF Sustainability

There were 13 OD Spots in the city

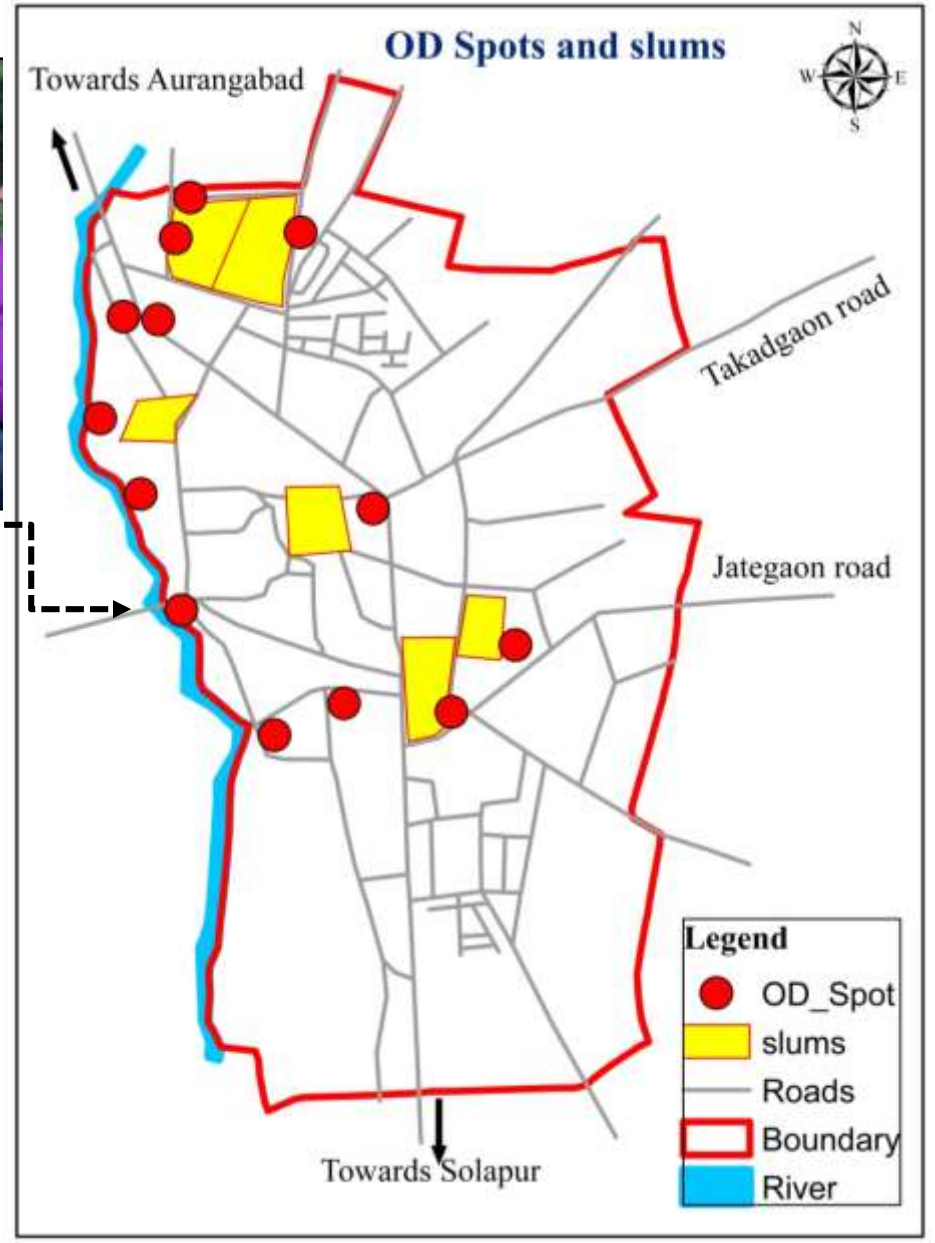
Spot along the Jategaon road

Sitting arrangement on OD spot

Spot along the highway 211

Spot along the internal road

- One OD spot got converted and trees, benches have been provided.
- **Proposal is being made** for conversion of OD spot to a garden along Jategaon road .
- Funding for that proposal will be through ULB fund.



Swachh Bharat Mission (SBM) Status

SBM Status for IHHL

Target - 2229 **Revised Target – 2359**

	Application received	Verified	Approved	Rejected	Constructed toilet	Commenced toilet
Online (28/3/2018)	3453	2272	2272	1180	2067	2
Offline (28/3/2018)	3380	3168	2257	2	**2078**	179

93 % Toilets Constructed

Tentative cost for toilet construction – 30000 Rs

Fund Utilization for SBM

Funds	Received (In Crore)	Utilized	Utilized for	Available	Planning to use available fund
14 Finance Commission	3.77	100 %	Solid waste management ,SBM ULB share ,Water supply pending light bill, Government loan ,development scheme ULB share ,Water tax pending bill.	0%	Solid waste management , water tax pending bill , water supply pending light bill,
SBM	0.34	100%	Toilet construction	0%	Second installment to beneficiaries

Source – *Field visit (2017)*

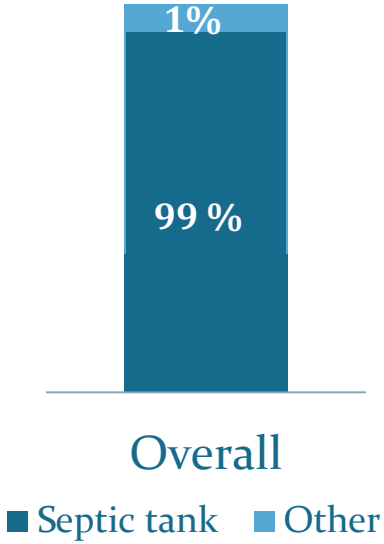
Effort for ODF Sustainability

- **Banners** for ODF sustainability.
- **Rallies** for awareness generation conducted in schools
- **Corner meetings of NGOs and SHGs** conducted to facilitate disbursement of toilet loans to SHG members.
- **Focus lights** on OD spots
- **400 Rs Penalty** for open defecation
- **Good Morning Pathak** by ward Representatives, local mandals ,SHG, NGO, employee of the sanitary department of the municipal council.
- Municipal council **felicitated the persons** who helped to sustain ODF status with certificate by MLA on occasion.
- Council has appointed some people to keep watch on OD spots.

2. Current Sanitation Situation: Collection

Collection of Septage

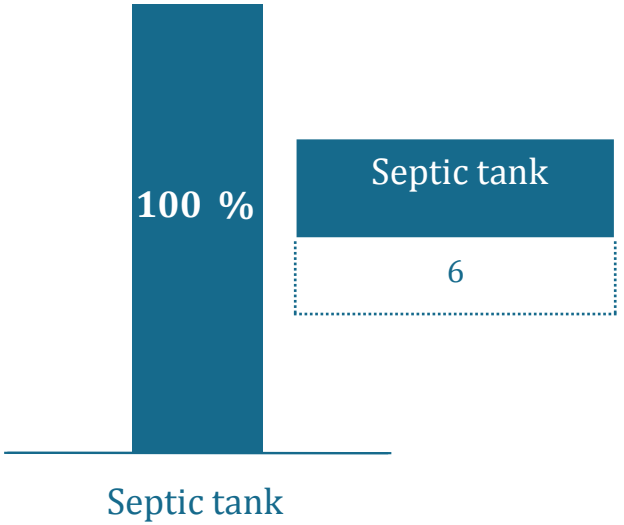
Collection systems of individual toilets



Septic tank	Other(Pit latrine)
6234	62

- Most individual toilets are **connected to septic tanks.**
- Almost all septic tanks are connected to open drains and very few connected to soak pits.
- Septic tanks usually have **3 chambers and most are placed outside the toilets, very few placed under the toilets** making access difficult.

Collection systems of CT and PT



- All CT and PT are connected to the septic tanks.

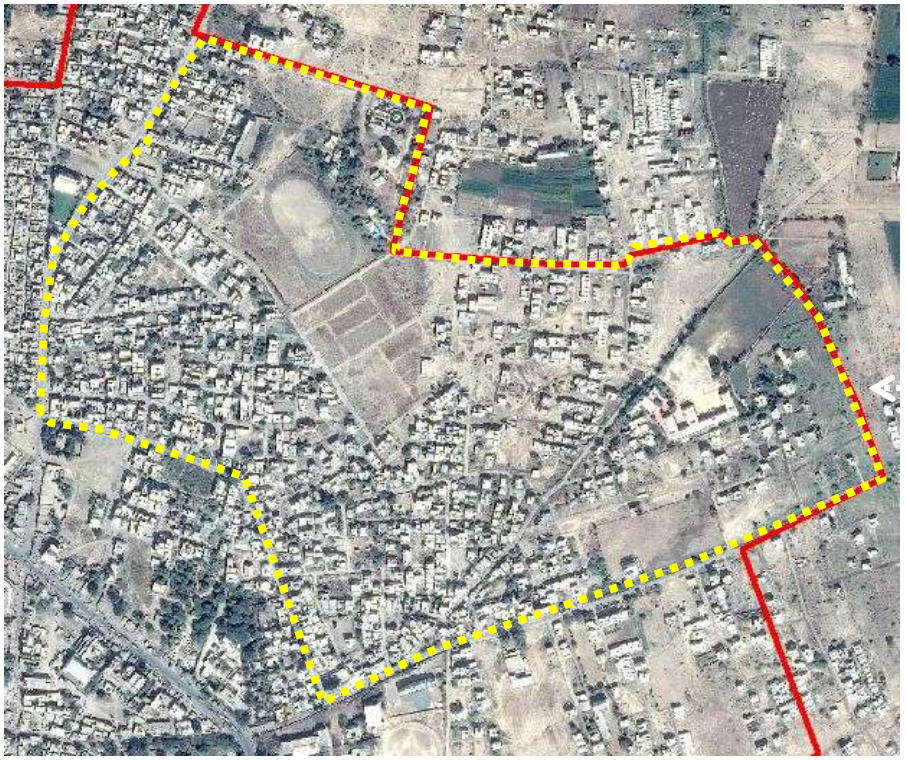
Source- *Field visit (2017)*

Septic Tank Assessment-Sanjaynagar slum

- Septic tanks connected to individual toilets are **mostly of circular precast but** rectangular septic tanks also present.
- Size - **8 feet long with 4 feet diameter.**
- Approx emptying cycle is 7-8 years

- The septic tanks are generally built below the toilet.

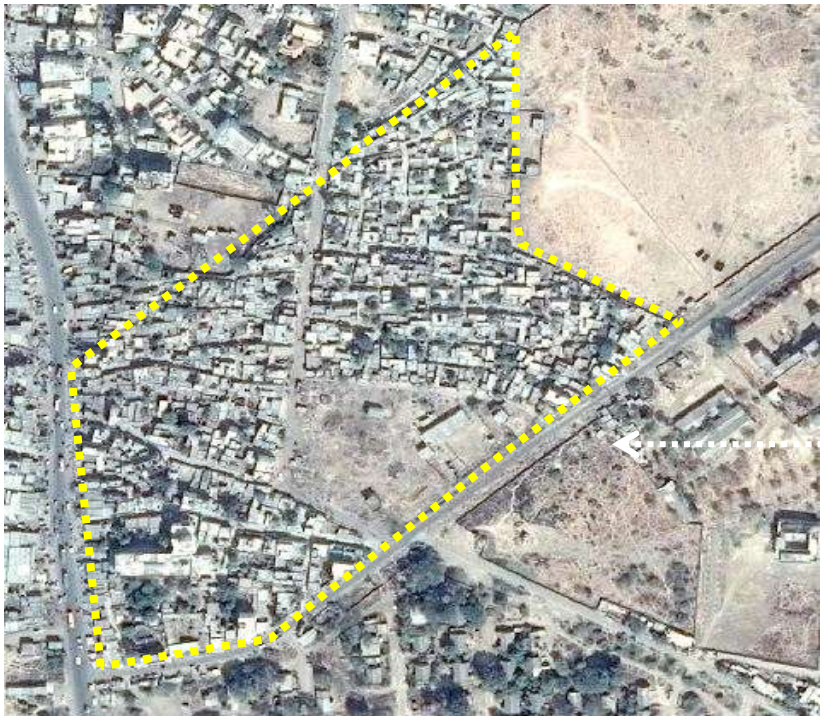
Septic Tank Assessment-Bungalow type area



Bungalow type area.

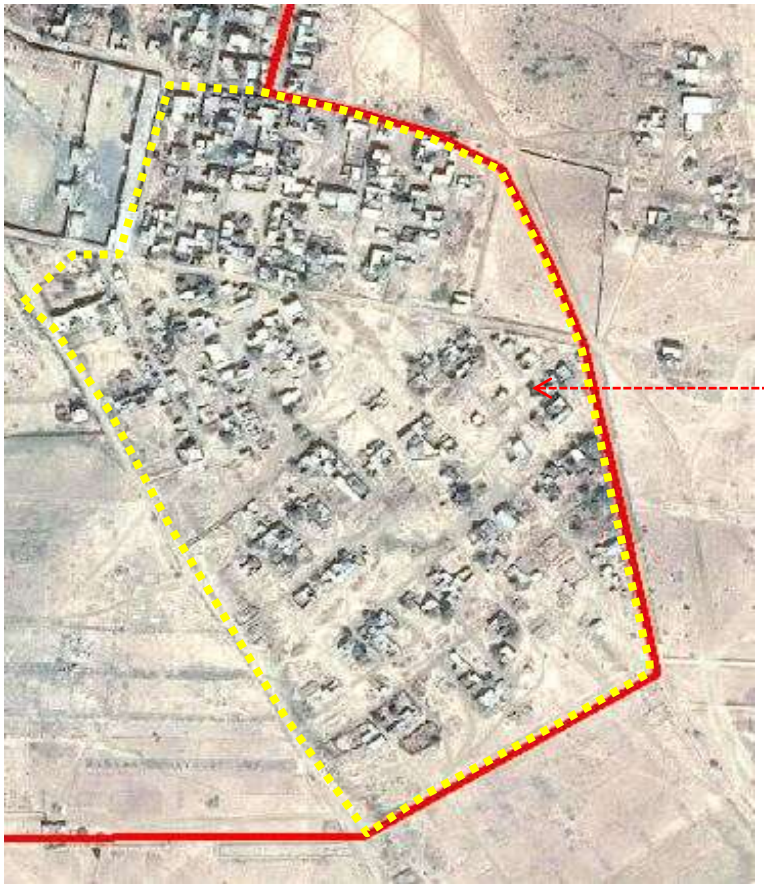
- A sample survey of 10/15 random households in bungalow typological area found that septic tanks connected to individual toilets are **rectangular tanks .**
- In bungalow typology area septic tank get emptied after 15 to 20 years
- In such areas size of the rectangular septic tank is varying which 12’ x 5’ x 10’ , 7`x 6`x 6` and 8`x 4`x 10` .
- Generally location of the septic tank is outside the toilet.
- All septic tanks are connected to the open drains.

Septic Tank Assessment-Sathenagar slum



- Pre cast rectangular and circular septic tanks observed in this area.
- Size : 8 feet long and 4 feet diameter
- 3 chambered
- Located generally outside of the toilet.
- Size of the rectangular septic tank – 7 x 5 x 6 feet.
- All septic tanks are connected to open drains.

Septic Tank Assessment – Tayyabnagar area

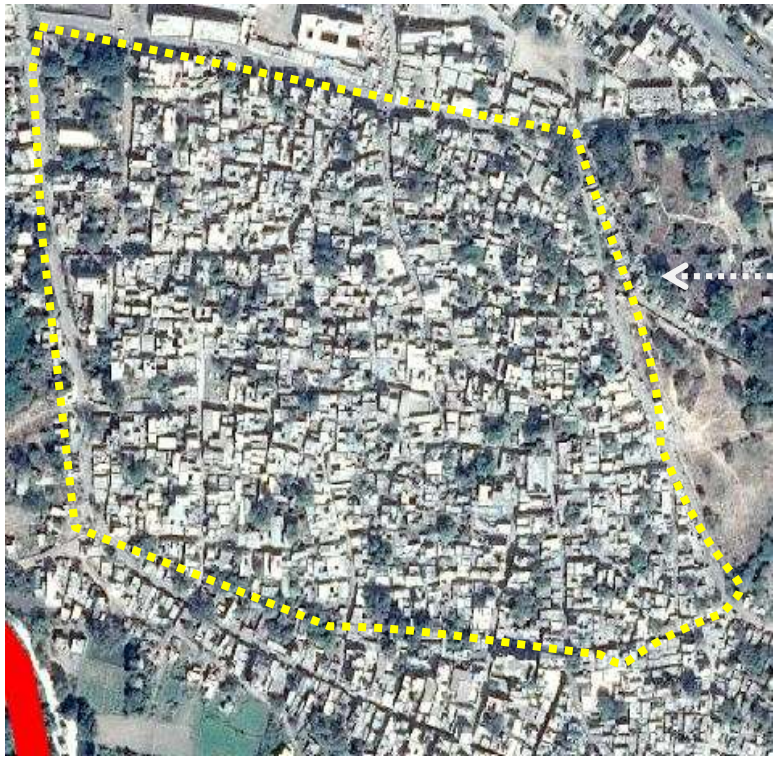


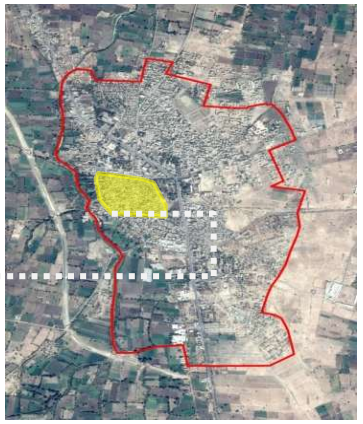
- Septic tanks are rectangular in the tayabbnagar area
- Size: 7 x 6 x 6 feet (long x wide x depth)
- 3 chambered
- Located below the toilets.
- All septic tanks are connected to temporary drains.

Septic Tank Assessment- Korbugalli area

- A sample survey of 7/8 random households in slum like area like Korbugalli found that septic tanks connected to individual toilets are **rectangular tanks as well as circular precast** having normal **size 6`x 6`x 5`**
- **Location –** Outside as well as below of the toilet.
- Septic tanks are connected to the open drains.
- **Frequency** of cleaning septic tanks is approx. **7- 8 years**

Septic Tank Assessment – Mixed use area





- Septic tanks in this area is rectangular as well as circular precast.
- Size of the precast in this area is big 10 feet long and 4 feet diameter.
- Size of the rectangular precast is 7 x 6 x 6 feet.
- Septic tanks are connected to the open drain.
- Location – Below as well as outside of the toilet.

Septic Tank Assessment – Islampura slum

Islampura slum

- In Islampura slum area the septic tanks are circular precast as well as rectangular tanks also.
- Size of the circular precast - 8 feet long and 4 feet diameter.
- Location – Generally below.
- Septic tanks are connected to the – Open drains.
- Size of the rectangular septic tank – 6 x 5 x 5 feet

Septic tanks in different areas of the city

Circular precast septic tanks

Septic tanks are below the toilets and don't have access

Inaccessible septic tanks with sealed tops

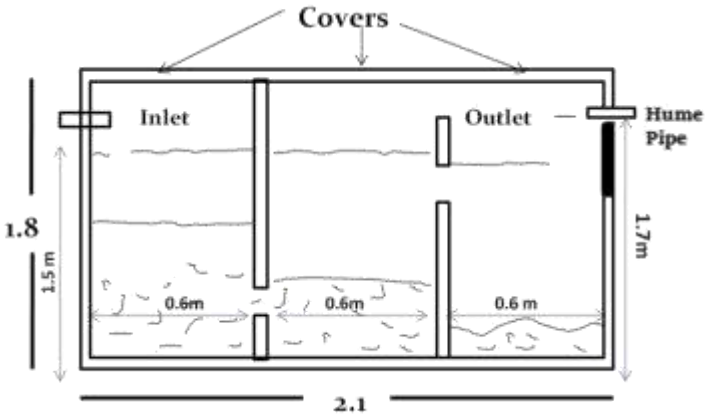
Circular precast septic tank

3 chamber with 2 opening precast septic tank

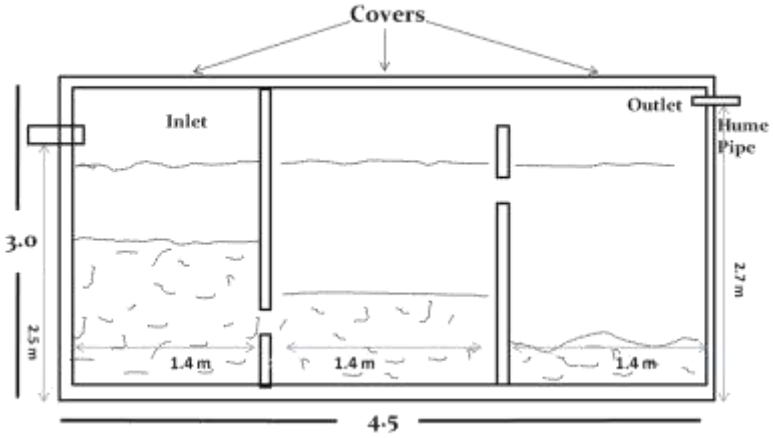
Oversized septic tank in bungalow

Summary – Septic tank assessment

SEPTIC TANK AVERAGE SIZE C/S IN GEORAI

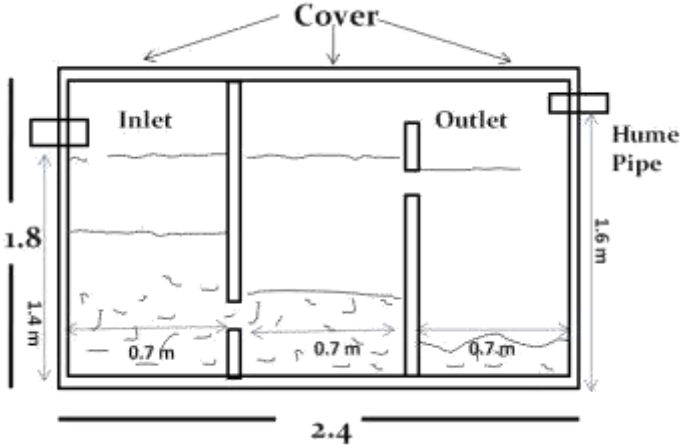


Average Size of Septic Tank for HHs in Georai – 2.1 x 1.8 x 1.8



Average Size of Septic Tank for Apartments in Georai – 4.5 x 3.6 x 3.0 m

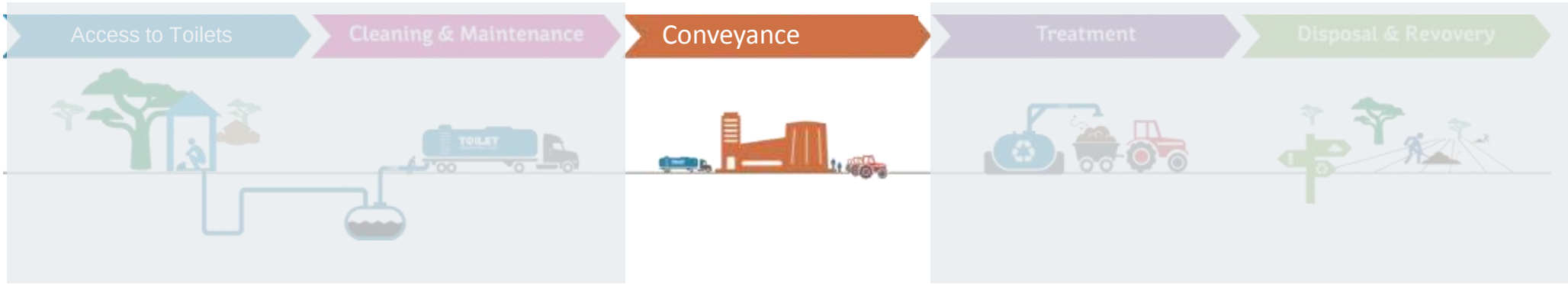
- There are about 4-5 percent circular precast septic tanks.
- Circular precast septic tank is – 3 chambered.



Average Size of Septic tank for CT/PT's in Georai– 2.4 x 1.5x 1.8 m

- Location of the septic tank is outside of the toilet in bungalow type areas.
- People empty septic tank in bungalow type area after 15-20 years later.
- Almost all septic tanks are connected to the open drains.
- Location of the septic tank is generally below of the toilet in slum areas.

2. Current Sanitation Situation: Conveyance



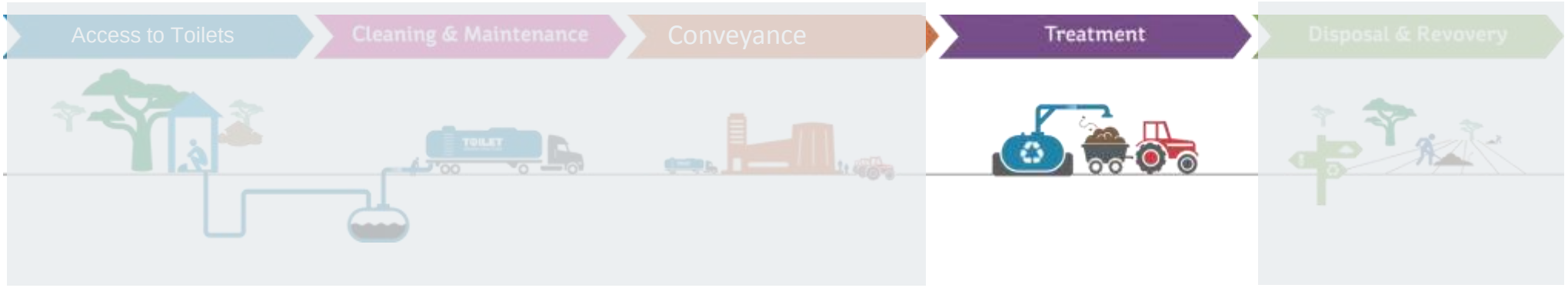
Septage Conveyance

Entities	Data
ULB Owned Vaccum Emptier (size and no.)	1 truck, 3000 litre capacity
Private Owned Vaccum Emptier (size and no.)	0
Cleaning charges	Rs. 1500 per trip Rs. 2300 outside city limit
% of septic tanks cleaned annually	0.6% **(3 in one month)**
Cleaning frequency of CT/PT toilet blocks (in current situation)	Once in 2-3 months

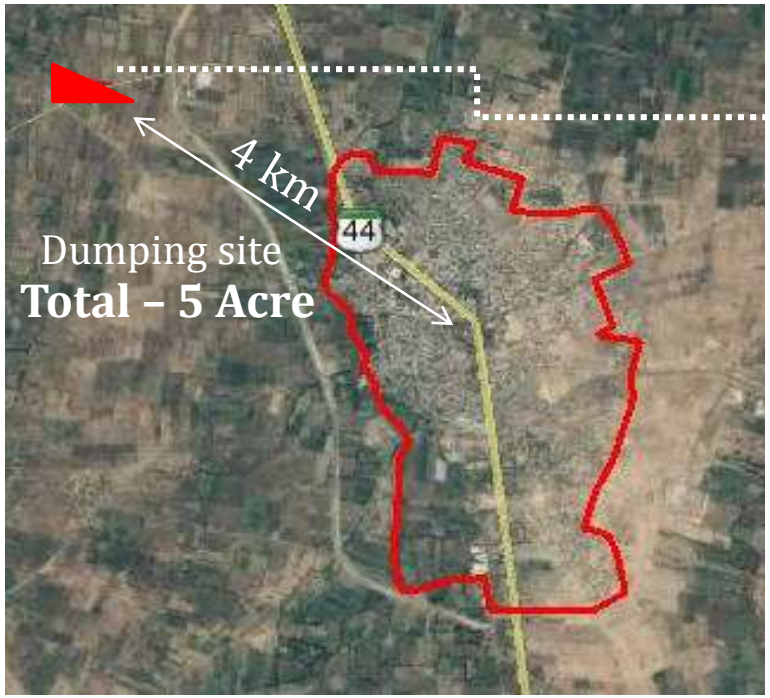
- There is no regulated schedule for cleaning tanks, and households call the ULB when the septic tanks are filled up.
- All roads are accessible by vehicles.

There is a Proposal to buy one new suction truck of 1000 lit capacity.

2. Current Sanitation Situation: Disposal



Septage Disposal



Currently septage is disposed on the SWM dumpsite without treatment

Disposed solid waste

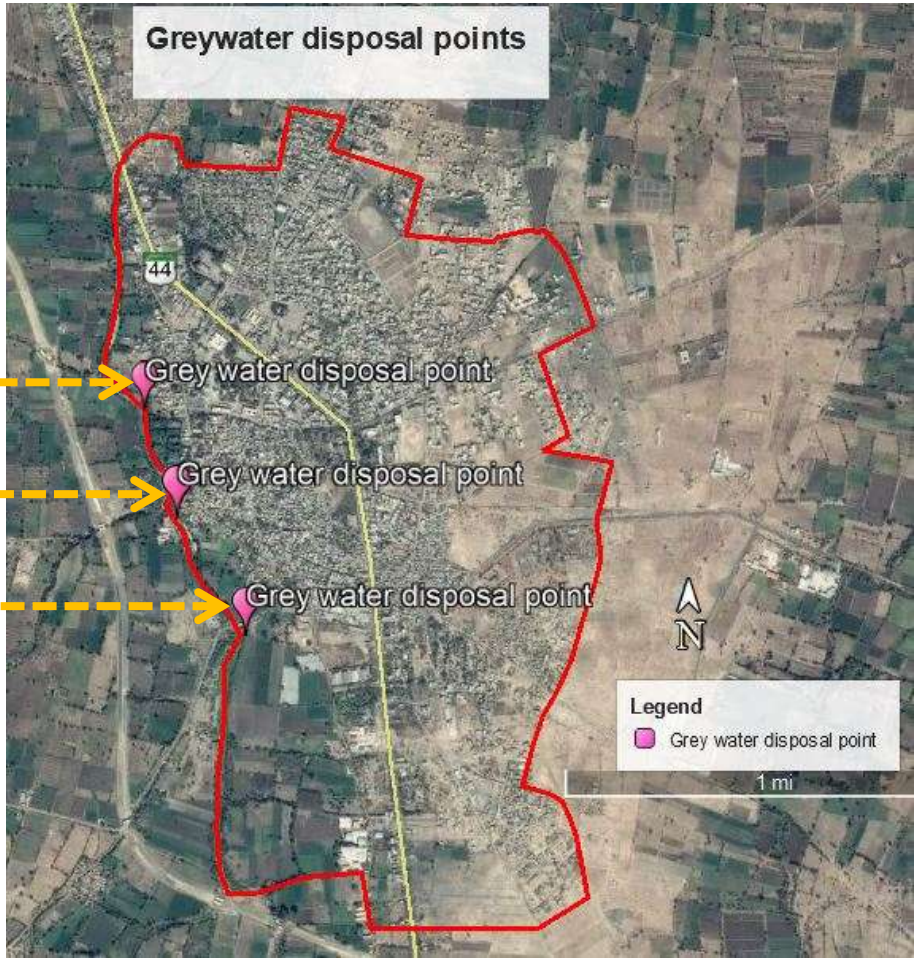
Trench in which septage is disposed

Shades under which wet solid waste is disposed

3. Grey water disposal

Grey water disposal

- At present, grey water from the city is disposed in the river at 3 different
- The major nalas meet the river at three different locations.



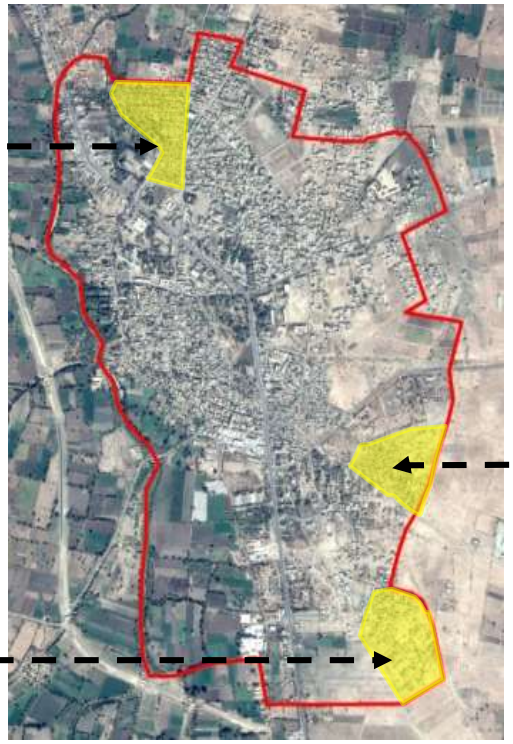
Waste water generated – 2.8 MLD

Open drains → Nalas → Vidrupa River

Lack of Drainage facility

Sanjay Nagar Slums

- Drains are blocked at some points..
- These drains are not enough deep .
- At many points people have made digging as drains.
- At some points these drains are very narrow.



This area is present in electoral ward number 9

Tayyab nagar area doesn't have drainage facility.

Tayabbnagar

- People leave waste water in front of their houses which causes waste water pots in that area.
- There will be approx. 100 HH in this area.

Jayakwadi Colony

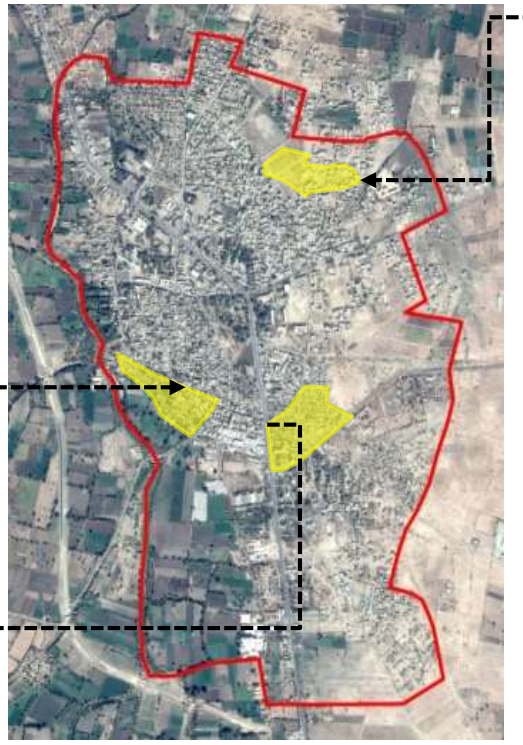
- This area is being developed from last 10 years yet it doesn't have drainage network also has water supply problem.
- People get water after 10 to 15 days.
- There are 200-250 households present in this area.
- 30 – 40 households have bore wells.

Lack of Drainage facility

Korbugalli

- Open drains in this area are mostly dumped with solid waste particles.
- That makes blocking of the flow of waste water, during monsoon, this area is clogged with waste.
- These drains don't have enough depth.

- At many places solid waste makes obstacles in the flow of waste water.



Sathenagar Slum

- In this area at one place black water from community septic tank is directly left into open drains.
- This does not flow properly through drains that causes very unhygienic condition.

Colony area

- Open drains in this area are blocked at 2-3 points while at other points waste water is slowly flowing.
- Open drains are not cleaned, they is always some solid waste material dumped into it.

Summary

- **Open drainage coverage : 79 %**
- No closed drains.
- There are 2 areas where drainage facility is not available namely Achanaknagar and Tayyabnagar
- These open drains are blocked at many places because of the solid waste material dumped into it.
- In slum areas ,many households made temporary drains to flow their waste water till main drainage line which passes from their property.
- At many places this drains are very narrow.

4. Solid Waste Management

Solid waste management

Since last 10 years, collection of solid waste is done by a private player for ULB

Daily Door to Door collection

↓

All waste gets collected at a one common point

↓

Transport to dumping site

↓

Dump on dumping site

- Segregation of the waste is done **at source**
- Capacity of the solid waste transport tempo : **2 ton**
- Council pays Rs 2.33 lakh to the contractor per month
- Contract given to private operator for daily door to door solid waste collection and it collects all waste at a one common point in the city.
- Council transports the collected waste to the dumping site.

Household level coverage of solid waste management services- 88%
Efficiency of collection of municipal solid waste- 98%

Extent of segregation of municipal solid waste- 11%
Extent of municipal solid waste recovered- 3%

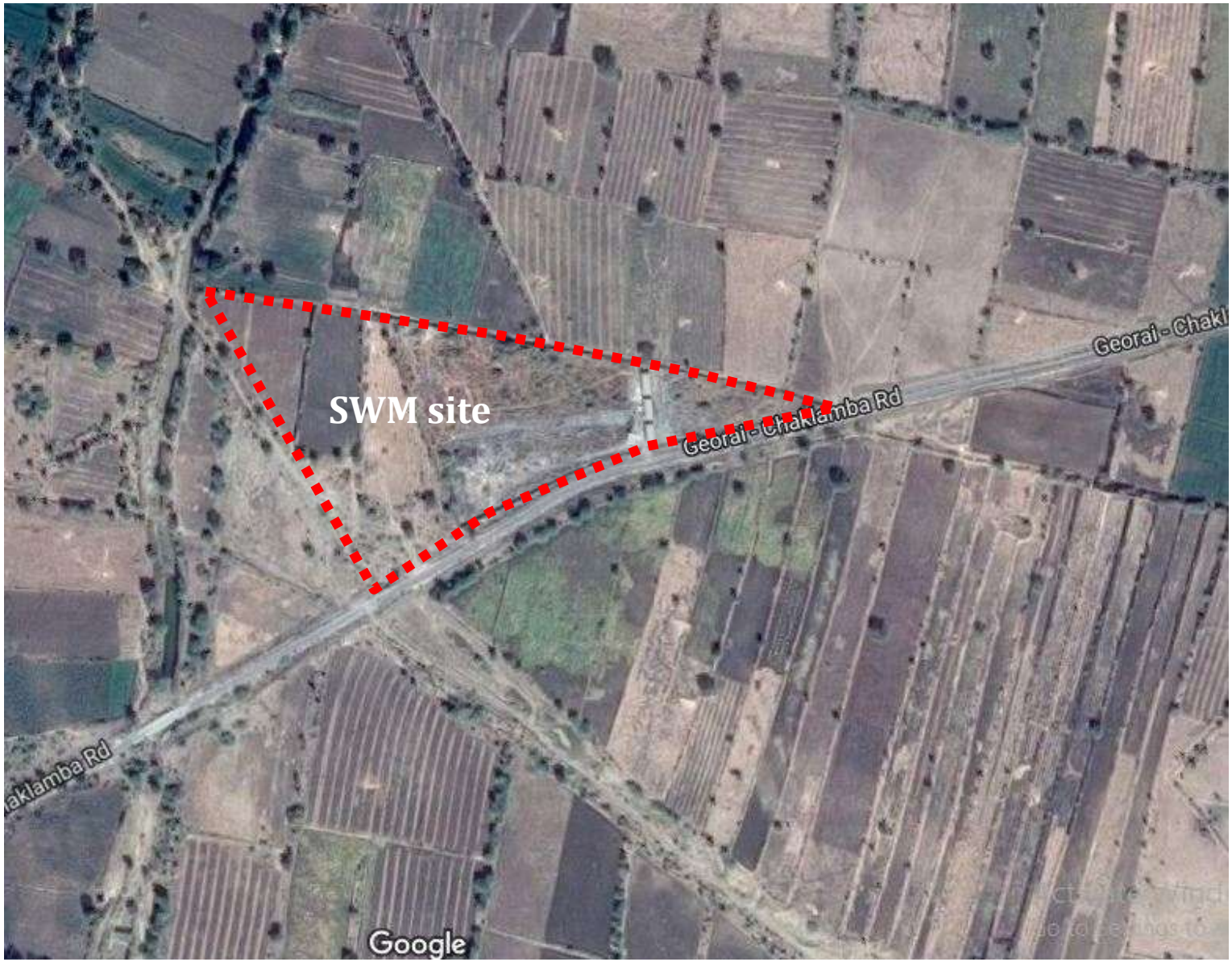
Total **18** waste collection vehicles

Sample of Ghantagaadi


Tempo 407


Tractor mounted trolley

Landuse Around SWM and Septage Site



Land use around the dumping site is total agricultural area.

SWM site

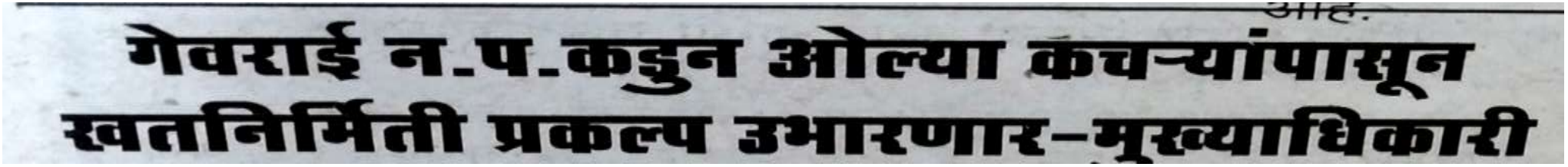
SWM – Ongoing project

Project – To make manure from solid waste.

There are total 56 pits for composting and daily around 3-3.5 tons of wet waste comes for composting.

Solid waste generation : 10 ton /day

This project is funded through 14 Finance Commission funds.



5. Ongoing Projects and Proposals

Ongoing Projects and Proposals

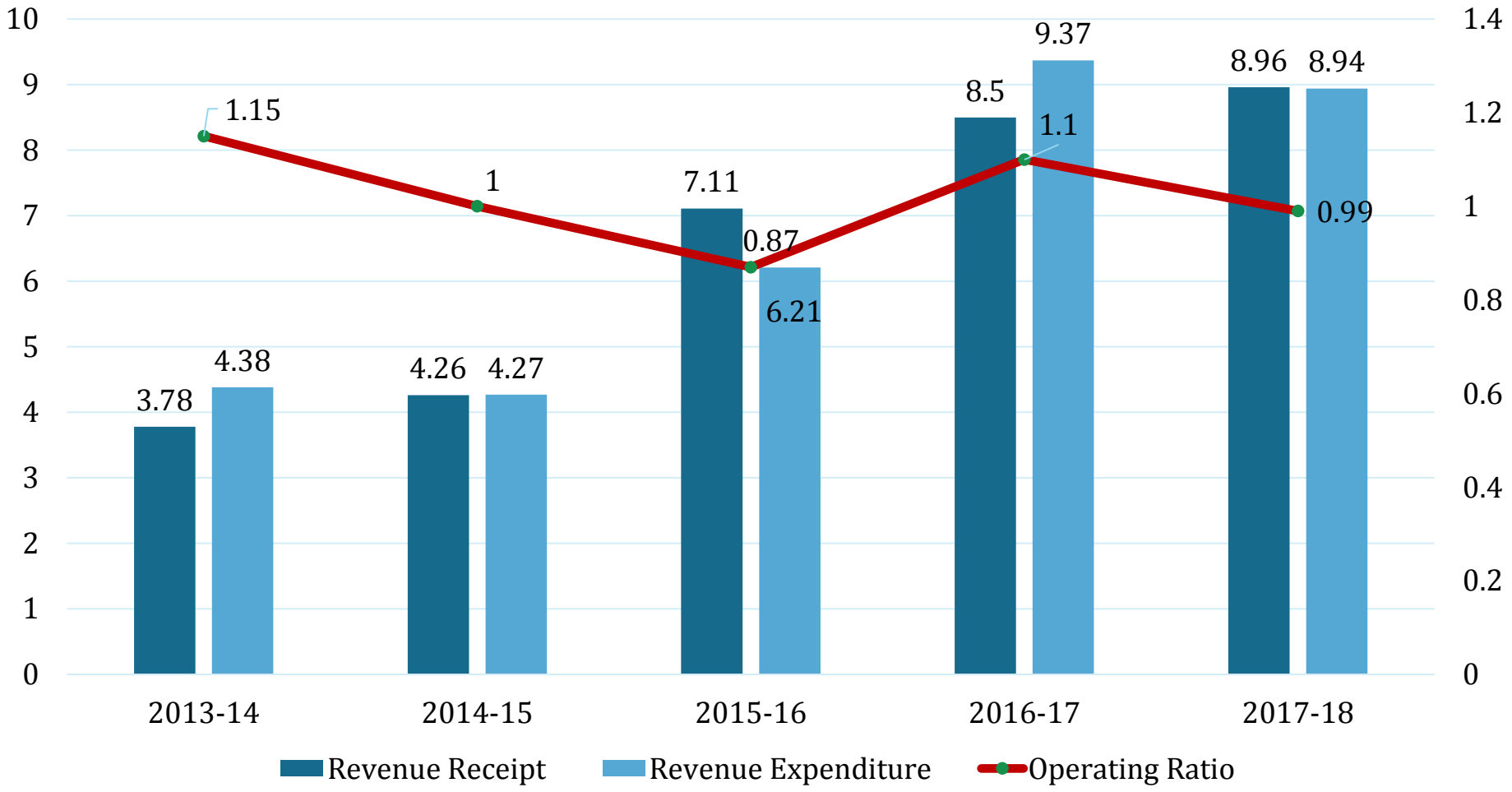
Sr. No.	Proposal	Fund raising	Current Status
1	Proposal to buy one new suction truck of 1000 lit capacity.	Nagar parishad fund	At the proposal stage
2	Provision of STP with underground drainage in future when water supply will be 135 LPCD.	Request to state government for funding	Due to water shortage this project is at a standstill and only at the proposed level.
3	Proposal to provide garden on one OD spot along Jategaon road .	Nagar parishad fund	At the proposal stage
4	Ongoing project of Underground water supply and distribution pipe lines around 15 km	Nagarotthan	Almost 80% work has been done, rest 20% will be completed in next three months.

6. Finance

Georai Budget

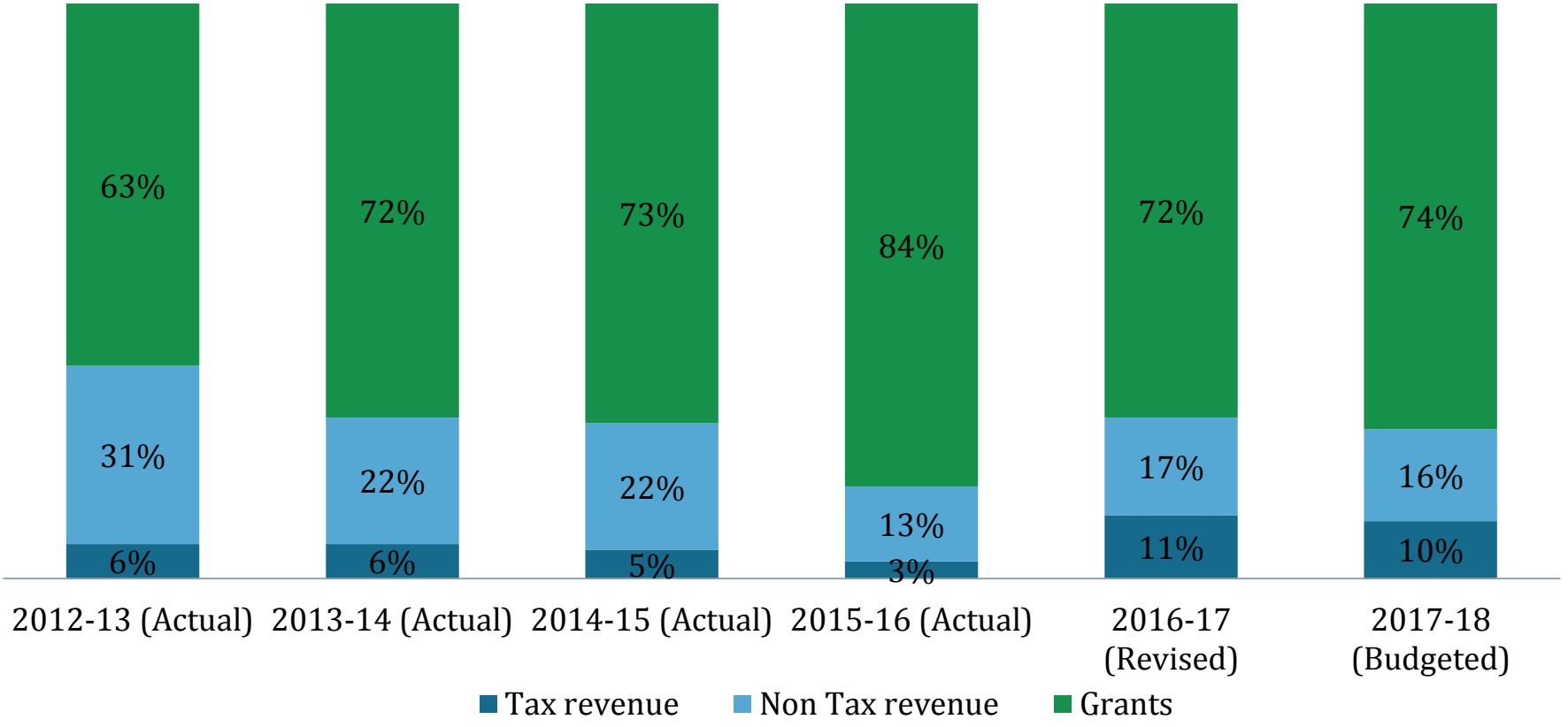
Georai Budget					
Category	2013-14	2014-15	2015-16	2016-17	2017-18
	Amount in Cr.				
Opening Balance	4.49	4.66	3.29	5.19	9.75
Revenue Account					
Revenue Receipt	3.78	4.26	7.11	8.50	8.96
Revenue Expenditure	4.38	4.27	6.21	9.37	8.94
Capital Account					
Capital Receipt	4.18	3.91	6.21	15.39	22.71
Capital Expenditure	2.99	6.11	3.06	12.76	22.38
Summary					
Total Receipt	7.96	8.17	13.32	23.89	31.67
Total Expenditure	7.37	10.38	9.27	22.13	31.32
Operating Ratio	1.15	1.00	0.87	1.10	0.99
Revenue Account Surplus	-0.6	-0.01	0.9	-0.87	0.02
Surplus/ Deficit	5.08	2.45	7.34	6.95	10.10

Revenue Expenditures are mostly parallel to Revenue Income



- Operating ratio over the years is less than and equal to 1 , except year 2016-17 and 2.13-14 ,that implies financial health is good .
- In most of the year expenditure is more than the receipts this is because payment delay of whole staff .Mostly happens that council get fund for payment in march and it is get distributed in April where financial year get changed.

Revenue receipt share



Tax revenue:

- Consolidated property tax.
- Water tax

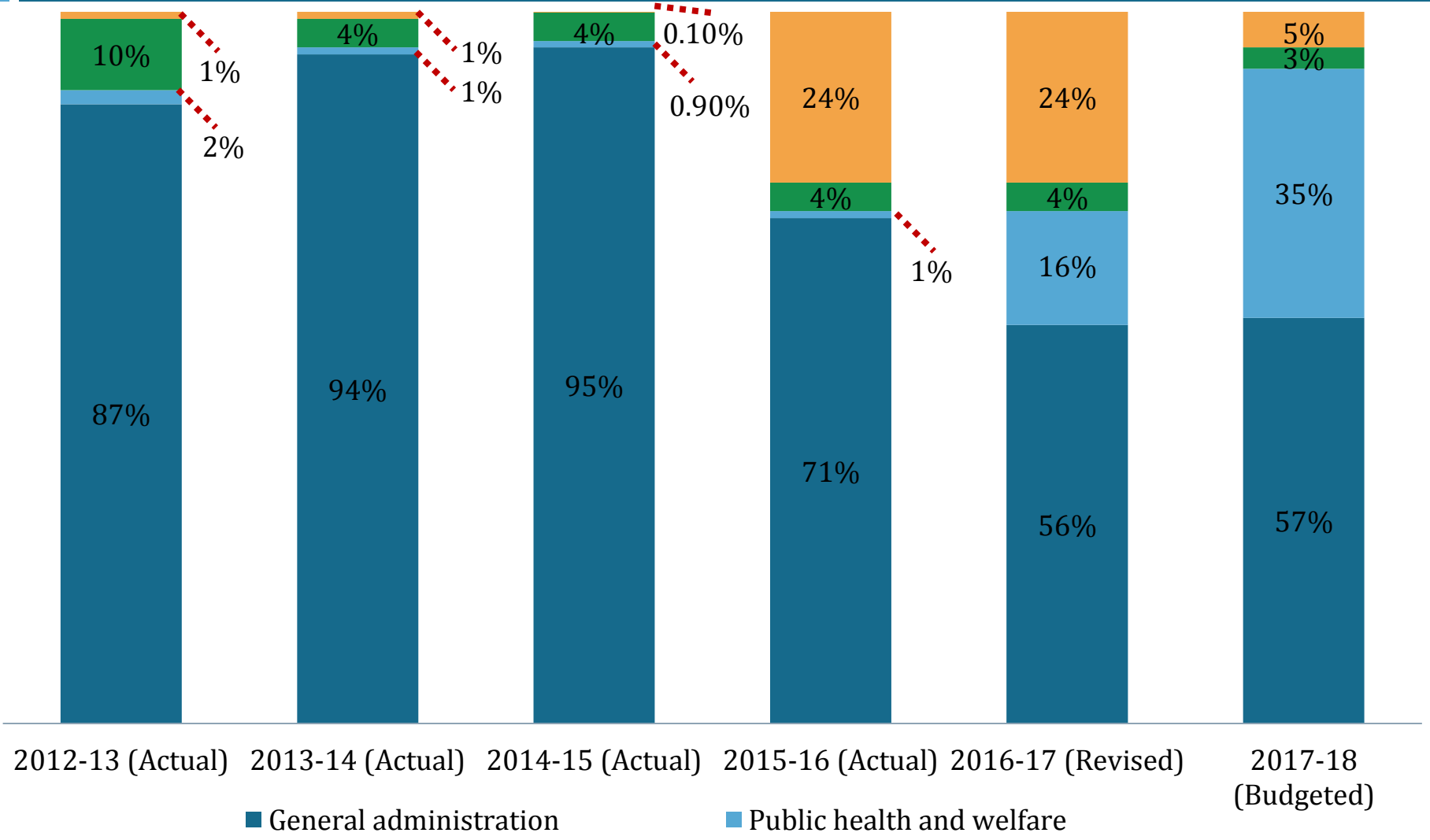
Non tax revenue

- Rental Income from municipal property .
- Fees and charges – ex. Mutation fees, development charges etc.
- Income from interest.

Grants

- Dearness allowance.
- Pay and allowance of staff.
- Maharashtra Swacchata Grant

Revenue expenditure share



- 70-80 % expenditure is on General administration.
- Over the years expenditure on public health and welfare is increasing . Which increase from 2% to 35%

Property Tax Rate

Sr. No.	Construction type	Land use type	State road(Rs. Per sq. m)	More than 9 m and 12 m road (Rs)	Less than 9 m road (Rs)
1	RCC	Residential	12	9	6
		Commercial	24	18	12
		Industrial	24	18	12
2	Dhaba	Residential	10	8	5
		Commercial	20	16	10
		Industrial	20	16	10
3	Iron sheets(Patre)	Residential	8	5	3
		Commercial	16	10	6
		Industrial	16	10	6

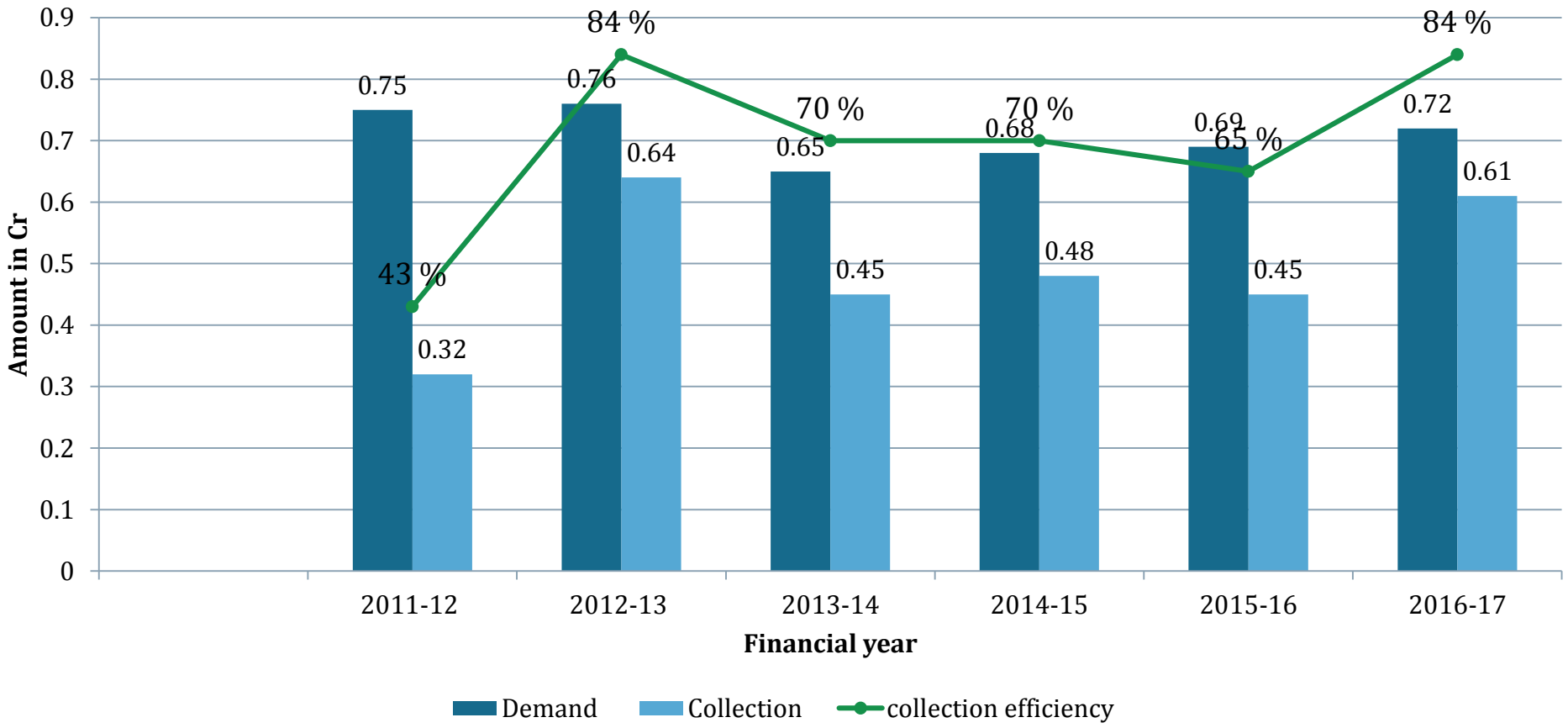
***Source**: Field visit (2017)*

Demand Collection Table(DCB)

Taxes	Year	Demand	Collection	Efficiency
All figures are in Cr.				
Property tax	2011-12	0.75	0.32	43%
	2012-13	0.76	0.64	84%
	2013-14	0.65	0.46	70%
	2014-15	0.69	0.48	70%
	2015-16	0.70	0.46	65%
	2016-17	0.73	0.61	84%
Water Tax	2011-12	1.39	0.52	37%
	2012-13	1.47	0.93	63%
	2013-14	1.28	0.77	60%
	2014-15	1.49	0.85	57%
	2015-16	1.49	0.90	60%
	2016-17	1.58	1.23	78%

Property Tax –Demand Collection

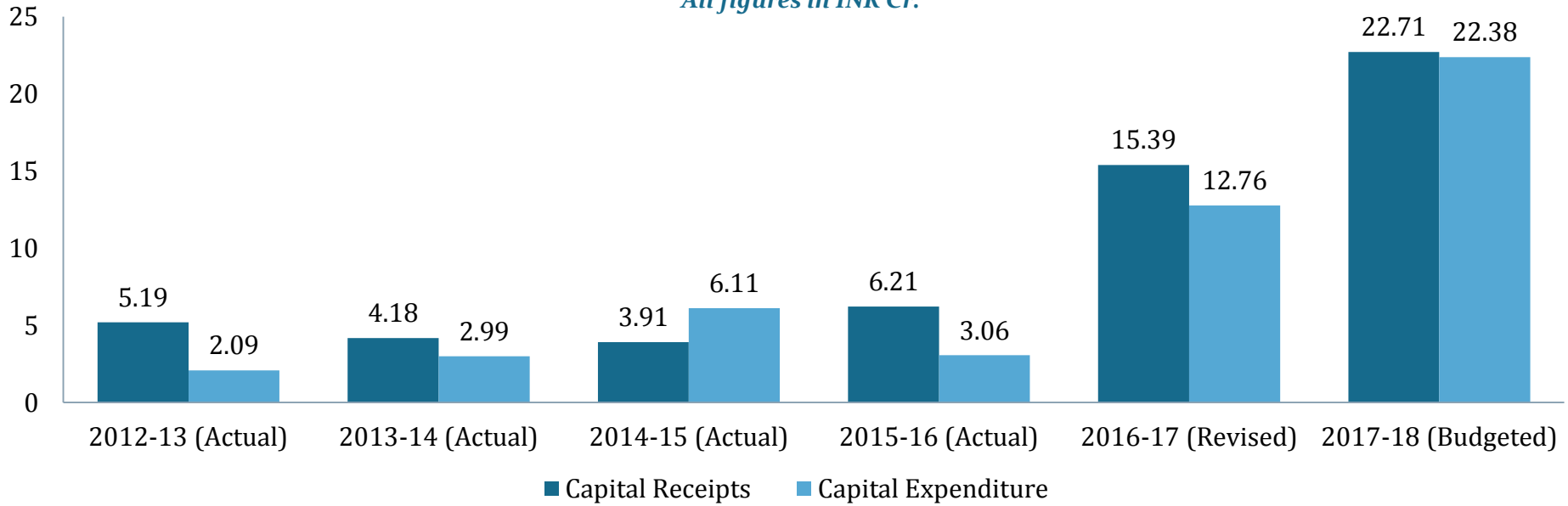
Demand- collection of property tax for last 6 years

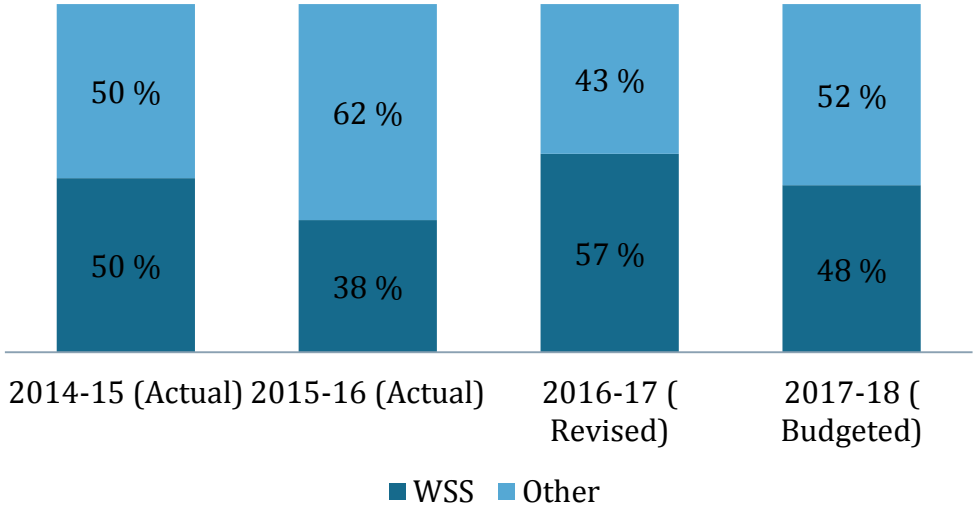


- Collection efficiency of the property tax is good which contribute 46% of the total own tax source of the ULB.

Capital Receipts & Expenditure

All figures in INR Cr.

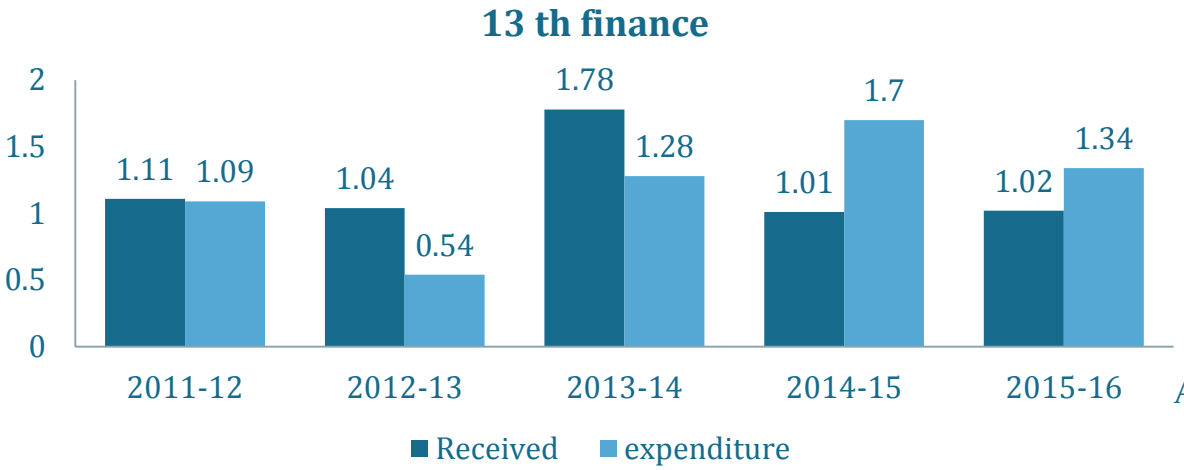




Almost around 50% expenditure is on water supply , waste water and solid waste management .

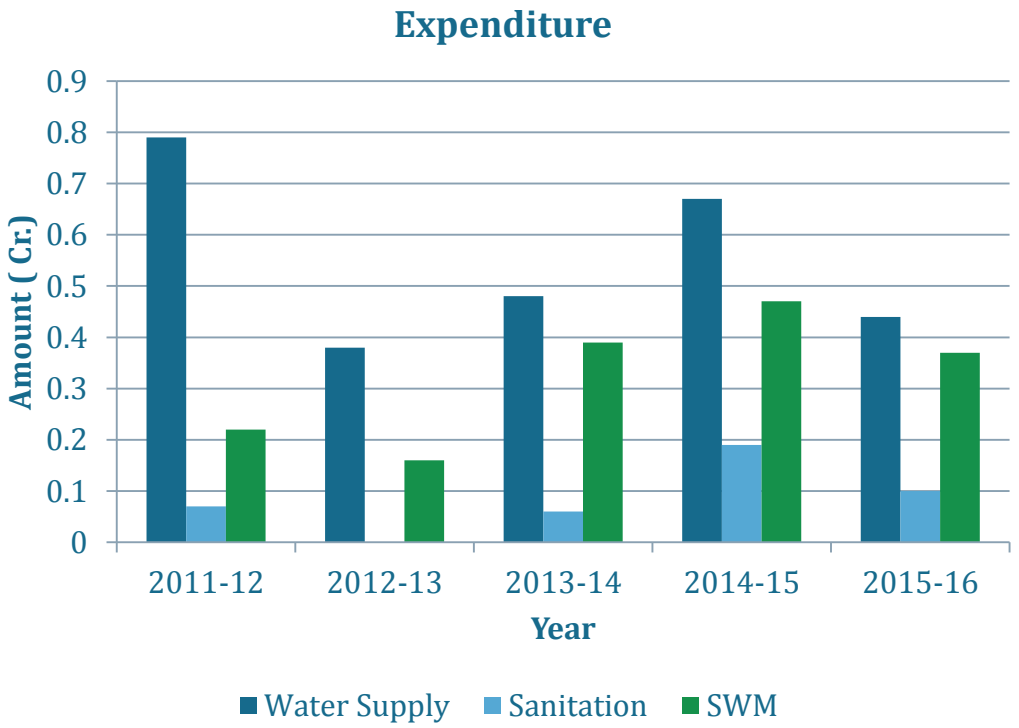
Major project recently done is expansion of the water supply lines and recently started SWM project.

13th Finance

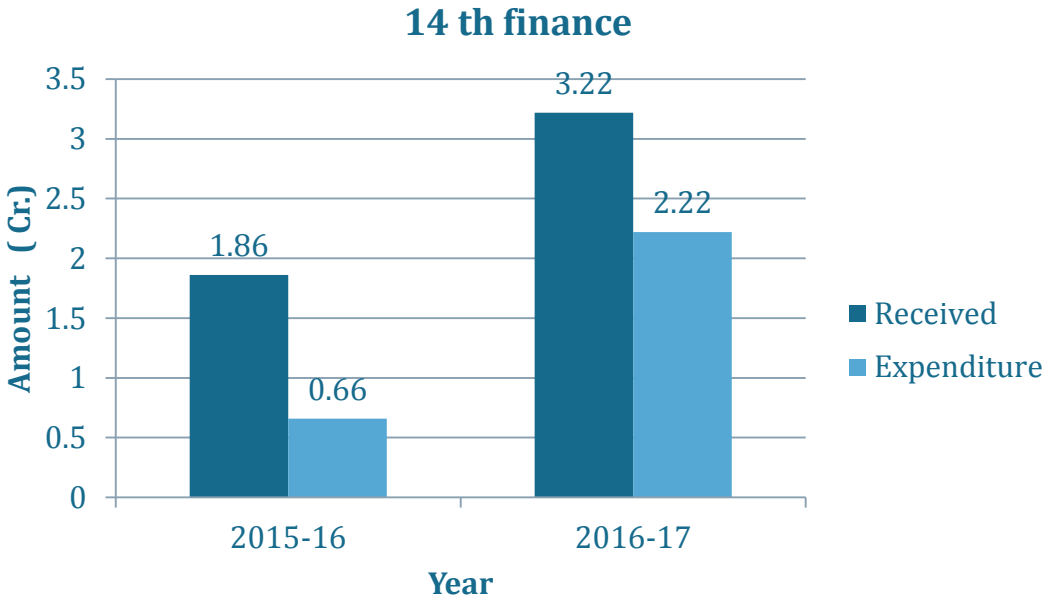


- Total amount received – Rs 5,97,27,315 ~ 5.9 crore
- Whole amount is utilized .

- Other than water supply , sanitation and SWM, this fund is also utilized for E-governance and other things.
- Under Water supply ,expenditure is for purchase of water and light bill for water supply
- Under Sanitation, expenditure is for payment of contractor for sweeping road and cleaning open drains.
- Under SWM ,expenditure is for payment of contractor for Daily door to door collection .

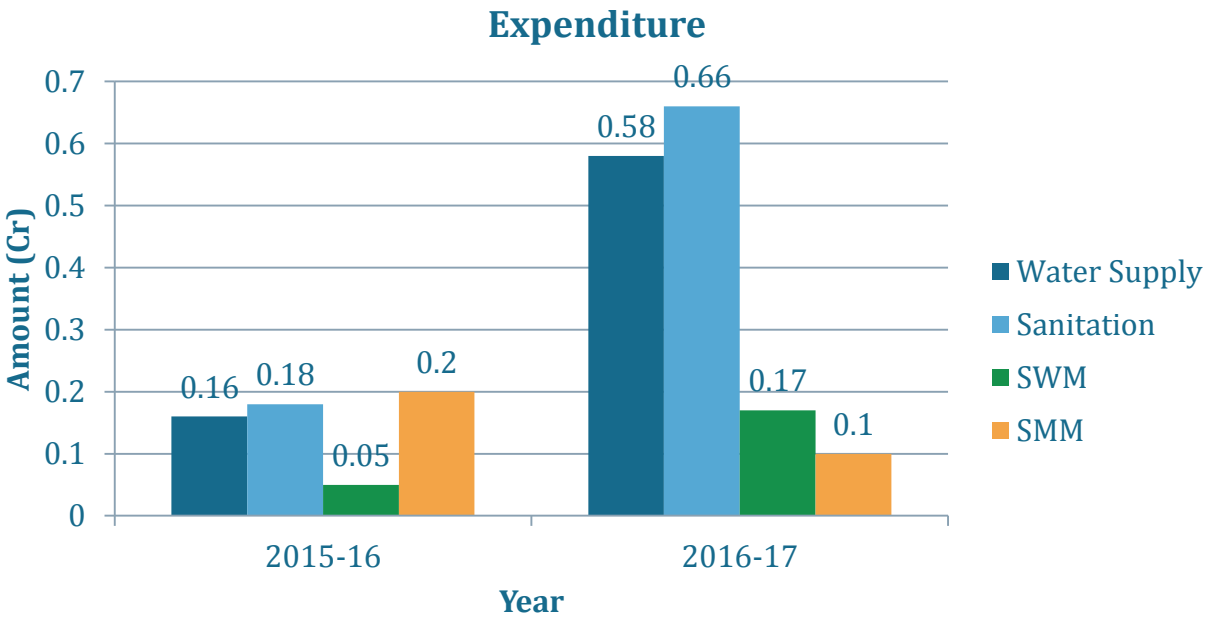


14th Finance



- Total amount received for last two years –Rs 5,08,97,204
- For year 2017-18 amount received till 31.10.2017 is Rs 1,44,52,522

- Other than water supply, sanitation and solid waste management fund is also utilized for share to the toilet construction under Swaccha Maharashtra Mission (SMM).



7. Summary of Challenges

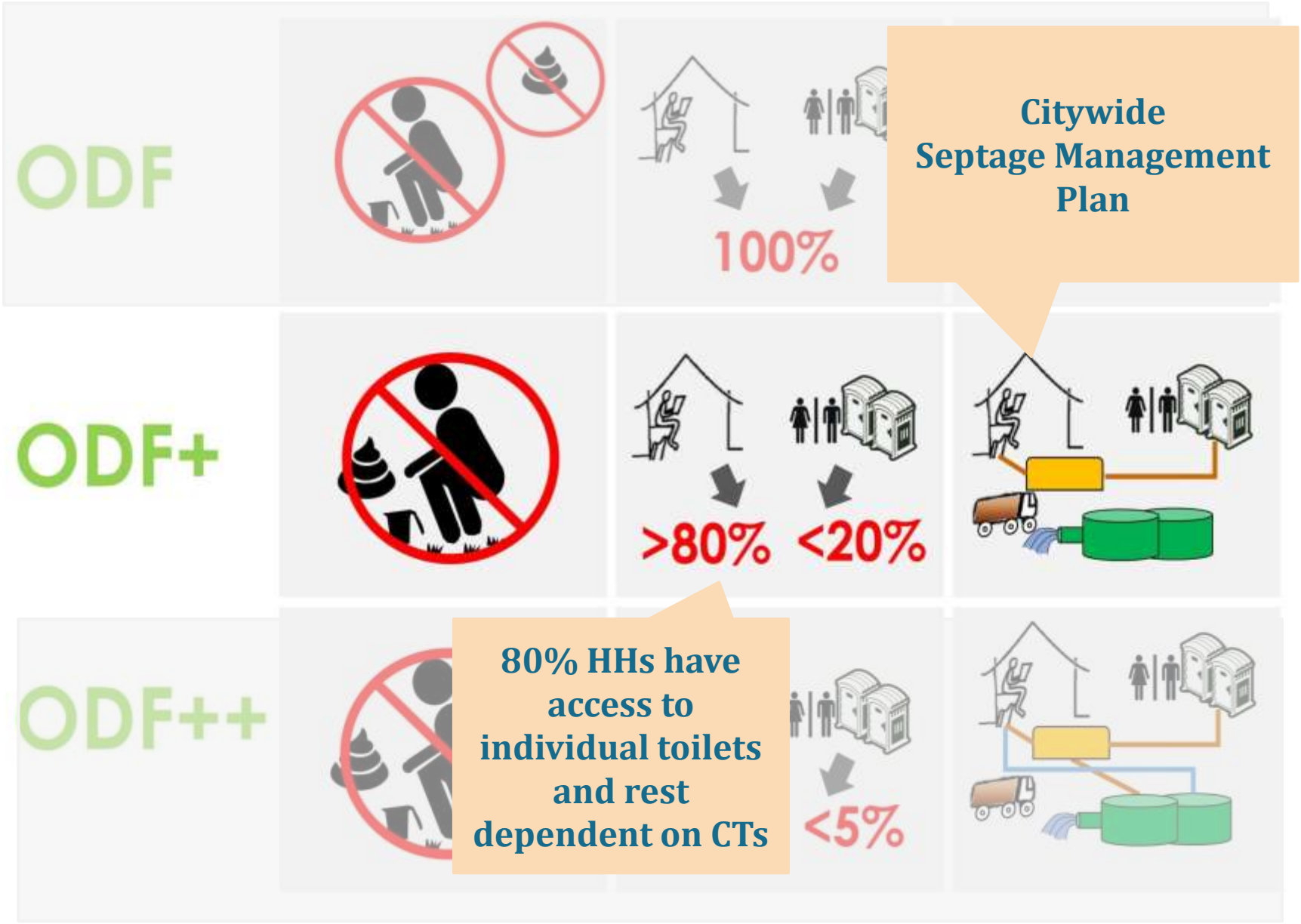
Current situation of septage management in Georai

Accesss	Collection	Conveyance	Treatment	Reuse /disposal
Pour flush latrines and CTs	Septic tanks and few pits	Liquid → Open drains/Soak pits		→ Into river Vidrupa
	Solid →	Suction truck	**No treatment of fecal sludge**	→ Dumping on SWM site in trench
•98 % coverage of IHHLs •6 CTs, 78 seats •No open defecation	•99 % IHHLs connected to septic tanks. •Large sized, 2 & 3 chambered tanks, most have access covers. •Genarally desludged after 7-8 years and even after 10 years.	•100 % coverage of open drains . •Municipal Council provides service, owns 1 truck of capacity 3 KL	Lack of treatment facility	•Poor quality of water in nallahs. •Lack of scientific disposal of waste water and septage at the moment.

No Treatment

8. Proposal

Concept of ODF , ODF +, ODF ++ by GoM



Why is Septage Management important ! ! !

1 truck of Faecal Sludge and Septage carelessly dumped
= 5,000 people shitting in the open!

Source : Chary, Srinivas, (2017), "City Wide Approach to Sanitation : Operationalizing FSM Regulations A Case study of Warangal City" at Ujjain Workshop by Water Aid, ASCI *(mimeo)*

Recognition to Septage Management at National level . . .

- **National Policy** on **FSSM** by MoHUA, GoI
- **National declaration** on **Septage Management** by MoHUA, GoI
- One of the major **thrust areas** of **AMRUT**
- **Primer** on **septage Management** and **Rapid Assessment tool** for estimating **budget requirements** for **FSSM**
- **Septage Management Advisory** of Government of India provides references to CPHEEO guidelines, BIS standards, and other resources for preparing SMP / FSSM plan.

CEPT support for moving cities towards ODF+

Support for Onsite systems

1. For new toilets that are under construction: Ensuring suitable technology option

CEPT Support

- Dos and Don'ts Flyer
- Training to masons
- CT/PT Assessment

Support in Planning & Technology selection for Emptying & Treatment

2. Regular desludging of septic tanks within the city limit and exploring possibility of desludging septic tanks outside city limit

CEPT Support

- Exploring scheduled v/s demand based desludging
- Deciding type & number of vacuum emptier
- Deciding the model of operation (ULB v/s Private)
- Support in development of contract for emptying (if required)
- Support in development of monitoring process / awareness programs

3. Suitable technology options for treatment of septage

CEPT Support

- Carrying out septage quality tests to assess quality of septage to be treated.
- Carrying out Ground /river water quality tests
- Identification of suitable treatment technology based on technical and financial assessment and requirement of the ULB
- Support in development of monitoring process
- Market assessment for byproducts /reuse

CEPT support for moving cities towards ODF+

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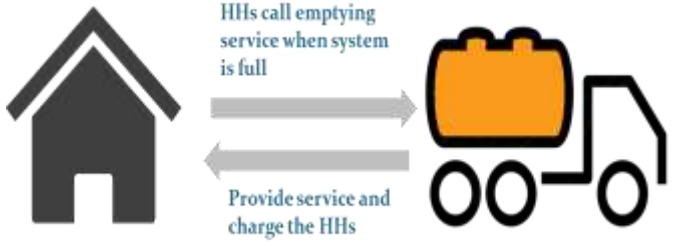
- Support in development of monitoring process
- Market assessment for byproducts /reuse

Support for Conveyance Mechanism - Demand v/s Scheduled

Current practice – Demand based emptying (Complaint redressal mode)

- Cleaning is done **on-call** by the **household** who **raises** a **complaint** regarding this with either the ULB or Private when the tank is full
- A **fee** is **charged** by the ULB or Private for provision of these services
- Leads to low toilet usage due to the fear of tanks filling up and high cost of emptying



Proposed practice – Scheduled based emptying Regular service mode)

- Septic tanks are cleaned on a **pre-determined schedule.**
- Households / property owners pay a **local tax** and get this services on regular intervals
- Scheduled emptying is being used in **Wai, Sinnar, Malaysia, Vietnam and Indonesia**

From a Consumer complaint system to Regular service . . .

Benefits of Scheduled Emptying

- **Equitable services -** all households / properties are covered by services
- **Pricing –** Services are offered at lower prices, due to efficiency gains
- **Behavior change -** Contribution to ODF sustainability as toilet usage can increase
- **Eradicate Manual scavenging -** Removal of need for manual scavenging due to regular emptying
- **Infrastructure optimization -** More predictable loads for treatment facility and route optimization of trucks
- **Environmental benefits -** Likely reduction in BOD and coliform in septic tank effluent, as well as lower likelihood of septic tank overflows

Support in operationalizing emptying services . . .

City	Demand Desludging (Existing)		Scheduled Desludging (5 year cycle)	
	No. of tanks emptied at present	Number of trucks	No. of tanks to be emptied daily	Number of trucks required *
Georai	2-3 monthly	1 – 3000 L	4	1 truck

Private sector is ready to invest for these trucks

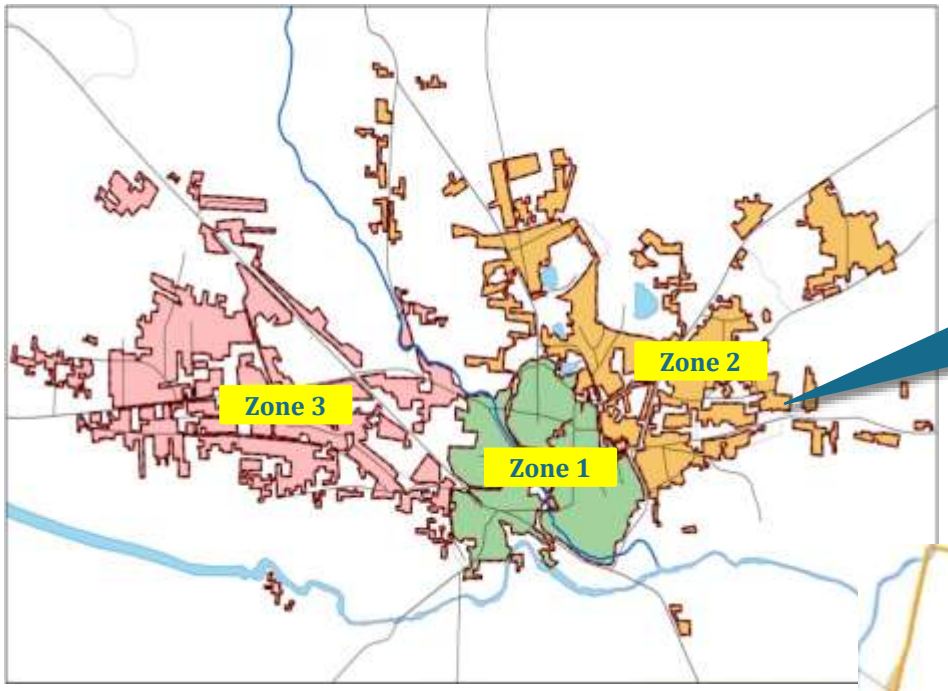
Support in

- Setting up Monitoring mechanism to monitor ULB / Private sector operations
- Support in development of contract for emptying (if required)
- Awareness for regularly desludging of septic tanks

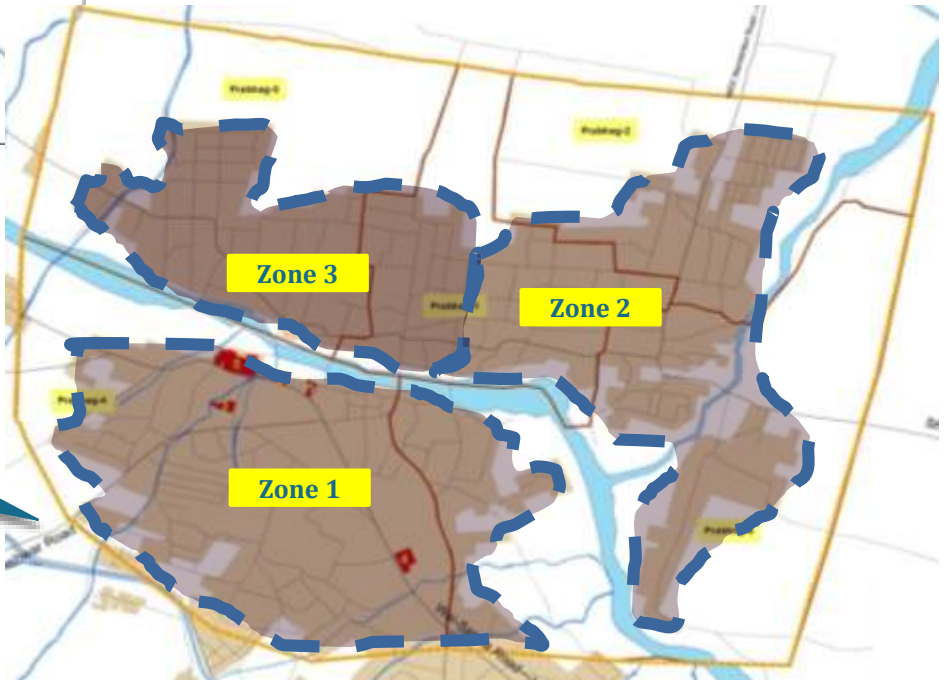
Note : * - Truck sizes may range from 3000 – 5000 L based on road width and average size of septic tanks

Example of Wai and Sinnar - Scheduled desludging services by involving private sector . . .

3 year cycle



3 trucks to desludge ~ 4000 septic tanks annually



2 trucks to desludge ~ 2000 septic tanks annually

Zoning for Georai for Schedule Emptying

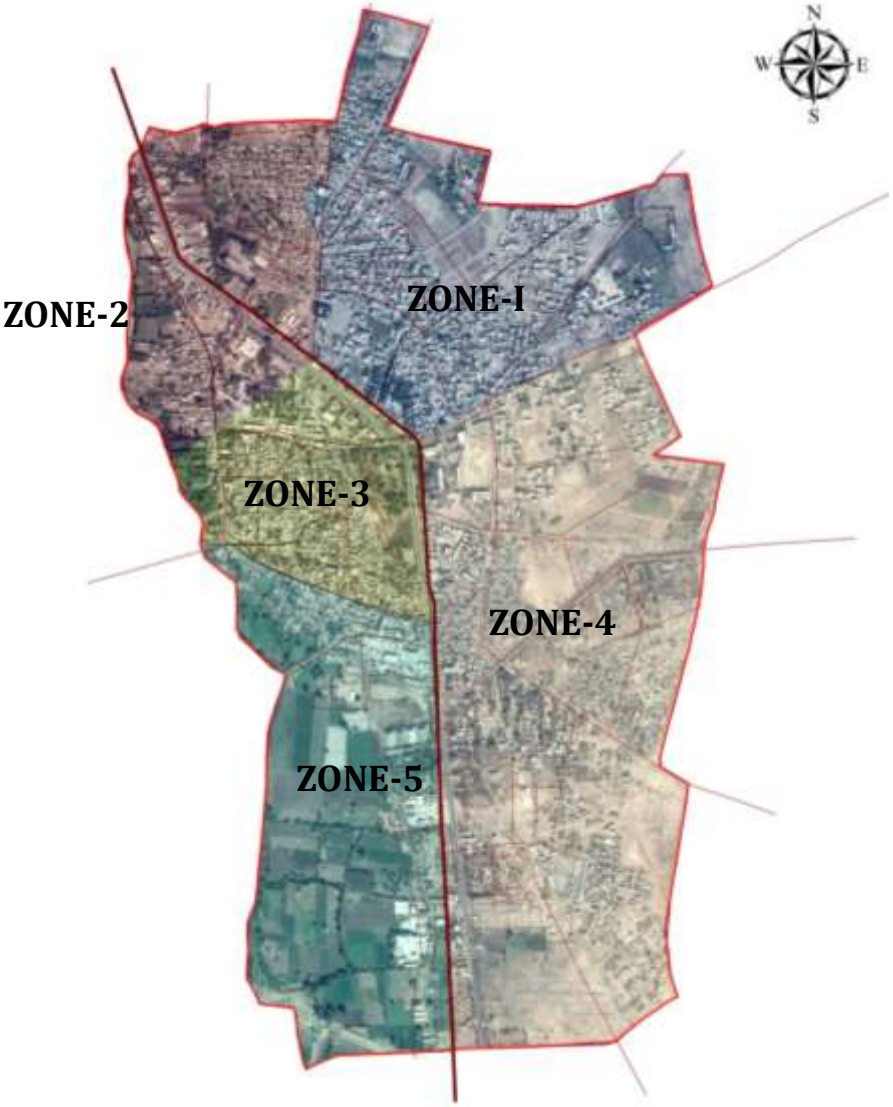
- The town has been divided into 5 zones for the septic tank desludging cycle. The septic tanks of each zone will be cleaned in turn every year during the 5 year cycle.

- The zones have been divided based on the distribution of households. The zones have been approximately delineated.

Zones	wards
Zone 1	2,3
Zone 2	1,5,7
Zone 3	4,5,6,7
Zone 4	3,8,9
Zone 5	7

Approx. 1246 septic tanks of individual toilets in the city needs to be cleaned annually.

Zoning of the city for emptying of septic tanks



CEPT support for moving cities towards ODF+

Support for Onsite systems

1 For new toilets that are under construction: Ensuring suitable technology option

CEPT Support

- Dos and Don'ts Flyer
- Training to masons
- CT/PT Assessment

Support in Planning & Technology selection for Emptying & Treatment

2 Regular desludging of septic tanks within the city limit and exploring possibility of desludging septic tanks outside city limit

CEPT Support

- Exploring scheduled v/s demand based desludging
- Deciding type & number of vacuum emptier
- Deciding the model of operation (ULB v/s Private)
- Support in development of contract for emptying (if required)
- Support in development of monitoring process / awareness programs

3 **Suitable technology options for treatment of septage**

CEPT Support

- Carrying out septage quality tests to assess quality of septage to be treated.
- Carrying out Ground /river water quality tests
- Identification of suitable treatment technology based on technical and financial assessment and requirement of the ULB
- Support in development of monitoring process
- Market assessment for byproducts /reuse

Support in operationalizing Treatment plant. . .

City	Demand Desludging	Scheduled Desludging
	Septage load cum/day	Septage load cum/day
Georai	1	28

Incremental Approach

Support in

- Identification of suitable septage treatment option
- Carrying out Wastewater quality tests
- Developing monitoring process
- Market assessment for by products /reuse

Need for **Incremental Approach . . .**

- Need to **start treating** the **existing septage** that is being dumped at dump site
  - Need to select **treatment technology** which is **modular** in approach

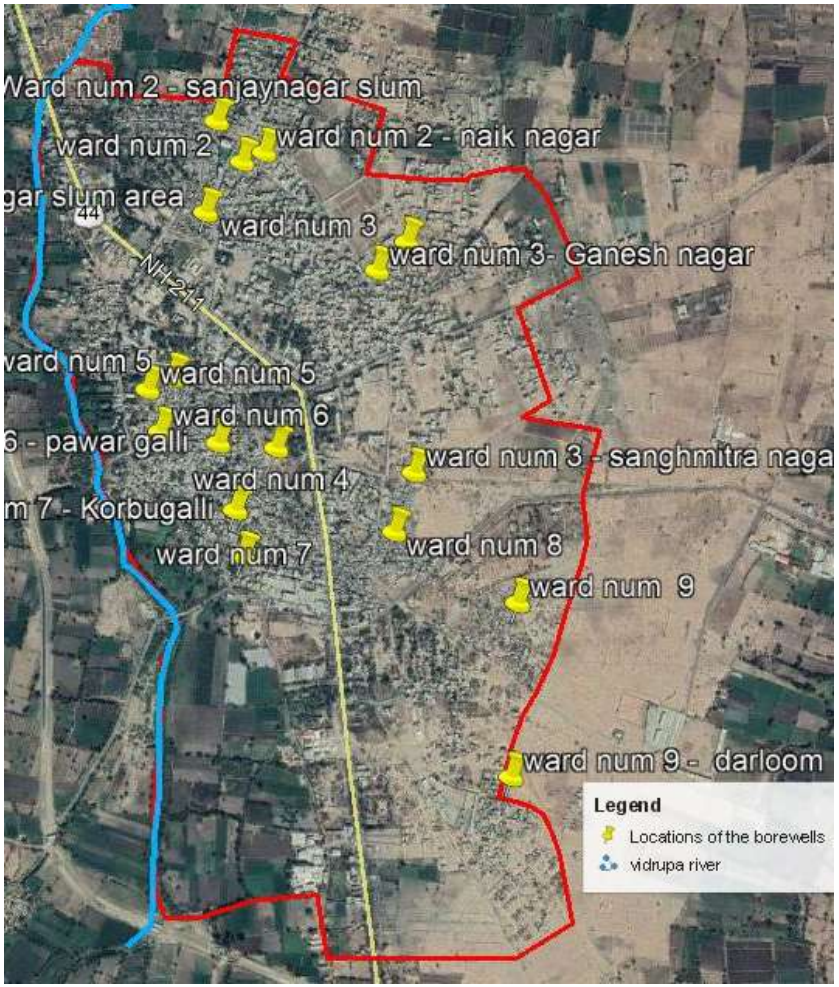
Incremental

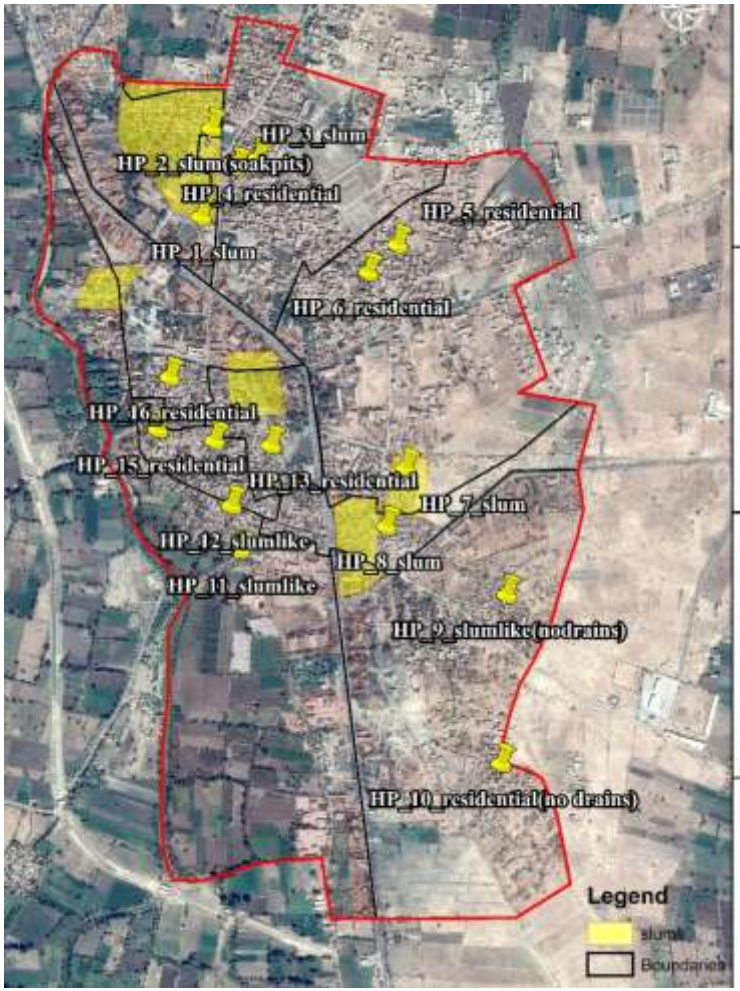
- Need to move towards **scheduled desludging gradually**
  - Develop a **DPR**
  - Take **technical** and **administrative approvals**
  - Roll out **contracts** for **construction** and **O&M**

Quality tests to be carried out in ODF+ cities . . .

Sampling location points identified for:

- **Surface water** quality,
- **Groundwater** quality,
- **Effluent** quality
- **Septage** quality





Septage Treatment

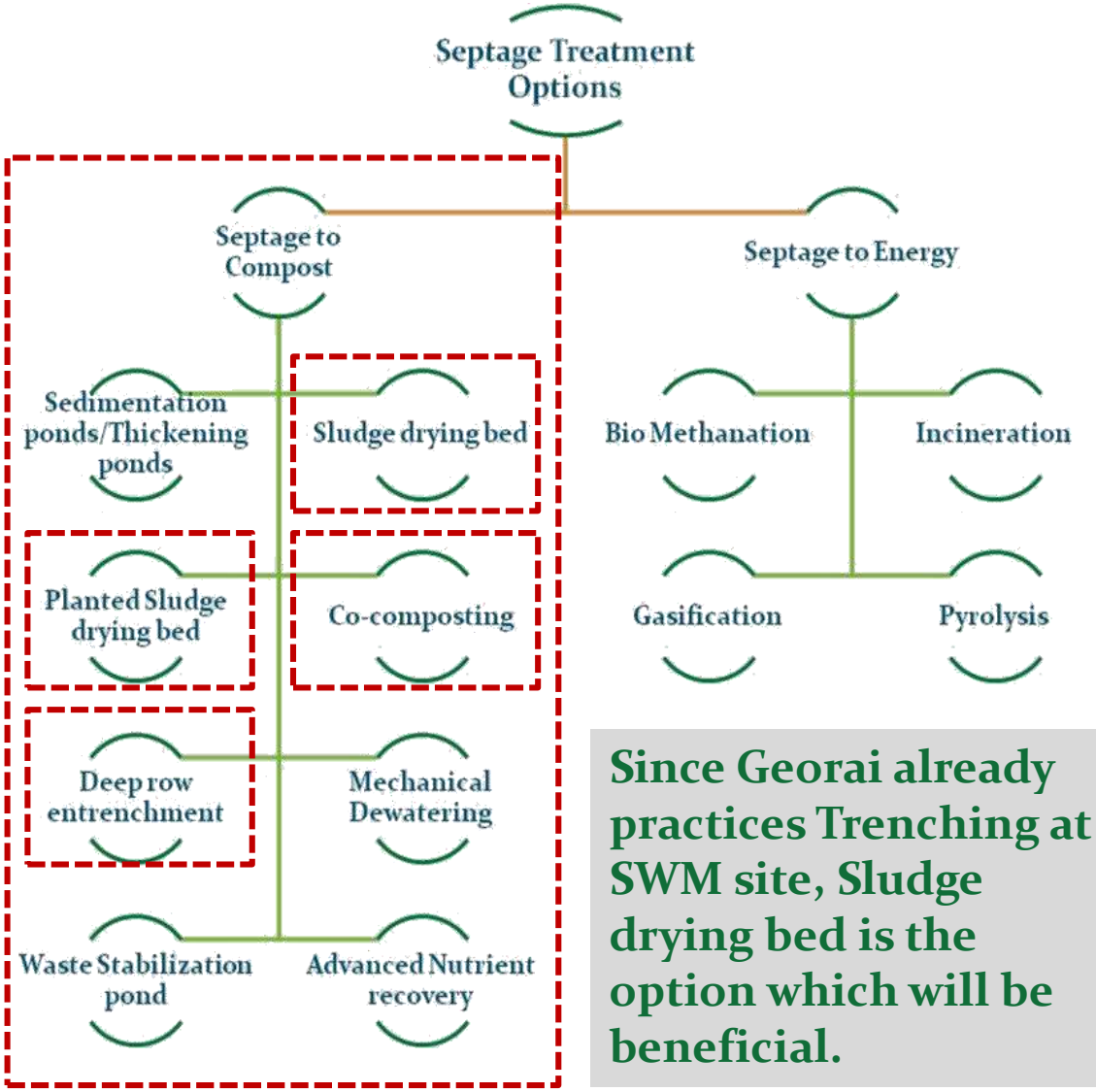
Options for cities without STP

a. Co-treatment at nearby STP

b. Co-treatment with SWM treatment facility

c. Cluster based FSTP

d. Independent FSTP



Since Georai already practices Trenching at SWM site, Sludge drying bed is the option which will be beneficial.

Technology options for GEORAI

Approach	Financing	Georai		
		Sludge Drying Bed + Oxidation pond	Planted Sludge Drying Bed + planted gravel filter+ polishing pond	Co-composting at SWM Plant
Scheduled (28 cum/day)	Capex	25	60-65	45-50
	Opex/year	8- 10	5-10	8-10

All figures in lakhs

Land available for FSTP – 4 Acre --- Area required is 200 – 4,000 sqm

Sludge drying bed

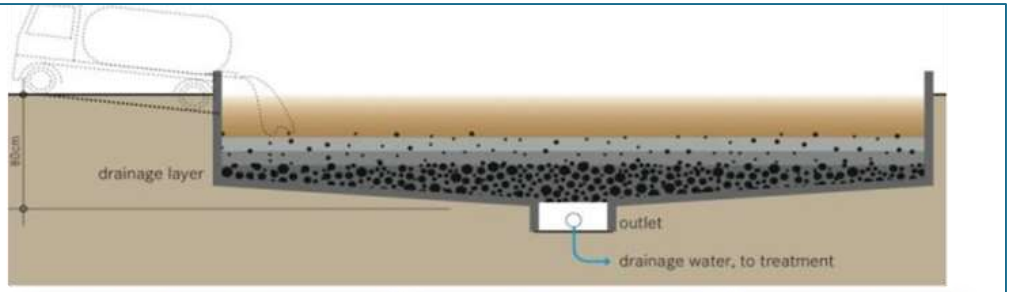
Planted sludge drying bed

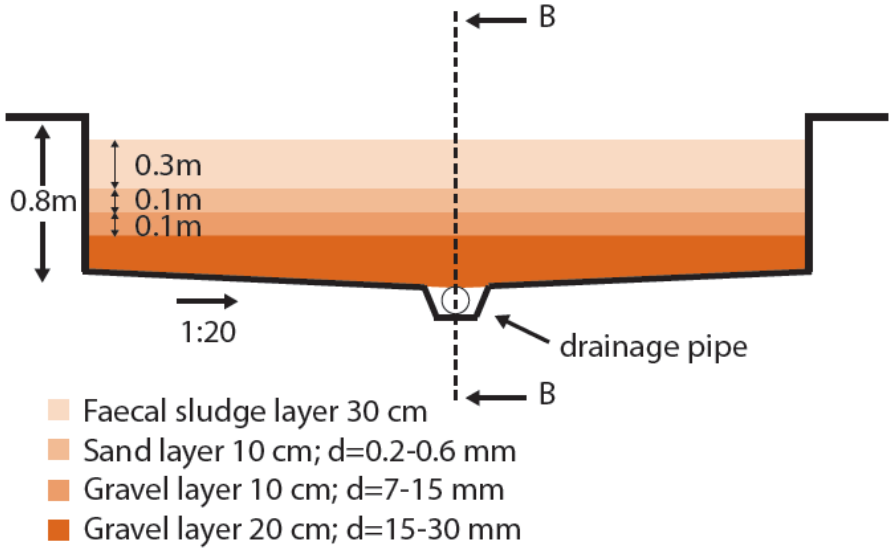
Co-composting with SWM

The numbers are indicative . . .

Technology Options for FSSM Services- Emptying & Treatment

Scenario 1: Sludge Drying Bed





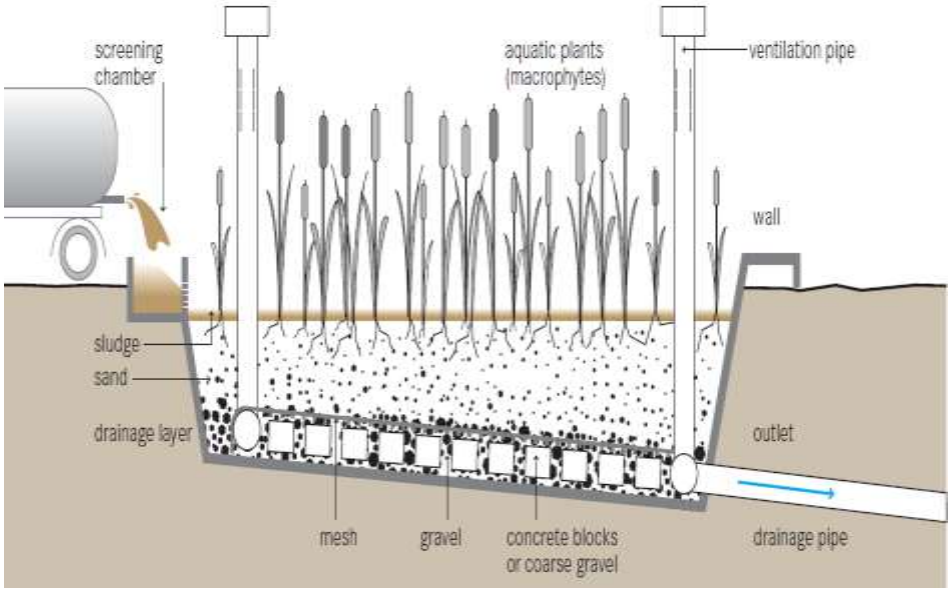
An Unplanted sludge Drying Bed is a simple, permeable bed that, when loaded with sludge, collects percolated leachate and allows the sludge to dry by evaporation

- Dried sludge must be removed every 10 to 15 days. Sand must be replaced when the layer gets thin. Treated Septage and leachate may require further treatment based on output quality
- This technology can be used in hot and temperate climate.
- Climatic conditions in India are favorable for SDB.
- Does not require electricity to function but is land intensive
- Simple technique but trained staff required.

Area available	16000 sq m (4 Acre)
Approx. area required	Approx. 200-4000 sq m (15% of total available land)
Maximum average rainfall of Georai (2016)	650 mm (state average 1272.8 mm)
Ground water level	12 m
Soil type	Black cotton soil

Technology Options for FSSM Services- Emptying & Treatment

Scenario 2: Planted sludge drying bed



Planted sludge Drying Bed is similar to an Unplanted sludge Drying Bed with the benefit of increased transpiration

- The key feature is that the filters do not need to be desludged after each feeding /drying cycle. Fresh sludge can be applied directly onto the previous layer
- Dried sludge must be removed every 2-3 years. leachate may require further treatment based on output quality

Area available	16000 sq m (4 Acre)
Approx. are required	Approx. 200-4000 sq m (15% of total available land)
Maximum average rainfall of Georai (2016)	650 mm (state average 1272.8 mm)
Ground water level	12 m
Soil type	black cotton soil

Technology Options for FSSM Services- Emptying & Treatment

Applicability

- **Any kind of sludge** can be treated in drying beds.
- It is best combined with **co-composting** in order to produce fertiliser.
- **Large land areas** are required for the construction.
- As **odour** could be an issue, they should be constructed **far away** from households.
- The bottom needs to **be sealed** to prevent groundwater pollution and the **percolate must** be treated.

Advantages:

- Easy to operate
- Dried sludge can be composted and used as fertiliser
- Simple operation, no skilled personnel required
- Results in much reduced volume of sludge
- Can achieve pathogen removal

Disadvantages:

- Requires large land area
- Only applicable during dry seasons or needs a roof
- Re-use or treatment of seepage water required
- Manual labour or specialised equipment is required to remove dried sludge from beds
- Can cause odour problems

- Crops such as Cotton, sugarcane, pulses and vegetables are harvested in and around Georai.
- Since there is a big APMC market in Georai, after doing a stakeholders meet with the farmers , as per their acceptability, manure can be sold for the farms in nearby areas.

Technology Options for FSSM Services- Emptying & Treatment

Scenario 3: Co-composting at SWM Site with demand based emptying

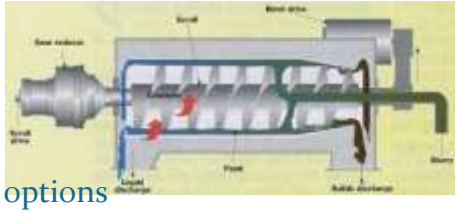
- Currently wet waste is composted through pit composting
- Co-treatment with feacal sludge could be explored due to availability of land and current waste treatment process at the site.
- Total 56 composting pits are there.
- Presence of market for use of the compost

Area of SWM Site: 5 Acre (20,234 sq mt)
Total solid waste brought at site: 10 Ton/day
Land use around the dumping site is total agricultural area.

Technology Options for FSSM Services- Emptying & Treatment

Scenario 3: Co-composting at SWM Site with demand based emptying

Sludge Drying beds for dewatering



Mechanical dewatering options

Windrow Composting

Factors for consideration

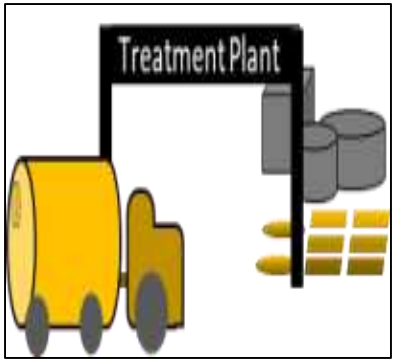
1. Requirement of a dewatering unit for septage :

- Slude drying beds or Mechanical dewatering
- For Sludge drying beds area requirement is 200- 4000 sq mt
- For Mechanical dewatering : The principal methods are belt filter presses, centrifuges and chamber filter presses.

2. Composting of the dried sludge with the organic waste through windrow composting

Proposed septage management in Georai

Access	Collection	Conveyance	Treatment	Reuse /disposal
Pour flush latrines and CTs	Septic Tanks	Liquid → Drains		Reuse of sludge as manure
		Solid → Suction truck	Trenching/ Sludge drying bed	
• 100 % of coverage of toilets. • Improve conditions of CT`s	•Ensure new septic tanks built are of adequate size and specifications. •Clean IHHL septic of entire town once every three years or 5 years	•Implement scheduled septic tank emptying in entire town for a 3-5 year cycle. •Council can operate/hire operator service with new fleet of trucks	•Sludge drying bed technique with co composting with SW •Quality of effluent emptying into drains will be better	•Improved quality of water in nallahs, saving contamination of river. •Reuse of manure produced after treatment creating a better environment, and could bring additional income for M.Cl.



How do we finance FSSM Services??

Capital costs can be financed through . . .

GoM resolution on use of 50% of funds for SBM and sanitation activities

१४ व्या केंद्रिय वित्त आयोगाच्या शिफारशीनुसार राज्यातील नागरी स्थानिक स्वराज्य संस्थांना प्राप्त होणाऱ्या मुलभूत अनुदानातून स्वच्छ महाराष्ट्र अभियानावर करावयाच्या खर्चाच्या कार्यपध्दतीबाबत.

महाराष्ट्र शासन
नगर विकास विभाग
शासन परिपत्रक क्रमांक: स्वमअ-२०१७/प्र.क्र. ४१/नवि-३४,
हुतात्मा राजगुरु चौक, मादाम कामा मार्ग
४ था मजला, मंत्रालय, मुंबई
दिनांक : २९ एप्रिल, २०१७

वाचा :

(१) शासन निर्णय ,नगर विकास विभाग, क्रमांक स्वमाअ २०१५/ प्र.क्र.२३/नवि-३४, दिनांक १५ मे,२०१५.

(२) शासन निर्णय ,नगर विकास विभाग, क्रमांक टिएफसी-८०१५/ प्र.क्र.१०६/नवि-०४, दिनांक ३ ऑगस्ट,२०१५.

शासन परिपत्रक :

१४ व्या वित्त आयोगाच्या शिफारशीनुसार राज्यातील नागरी स्थानिक स्वराज्य संस्थाना प्राप्त होणाऱ्या मूलभूत अनुदानातून किमान ५० टक्के एवढा निधी स्वच्छ महाराष्ट्र अभियानातील बाबींवर खर्च करण्याचे संदर्भीय क्रमांक २ येथील दिनांक ३ ऑगस्ट, २०१५ च्या शासन निर्णयान्वये बंधनकारक करण्यात आले असून, सदर शासन निर्णयातील परिच्छेद १ (II) (i) मध्ये नमूद करण्यात आलेली कामे या निधीमधून करण्यास मुभा देण्यात आलेली आहे.

२. या संदर्भात शासनाच्या असे निदर्शनास आले आहे की, काही शहरांमध्ये घनकचऱ्याचे संकलन व वाहतूक करून त्यावर प्रक्रीया न करता तो डंपिंग ग्राऊंडवर ढंप करण्याचे काम कंत्राटीपध्दतीने (Outsource) करण्यासाठी १४ व्या वित्त आयोगाचा निधीचा वापर करण्यात येत आहे. तसेच, काही शहरांमधील घनकचऱ्याचे संकलन व वाहतूक करण्यासाठी वाहने खरेदी करण्याकरीता हा निधी वापरण्यात येत आहे.

३. केंद्र शासनाच्या स्वच्छ भारत अभियानाच्या धर्तीवर राज्यामध्ये स्वच्छ महाराष्ट्र अभियानाची अंमलबजावणी सुरु आहे. या अभियानांतर्गत घनकचरा व्यवस्थापन नियम, २०१६ अंतर्गत कार्यवाही करुन शहरे "स्वच्छ" करणे हा महत्त्वाचा घटक आहे. त्यानुसार, राज्यातील प्रत्येक नागरी स्थानिक स्वराज्य संस्थांनी त्यांच्या शहरात निर्माण होणारा १००% कचरा निर्मितीच्या जागीच वेगवेगळा (ओला कचरा, सुका कचरा व घरगुती घातक कचरा) करून घेवून स्वतंत्रपणे संकलित करणे, या संकलित केलेल्या (ओला कचरा, सुका कचरा व घरगुती घातक कचरा) १००% कचऱ्याची वाहतूक करणे, ओल्या कचऱ्यावर केंद्रीय अथवा विकेंद्रित पध्दतीने जागीच प्रक्रिया

GoM resolution asking city to move towards ODF+ and to utilize incentive grant and 14th FC funds for ODF+ activities

स्वच्छ महाराष्ट्र अभियान (नागरी) अंतर्गत शहरांनी हागणदारी मुक्तीचा दर्जा शाश्वतरित्या टिकविण्याबाबत.

महाराष्ट्र शासन
नगर विकास विभाग
शासन परिपत्रक क्रमांक: स्वमअ-२०१७/प्र.क्र.३७/नवि-३४
शहीद भगतसिंग चौक, मादाम कामा मार्ग,
मंत्रालय, मुंबई - ४०० ०३२.
दिनांक : १७ मार्च, २०१७

वाचा -

शासन निर्णय क्र. नगर विकास विभाग, स्वमाअ-२०१५/प्र.क्र.२३/नवि-३४, दि.१५ मे २०१५.

शासन आदेश -

केंद्र शासनाच्या "स्वच्छ भारत अभियान (नागरी)" च्या धर्तीवर दिनांक १५ मे, २०१५ च्या शासन निर्णयान्वये राज्यामध्ये "स्वच्छ महाराष्ट्र अभियान (नागरी)" ची अंमलबजावणी सुरू झाली आहे. या अभियानांतर्गत शहरे "हागणदारी मुक्त" करणे व घनकचरा व्यवस्थापनांतर्गत "स्वच्छ" करणे या दोन प्रमुख बाबींचा समावेश आहे.

२. या अभियानांतर्गत शहरांमधील ज्या कुटुंबांकडे शौचालयाची सुविधा उपलब्ध नसल्याने जी कुटुंबे उघड्यावर शौचास जातात, अशा कुटुंबांना वैयक्तीक घरगुती शौचालय (IHHL) अथवा सामुदायीक शौचालयाची (CT) सुविधा उपलब्ध करून देवून शहरे हागणदारी मुक्त करण्यात येत आहेत.

३. राज्यातील सार्वजनिक शौचालय वापरणाऱ्या कुटुंबांची संख्या (२१%) देशपातळीवरील सार्वजनिक शौचालय वापरणाऱ्या कुटुंबांच्या संख्येच्या सरासरीपेक्षा जास्त आहे. या अभियानांतर्गत शहरे हागणदारी मुक्त झाल्यानंतर हागणदारी मुक्त शहराचा दर्जा शाश्वत रित्या टिकविण्यासाठी (ODF Sustainability) जास्तीत जास्त कुटुंबांना वैयक्तिक घरगुती शौचालयाची सुविधा उपलब्ध करून देणे आवश्यक आहे. तसेच शहरांमध्ये बांधण्यात आलेल्या शौचालयांच्या सेप्टीक टँक मधील मैला व्यवस्थापन करणे आवश्यक आहे.

४. हागणदारी मुक्त शहर (ODF) व ODF+ तसेच ODF++ शहरांचे निकष पुढील प्रमाणे आहेत.:-

	निकष १	निकष २	निकष ३
ODF शहरे	दिवसाच्या कुठल्याही वेळेस शहराच्या कुठल्याच भागात एकाही व्यक्तीने उघड्यावर शौचास बसल्याचे आढळून न येणे, तसेच शहरामध्ये कुठेही उघड्यावर मानवी विष्ठेचे पुरावे न दिसणे	प्रत्येक कुटुंबास, संस्थेस व इतर सर्व प्रकारच्या मालमत्तांना शौचालयांची उपलब्धता असणे. (स्वतःची अथवा गट शौचालये / सार्वजनिक शौचालये)	शहरातील सर्व शौचालये सुरक्षित मैला संकलन व विल्हेवाट प्रणालीस जोडलेली असणे.

GoM resolution for incentive funds for ODF+ activities

	ODF Cities (Rs.)	Swachh Cities (Rs.)	Linked to Sustainability
A Class	2 Cr.	2 Cr.	30% released on **first validation by State**, if positive
B Class	1.5 Cr.	1.5 Cr.	30% released on **validation by MoUD**, if positive
C Class	1 Cr.	1 Cr.	40% released on 2nd validation after a **six months**, if positive

Utilisation of funds for

Sustainability and moving towards

ODF+ and ODF++

स्वच्छ महाराष्ट्र अभियान (नागरी) अंतर्गत हागणदारी मुक्त व स्वच्छ होणाऱ्या नागरी स्थानिक स्वराज्य संस्थांना प्रोत्साहन अनुदान देण्याबाबत.

महाराष्ट्र शासन
नगर विकास विभाग
शासन निर्णय क्रमांक: स्वमअ २०१६/प्र.क्र.२३/ नवि-३४
हुतात्मा राजगुरु चौक, मादाम कामा मार्ग
४ था मजला, मंत्रालय, मुंबई
दिनांक : २८ मार्च, २०१६

वाचा:

(१) शासन निर्णय, नगर विकास विभाग, क्रमांक स्वमाअ २०१५/प्र.क्र.२३/नवि-३४, दिनांक १५ मे, २०१५.

(२) राज्य अभियान संचालनालय, स्वच्छ महाराष्ट्र अभियान संचालनालय, यांचे परिपत्रक क्रमांक राअसं/ कार्यान्वयन सूचना/४२/१५-१६ दिनांक २८ जुलै, २०१५

(३) शासन निर्णय, नगर विकास विभाग, क्रमांक स्वमाअ २०१५/सं.क्र.१५४९ /नवि-३४, दिनांक २९ ऑक्टोबर, २०१५.

प्रस्तावना :

केंद्र शासनाच्या "स्वच्छ भारत अभियान (नागरी)" च्या धर्तीवर संदर्भीय दिनांक १५ मे, २०१५ च्या शासन निर्णयान्वये राज्यामध्ये "स्वच्छ महाराष्ट्र अभियान (नागरी)" ची अंमलबजावणी सुरू झाली आहे. या अभियानांतर्गत शहरांमधील ज्या कुटुंबांकडे शौचालयाची सुविधा उपलब्ध नसल्याने ती कुटुंबे उघड्यावर शौचास जातात, अशा कुटुंबांना वैयक्तीक घरगुती शौचालय अथवा सामुदायीक शौचालयाची सुविधा उपलब्ध करून देऊन, शहरे "हागणदारी मुक्त" करणे व घनकचरा व्यवस्थापनांतर्गत शहरात निर्माण होणारा १००% कचरा निर्मितीच्या जागीच (ओला व सुका) वेगवेगळा करून स्वतंत्रपणे संकलित करणे, या संकलित केलेल्या (ओला व सुका) १००% कचऱ्याची वाहतूक करणे, ओल्या कचऱ्यावर केंद्रीय अथवा विकेंद्रित पध्दतीने जागीच प्रक्रिया करणे तर सुक्या कचऱ्याचे विलगीकरण करून त्यावर प्रक्रिया करणे व उर्वरित कचऱ्याची शास्त्रीय पध्दतीने विकसीत केलेल्या भराव भूमीवर विल्हेवाट लावून शहर "स्वच्छ" करणे या दोन प्रमुख बाबींचा समावेश आहे.

२. स्वच्छ महाराष्ट्र अभियानाच्या अंमलबजावणीस गती यावी व हागणदारी मुक्त झालेल्या तसेच स्वच्छ झालेल्या शहरांचा यथोचीत सन्मान व्हावा म्हणून, राज्यातील हागणदारी मुक्त झालेल्या व स्वच्छ झालेल्या शहरांना प्रोत्साहन अनुदान देण्याची बाब शासनाच्या विचाराधीन होती.

शासन निर्णय :

प्रस्तावनेत नमूद केलेल्या बाबींचा विचार करून स्वच्छ महाराष्ट्र अभियानांतर्गत "हागणदारी मुक्त" झालेल्या व "स्वच्छ" झालेल्या नागरी स्थानिक स्वराज्य संस्थांना पुढील प्रमाणे प्रोत्साहन अनुदान देण्यास शासन मान्यता देत आहे:

Sinnar has financed the CaPEX and OpEX of FSTP through 14th FC funds

- Sinnar Municipal Council has passed resolution to fund FSTP project cost through 14th FC funds.

- The project cost includes:
  - Capex
  - Opex for 3 years

Funds available with Georai for financing FSSM Capex

Fund utilization -- Availability						
City	Funds under scheme	Received (in Rs. Crore)	Utilized Fund		Available Fund	
			Amount (In crore)	Percent	Amount (In Crore)	Percent
Gevrai	14th FC	5.08	2.88	57 %	2.22	43 %
	SBM Incentive Fund	0.35	0.35	100%	-	-

Funds are available for ODF+ activities

O & M can be financed through Charges or taxation . . .

Funding : Opex

Including tax ,user charges, fines and so on.

Sr No.	Amount	Sanitation Tax
Existing sanitation tax	-	2.5 % of existing property tax
Average Existing Property Tax	1080	
For scheduled emptying sanitation tax	175-200	About Rs 15-20 per month

17 % increase in property tax will finance the scheduled desludging services

Taxation can be **done** as per the **Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships Act, 1965, Chapter IX : Municipal taxation, Section 108** only if it is **provided** as a **service**

Also revenue from sale of septage compost under HARIT

Can partly finance O&M of services

Sinnar has levied differential tax on all properties for financing FSSM services

Differential taxation rates

Residential Properties **with / without toilets**–
Rs. 300 / annum

Non Residential Properties **with toilets** –
Rs. 300 / annum

Non-residential properties **without toilets**–
Rs. 100 / annum

City level resolution for taxation

सिन्नर नगरपरिषद,सिन्नर मे.विशेष सभा
ठराव क्रमांक ६१ दिनांक २४/०३/२०१७

विषय क्रमांक ५) सिन्नर नगरपरिषद तर्फे आकारण्यात येणारा स्वच्छता कर,घनकचरा व्यवस्थापन कर व मैला व्यवस्थापन कर यांची पुर्नःरचना करणेबाबत चर्चा करुन निर्णय घेणे.

प्रस्तावाचा मजकुर - कार्यालयीन टिपणीचे सभागृहात चर्चा होवुन सिन्नर नगरपरिषदे तर्फे सद्या आकारण्यात येणारे विशेष स्वच्छता कर,विशेष घनकचरा कर व मैला व्यवस्थापन कर यांची पुर्नःरचना करुन यापुढे सन २०१७-१८ या आर्थिक वर्षापासुन खालील प्रमाणे मैला व्यवस्थापन कर व घनकचरा कर म्हणुन आकारण्यात यावेत व त्याप्रमाणे बिल तयार करुन मालमत्ता धारकांना देण्यात यावेत.

वार्षिक कराचे दर (रुपये)

अ.क्र.	कराचे नांव	निवासी मालमत्ता		बिगर निवासी मालमत्ता	
		शौचालय असलेले	शौचालय नसलेले	शौचालय असलेले	शौचालय नसलेले
१.	मैला व्यवस्थापन कर	३००/- (प्रति सिट)	३००/-	३००/- (प्रति सिट)	१००/-

वार्षिक कराचे दर (रुपये)

अ.क्र.	कराचे नांव	निवासी	बिगर निवासी
१	घनकचरा व्यवस्थापन कर	१००/-	३००/-

वरीलप्रमाणे कर आकारणी करणेस सदरची सभा सर्वानुमते मान्यता देत आहेत. त्याप्रमाणे प्रशासकीय कार्यवाही करण्यात यावी.

सुचक :- श्री. लोखंडे गो.वि.
अनुमोदन :- श्री. चोथवे प्र.झुं.
ठराव सर्वानुमते मंजुर

अध्यक्ष,
सिन्नर नगरपरिषद,सिन्नर

Wai has levied tax on all properties for financing FSSM services

Incremental approach: Moving towards ODF++

- ULBs should take **incremental approach** for **liquid waste management**
- All four ULB's topographic profile suits for incremental approach for liquid waste treatment
- First step to **tap the liquid waste** from **existing discharge points** either **diverted** through **interceptor sewer** or **in-situ decentralized treatment system** as per availability of land
- Need to carry out **quick preliminary technical** and **financial feasibility** assessment for possible options

City	Waste Water generated (MLD)	Cost for interceptor sewer (Rs in Cr)	Treatment cost (Rs in Cr)
Georai	**2.8**	**0.3 - 0.5**	**2.5 – 3.5**

Source: PAS SLB 2016-17

Stakeholder Engagement for ODF Sustainability and FSM

1. Achieving universal access to IHHL

Assessment of need of sanitation loans and mobilizing them for very poor families in slums.

2. CTs/PTs assessment

Quantitative and qualitative assessment of the CTs/PTs and suggest ways to improve it

3. School Sanitation

Assessing sanitation status of schools and suggesting ways to improve it

3. ODF Validation and OD Watch

Help the city with the MoUD validation process and OD watch

4. OD spots development

Identifying OD spots and suggesting ways of development, identify financing options

Stakeholder Engagement for ODF Sustainability and FSM

5. ODF sustainability through effective participation of Stakeholders

i. Self-Help Groups

189 Active SHG groups in Georai who can help in Awareness generation and loan mobilization

ii. Elected and Administrative wing

PAS team briefed the elected and administrative wing of GMC about the ODF+ work. Their support will be required to plan and implement the project.

iii. Citizens

Citizens participation is solicited for effecting planning and implantation of scheme.
Team will identify various platforms and events to involve them in the process.

iv. Local Gov. of Outgrowth Areas

Villages near Georai (Kolher, Takadgaon Pandharwadi) will be consulted while making the septage management plan.

v. NGO`s

2-3 Active NGO`s groups in Georai who can help in Awareness generation and loan mobilization

Measures to be taken by Georai Municipal Council while Implementing the Septage Management Plan

- The proposed desludging system to be adopted should be approved by all council members.

- Pass a general resolution for the following-

- Various proposals which are at the pending stage should be passed and cleared for working.
- Land allocation at the existing SWM site.
- Levying a revised sanitation tax/Service Charge and improve its awareness among the citizens.
- Self Help Groups Involvement

- Allocate funds for the project.

- Invite tenders for both desludging and the FSTP on DBOT basis.

- HH Survey (through Sanitab/Property tax survey) to make accurate database of households, septic tanks, properties.
- With the help of farmers, implement the best possible use for manure.

Discussion Points . . .

- What are the **next steps of action**
  - City Resolution of taking up this activity
  - Deciding on the approach for emptying and treatment

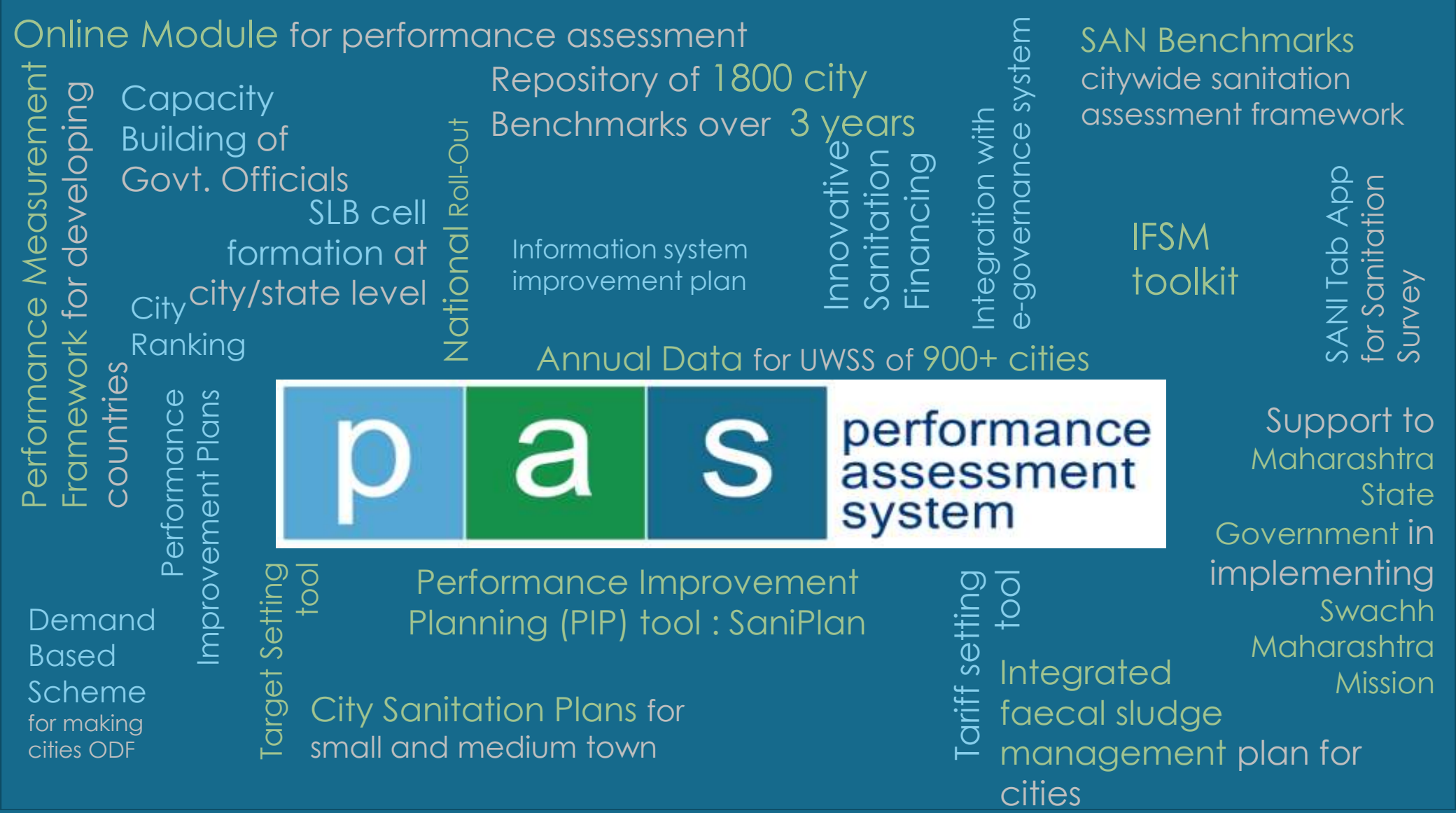
- **Time frame** for initiating implementation of FSSM

Proposed Timeline for discussion . . .

Sr. No.	Key steps	Timeline (months)											
		1	2	3	4	5	6	7	8	9	10	11	12
	FSM Plan and Execution												
1	Discussion with ULB (Elected and other administrative wing to take up FSM and activities related to ODF sustainability)												
2	Stakeholders identification / consultation throughout the FSM planning process												
3	City level FSM plan based on secondary data source / data base of SaniTab survey												

Proposed Timeline for discussion . . .

Sr. No	Key steps	Timeline (months)											
		1	2	3	4	5	6	7	8	9	10	11	12
4	Assessing financial requirement - Capex , Opex , Taxes to be levied												
5	Develop and enforce regulations required for FSM -Scheduled / demand cleaning -Taxes / Charges to be levied												
6	Develop and carry out awareness generation activities Scheduled / demand cleaning -Taxes - Penalties												
7	Develop , review and finalize contracts and bid documents and float the tenders												
8	Construction and commissioning of FSTP												
9	Implement first cycle of city-wide scheduled emptying and functioning of FSTP from here onwards												



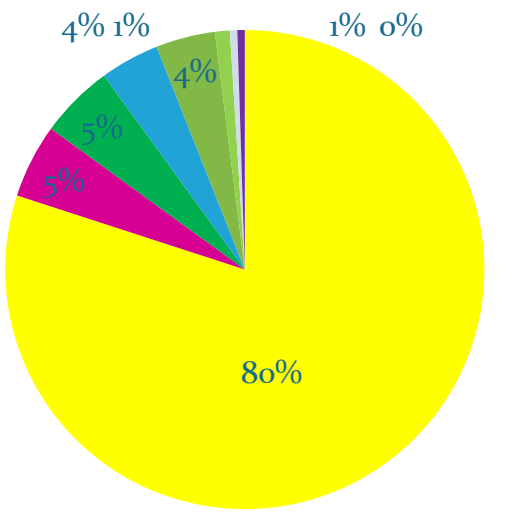
Project Directors : Prof. Meera Mehta and Prof. Dinesh Mehta | www.pas.org.in | pas@cept.ac.in
Senior Research Associate : Aasim Mansuri and Dhruv Bhavsar

p a s performance assessment system

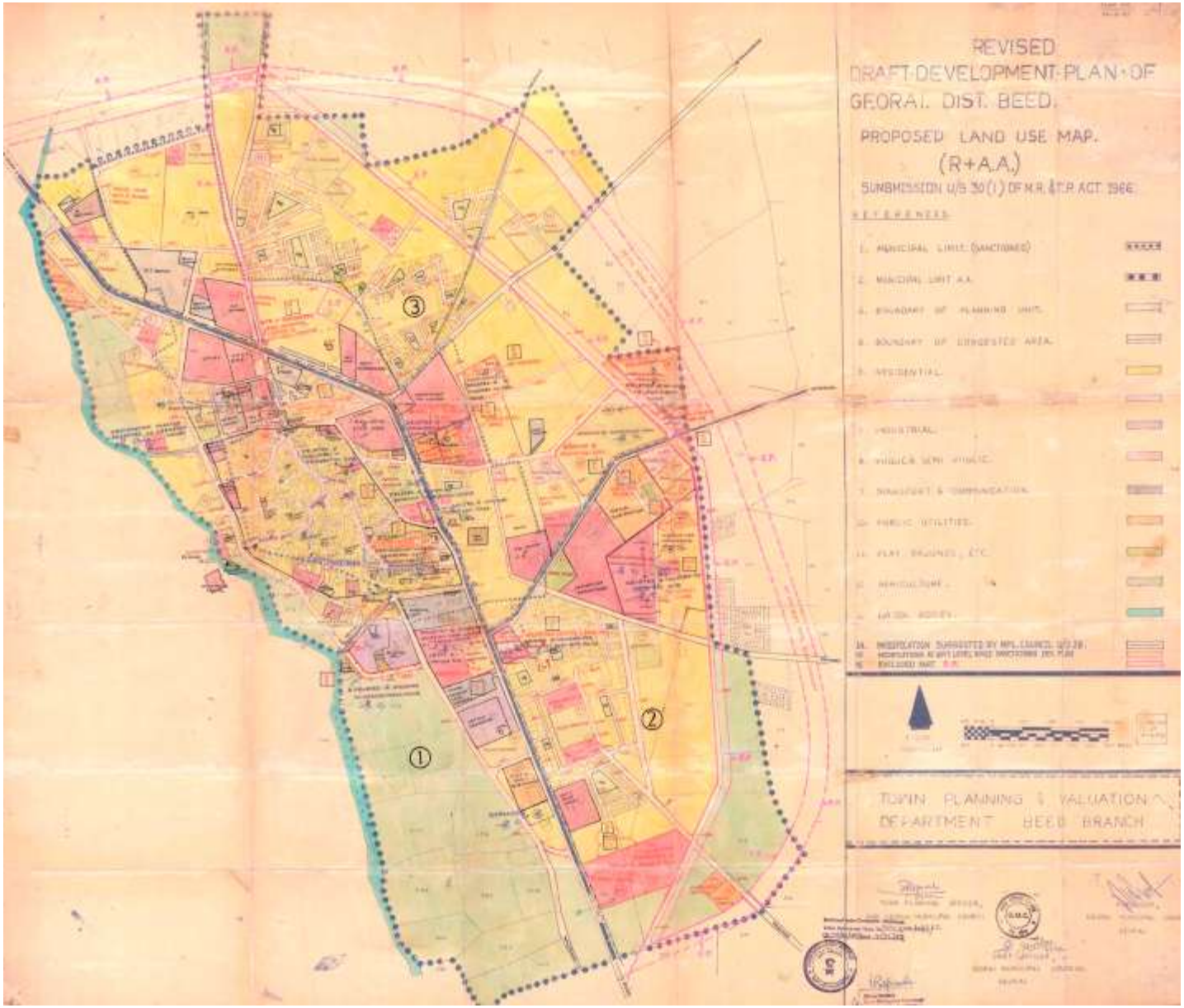
C-WAS, CEPT University, Ahmedabad, India

Annexures

Land use map

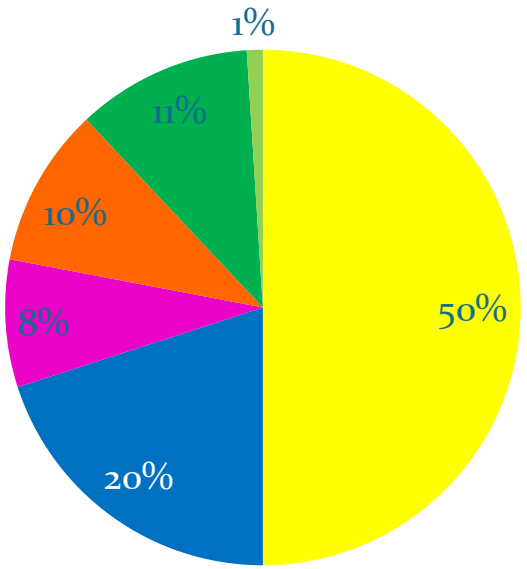


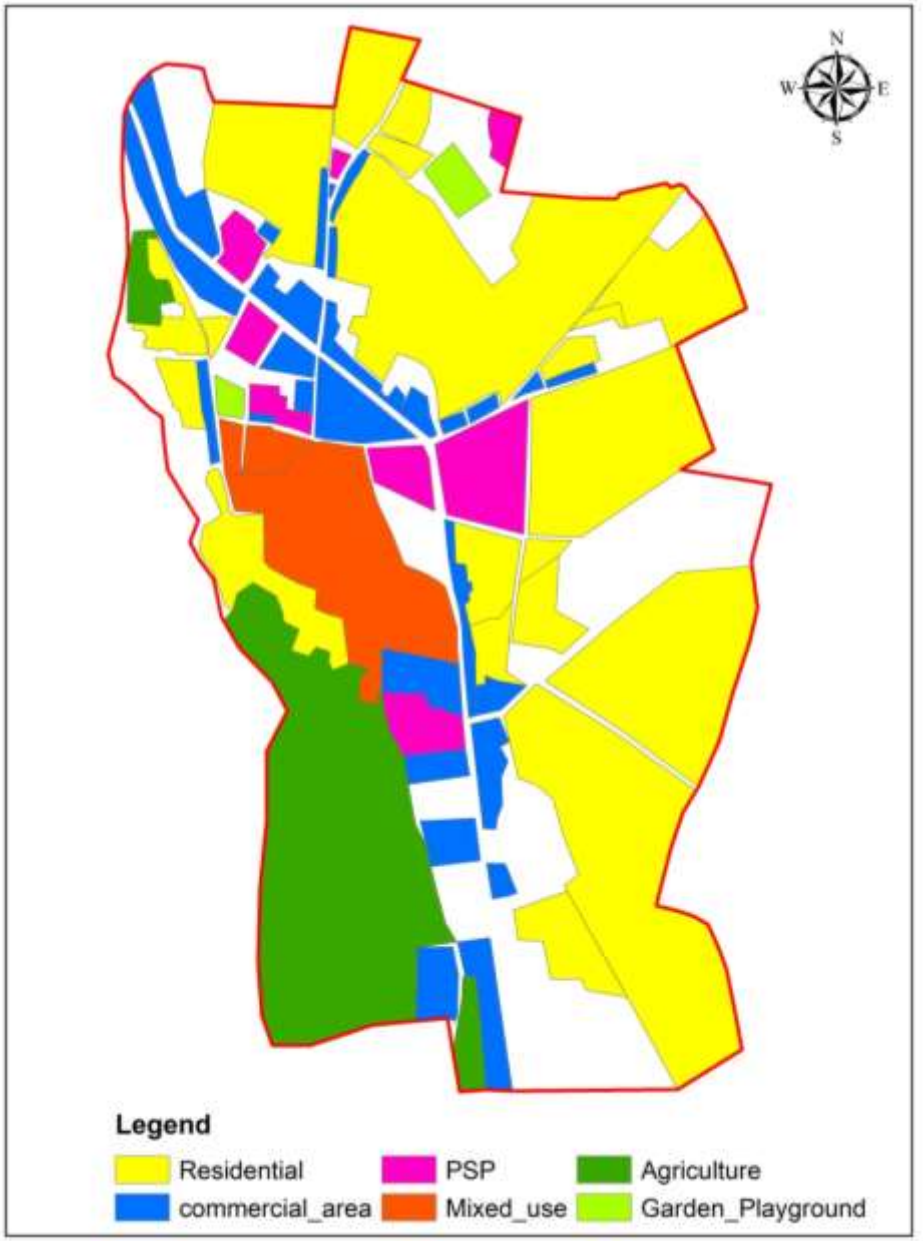
Residential
PSP
Agriculture
Transportation
Water bodies
Play ground
Public utilities
Industry



Note: This is the old Land use map which doesn't have commercial land use section .

Current Land use map

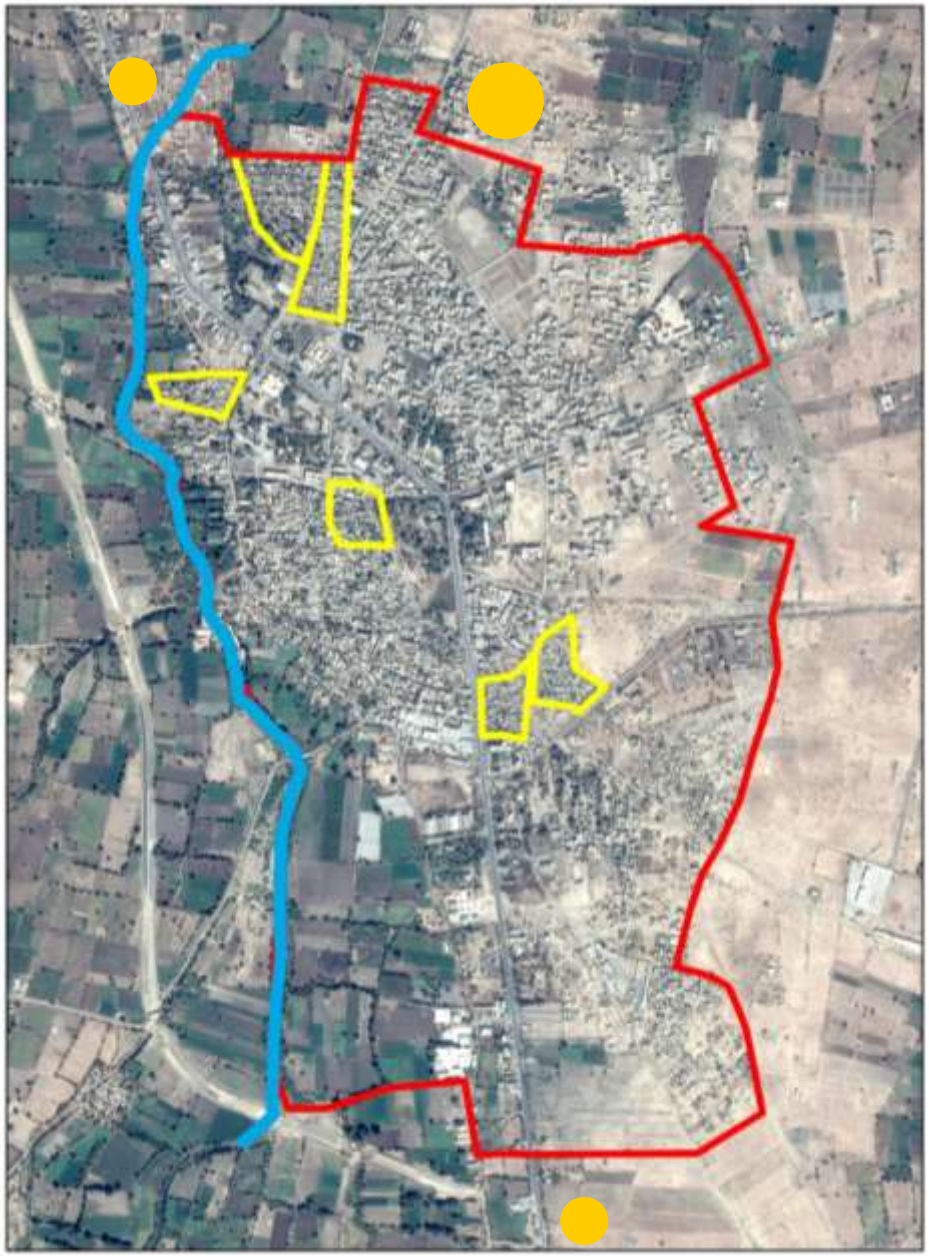




Note: This map is made on the basis of the field visit as there is no latest map available in council.

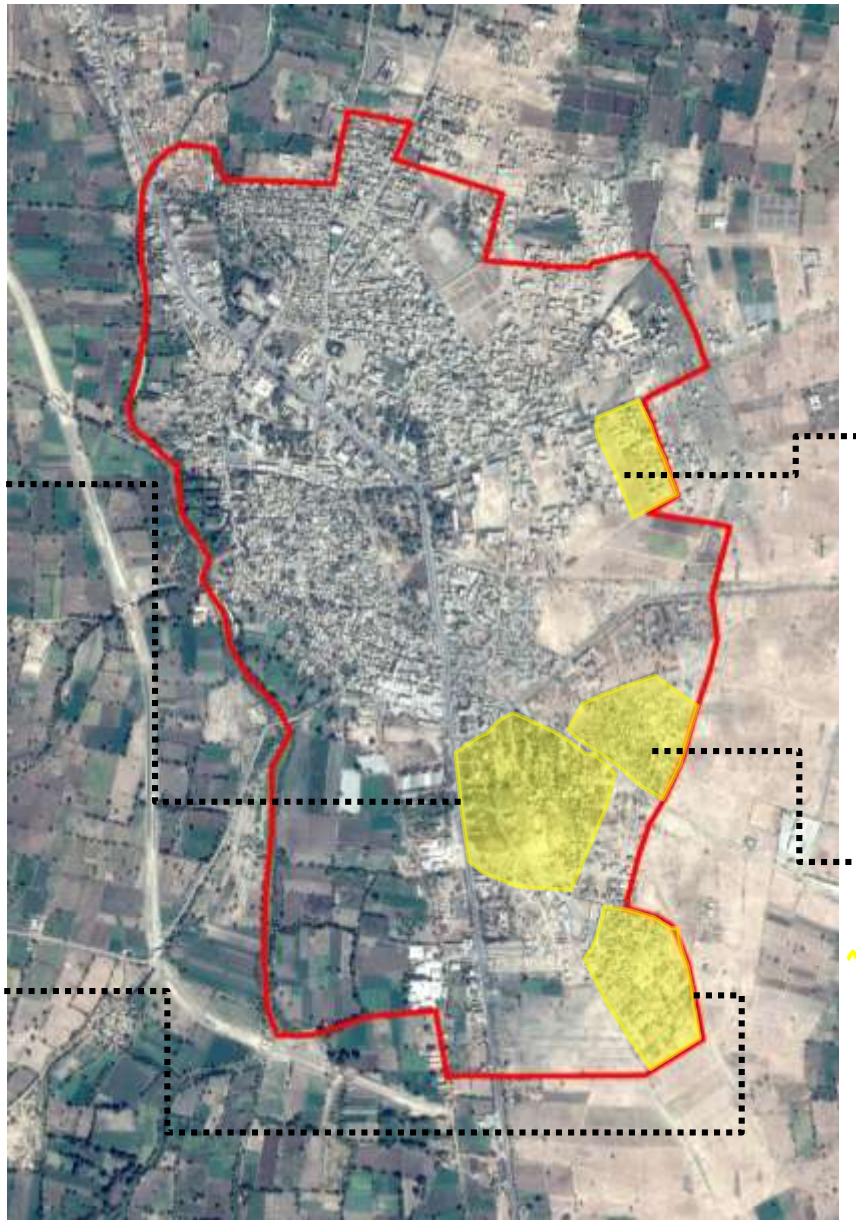
Settlement pattern and natural features

Sr. No	Slum	Household	HH having Individual toilet	HH –Don't have individual toilet(Tentative)
1	Sanjaynagar 1 and 2	753	738	15
2	Sathenagar 1 and 2	746	712	34
3	Islampura	90	88	2
4	Bhimnagar	200	180	20



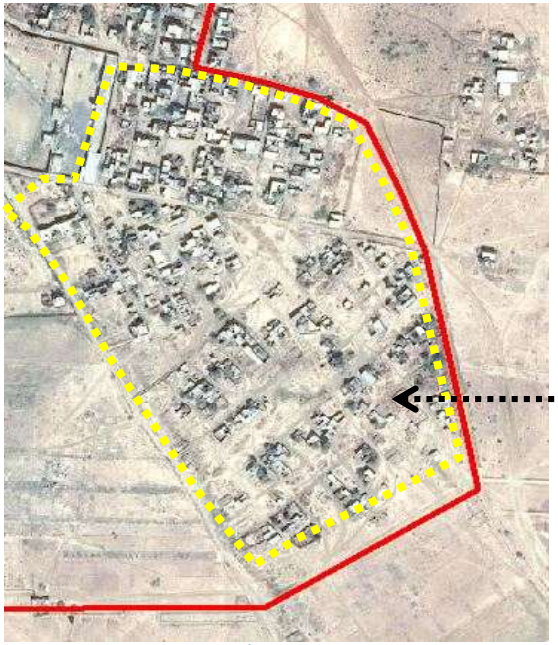
Area having Lack of water connections

Darloom area

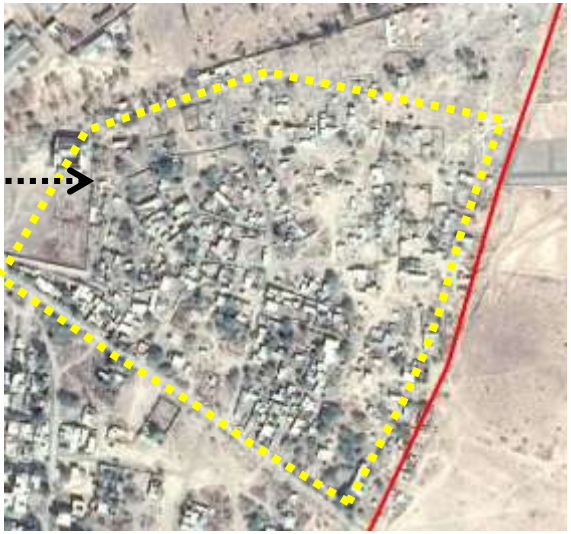


Municipal boundary

Balraje nagar

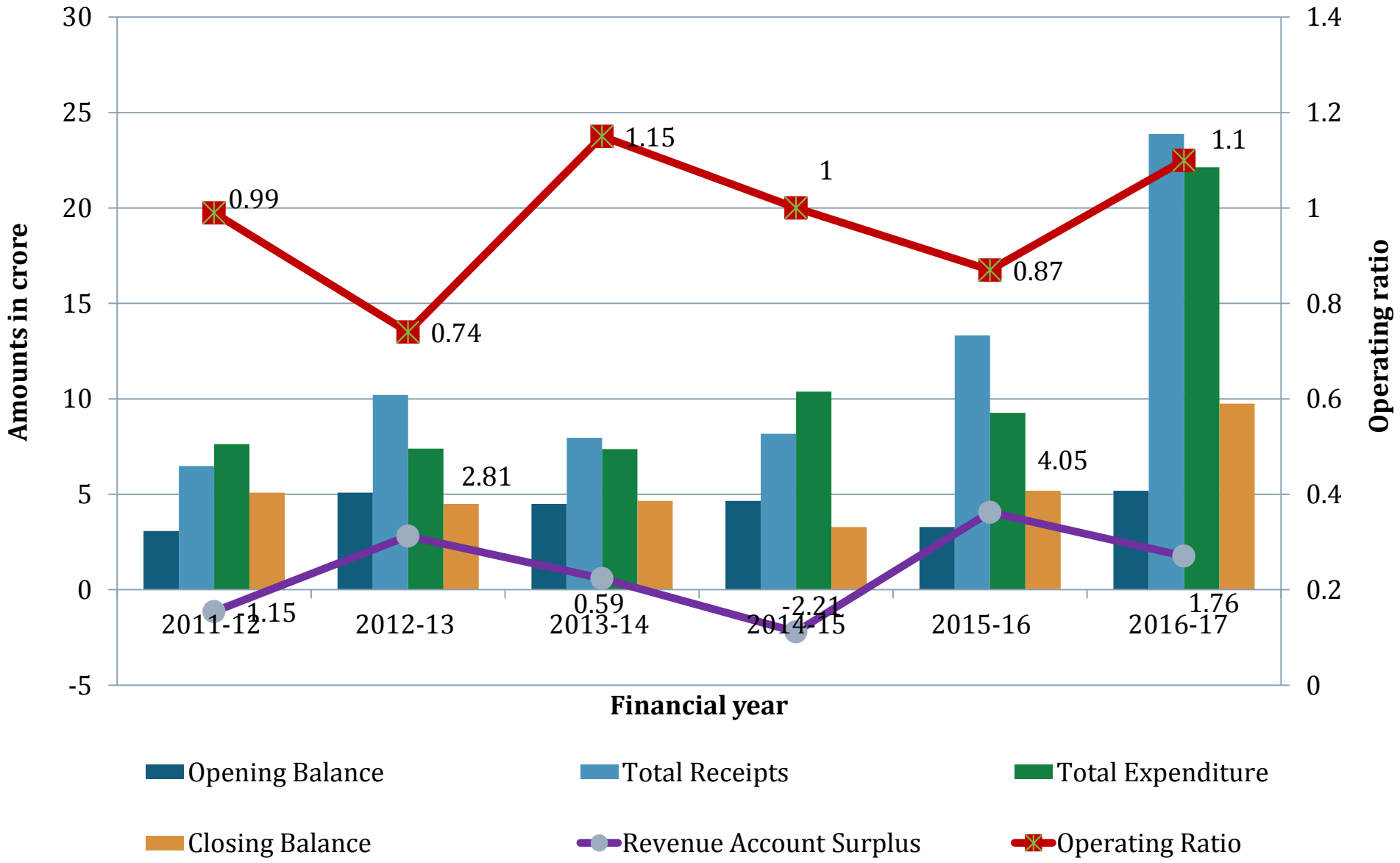


Tayyab nagar



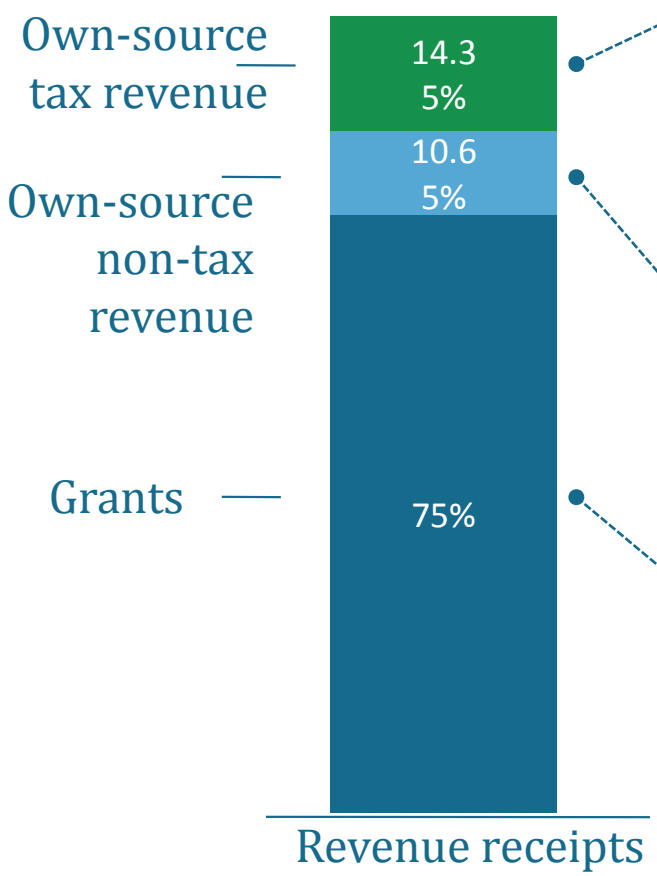
Achanak nagar

Budget Analysis- Georai



Revenue receipt share- Average

Georai ULB Revenue receipts (Average between 2013-2017)



- The two main sources of tax revenues are property tax and water tax

Property tax – 46 % of average tax revenue from 2013-2017
Property tax per property according to calculation - 2963 Rs
Water tax - 45 % of average tax revenue from 2013-2017

- Non-tax revenues like **rent from properties, licence fees ,fines , penalties ,sales of forms** etc. make up a small portion of revenue receipts

The average revenue grants amount 24.65 crore **constituting ~75% of total revenue receipts**

- Share of per capita in the revenue share is tentatively 1756 Rs.
- Property tax share is 46% which includes sanitation tax, education tax ,special education tax.

Source: ULB Budget (2017-2018)

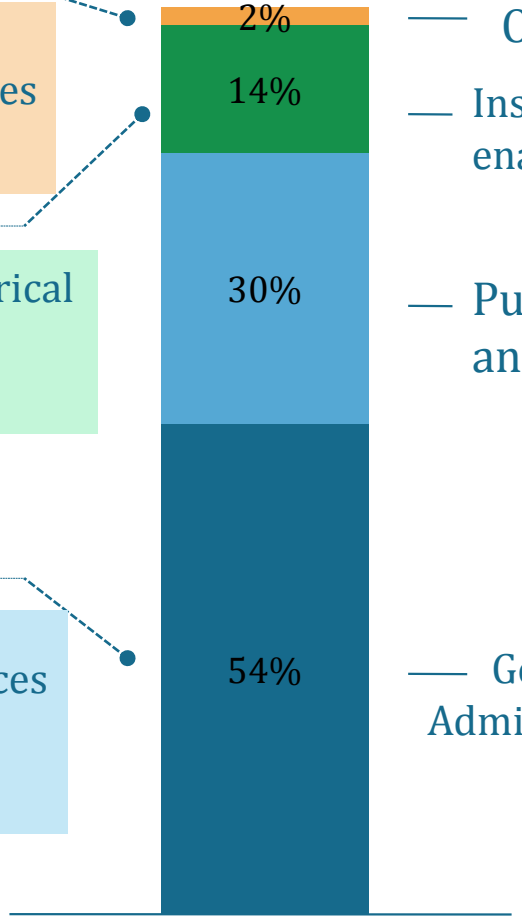
Revenue Expenditure Share- Average

Georai ULB Revenue expenditure, (Average between 2013-2017)

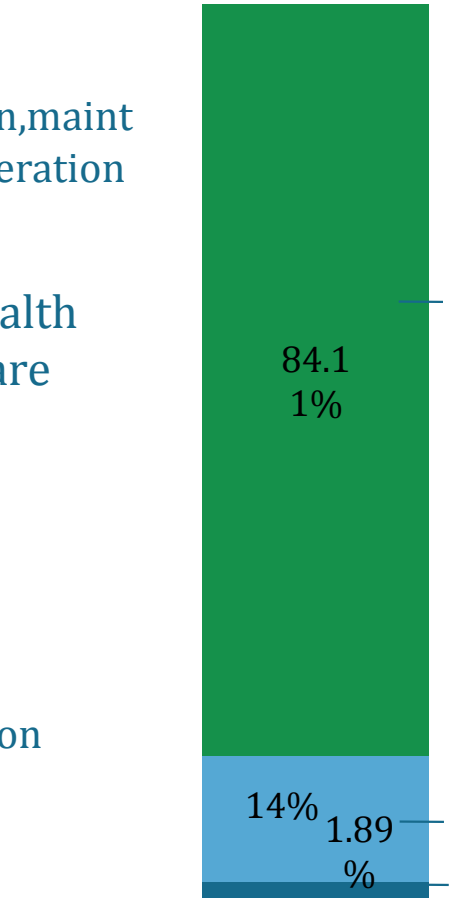
It includes expenditures on publicity of schemes ,expenses for special occasions, etc

Plant and machineries, electrical installations, furniture & fixtures and so on

It includes Salaries ,allowances ,pensions ,gratuity ,administrative expenses



Revenue expenditure

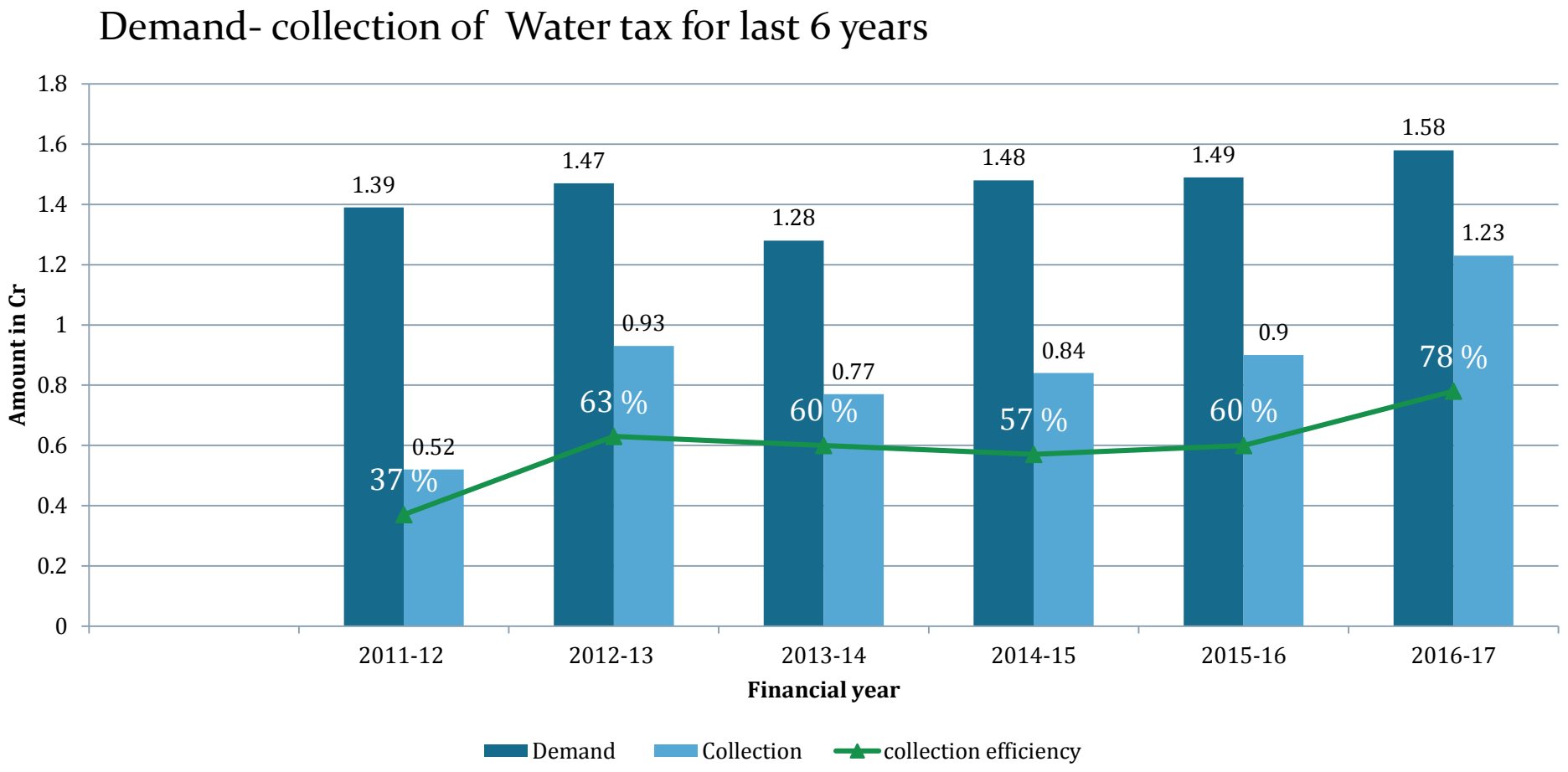


Public health and welfare

- Per capita expenditure is 2274 Rs.
- Per capita expenditure on SWM ,Water and Waste water – **511 Rs**

Source: ULB Budget (2017-2018)

Water tax – Demand collection



- Collection efficiency of the water tax is gradually increasing from 2011 to 2017.
- Water tax contribute 45% of the total own tax source of the ULB.
- Water tax is 1560 Rs per year for the residential area.
- Twice for the commercial area, four times for the industrial area.

Regulations of Scheduled Emptying

Stakeholders & Their Responsibilities

Municipal Councils		Contractors		Households	
Fecal matter is dumped only at **designated site**	Septic tanks are cleaned only by the **assigned contractors**	Use of safety gears and maintain **hygienic conditions** during emptying and transport process	Adequate **regular emptying** of septic tanks	**No damage** to septic tanks, and they should be **emptied periodically**	**Support the contractor** during the emptying process.

Scheduled Emptying- Data required & Awareness

DATA REQUIRED

- Property Records
- HHs Surveys through Sanitab
- Zoning and Route mapping of the vehicles for scheduled emptying.
- Property tax survey along with Name, phone number, address of households
- Number of toilets having septic tanks.
- Water availability.
- Accessibility

AWARENESS

- Posters & Banners
- Newspaper Advertisements
- Rallies and awareness during Good morning pathak.
- Awareness through social media sites.

Demand based Emptying service for outgrowth

Demand based emptying of the outgrowth at the initial stage. Schedule emptying can be taken up after consulting the institution in the outgrowth.

Current status of outgrowth area

1.	Nature of outgrowth	Villages – Kolher, Takadgaon, Ranzani, Pimpalgaon.
2	Authority	Gram Panchayat
3	Population	1500
4	Household	300
5	Septic tank emptying services provider	ULB
6	Treatment of septage	Existing dumping Site without treatment
7	charged for cleaned septic tank	Rs-2300 per trip

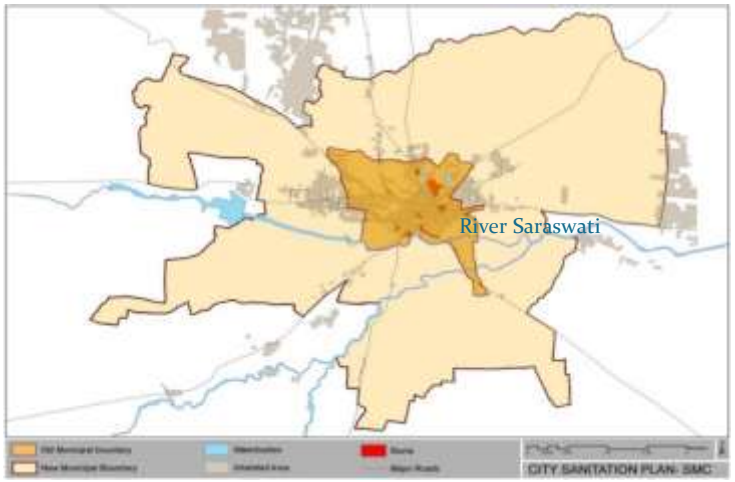
Need to assess the current fecal load/Emptying per month to calculate the emptying and treatment infrastructure requirement

Sewage Treatment v/s Septage Treatment

Aspect	Sewage Treatment	Septage Treatment
Treatment	Solid and liquid Treatment	Solid and Partial Liquid Treatment
Construction	New construction of sewers, demolishing of existing septic tanks	Works with existing system of septic tanks, no new construction apart from FSTP
Time Frame	Project will take years to take off	Project can take off within a Years time
Land Requirement for Treatment Plant	3 lands- acquisition required	Will occupy less space, land options already available, at the most acquisition for extension
Surrounding Villages	Will not serve surrounding villages	Will serve surrounding villages
CAPEX for Treatment Plant	INR 98.8 crore	INR 55-65
Annual OPEX for Entire Operation	INR 2.55 crore	INR 15-20 lakh
Burden on Citizens	Added capital expense in connecting toilet to road sewer INR 2011/-/House Annually	No additional capital expense apart from creating access to septic tank for few households INR 250-300/Sanitation tax/property

Identifying treatment facility - Compare Sinnar and Wai Cases

Sinnar	Population	72000
	Area	51 Sq.km



Treatment Adopted– Anaerobic digestion

Wai	Population	36025
	Area	3.64 Sq.km

Treatment Adopted– Packaged treatment plant

Key Points	Sinnar	Wai	Georai
Total No. of Septic Tanks in the city	12000	6000	**6234**
Total no. CT's/PT's in the city	22	31	**6**
Capacity of proposed FSTP	70Cu.m/day	40 Cu.m/day	**28 Cu.m/day**
Suction Emptier trucks required	1 / 2 Vehicles – 3000 ltr 1 / 2 Vehicles – 1500 or 600 ltr	2 Vehicles – 5000 litre	**1-3000 litre,1-3000 Litre 1- 1000 litre**
Area of land required	2500 sq.m	1000 sq.m	**1872Sq.m**
Treatment Adopted	Anaerobic digestion	Packaged treatment plant	**Sludge drying**
Cost of FSTP	1.88 Crore	1.5 Crore	**Tentative cost-1.05 Crore**

Septage Management Plan – Treatment facility

Selection of treatment technology considering the following parameters

- Septage to be treated daily is 28 Cu m + commercial and outgrowth
- Nearest STP is at Aurangabad (which is 95 km away from the city). Hence not feasible to use it.

Treatment of septage and assessment of technology providers

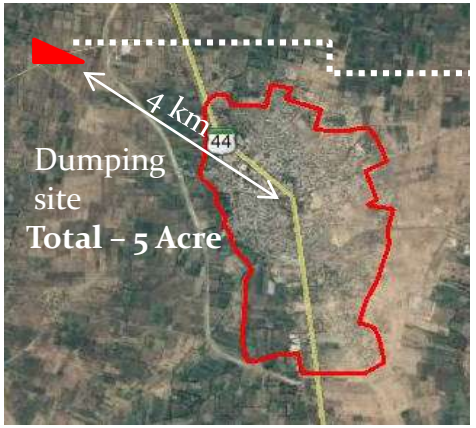
Technical performance of treatment options
- •Required quality output
- •Local market scenario, its pros and cons
- •Pretreatment/post treatment requirement
- •Site condition (soil type, ground water)
- •O & M Cost
- •Ease of construction & maintenance

Presence of treatment plant service provider and Type of tender

- Assessment of treatment technology providers in near-by cities such as Aurangabad, Beed.
- Design and floating of tender, DBOT
- Quality and Quantity of septage to be treated should be studied.

Availability of Land and its surround land use

- Land available with the ULB is 5 acre.
- Land adjoining to the treatment land is agricultural land.
- Currently only 25% of the site is used for solid waste disposal.
- Rest of the land can be used for septage treatment purpose.
- Land is within the vehicle reach at about 4kms from the city center.



Septage Management Plan – Treatment facility

Reuse of the byproducts

- Treated water, Manure and Methane gas are the possible by products of the treatment plant
- Assessment of farmers to use manure for the same is needed.
- Treated water could be used for maintaining CTs/PTs or nurseries.

Possibility of linking it with the Solid waste treatment plant

- Currently septage is being disposed of on the land parcel for the solid waste disposal treatment plant site.
- GMC has finalized for segregating the solid waste at source and composting the wet waste and making manure.
- Assess possibility of mixing compost with the by-product of septage treatment plant and sell as manure for the same

PCB report of the quality of waste water

- According to The Water Quality Status of Water Bodies of Maharashtra with Recourse to Analytical/Statistical Tools report published in 2014,

  In Georai taluka, exceedance of 10-15% of TDS, TH were observed, villages' viz. Patrud, Georai, Hirapur had poor WQI.

Availability of Funds

- Total amount received for last two years is Rs 5,08,97,204
- For year 2017-18 amount received till 31.10.2017 is Rs 1,44,52,522

OPEX

- Sanitation tax
- Reused and Selling of byproduct

Proposal Financial Model Service Chain