

Wai CityWide Inclusive Sanitation

September 2022

Wai Municipal Council

Center for Water and Sanitation CRDF, CEPT University, Ahmedabad



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Background for sanitation planning in Wai

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- Fostering Inclusive sanitation through the lens of equity and gender
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Wai Municipal Council - CEPT partnership

In 2012, CEPT, through a BMGF grant, was working on a making a case for non-networked sustainable sanitation for small and medium towns. The city of Wai was chosen as one of four cities, where City Sanitation Plans would be prepared. This was done in consultation with Water Supply and Sanitation Department (WSSD) of the State Government of Maharashtra and Maharashtra Jeevan Pradhikaran (MJP).

In 2013, after a consultative process, the CSP was prepared and the city government came forward to ask CEPT for implementation support. Based on the city's priorities, two main proposals were selected and the city set about making itself Open Defecation Free with safety managed faecal sludge.

The ODF campaign received a push with the launch of Swachh Bharat Mission, for which CEPT provided implementation and monitoring support to the local government. It was declared ODF in 2016 and has since then sustained this status according to regular revalidations.

With the implementation of the Integrated Faecal Sludge Management plan, the city became the first in India to implement scheduled desludging of septic tanks and one of the very few to have a Faecal Sludge Treatment Plant. The city was now been declared ODF++. Lessons in sanitation planning from this small city were disseminated across all urban centres across the state of Maharashtra, under the Swachh Maharashtra Mission for Urban Areas.

In 2018, Wai was chosen as one of eight cities across the globe for the CityWide Inclusive Sanitation Programme funded by the BMGF. With this, the city continues its journey in proving itself to be a model city in the sanitation sector.









Citywide Inclusive Sanitation

Initiative by the Bill and Melinda Gates Foundation

A state of urban sanitation, where all members of the city have access to adequate and affordable sanitation services through appropriate centralized and decentralized systems, without any contamination to the environment along the sanitation value chain.

POLITICAL WILL AND **ACCOUNTABILITY**

systems incentivize service improveme nts in planning, capacity, and leadership

> COMPREHENSIVE LONG-TERM **PLANNING** fosters demand for innovation and is informed by analysis of needs and resources



RANGE OF OPTIONS Authorities deploy a range of

funding, business, and hardware approaches—sewered / nonsewered—to meet goals



EQUITABLE SAFE SANITATION

Everyone in an urban area, including the urban poor, benefits from equitable safe sanitation services



GENDER AND SOCIAL EQUITY

are designed into planning, management, and monitoring



SAFE MANAGEMENT

Human waste is safely managed along the sanitation service chain. starting with containment



MUNICIPAL ACCOUNTABILITY

Authorities operate with a clear, inclusive mandate, performance targets, resources, and accountability

Swachh Maharashtra Mission aligned Swachh Bharat Mission





Government of India in 2014 has launched Swachh Bharat Mission (SBM) to make India "open defecation free" (ODF) by 2019. Under SBM, emphasis has been put towards toilet construction. These toilets will be connected either to sewer networks or onsite sanitation. systems. So while toilets are an essential part of overcoming the sanitation challenge, they are the means not the end. They will only deliver the results we want if coupled with measures to reduce the amount of untreated waste. Government of Maharashtra aims to move towards improved sanitation by encouraging access to own toilets with safe management of faecal waste, for which they have developed a concept of ODF, ODF+ and ODF++ cities for the first time. Later on this concept was adopted by the Government of India for the whole country. The state has also introduced an incentive scheme wherein the cities that are declared ODF are provided incentive grant based on the size of city. The cities can use this fund for attaining ODF+/++ status.

Mission Objectives

- Elimination of open defecation
- **Eradication of Manual Scavenging**
- Modern and Scientific Municipal Solid Waste Management
- Behavioral change regarding healthy sanitation practices
- Awareness about sanitation and its linkage with public health
- ULB capacity for enabling private sector participation

Kev reforms



Framework for ODF. ODF+/++ cities with three tiered validation mechanism



Incentive funds for performance. Convergence of funds with 14th FC grants



Demand driven, beneficiary led toilet construction. Emphasis on good quality.



Sustainability Charter and 'Mission OD Watch' to restrict slippage back to OD



Unique, decentralized institutional setup for implementation and robust monitoring



Moving beyond toilets with safe and sustainable management of septage and wastewater



Guidelines for ODF, Sustainability and FSSM Planning. Capacity building workshops for cities



FSSM strategy for achieving complete treatment across all cities. Adopting co-treatment as a solution



Vetting of technologies for FSTPs. Funds for DPR preparation







Ceremony for declaration of Urban Maharashtra as ODF in presence of Hon. President of India 2^{nd} Oct 2017



Wai - A city just like many others in India

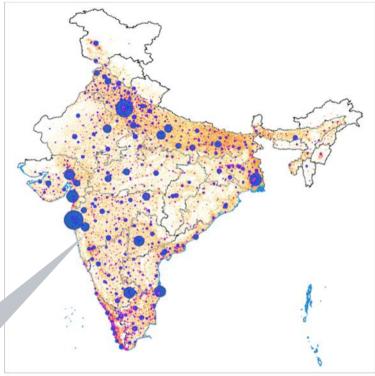
Wai is representative of more than 7,400 small and medium towns of India, including 3600 Urban Local Governments and 3800 Census Towns. Approximately 40% of India urban population - 150 million people - live in these towns.

Like all other small and medium towns in India, the city of Wai has faced the same sanitation issues – open defecation, untreated disposal of faecal waste, financial constraints and growing environmental pollution.

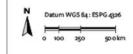
Wai has overcome these problems and has emerged as a model for other cities in sanitation planning.

This city has shown that it is possible for a small town to deliver high quality, affordable, equitable and inclusive sanitation services to its citizens.

















A small town in the Satara district of Maharashtra...





95km south of Pune; 35km from Satara



River Krishna



43,000 population 4% slum population



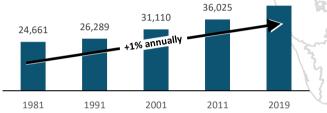
8,991 households



3.54 sqkm



81% literacy



- Pilgrimage town "Dakshin Kashi"
- 250 temples and famous ghats
- · Bollywood movie shooting location









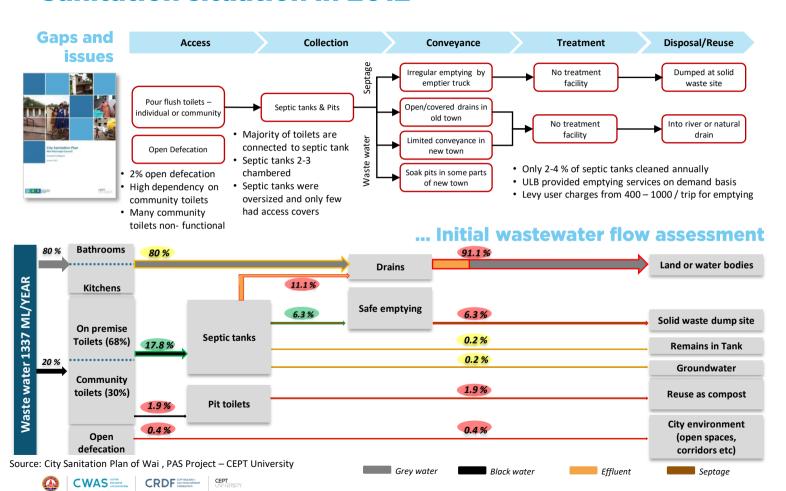








Sanitation situation in 2012



City sanitation plan for Wai in 2012

In 2012, the Government of Maharashtra via the Water Supply and Sanitation Department (WSSD) and the Maharashtra Jeevan Pradhikaran (MJP) chose the city of Wai along with 3 other cities for developing City Sanitation Plans (CSPs) with support from CEPT University and AIILSG.

The aim was to prepare a City Sanitation Plan which focused on universal access to sanitation through outcome based options rather than technology based options. Further, the proposals had to be financially feasible for the ULBs of the two cities.





Development

options





of sanitation

Assessment of sanitation across various sectors

Analysis of city budgets and finances

Continuous stakeholder engagement

Treatment

Waste water

treatment facility

Fecal sludge

treatment facility

Proposals and solutions





Universal access

to toilets

Access

Adequate primary treatment through improved septic tanks Rehab of drains (Phase 1) & Settled sewer (Phase 2)

Conveyance

Institutional

assessment

Capacity

Suction emptier truck (Phase 1)

100% coverage of conveyance system

(Phase 1) 100% Treatment of septage and grey water

Safe disposal or reuse of waste

Disposal/Reuse

Safe disposal or

reuse of treated

waste water

Reuse of treated

septage

Based on local priorities, in 2013 WMC decided to focus on two high potential solutions in the near term

2

Collection

Improved septic

tanks

Own Toilets + Septic Tanks

Construction of own toilets, individual or shared by 2-4 households, along with attached septic tanks

Septage Management

Regular (in a 3-year cycle) collection and disposal of septage from septic tanks, along with necessary refurbishment of septic tanks, construction of a treatment facility for septage and the reuse of treated septage



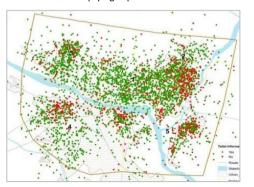
Citywide assessments across the service chain

Property level database of toilets and septic tanks



Assessment captures the following aspects

- · Toilet availability
- · Where is the toilet connected to
- · Size and shape of septic tank
- · Access covers to septic tanks
- · Accessibility of septic tanks
- When was the septic tank last emptied
- · Desludging frequency of septic tanks
- · Problems encountered while desludging
- · Reasons for emptying septic tanks





A mobile app was developed for this purpose which was then used to do a 100% survey of households across the city. Data from the app plugs into a customized dashboard with charts and maps.

SaniTab allows for customized questionnaires and has since then been used for various surveys in Wai and other cities.



City level assessment using performance indicators



- Coverage of individual toilets in the city and especially in the slums
- Coverage of adequate sanitation system including sewage network and onsite systems
- Collection efficiency of the sanitation system Adequacy of treatment capacity
- · Quality of treatment
- · Extent of reuse and recycling
- Efficiency in redressal of customer complaints
- Extent of cost recovery
- Efficiency in collection of charges

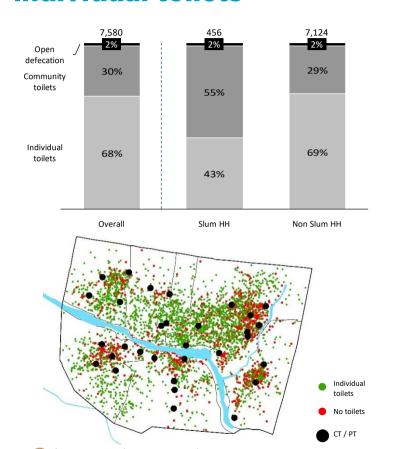
Septic tank study

A detailed technical assessment was undertaken for sample properties in terms of design, construction, influent and effluent wastewater quality. The study also gave various design recommendations for well-functioning septic tank.





Initially only 68% of households in Wai had access to individual toilets



Open defecation



- Lack of availability of finance, space constraints and legal clearances are cited as the main barriers to adoption of individual toilets
- As a result, even non-slum households rely on community toilets

High Dependency on community toilets which were poorly maintained



- Have 4-5 seats, built side by side with no electricity supply in older blocks
- Lack water supply within the toilet. Water is supplied outside the toilet
- However newly constructed toilet blocks were adequately equipped

WMC launched "Own toilet scheme" **Later aligned with Swachh Bharat Mission**

A resolution was passed by the city council which pledged to make available a subsidy of Rs 5000 for households without toilets. Wai was the first city to pass such a resolution.

Funds for this subsidy were to be sourced from ULB's 14th FC grants.

This received further support when the Swachh Bharat Mission was launched and households received further subsidies from the center and state governments.







Swachh Bharat Mission Subsidy: INR 4.000

Swachh Maharashtra Abhivan

Subsidy: INR 8.000

Urban Local Body Subsidy: INR 10.000

Total Subsidy for toilet INR 22,000

Processing applications for toilet subsidy



SMS to targeted individuals inviting applications for subsidy. Forms distributed through various channels

Application submission Online processing of applications and offline database

Site inspection

SMS about progress and approval of application, invitation to collect work orders First instalment of subsidy to beneficiary bank account

Toilet construction On ground inspection of completed toilet Second instalment of subsidy to beneficiary bank account









Ensuring success through strong communications and monitoring

Generating awareness about the subsidy scheme, benefits of individual toilets, and ill effects of open defecation

1. Posters designed to share scheme information, displayed prominently across the city - near temples, in residential areas, at road crossings and in market places.





स्बच्छ महाराष्ट्र अभियान: रु. १२.००० नगरपरिषद: रू. ५००० ते १०.००० अनदान

बांधायला परेसे पैसे नाहीत? शौचालय कर्ज

गट शौचालय

आजंच नगरपालिकेत याबाबत चौकशी करा व अर्ज भरा !!







2. Day and night announcements and jingles on rickshaw hired to go around the city

खशखबर ! खशखबर !! खशखबर !!!

स्वतःचे शौचालय नसलेल्या कटुंबांना वाई नगरपालिकेची विशेष भेट...



स्वच्छ भारत अभियानाच्या माध्यमातून वाई नगरपालिकेने आपली

"वैयक्तिक / गट शौचालय योजना"

नव्या रूपात रावविण्याचे ठरविले आहे



वाई मधील पहिल्या १०० शौचालयांसाठी शासनातर्फे मिळणार आहे

रु.१२,००० चे अनुदान !!

याशिवाय वार्ड नगरपालिकेतर्फे शौचालय नसणाऱ्या पात्र कुटुंबांस देण्यात येणाऱ्या अनुदानाची रक्कम

रु. ५.००० वरून तब्बल रु. १०,००० !!

काय म्हणालात ?

तुमच्याकडे वैयक्तिक शौचालय वांधण्यासाठी पुरेशी जागा अथवा निधी नाही ?? तर मग अधिक किफायतशीर "गट शौचालया" चा पर्याय निवडा

- गट शीचालय -

ज्या कुटुंबांना वैवस्थिक शीचालय बांधणे शक्य नाही, अशी एकाच परिसरात राहणारी, एकमेकांना बांगले ओळखणारी २ ते ४ इटेबे, जबळवास उपलब्ध असलेल्या स्वतःच्या सामाईड जागेमध्ये गट शौचालय बांधू शबदात. यामुळे औचालय बांधण्यामाठी प्रत्येक कटुंबास लागगाऱ्या निधीमध्येटी बचत ट्रोईल, गट औचालये ट्री संबंधित कटुंबांच्या मालकीची असतील आगि त्यांचा बायर त्यांच्यामाठीच नियंत्रित केला बाईल, गट शौचालयांची देखभाल आगि दरस्ती संबंधित कुटुंबांकदूनच केसी जाईस.

शौचालय बांधण्यासाठी कर्ज घेण्याचे पर्याय



तमच्याकडे 'स्वतःचे शौचालय' आहे का?

पैसे नाहीत ???



जर तुमच्याकडे पैसे नसतील तर तुमचे स्वतःचे शौचालय बांधण्यासाठी तुम्ही कर्ज घेण्याचा विचार केला आहे का?

आपण घर, आरोग्य, शिक्षण, बाहने इत्यादींसाठी कर्जे घेतो...मग शौचालवासाठी का नाही?!



आपल्याचा कर्जे कोणाकडून मिळु शकते? काहीं पर्यावांसाठी मागील बाजूस पाहा:

शौचालय बांधण्यासाठी कर्जे घेतलेल्या व्यक्ती

मी. सवर्णा लोखंडे वा सिकरच्या रहिवासी असन त्यांचा शिवणकामाचा व्यवसाय आहे. थान्यचनच*नव*रा करणा≕ग मायक्रोफायनात्स इनिस्टब्र्यमनवटे नीदणी नेलेल्या एका बचार गटाच्या त्या २००८ गामन मदस्य आहेत. शीचालय बांधण्यासाठी त्यांनी बचर गटाकड़न कर्न पेराले. आरा

लांनी संपर्ण कर्वाची परवकेट केली आहे. महाराष्ट्र शामनाल्डन त्यांना ऑक्टोबर २०१५ मध्ये "स्वन्त्रता वत" स्ट्रणन गौरविले बाई शहरातील २ सचत ग्रहांगशील महिलांना त्यांची त्यतःची शीचालये वांगपगामाती यार्थ अर्थेन को-ऑपरेटिव्ह वैकेकडून कर्जे मिळाली आहेत. प्रत्येक महिलेला रू. २०,००० एवंडे कर्ज

कर्जे ११% ज्याच दराने घेतली असन ती एका वर्षात परत फेडायची आहेत. वचत गटातील महिला एकमेकोमाठी हमीबार आहेत. उतर कोमन्यारी बादा नारणाची आवश्यकता नारी

त्यांच्या शौचालयांचे बांधकाम चाल आहे.

3. Handouts and subsidy application forms given to targeted households





4. Local radio and TV spots for animated movies and jingles

5. Movies, talks and presentations during festival gatherings like Ganpati Utsav



















6. Newspaper coverage



अधियानीतर्गत दोन ऑक्टोबरफर्यतः पालिकेत्वे गुरु मार्कित प्रथमानी वैवर्षितक शोपालय बांधन सक्रिय संपूर्ण बार्ड शहर हागणदारीमुक्त स्थापना करण्यात आसी आहे. या सहभाग घेण्याची इच्छा दरीविकी. (निर्मेल) करण्यात येणात आहे. पचकाने चार तणांवर देहात्मक वालेखी नव्याने दाखन झालेखा त्यांसाती पारिकेलफें विविध कारवाई केली कोणाडी व्यक्तीने २१ अजीन न हरकत दाखना उपस्थ व उपाययोजना करण्यात उपह्यावर शीवास बस् नये, देन्यात आस स्वतः पुराकार चेठन पालिकेस कारवाई केली वाईल शीचालय जायव दशावय ऊर्फ बचा खरात. सहसार्य सरावे असे आवाहर जाते अला रुपक्षीने सार्वजनिक पता विभाव शर्मिया जातक नगराच्यक्ष भूषण गायकवाड व शौदालयांचा वापर करावा. पनंड्य मोरे अनित सावत संदोष

कारी आशा राउत यांनी ज्यांच्याकडे जागा उपलब्ध आहे, जावळे, सामाजिक कार्यकरें व

9. Providing architectural design solutions for identified households with space constraints

10. Encouraging group toilets where 2-3 neighbors construct a common toilet for themselves







11. School activities – drawing competition, form distribution, presentation to parents and teachers



12. Good Morning Pathak - monitoring squads for common OD spots in the city during morning and evening hours.

Those "caught' were not punished made to understand the importance of using a toilet over open defecation and given toilet subsidy forms



- 7. Community and ward level meetings with elected representatives leading the meetings to encourage households to opt for own toilets
- 8. Household level group discussions and surveys







Wai was declared ODF in 2016

Wai was 1st declared ODF by the State Govt. followed by ODF declaration at National level by QCI in August 2016 & Revalidated ODF in September 2017 and April 2018



The city received a sum of Rs 1 crore as incentive funds after becoming ODF which was to be used towards becoming ODF+



Next step: Ensuring sustainability of the ODF status according to Govt of Maharashtra's charter



Sustainability Charter

We are committed towards the vision of Swachh Bharat. We shall ensure ODF sustainability in Maharashtra by:

- #1. Achieving universal access to Individual Household Level Latrines (IHHL), which is a leading development priority.
- #2. Ensuring adequate, clean and reliable access to public/community toilets across urban Maharashtra, wherever IHHL is not possible.
- #3. Ensuring ODF sustainability through effective participation of government, elected representatives, schools, donors, NGOs, SHGs, CBOs and the communities.
- #4. Continuing and institutionalizing rigorous ODF validation and monitoring process through "OD Watch" and "ODF Sustainability Tracker".
- #5. Encouraging development of OD spots into usable public spaces.
- #6. Recognizing and awarding ULBs for their sustained performance.
- #7. Moving towards ODF+/++ by ensuring effective collection and adequate treatment of human faecal waste.

Shri, Devendra Fadnavis

Chief Minister, Maharashtra









ODF sustainability

Moving towards universal coverage by mobilizing more applications for individual toilet subsidy

1. Exploring sanitation credit and the role of self help groups.

After achieving 85% individual toilet coverage, the city decided to move towards universal access to toilets by mobilizing applications and facilitating access to loans for those with financial constraints even after subsidy.



3. Toilet and lender fair to bring together potential applicants, financial lenders, sanitation technology providers and sanitary-ware vendors



Self help groups (SHGs)

Micro-finance institutions (MFIs)

Credit societies

Commercial banks

Housing finance companies (HFCs)

2. Awareness activities for encouraging sanitation credit for individual toilets. Jingle and video at local event. Pamphlets giving information about sanitation credit.







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पूराचा हा सामाना विना करूंब सांच्या	ा बर, श्रीवधित, रेश मेरे मिठका पूछना रोला अपनी विवय) अह्मस्या नर	वस्त्रप्त, वज्ज रहता ल हार्र, वेंद्र विदिश्य मेरेल १८ अज्यद्ध स ल रणपुर हार्व रेंग्सा कर्जीन जिल्ल संस्थे कर्ज प्रक्रियेजावत	पर श्यामी बेन् ता धरोषा पापर करन पार्ती वसचित तथा ज्या कार्योलकाक	तो. वर शर्वय प्रतिनिधी मृत् होड शक्ते.



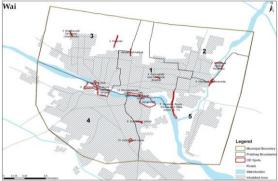






Cleaning and developing old OD spots into beautiful public spaces to discourage reverting to old habits

Form of development: Level the spot, plant trees, lay paving blocks, illuminate the spot, put benches and protect the area with fence







Assessment and upgradation of Community and Public Toilets

- CT/PT audit across the city
- Refurbishments according to CSP recommendations
- One new PT constructed at strategic location which can serve main temple visitors as well as the nearby slum
- Contract with Nirmal Bharat foundation for toilet maintenance
- Refurbishments according to Swachh Sarvekshan requirements and ODF++ compliance



School sanitation investment requirement

12 Public Schools

Girls- 1247
Toilets- 11
Urinals- 47

Boys- 1479 Toilets- 12

Urinals- 59

Staff - 96

New toilets

Rs 17 Lakhs (44 Toilets + 38 Urinals)

(103 Toilets +

192 Urinals)

Refurbishment

Rs 6 Lakhs
Annual O&M

Rs 3.2 Lakhs



14 Private Schools

Girls- 3157 Toilets- 36 Urinals- 75

Boys- 3406 Toilets- 24 Urinals- 82

Staff - 251

INR 12 Lakhs
INR 55 Lakhs

INR 7.8 Lakhs



Wai Council signed a resolution to implement an integrated FSSM plan

Wai was the first city in India to have passed such a resolution

The resolution covered aspects like:

- Citywide FSSM
- Involving Private sector
- · Scheduled cleaning
- · Land for treatment facility
- Taxes to be levied

All septic tanks in the city emptied regularly. Affordable and inclusive emptying service. All human faecal waste treated and made safe for disposal. A dedicated treatment facility for Wai. Reuse of treated water and sludge. The procedure of the process of the



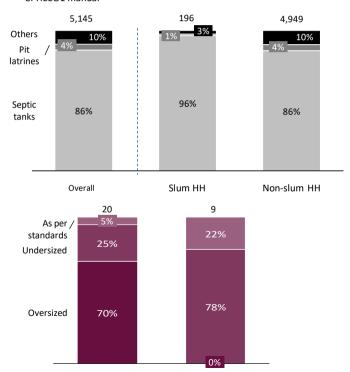
All toilets connected to safe collection and disposal systems. Septic tanks built according to standards.

Safe disposal of treated waste. No pollution of soil or water due to open dumping of untreated septage from emptier trucks. River is clean. Septic tanks function efficiently, drain effluent is of better quality.



Major dependency on septic tanks

- · Most personal toilets connected to septic tanks
- Septic tanks usually 2-3 chambered with properly constructed bases
- Access issues for some septic tanks
- Oversized tanks according to standards prescribed in IS codes and CPHEEO1 manual





Most personal toilets connected to septic tanks

Inaccessible septic tanks with sealed tops and no access covers

In old community toilets, septic tanks are behind the block making them difficult to access

Septic tanks located near drains





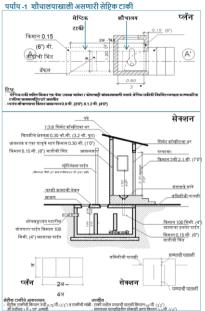
Personal toilet septic tanks

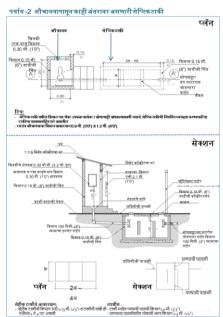
Community toilet septic tanks

Improving containment systems

1. Guidelines for proper construction of toilets and septic tank shared with toilet subsidy applicants along with the work order and at the Toilet and Lender fair













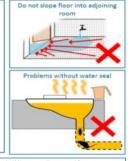


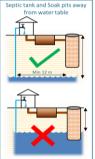
2. Training of local contractors for good construction practices for toilets and septic tanks. Illustrated guidebook in English and Marathi

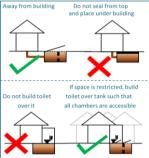


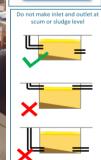


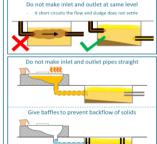




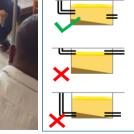














Average desludging frequency was more than 8-10 yrs

- WMC owned 1 suction emptier truck of 5kL capacity for the cleaning of all septic tanks in the town.
- Desludging of household tanks was demand based and chargeable at INR 1,000/ trip.
 Households called the ULB truck when their tanks overflowed.
- This amounted to a desludging frequency of 8-10 years (or even more) instead of the 3
 year CPHEEO standard.
- The truck was also responsible for desludging septic tanks connected to all community

"Yearly desludging of septic tank is desirable, but if it is not feasible or economical, then septic tanks should be cleaned at least once in two - three years, provided the tank is not overloaded due to use by more than the number of persons for which it is designed" - Pg 9-22, CPHEEO Manual



No drains	8%	
Open drains	57%	
Closed drains	35%	

Effluent from septic tanks

Effluent was generally released into the city's roadside drain network along with greywater from bathrooms and kitchens and was ultimately being let out into River Krishna. Very few septic tanks were connected to soak pits

When tanks are not desludged regularly, the efficiency of digesting faecal matter goes down over time leading to the release of untreated faecal matter from tank outlets. Similarly when septic tanks are not emptied before they overflow, untreated faecal matter goes into the drains as it has not been retained in the tank for the required amount of time.

Wastewater samples were tested from 7 locations across Wai and checked for the levels of Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Faecal Coliform and pH level. Results showed that the quality of effluent was beyond the prescribed norms.













Innovative concept of scheduled emptying of septic tanks

Benefits of moving from

complaint redressal on-demand system to

o regular scheduled service

Desludging frequency



Service on receiving call by HHs, who do not see the need for regular cleaning. Usually only when septic tank overflows in 8-10 years (2% annually).

Infrastructure optimization, Efficiency, Equity and affordability



ULB has one truck for desludging individual as well as CT/PT septic tanks.



Emptying charge of Rs 1000/trip levied by the ULB to cover the cost of operations.

This was a high price to pay in an emergency situation for households.



Any future treatment facility would receive septage of varying quality. Also cannot predict quantity of daily load.

Regulation and monitoring



No monitoring mechanism and regulation esp. of private informal providers. Manual labour is needed as sludge hardens in tank due to not being emptied for a long time.

Environmental benefits



Low frequency of desludging results in poor efficiency of tank and low quality effluent. Overflow before emptying also pollutes environment.

Desludging done for all septic tanks on a fixed cycle of 3 years and predetermined schedule (33% annually) based on city zoning.

Private operator given contract for servicing individual tanks leaving the ULB truck free for CT/PTs.

A "sanitation tax" of Rs 50/year to be paid along with property tax and all provided service without emptying charge. Private operator quotes lower price per tank due to trip optimization with clustered service visits and assured business.

More predictable load quantities for treatment facility. Better quality loads once desludging completes one cycle.

Regulated and monitored by ULB. Payments to private operator linked to performance and adherence to standards. No need for manual labour due to regular emptying.

Likely reduction in BOD and coliform in septic tank effluent due to better efficiency of tank. Also avoids solid overflow.

Planning for Scheduled emptying

Operational requirements

Zones of Emptying cycle

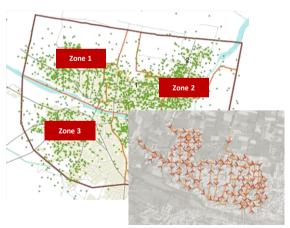
• The city was divided into 3 zones as per the citywide database on toilets and septic tanks.

Emptying Truck: Number and capacity

• 2 trucks to desludge ~ 2000 septic tanks annually. 300 days per year. Visits between 7am-5pm per working dav

Route planning

• Deciding the truck movement within the zone



Engaging a private contractor

1. Consultations with various players to gauge interest. Landscape assessment of players. Assessing ULB capacity and processes

2. Designing an appropriate contract document. Each contract option along with draft tender clauses was discussed with the private sector and ULB to understand their concern and requirements. The document was also vetted by legal firms



Source of revenue

Bundled or Unbundled contract?

Operational role of the private contractor

Revenue stream enough to meet private players' return expectations?

How to address the major risks for the private player and the LG?

Risk mitigation 6 and allocation

Balancing LG and Private interest

Investment / ownership of capital asset

Who should invest in capital assets?

6

What is the appropriate contract duration for private and LG?

Contract length and value

Payment structure What is the appropriate payment structure for the private player?







3. An e-tender was floated on the State government's MahaTenders website for a competitive bidding process





4. Out of all bids received, Sumeet Facilitates Private Ltd. was selected and awarded the contract for 3 years.







Performance linked payments

The contract is 'performance based' i.e. it specifies what the service provider must deliver in order to get paid, and not the inputs or material used. In order to receive full monthly payments, the private operator is required to produce proof (through signed forms) of having emptied the required number of tanks and safe discharge at the designated FSTP site. Thus each desludging is accompanied by a form with signatures from the truck operator and septic tank owner for proof of emptying and FSTP operator and truck operator for proof of safe unloading at designated treatment site. Four copies of this form are made – each for the records of the Household, Desludging company, FSTP and WMC.

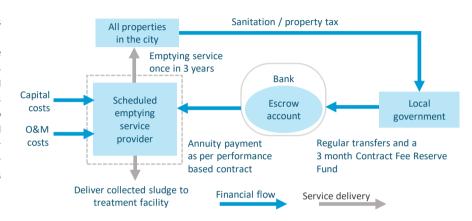
Clauses in the contract enforce performance standards and safety compliance for septic tanks emptying such as the prohibition of manual scavenging, requirement of personal protective equipment for workers, quality of suction trucks, cleaning up of spillage and assigning responsibility for damage to septic tanks.





PLAM - Performance Linked Annuity Model for scheduled emptying

This model helps to mobilize capex for conveyance as well as day to day operations management from the private sector. Wai government signed an exclusive contract with the service provider where payments are done on annuity basis - in Wai's case monthly. This OpEx is backed by sanitation tax and property tax levied by the government on the citizens and thus is a sustainable model of finance. Payments are linked to performance – based on number of septic tanks emptied and adherence to standards. As no permit is given to another private operator, there will be an assured market. On the other hand, households are also willing to get their tanks emptied as no user charge is paid at the time of emptying.



Sanitation Tax

The Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships Act of 1965 allows for a 'special sanitary tax'. WMC also levied a sanitation tax to ensure adequate funds for OpEx.

In this arrangement, property owners pay a yearly sanitation tax to the government as a part of their property tax bills, as against current system of paying a charge/fee at the time of emptying services.

WMC also decided to use surplus from property tax collection for this purpose to keep the sanitation tax low. The citizens currently pay Rs60 annually as sanitation tax in addition to their property tax.

Escrow mechanism

In consultations with the private sector, it was found that the biggest risk they report in signing contracts with local governments is of delayed payments. To protect against this an Escrow mechanism was set up which is basically a tripartite agreement between WMC, the private contractor and an independent bank.

An account was opened with the bank where WMC will put funds to create a Contract Fees Reserve Fund (CFRF) at the start of the Escrow arrangement. WMC is to maintain a minimum balance of three months' payment to the contractor via transfers from property tax and sanitation tax every month.











Awareness and communications to ensure success of scheduled operations

What is the concept of scheduled emptying?

Regular desludging is important for health and environment

Council is rolling out a service for everyone

There is no emptying charge for service once in three years

What do citizens have to do?

How to be ready for your turn?

What to expect when desludgers come to your house?

Providing good quality service which abides with laws and regulations

PPE is used and there is no manual scavenging

Transparency in operations and safe delivery - Sign the receipts

Closing the cover

Ensuring user satisfaction

1. House to house visits – interpersonal communication about the new service being provided by WMC.



3. SMS sent to property owner 2 days prior to scheduled service. Households are expected to be ready with their access covers open



Scheduled emptying for your septic tank is due on 18/11/2018. Please be ready at home. For more info call: Phone number. Help us in making Wai a clean and healthy city.

2. Wall paintings and banners across the city announcing the service and its benefits













Remember!



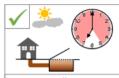


Service is available to each household once every 3 years





Contractor will call 2 days before scheduled visit



Contractor will visit between 7 am and 5 pm. Be present at home and ready! Keep Septic tank cover open for visit



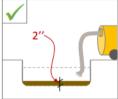
When constructing new septic tank, do not seal cover and give proper access



Cleaner should be wearing proper safety gear



No one should enter tank! Manual scavenging is prohibited by law



Leave 2 inches of sludge when emptying



There should not be any spillage or damage to septic tank



After emptying sign the receipt given by contractor



No payment is to be done to the contractor



Do not put acid/harsh chemicals, or solid waste in you septic tanks

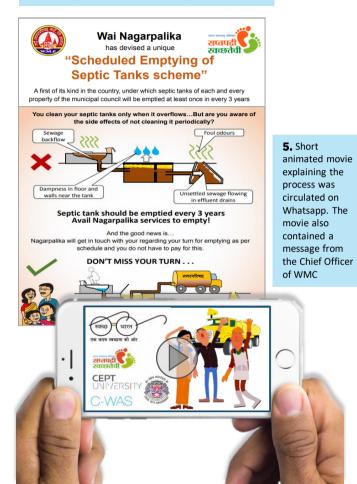


There should not be any spillage in the city or disposal in drains



Septage should only be disposed at designated treatment plant

4. Pamphlet distributed to households explaining what to expect on the scheduled day of service.





Earlier, sludge was being disposed off at the city's solid waste dump site without treatment





New Faecal Sludge Treatment Plant set up in Wai

Through a grant by Bill and Mellinda Gates foundation, an Indian company, Tide technocrats set up a septage treatment facility of 70,000 litre capacity on land allocated by WMC for this purpose. Both Capex and Opex for 2 year to be provided by Tide technocrats

The FSTP was inaugurated on the 30th of May 2018, along with the scheduled emptying service.

The plant first dewaters the sludge and then converts sludge comprising of 30-35% solids to Biochar using a thermal process. Wastewater removed from the sludge is then treated separately through Phytorid and MBBR technologies to meet CPCB norms.

The plant is also energy efficient such that the heat generated in the thermal process is put back into the system and used for further drying and power generation.



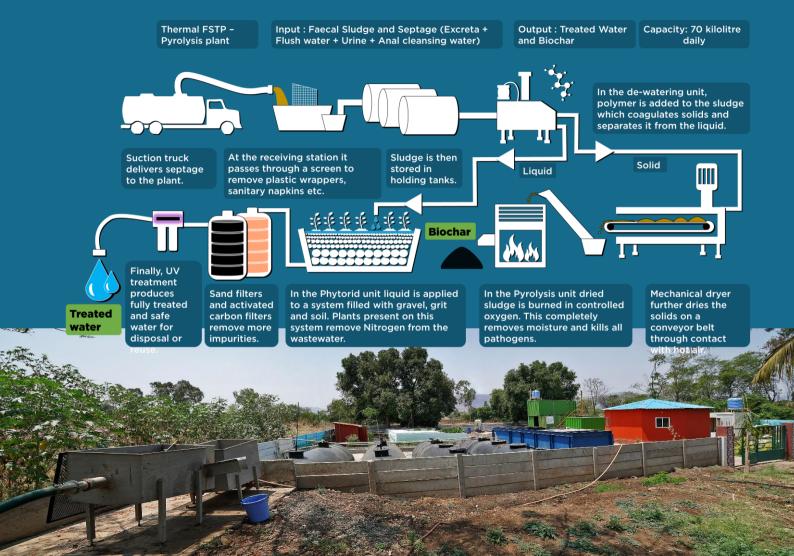




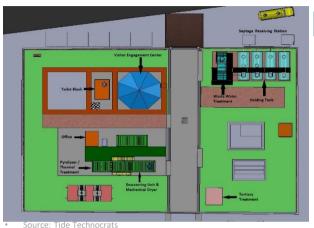








Developing FSTP as a Resource Park





NDE	FORFE	CAL	SLUDGE TREATME	NT PLA
LNO	VEGIN		FARTICULAR	-
1	_	_	PROPOSED COMPOUND W	WLL.
3		_	MG GATE CONCRETE ROAD	
-		-	BORDWELL CHAMBER	
6		-	CONCRETE PATHWAY	
6.	100000	200	TOLET BLOCK	
7.	-	50	LIFE+ TANK	
A.	10000000		CONSTRUCTED WET LANS	
9.	The same of		TOILET BLOCK PLATFORM	-
10.		*	VISITORIS ENGAGEMENT C	ENTRE
11.	10000	-	CONTROL UNIT CHESEL GENERATOR SET	
12.			DESEL GENERATOR SET	
14	ANNOONAN	0000	40 FEET CONTAINER	
18.	-	-	FRITE PLATFORM	
18.	7171	-	EMERGENCY ACCESS WAT	r .
17.	-	-	SOL BIO FILTRATION UNIT	
18.	10000000	100	HOLDING TANK	
18.		ш.	HOLDING TANK PLATFORM	
20.		ш.	SRS PLATFORM	
21.	_	=	GRAIN	
23.		-	PHYTOROID UNIT	
24	********	777	STORAGE CONTARIER	
St. L	EGEND	_	NAME	NO
1.	-	AS	HOKA TREE	2
2.	總	MA	ASSANGEANA	16
3.	63	GU	JLMOHAR	7
4.	6.3	LA	VANGA TULSI	4
5.	63	PL	UMERIA	7
6.	122	AR	RECA PALM	2
7.	480	во	1	
8.	44	GC	20	

Field visits



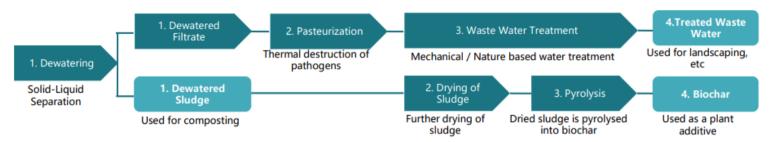


Resource center building





Proposed **reuse** plan for treated wastewater, dewatered sludge and biochar

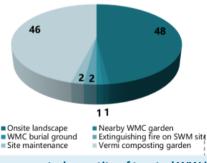


The quality of **treated wastewater** is achieved within the permissible limits provided by MPCB

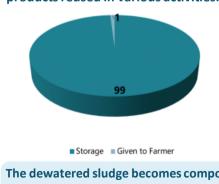
The **treated dewatered sludge** has good NPK values which will be beneficial for preparing compost

The **treated biochar** has good carbon values which can be used as an additive for preparing compost

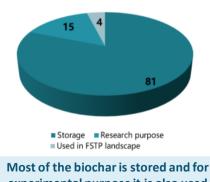
Summary of quantities of by-products reused in various activities. (May 9, 2018 to March 21, 2020)



The generated quantity of treated WW is completely reused on site and in adjacent WMC garden.



The dewatered sludge becomes compost after 60 days of drying.



experimental purpose it is also used in the FSTP landscape

The biochar and dewatered sludge are stored, and some quantity is used for composting purpose

Treated Wastewater



Biochar



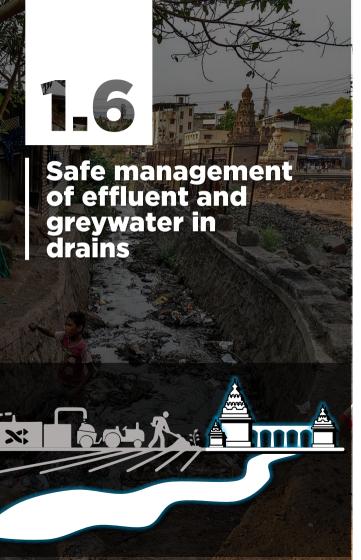






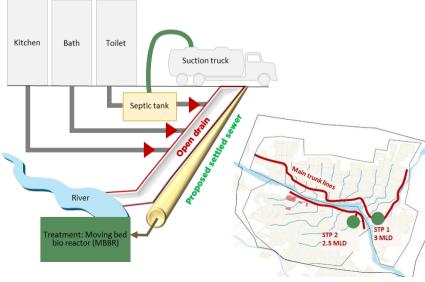






In the long term, the city is interested in settled sewers as a low cost option to provide safe conveyance of waste water

- Small bore sewer system to convey wastewater from bathrooms, kitchens and septic tank effluent which will be treated through MBBR plants – one on the north half of the city and one on the south
- Sewer systems with a minimum diameter of 100 mm are proposed to be constructed over a period of 5 years.
- Detailed project report was prepared by a consultant in 2017



In 2022, Wai City successfully completed its

first 3-year cycle of scheduled desludging

3600+
Septic tanks served

6800+

Properties covered

95%

Acceptance rate of services

19 million
Liters of septage treated







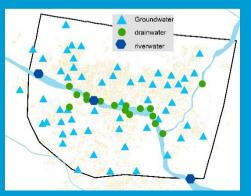
Tracking environmental benefits





To track this impact, A water quality monitoring system based on the guidelines provided by the Central Pollution Control Board (CPCB) and the Maharashtra State Pollution Control Board (MPCB) was developed. Opinions of four sector experts were also considered to define the monitoring regime. The experts included three university professors and one engineer in laboratory at a local utility. They helped in determining the test parameters and sampling procedure for the regime. The assessment began in the baseline year 2019, when scheduled desludging was initiated. It defined sample selection process and frequency of the sampling and testing, etc.





Improved performance of septic tanks after desludging resulting in improved drain water quality flowing into river



Reduction in Nitrogen, Total Suspended solids and Organic loads in septic tanks effluent after desludging them



Reduced concentration from septic tank effluent helped in reducing the discharge of nitrogen and TSS into the open drains



50-60% decrease in the value of TSS and BOD load in desludged areas



Eventually improving the quality of river water and ground water as the quality of drain water and supernatants are improving





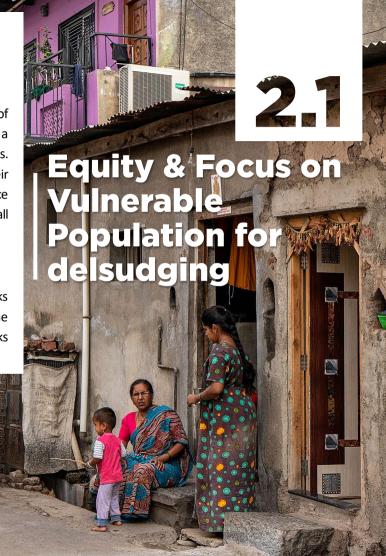
Instead, a small 'sanitation tax' levied on all properties in the city.

The PLAM mode de-links service delivery from collection of "desludging fee". All properties are provided the service on a mandatory basis without waiting for individual desludging requests. This ensures that all households receive the service irrespective of their capacity to pay for the desludging or their ability to avail the service through the municipal complaint process. It also guarantees that all localities are served equally including low income and slum areas.

Long pipes to serve in dense localities

Special care is taken to provide service in such areas where the trucks may face access issues due to narrow lanes and dense housing. The desludgers carry long pipes which are able to reach septic tanks located at the end of narrow lanes in high density localities.







Moving from access to agency to transformation for women in Wai

Equity and inclusivity have always been a major focus of CWAS interventions. In Wai, CWAS has been successfully supporting the WMC for interventions through the lens of gender inclusivity.

CWAS conducted an assessment of gender inclusive situation in Wai with the support of PRIA to identify focus area and activities to move from access to developing agencies among women and aim towards transformations in Wai. The recommendations are further proactively taken up by WMC with the help of CWAS.

Transformation Agency Access Capacity Building Building leadership and increasing participation of SHG engagement for IHHL women at WMC on various national and and San credit 1. Training workshops and field visits for elected international platforms women councillors for FSSM 2. Frequent Training and support to Chief Officer for Assessment of CTs wrt to **ESSM** Institutionalizing allocation and utilization of gender inclusivity budget for improving access to all CTs for women 3. Training to engineer for emptying and treatment. Use of sani tab, O&M of FSTP etc MHM facilities to be Advocating inclusion of clauses for encouraging installed in all CTs/PTs Group of women waste pickers formally engaged by women's engagement in Contracts of sanitation municipal council for waste segregation. department of WMC Awareness generation among women citizens for FSSM during scheduled desludging operations Provision of PPE for sanitation workers included in all contracts sanitation dept of WMC Capturing gender of respondent and family member supervising emptying process in Sani tab app Presence of a female site-in charge for FSTP

Working with Women SHGs over the years to facilitate access to individual toilets in Wai

Wai has a good network of SHGs which has been leveraged over the vears to increase coverage of individual household toilets for SHG members who do not have toilets. WMC along with support from CWAS have conducted team activities for exploring demand for sanitation loans for HHs who have financial constraints but were willing to construct individual toilets

SHG meetings were conducted in two areas to A meeting was conducted with the presidents of 14 assess the demand for 'Sanitation loans' SHGs to understand the access of individual toilets Two SHGs were identified who were willing to for SHG members and also to involve members in construct toilets by taking credit. sanitation related activities The toilets were constructed by taking the loans and have been repaid

2016 2015

2017

A telephonic survey of SHG

List of women SHG who members was conducted to with WMC

do not have IHHT shared

2021

A landscape study was conducted through CHF to assess the willingness of SHG members to take loans to construct toilets and facilitate interactions with financial institutes and mobilize applications.

Applications for IHHT were

assess demand for individual

toilets

In 2015, demand for 'Toilet Loans' was initiated from women SHG members

In 2017, a survey conducted to find out SHG members who took sanitation loans

mobilized by interacting with **SHG** members

2019

Discussions with SHG members for involvement in FSSM related activities and assessing demand for IHHT

An assessment of all community and public toilets in Wai conducted in April 2019 focusing from gender perspective

2018









Assessment of CT and MHM with respect to gender perspective

Assessment of MHM facilities in CT/PTs was done to arrive at interventions to provide access to MHM for women using CT/PTs

Assessment of Current operational and disposal mechanism for MHM waste generated in community toilets

In principle approval received for installing MHM facilities in all CT/PTs and installation for selected Pilot CTs to be done

Selection of pilot community toilets for installation of MHM facilities

In principle approval received for installing MHM facilities in all CT/PTs and installation for selected Pilot CTs to be done

Institutionalizing allocation and utilization of budget for improving access to all CTs with MHM facilities

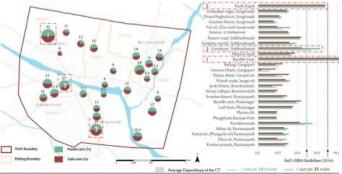






Women in this area are aware of the purpose of the machine but they do not know how to use it, hence they often ended up disposing the sanitary napkins in the dustbin.











Interventions in terms of Women leadership from agency level to transformation in Wai

Wai is governed by the elected municipal council and Currently in WMC women hold leadership and other managerial positions. Though representation among sanitation workers is still low. 5 out of 10 elected representatives are women in WMC

Staff	Women	Total							
WMC Elected Representatives									
Elected Representatives	5	10							
Standing Committee	4	5							
Sanitation Committee	2	3							
Water Supply Committee	2	3							
Building Works Committee									
WMC Executive Staff									

MINAC E.	a acception Const					
	ecutive Stat	T .				
Permanent						
Class 1	NA	NA				
Class 2	1	1				
Class 3	3	19				
Class 4	8	72				
Subtotal	13	93				
Contractual (Computer operators)						
Admin dept	1	1				
Accounts	2	2				
Sanitation dept	2	2				
Tax dept	1	2				
Inward-Outward dept	1	1				
Building Dept	0	3				
Subtotal	7	11				

Staff	Women	Total
Priva		
Tide Technocrats- FSTP Operators	1	6
Sumeet Facilities- Emptying contractor	0	7
Subtotal	1	13
Other contr	acts of healt	h dept
Labor Contract	6	60
WMC building maintenance	3	4
Nirmal Bharat (CT/PT)	0	9
Driver Contract	0	5
Firemen Contract	0	4
Subtotal	9	82

Based on assessment of staffing pattern of WMC, building capacities of women councilors was identified as a major area of intervention for multiple workshops were organized







Sanitation department









Interventions in terms of Gender inclusivity in Scheduled desludging

There was active participation of women councilors who showed keen interest in participating in more such workshops for better understanding FSSM

Handholding support for implementation and monitoring of FSSM to decision makers and executive officers have led them to take ownership of the activities

A conducive environment has been created to enable participation of women in FSSM activities in Wai.

Awareness generation along with daily scheduled desludging operations among women citizens for FSSM

Handholding support for implementation and monitoring of FSSM to decision makers and executive officers have lead them to take ownership of the activities

Handholding support for implementation and monitoring of FSSM to decision makers and executive officers have lead them to take ownership of the activities

Wider dissemination to acknowledge the participation of women in FSSM was done through social media and through representation at various platforms

contracts of sanitation department of WMC













Sanitation worker safety: from the lens of Social Inclusion

- · Contract with private sector reiterates prohibition on manual scavenging
- Frequent emptying will remove need to human intervention in cases where sludge has hardened
- · Safety gear specified in contract and mandatory at all times
- Developing guidelines for PPE and workplace safety
- Initial assessment in progress for worker perception of PPE and their requirements
- Training workshop cum medical camp for SanWorkers across all aspects of the service chain





Training workshop and Health Camp for all Sanitation Workers

On 28th April 2021, as a part of ongoing interventions PPE training cum health checkup camp was organised

On 10th and 11th August 2021, a two-day workshop for 120+ sanitation workers of Wai Municipal Council was conducted with support from CWAS. On 30th August 2022, Wai Municipal Council organized a Sanitation Workers Workshop at Wai with 70+ participants









Major points that have been covered were-Sanitation Ecosystem, PPE usage (importance and demonstration) and occupational health hazards (Diseases & their symptoms, Precautions, First Aid).

Resource materials have been prepared to guide sanitation workers



PPE and Sanitation worker safety during COVID 19

In the context of COVID 19, when sanitation service continued as an essential service during the lockdown, CWAS supported the cities of Wai to ensure that it's sanitation workers have adequate protection with PPE gear. The video is available on Youtube.









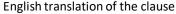


Provision of PPE for all sanitation workers included in all tender and contracts of WMC

- Sanitation workers provide important sanitation services and often at the cost of their safety and health.
- A study of sanitation workers, their access to PPEs and its usage was conducted by CWAS team with support of WMC in Wai
- The study found that overall usage of PPEs by the sanitation workers was low. One of the primary reason being that the PPEs provided were not work specific and user friendly. The qualitative discussions with the women workers also revealed that the provided PPEs did not meet their specific needs.
- CWAS team also analysed the contract documents and found that they did not include any clauses related to provision and replacement of PPEs.
- To address this issue, CWAS team supported WMC to draft clauses related to provision of work specific PPEs and include it in their tender and contract documents.
- CWAS also supported WMC to institutionalize mechanisms for monitoring and replacement of PPEs from time to time

All workers (especially women) should be given ISI marked PPEs every time they are at work and ensure its usage'.

वाई नगरपरिषद वाई (जि.मालामा) Ser with गा-गाव्यांकारो संत. वर्ष नगरवीयत, यहं March see देश कीर्न कामागर तथ ५ -कारणे संघ - वर्षे नगायीयकेश्चीत विभिन्न सम्बन्धती सहस्यत महित्यसद एका प्रतिसं sof strodouble feature २९)मधर कानी मक्सेदार धाना साद्य निर्देश देशका देशे की हि १ जूने २०१५ नंतर भी तन ही थी अंगारकतावानी मुरु हार्केनी आहे त्यानुकार मा करांदाचर जी एस ही अधिनिधमानुसार करांची आवश्रतनी होनार आहे त्यानुध्ये निविधायादा कारामा दि १ जूनै २०१५ नंतर लागू जी एसटी च्या दराच्या वोजाचा विचार कराच क्योबार यांनी निविद्य सादा करावदाच्या आहेत. धनकावतः संकतन, वाहतूक व त्यावर प्रक्रिया वक्तवहत्व धन्येक कामनारांने सुरक्षा साधानीया वापर न करता कर-पार २०० वर अने,शतकता कामकरता (विशेषा, सरिवारण) पारवार असामान पार्चक वेडी unite in Physiles spec yearst this origin a very our ban for origin • तक अणि बेदेनाचा सामाग प्रश्राविधित तास्य स्वच्छ इसमोजे (निवाधी संपर्धात पानस्य हावप्रणाह्या सम्मारांना) हेवी इपूरी इसमोजे (त्यादसस्विकः अधिनिकः स्त्यातवातील धनकवरः शताळगार्मा कामप्रशंसा) मामकरिता सपरण्याचे क्यो/नागोश कामकीरत वापवनवे बृद्द/नमबूद (नमबूद गानी स्था वरणास्थ व्यवस्थातकीता) · treets अधिकारदापने त्यांच्यासम्बद्धानानी अतिना शामामा तथा गरं तथेन जनवानुसंसकी प्रतिना प्रया नदण सकतेत नरपवास्त्री एएउसील असते. अन्यकंचाटदाराने दिलेल्या सर्थ बुरक्त कांधनांची, त्यारमा प्राचाती तसेच ते निचामितारमे किया कांकणांची विसंसी केन्याल बदलने पाहिलेय न्याची लोदपति केवणे अध्यक्षक आहे. तसीय नतायविष्णदेश वित्र देशवादका वेदी मीठारी व उपवरणे बदल केरवाना असाम सदर वरणे आवस्का बनेव Tender document for labour contract















A study identified organizational structure and processes in WMC through discussions with the WMC officials and identified options to institutionalize FSSM services



Identifying key processes of WMC

To institutionalise FSSM services within WMC, assessment was done for key areas such as staffing pattern, recruitment processes, roles and responsibilities performed and monitoring and reporting mechanisms for services.



Assessing and understanding the process through discussion with stakeholders

Based on the discussion with the WMC officials, key processes were mapped in detail to study the stakeholders involved in these processes, forms and formats used, frequency of reporting and monitoring, etc.



Suggestions to institutionalise the FSSM services within the existing structure of WMC

From the analysis, roles and responsibilities for the officials and staff members of WMC as well as the private operator were identified – for planning, implementation, reporting and monitoring the FSSM service.

Executive wing of WMC

Tax Accounts **Executive wing** (led by the chief **Health & Sanitation** officer Mrs. Vidya Pol **Water supply** Chief officer office Building There are total 12 Fire functional departments in Audit WMC Education **Town planning** NULM Meeting proceeding office

Wai is governed by the elected municipal council which is aided in its day-to-day operations by the executive wing

Role and responsibility of sanitation department

Chief officer

Mrs. Vidya Pol

Sanitary Inspector

Mr. Gunvant Khopade. Graduate, Age: 53 (1 sanctioned, 1 working (additional charge), 1 vacant)

Sanitary Supervisor

One is graduate, other 2 are educated till 10th grade, Age range: 35 to 45 (2 sanctioned, 3 working (2 additional charge), 1 vacant)

Sanitary workers

Few are graduate, others are educated till 10th grade, Age range: 30 to 45 (60 sanctioned, 56 working (on field 43), 0 vacant)

Water supply department

Water Supply and Sanitation Engineer

Ms. Kranti Waghmale Graduate, Age: 24 (1 sanctioned, 1 working, 0 vacant)



Source: WMC





Proposed activities to be taken up by different stakeholders for improving reporting and monitoring of emptying operations

							Role of	participant	s					I
	Responsibility details			w	мс			Sume	et Facilities		Tide Tech	СЕРТ	Citizens	
	responsibility details	со	SI	Sanitary supervisor/ workers	Engineer	Elected member (councillors)	Director	Project Directo r	Site supervisor	Emptier (Driver and helper)	Site in charge			WMC staff shall trained and
1	Informing the households prior to emptying		C					CA	R					involved for usi
2	Conducting daily emptying of septic tanks		C				1	С	Α	R	- 1		- 1	Sanitab and monitoring da
3	Providing feedback for service	1	Α	R	- 1			- 1	А				R	over dashboar
4	Daily on ground monitoring of emptying activity	1	А	R		1	1	AC	R					WMC officials
5	Regularly monitoring overall performance	CI	Α		R	1	А	R						play active role
6	Regular reporting to WMC on overall performance		Î				CI	R						monitoring or
		inv	olve	taff shall be ed for using ring data ov	Sanitab a	ind	reg	ularly me w the pr	her-ups of eet WMC or ogress/chaperations.	officials to				ground activitie

		Role of participants											
	Responsibility details		wмc				Tide		Sumeet Facilities	СЕРТ			
		со	SI	Engineer	Elected councillors		Managing Director	Sanitation lead	Site coordinator	Site in charge	Operator and helper	Site supervisor	
1	Conducting daily treatment operations		С				1	С	С	Α	R	1	
2	Monitoring of the overall FSTP operations – quality checks, reuse of bio-char and water, online quality monitoring etc.	CI	А	R	1	•	1	С	A	R			
3	Reporting WMC about day-to-day operations						- I	С	Α	R			- 1
4	Reporting WMC about overall operations					1	IC	R					

Tide team to submit the fortnightly reports on regular basis to WMC council with the details requested by WMC

WMC official should monitor the treatment operations regularly. CEPT team can support WMC in understating the technical aspects and processes

Tide team to report WMC regularly about the daily operations. They can submit the manifest form of septage load taken to WMC regularly Responsible – Who is completing the task.

Accountable – Who is making decisions and taking actions on the task(s).

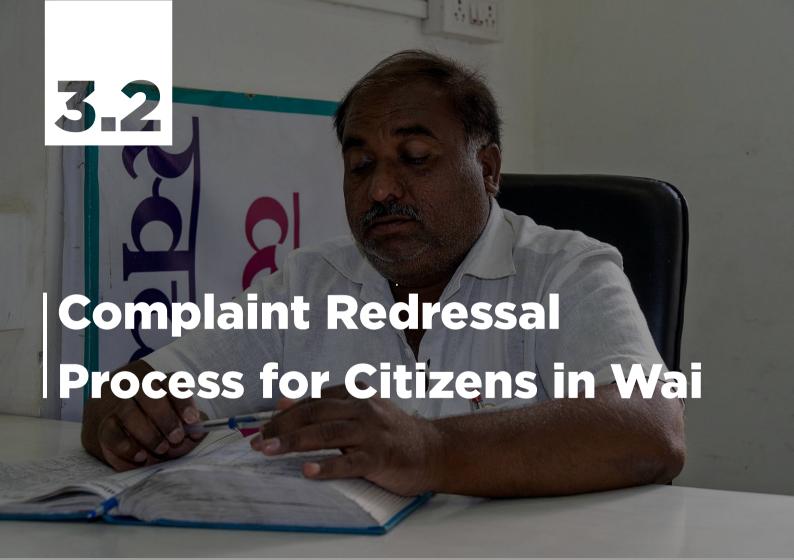
Consulted – Who will be communicated with regarding decisions and tasks.

Informed – Who will be updated on decisions and actions during the project





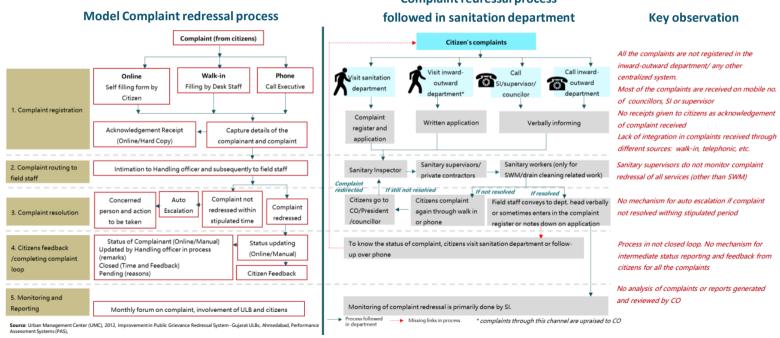




Study has been conducted to assess the existing complaint redressal system in Wai through discussion with the WMC officials, elected body and citizens. Based on the analysis improvement measures have been taken up in water and sanitation sector.

The existing complaint redressal framework of sanitation department is being compared with the model framework.

Complaint redressal process



Within the Sanitation Department, a uniform process of complaint registration and redressal is not followed for all the services

Sanitation department addresses complaints for its various services through own staff or private contractor

Following is the list of services provided by sanitation department, the nature of complaints received around these services and the forms and formats used for the same.

	Services	Nature of complaints/emergency requests received	Forms and formats commonly used for complaint registration					
Sen	Service provided by own staff of sanitation department and partially through contract							
1	Drain cleaning, Street sweeping, Picking up dead animals	Blockage/overflow of drains, Waterlogging, Street/public places sweeping issues, Public littering, Cattle nuisance, Removal of dead animals	Complaint register at Sanitation department					
2	Emptying of septic tanks by WMC's truck	Overflowing/filled septic tanks	MAINet software and Log book					
Ser	vices provided through private operator/co	ntractor						
3	Door – to – door collection of solid waste	No door-to-door collection, vehicle not visiting on time, etc.	Complaint register at Sanitation department					
4	Cleaning and maintenance of CTs and PTs	Unclean CT/PTs, broken doors, taps, seats etc.	Complaint register at Sanitation department					
5	Emptying of Septic tanks of all properties	Overflowing/filled septic tanks, Septic tank emptying truck not visiting on time	Sanitab and emptying forms					



Apart from the existing redressal process, **Swachhata app** is another tool by Government of India for registration and monitoring of sanitation related complaints









3.3

Process improvement with monitoring systems

A 'Payment dashboard' and 'Adhava report' have been developed and institutionalized to improve the monitoring and reporting of the payment to the private contractors and various services provided by the sanitation department of WMC

Adhava report

- 'Adhava' (review) meeting is the monthly/bimonthly meeting conducted by the CO with various departments of the council, primarily to supervise and control over the acts and proceedings of the council.
- These meeting were further leveraged to strengthen the monitoring and reporting of the FSSM related activities of the sanitation department by introducing an 'Adhava Report'.
- An 'Adhava' report is a monthly one pager report including performance indicators for all sanitation related activities.
- The report is developed by the SI and clerical staff of the sanitation department and submitted to the CO regularly.

_			
	Morthly report of key activities of sar	station departm	***
_		_	
	Coupling of explications of all properties	0.0	bolk
-	Total argist factio actually cleaned	Se.	e
2	Tatal explain critical d	10	1000
,	Clearwitte of Mutadams during random	-	Str. Sales annual Artis
_	cate	_	March and Auril month bill a in springston deal, laterated not done until
4	\$2 submitted for provious menth and its status		May, Ann., July, August morth bits not submitted yet.
5	No. of complaints received / redressed	No.	Romplets
6	taum/amment	165.	Nisse
2	Emphyling of explicituries of CFs/PFs	940	brok
i.	Are septic funits of all CTs/YTs deuned in this munitif	Nac No	ii.
	Total argic fanio deared this month	n.	10
	Total soptogo collected	10	195000
	No. of complaints worked / redressed	16.	No complete.
5	(swey/servege)	96.	Related
3	Treatment of septage	0-R	0mah
1	Total soplage restived at the station	400	357000
2	Total scytage treeted	100	362388
3	Total copings mused	Signed it	With resistage - 2012 bg Seculiar - 81-45 kg Tracked water - 2007 bt kt All the Society was mixed with well septiage and solety way by flammers All the Society was research for 7 this team for finding review.
4	Total CIV of solar power generalist and consumed	rar	ISAT Units generated and ISSS units comsumed
6	Totales/Garnesies	Nr.	Sconnett/sue deevel
4	Sold Waste Management (D to D Collection to Sugregation)	04	Desails .
1	Total D to D waste collected	se:	90.57
2	Total works sugregated	MT	Set saste (40 M, Gry parte (15 M) Mixed saste (40 M) have slow made (3.50
	Tuto/quoto treated	wr	Bird waste (340,55 MT) is put in plo for composing they waste (310,66 MT) is further suggested in different categories and nat said yet. Madd waste is dumped on the dumping ground.
4	Total reused	MT	No data available
5	Blissbrided for previous north and its status		February to August worth payment not done
6	No. of complaints worked / redressed	*	No complaints
	tasuag/camerant	96.	No comments/Issues observed

Adhava report includes performance indicators for:

- Solid waste management,
- Scheduled septic tank emptying service,
- Septage treatment,
- · Drain cleaning,
- Cleaning of community and public toilets etc.

Payment Dashboard

- Payment Dashboard is a real-time monitoring tool to monitor and track status of bill payment of all the private operators contracted by the WMC officials (CO & accounts department)
- Through this dashboard, the payment of contracts of sanitation department has made easy and the Council wants to adapt this for all its private contracts.

Salient features and benefits:

- Single Window and easy to operate excel based tool
- Easy to read and self-explanatory for monitoring purpose
- No additional IT infrastructure or workforce required to operate it.
- Single entry record management system with contract-wise bills at one place
- Can be further used to assess performance of contractors





3.4

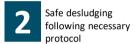


Need to monitor FSSM systems



Ensure safe collection. conveyance and disposal of Faecal Sludge.











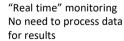


Performance linked payments where private sector is involved.

Benefits of SMART systems for monitoring

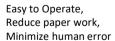














Can view progress easily

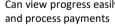








Photo stamping, Geo stamping, Signatures





Tools developed











SaniTab - Creating a citywide database with desludging operations

Mobile app for initial citywide survey now used for monitoring safe desludging operations with customized form

Scheduled emptying as an opportunity to create a unique and detailed database of all onsite systems in the city as every septic tank is visited once in the cycle

Dashboard to show real time progress on CWIS principles

Municipal staff being trained to use the app themselves. Dashboard introduced to city managers.

















SaniTrack - End to End Monitoring for FSSM

- Amazon like delivery app to monitor desludging operations-
 - service at property end
 - · safe decanting at FSTP
 - · treatment quality at FSTP
- Can handle both scheduled emptying as well as demand based operations
- · Payment linked Mechanism
 - Payment can be linked to results from this system.
 - Payments can be done as per automatically generated reports.
- · Can also used as database creation tool.
- Modules catering to every stakeholder truck operators, ULB Officials, administrators etc.
- Integrated with quality monitoring hardware at FSTP for realtime quality data





Mobile based

3.5

| Financial capacity



City investment plan to ensure financial sustainability of Wai Municipal Council for the next ten years

City investment plans provide a link between the municipality's strategic vision, local priorities, and its annual budget. The City Sanitation Investment Plan (CSIP) for Wai is a multi-year scheduling and financial planning of sanitation infrastructure investments. It assesses the city's ability to undertake capital investments for sanitation projects and ability to fund the operational obligations and helps in identifying new projects required to improve service levels. It is prepared for a duration of ten years from year 2019 to 2029.

The City Sanitation Investment Plan was prepared using SANIPLAN, a model developed by Center for Water and Sanitation (CWAS) team.

The investment plan was prepared through desk-based research analysis and discussions with Accountant, Tax Inspector & heads of water supply & sanitation dept. of WMC, interviews with private stakeholders like Chartered Accountant.

The financial health of WMC was studied through detailed assessment of municipal budgets, balance sheets and annual financial statements. Accounting and budgeting practice and processes were also reviewed in detail.

Component	Summary of Funding requirement
Total Capital investment requirement for 10 years	INR 4,894 lakhs
Capital requirement WMC share	INR 543 lakhs
Operation and Maintenance requirement	INR 195 lakhs/annum

Key Projects

Construction of individual HH toilets



Construction and Upgradation of open surface drains to closed drains for storm water

Moving towards

water+ status

Achieving Financial

Sustainability



Laying of new settled sewer for wastewater conveyance and a treatment plant



Improve collection efficiency of wastewater charges and

Impact on Service Levels



86%→ 96% Benchmark: 100%

Coverage of households with individual toilets in the city



0%→ **97%**Benchmark: 100%

Efficiency of wastewater and septage collection system



Adequacy of treatment plant capacity for effluent and sullage



Cost recovery in FSSM & wastewater services



83%→ 90% Benchmark: 80%

Collection efficiency of waste-water taxes & charges

Existing service levels for sanitation projects were assessed for WMC based on which new projects were proposed to enhance the sanitation service levels. Overall capital cost and operations and management cost was calculated for the existing and future projects to weave in the investment plan.









Enhancing own revenue for Wai Municipal Council

Property tax and water tax are major own-tax revenue sources of Wai. Property tax contributes 60% to own tax income and water tax contributes 35% of own tax income.

Property tax assessment focused on parameters like collection efficiency trends, methods of assessment and property tax management and billing efficiency are considered for Wai Municipal Council based on desk-based research and analysis.

Improving Collection Efficiency of Wai Municipal Council

Plan to **introduce Amnesty or One-Time Settlement scheme** to improve its arrear collections. Under this settlement scheme, discount on penalties can be given to top defaulters to pay arrears. One of the suggestion is to improve property tax collections through online mode of payment.

Revision of method of assessment of property tax

- Wai should revise the ready reckoner rate table of property tax based on current market values.
- With the revised rates based on current market value of the properties, the overall property tax demand of WMC will increase.
- In the long term, WMC can shift to capital value method for assessment of its properties. Through this, property tax can be levied on the basis of market value.

Improve the current property tax management system and billing efficiency through property tax reforms

- Digitized property tax records and match with building permissions and utility database.
- Link building permission database with property tax system and bill newly added properties every year.
- Introduce GIS Mapping of Properties to create a robust and effective property tax management

Sanitation tax as a percentage of property tax to make it equitable

One of the suggestion is to sanitation tax can also be levied as a percentage of property tax. This allows the tax to be more equitable as those with larger and better properties pay a higher tax.

Improve collection efficiency of water tax

Wai is able to achieve full cost recovery in its water supply services through its water tax. The current collection efficiency of water tax remains 67% on an average and arrear collection efficiency is 45%.

- ✓ WMC should focus on improving its water tax collection efficiency and settle arrears by introducing One Time Settlement Scheme or Amnesty Schemes.
- Examples of good practices of Indian cities has been reviewed for OTS campaign like HMWSSB (Hyderabad) who launched 40 numbers of Mobile Collection Vans in Board Office equipped with computer, printer and operator for on-spot collection meant for One Time Settlement (OTS).









Improved and transparent budgeting for WMC

Improving the current property tax management system and billing efficiency through property tax reforms

The CWAS Team supported Wai Municipal Council in analyzing and improving WMC's municipal budget. Annual budgeting process and budget allocations in Wai lacked realistic estimates. Ad-hoc allocations and linear increment affected the overall financial planning of WMC.

- ✓ The team carried out a detailed study of previous trends of the revenue and capital accounts through the budget documents and discussions with WMC officials.
- Suggestions to improve the sanitation budget heads for Wai's budget 2021-22 was done through a consultative process with all the city officials across varied departments-accounts, administration, building and construction and sanitation.
- Suggestions were made through a lens of inclusivity, accountability and transparency.



Communicating city budgets through budget briefs

- CWAS Team developed Budget Brief tool for Wai Municipal Council to help in creating transparency in preparing budgets and can boost local participation and citizen engagement in budgeting process.
- The budget brief in Wai Municipal Council is prepared for three consecutive financial years.



- ✓ Prepared in the local language for the cities
- ✓ Can be easily communicated to all stakeholders
- ✓ Simple graphical representation and remains self-explanatory.
- Captures key infrastructure highlights of the city, revenue-capital account summary, surplus/ deficit,, sectoral allocation of the revenue head, upcoming government schemes and grants, major budgeted projects, and their annual capital expenditure.

Key Highlights of Wai Municipal Council's budget prepared through budget brief published in the local newspaper on February 29,2020









Budget software to enable uniformity and digitization of

municipal budgeting in WMC

 The annual municipal budget of Wai Municipal Council are analysed through the lens of effectiveness and readability.

- These budget documents are not structured and organized in prescribed formats.
- Repetitive accounting codes, non-structured departmental heads and functions, varied yearly budget formats are challenges that have been reported while analyzing municipal budgets of WMC.
- In order to improve the process of budgeting, budget softwares are planned to get introduce in Wai Municipal Council to introduce digitization, enhance uniformity and structure of WMCs budget.



Key features of the budget software module:

- ✓ Single window -based easy data entry system through a computer/laptop/similar device with a keyboard.
- ✓ Excel-style data entry mechanism
- ✓ Browser-based solution with a server that stores data.
- Recasted, readable, improved and digitized budgets for Wai Municipal Council.
- Budget brief dashboards that give analysis of key highlights of previous year and current year budgets.



Scaling up in Maharashtra URBAN MAHARASHTRA

Scaling up in Maharashtra

- Experiences and lessons from Wai have been translated into policies and guidelines at State and National level
- Concept of scheduled emptying is in process of being adopted statewide with a government strategy
- Training of first set of 130 ULBs selected from Maharashtra for developing FSSM plans – 90% cities report plans to take up same model to become ODF++
- · Resource materials developed is readily available for other cities to use
 - Model tender documents for scheduled emptying and FSTP DBOT
 - · IFSM assessment and planning toolkit
 - Toolkit for engagement of private operators
 - Case studies of Wai
 - Awareness materials for FSSM and ODF
 - Monitoring tools being prepared









Partners







BILL&MELINDA GATES foundation

































