



Scheduled Emptying Experience of Wai and Sinnar

Center for Water and Sanitation, CEPT University

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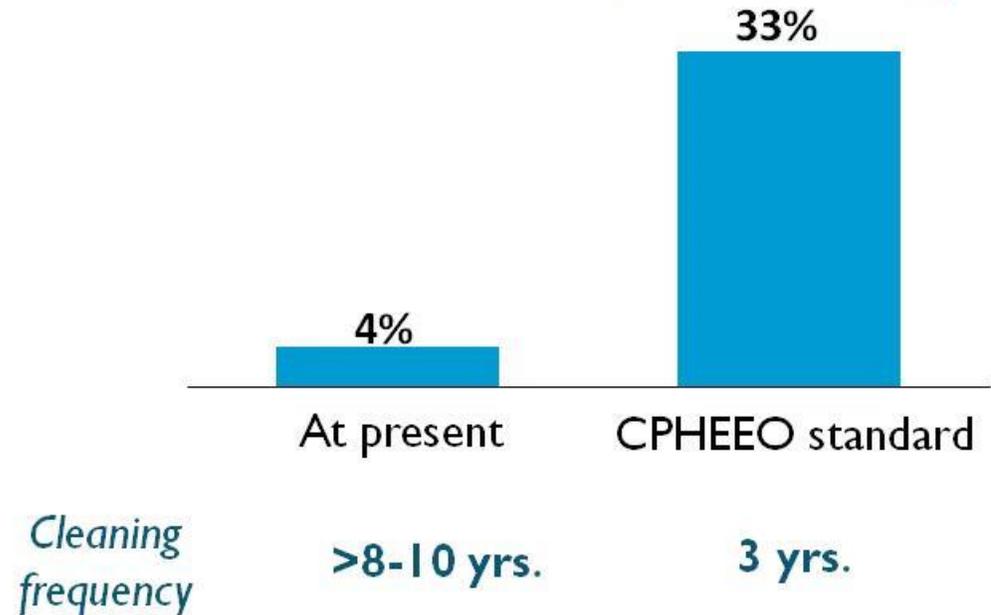
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Current practice of desludging in Indian cities is of complaint redressal and NOT a public service the way sewerage and SWM are!

Common practice is of on-call demand based services as complaint redressal in India



Number of septic tanks cleaned annually by a small/medium ULB in India (As a % of total septic tanks)



Environmental impacts of poor quality effluent, requirement of manual labour and un-monitored septage dumping



Low desludging frequency

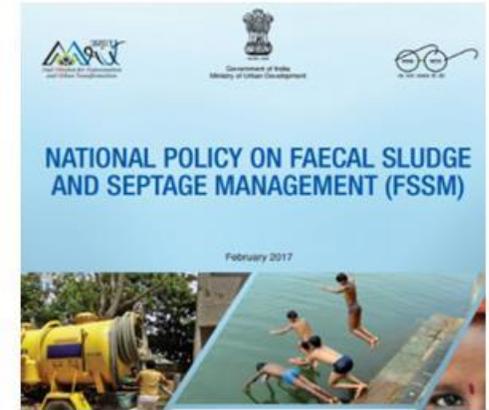
- = poor efficiency of septic tank
- = poor quality of supernatant / effluent overflow being released in rivers
- = requirement of manual labour to remove it



With no designated sites for safe disposal, truck operators often have to resort to dumping on open ground or in water bodies

National Policies and guidelines advise regular cleaning of septic tanks

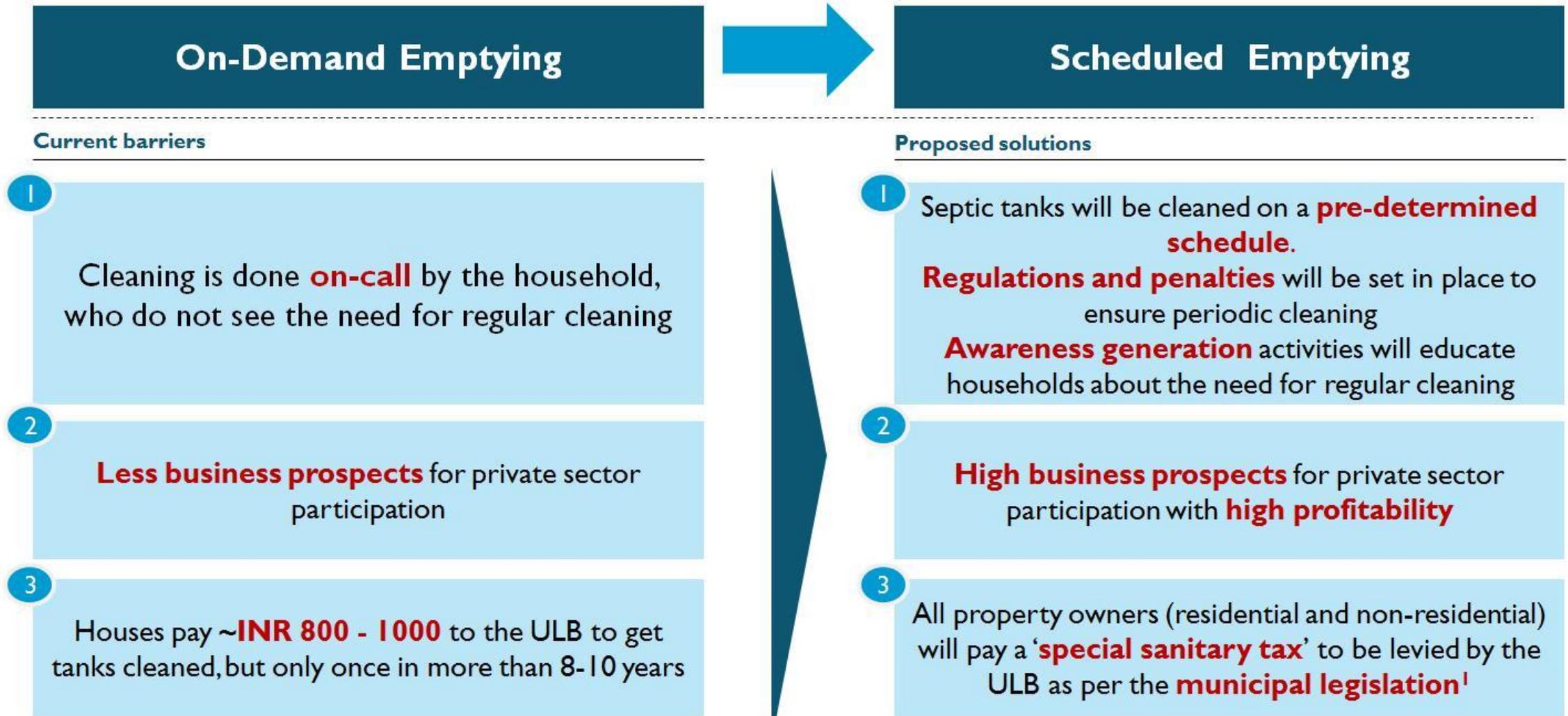
- While desludging frequencies vary, it is typically considered best practice to desludge tanks once every two to three years, or when the tank becomes two-thirds full.
- **National Policy on Faecal Sludge and Septage management** says Regular cleaning of septic tanks through a systematic extraction and collection procedure is essential to check environmental pollution.
- **CPHEEO** suggests septic tanks should be cleaned at least once in two - three years.





Scheduled Emptying in Wai and Sinnar

Scheduled emptying can achieve regular emptying as recommended by CPHEEO



(1) Maharashtra Municipal Councils, Nagar Panchayats and Industrial Townships Act, 1965, Chapter IX : Municipal taxation, Section 108

On May 30 2018,
Wai Municipal
Council with 43,000
population became the
first
city in India to start
a Scheduled
Emptying service.



On 27th March ,
Sinnar Municipal
Council with 72,000
population initiated
Scheduled
Emptying service.

It is possible for most
cities in India to adopt
this practice.

What is Scheduled Emptying?

Under a scheduled emptying service...

all septic tanks in the city are visited once during a fixed cycle

and mandatory emptying is done...

according to a predetermined schedule...

by one or more licenced service providers...

Who are paid through annuity payment backed by ULB revenues

and deliver sludge safely to a designated disposal site for treatment

and reuse



Benefits of Scheduled Emptying



Equitable and inclusive services - all households / properties are covered by services. The payment is linked to property tax.



Pricing – Services are offered at lower prices, due to efficiency gains and the pricing is much less than the distress fee that households had to pay previously



Behavior change - Contribution to ODF sustainability as toilet usage can increase



No manual labour - Removal of need for manual labour due to regular emptying



Infrastructure optimization – Planned schedule and frequency for all. Clustered service visits. More predictable loads for treatment facility and route optimization of trucks



Environmental benefits - Likely reduction in BOD in septic tank effluent, as well as lower likelihood of septic tank overflows

Planning for Scheduled emptying in WAI and SINNAR



1. Zones of Emptying cycle

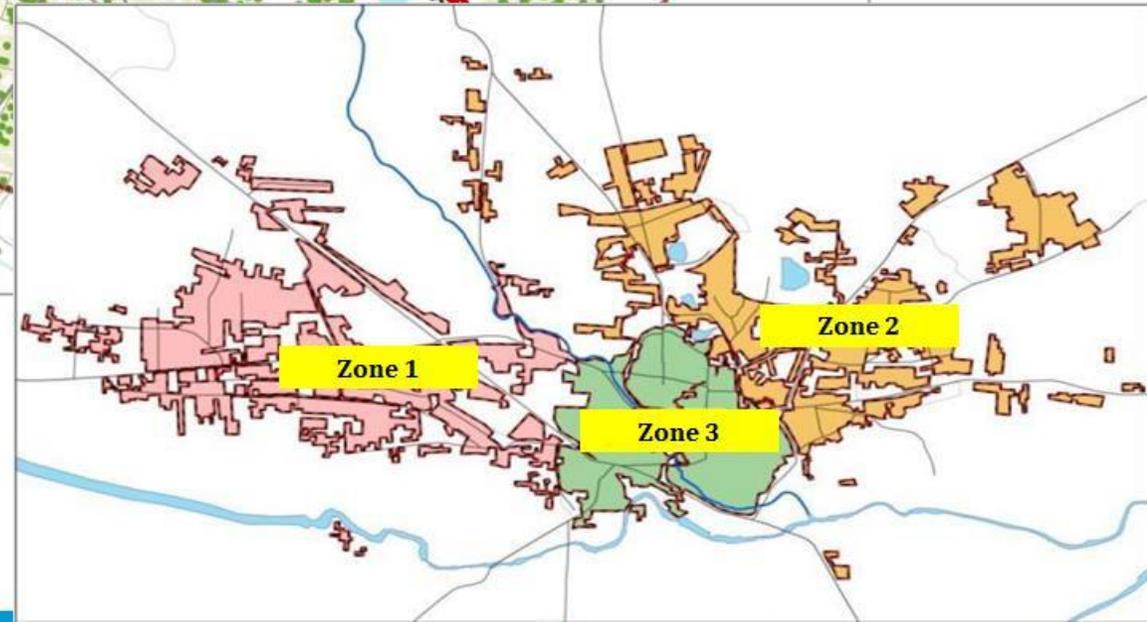
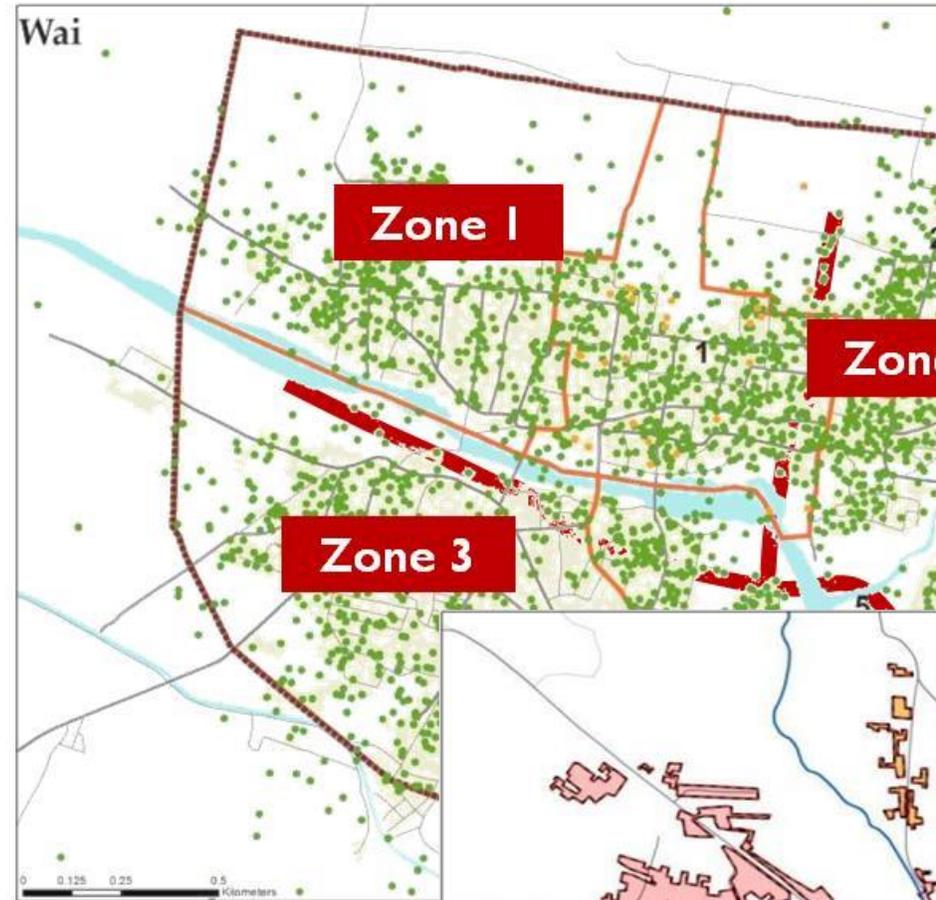
- The city was divided into 3 zones as per the citywide database on toilets and septic tanks.

2. Emptying Truck: Number and capacity

- Determine number and capacity of vehicles required for emptying operations.

3. Route planning

- Deciding the truck movement within the zone



Wai and Sinnar council decided to involve private sector for Scheduled emptying

Preliminary discussions with potential private providers to assess interest, concerns

Ownership of assets

The private party brings their own trucks for emptying and operate them for 3 years.

Performance linked payments

Payments based on achieving agreed targets of septic tanks emptied

Clauses to ensure safety standards - use of PPE and vigilance against manual scavenging

Fines on non-achievement of targets

Escrow mechanism – reducing late payment risk

An Escrow account is held by a third party bank.
ULB needs to maintain a fixed balance in it = 3 months of payment

Transparent bidding process through government approved process and websites

Awareness activities to be done by private contractor

Emergency emptying also included in contract

Levied differential tax on all properties for financing FSSM services

City level resolution for taxation

Differential taxation rates

Residential Properties **with / without**
toilets—

Rs. 300 / annum

Non Residential Properties **with toilets** —
Rs. 300 / toilet seat

Non-residential properties **without**
toilets—

Rs. 100 / annum

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 पुनःरचना करणेबाबत चर्चा करून निर्णय घेणे.

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

वार्षिक कराचे दर (रुपये)

अ.क्र.	कराचे नांव	निवासी मालमत्ता		विगर 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	विगर 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. चौथवे प्र.झुं.
ठराव सर्वानुमते मंजूर



अध्यक्ष,

सिन्नर नगरपरिषद, सिन्नर

Escrow Mechanism for payment to contractor ...

Key Clauses :

- WMC and SMC will put funds in the Escrow Account to create a **Contract Fees Reserve Fund (CFRF)** at the start of the Escrow arrangement.
- **Minimum balance of three months** payment to the Contractor
- **Transfers from property tax and sanitation tax** every month to pay to the contractor



महाराष्ट्र MAHARASHTRA 2015 6 JUN 2017 PM 215037
SUB TREASURY OFFICE SINNAR
- 9 JUN 2017

महाराष्ट्र MAHARASHTRA 2015 6 JUN 2017
क्यांक 362 तारीख 6 JUN 2017
काय श्री. / सी लिमिटेड
श्री. विनय नरेश पणिक सा.
रिपत रुपये 9.00
दंडीय घेतल्याचे क नं. दारुण अकाउंट अडिशन
काय: / हस्ते जाकिट सुकाठ से मरुद
बदकांत महीड बोडके
मुद्रांक विकेता सिन्नर
कवनाय क्रमांक 18/16

ESCROW ACCOUNT AGREEMENT

This Agreement is made and entered into at Sinnar, on this 16th day of June 2017 between: Sinnar Municipal Council, having their address at Sinnar Municipal Council Office, Sinnar (hereinafter referred to as the **SMC**) which expression shall, unless repugnant to the context, include its respective successors and assigns) of the First Part;

AND

Sumeet Facilities Pvt. Ltd, a Company incorporated under Companies Act having its registered office at Summit House, 1st floor Plot No. 64/21, D - II Block, MIDC Chinchwad, Pune (hereinafter referred to as the **Contractor** which expression shall, unless repugnant to the context, include its respective successors and assigns) of the Second Part;

AND

AXIS BANK LTD., a banking company incorporated under the Companies Act 1956 and carrying on the banking business in terms of the Banking Regulation Act, 1949 and having its Registered

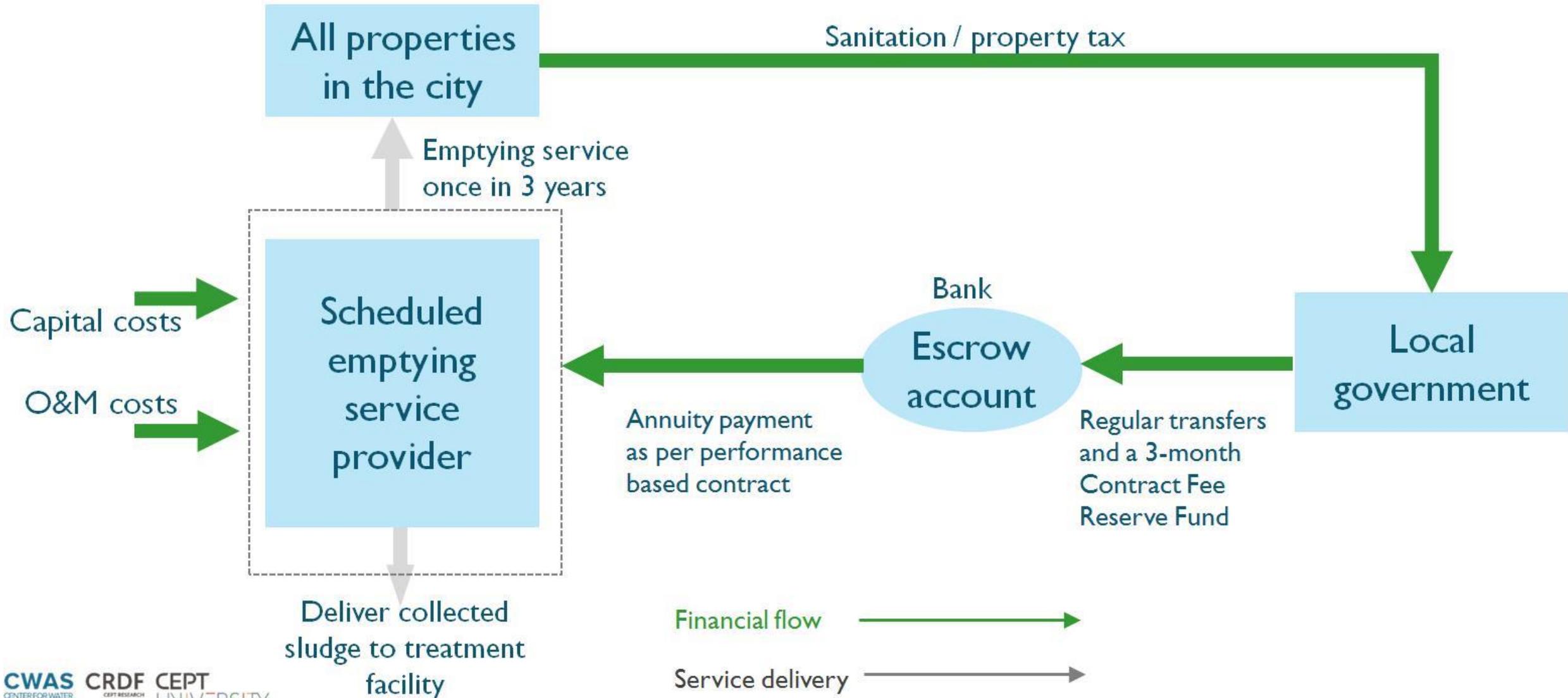
For SUMEET FACILITIES PVT. LTD.

CIN: U74900MH2015PTC025037

18/16

18/16

Performance Linked Annuity Model (PLAM) for scheduled emptying



Appointment of private sector for scheduled emptying

- Sumeet Facilitates private Ltd. is a company based in Pune with offering variety of services with pan India presence.
- Appointed in Wai and Sinnar for scheduled emptying service through a competitive tendering process
- Service based contract for 3 years
- Operations in Wai and Sinnar started since 30th May, 2018 and 27th March, 2019 respectively



Awareness generation to ensure success

Paintings / banners in the city by SMC and WMC



Household visits by desludger with info.leaflets



WMC circulated small videos



Intimation through SMS





Wai Nagarpalika

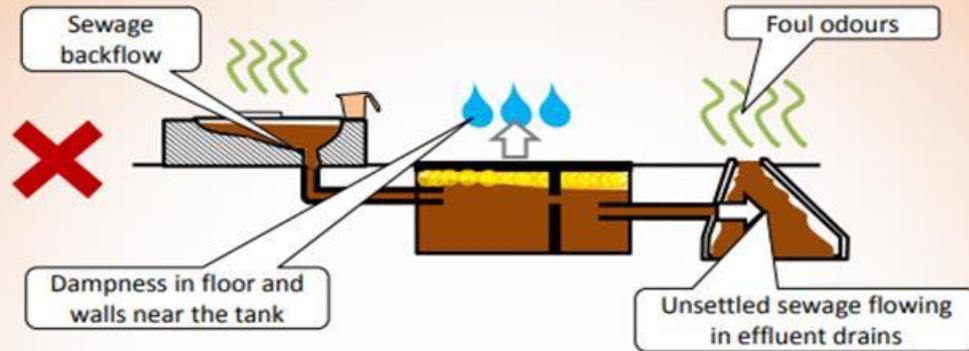
has devised a unique

“Scheduled Emptying of Septic Tanks scheme”



A first of its kind in the country, under which septic tanks of each and every property of the municipal council will be emptied at least once in every 3 years

You clean your septic tanks only when it overflows...But are you aware of the side effects of not cleaning it periodically?

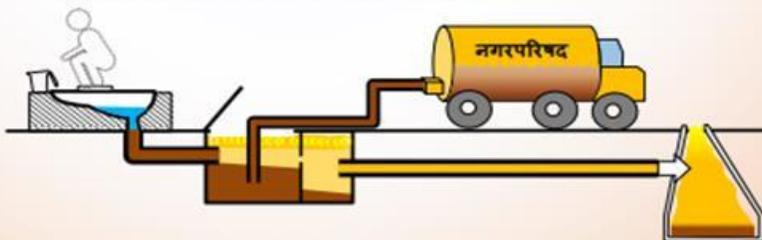


Septic tank should be emptied every 3 years
Avail Nagarpalika services to empty!

And the good news is...

Nagarpalika will get in touch with you regarding your turn for emptying as per schedule and you do not have to pay for this.

DON'T MISS YOUR TURN . . .



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

- Helmet
- Safety goggles
- Mask
- Suit with apron
- Rubber gloves
- Torch
- Gum boots

✗ 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

Systematic emptying process followed in Wai and Sinnar



1. Property tax data was used as a baseline. All properties in the city surveyed to collect sanitation data



2. City divided into 3 zones. Route plan prepared for scheduled emptying for zone 1



3. Households informed about the visit a day earlier, to open cover of their septic tank



4. Households visited as per route plan between 7am to 5 pm



5. Form signed by household once the tank is emptied and checked



6. Septage carried to treatment plant and record maintained

Performance linked Monitoring Mechanism

Daily report on septic tanks emptied by Sumeet team to council

WMC's copy

Property holder's copy

Treatment plant's copy

Sumeet team's copy

Collection and transport record form Serial No: _____

i. Details of Waste Generator

- Name :
- Phone Number:
- Address :
- Property Tax Number :
- Type of building : Individual house / Apartment / Commercial complex / Other (specify) _____
- Was the Septic tank cover open (Yes / No)

ii. Identification of Waste:

- Volume _____ liters
- Type : _____ Septic Tank _____ Others _____
- Source : Residential/Commercial/Restaurant/Other _____
- Septic tank cover placed back on Septic tank : Yes / No
- Septic tank emptied : Yes / No
- Any kind of deficiencies, missing pipes or fittings, improper manholes or access covers, any other cracks or damage observed : _____

The undersigned being duly authorized does hereby certify to the accuracy of the source and type of Fecal Sludge and septage collected and transported.

Date: _____, Time: _____, Name and Signature – Property owner: _____

III) Details of Sumeet Facilities Operator

- Name of Driver :
- Permit :
- Vehicle License no :
- Truck Capacity :
- Pump Out Date :
- No. of trips taken to empty the septic tank:

The above described wastewater was picked up and hauled by me to the disposal facility named below and was discharged. I certify that the foregoing is true and correct:

Name and Signature of authorized transport agent and title: _____

iv) Acceptance by Wai Municipality's authorized FSTP

The above transporter delivered the described Fecal sludge and Septage to this treatment facility and It was accepted.

The waste was contaminated with solid waste or other kinds of waste: YES / No

Details (if yes): _____

No of trips received at the FSTP for this form: _____

Septage received at treatment plant: Date: _____, Time : _____, Volume : _____ liters

Name and Signature of authorized treatment plant operator signatory and title: _____

NOTE: SUBJECT TO THE TERMS AND CONDITIONS OF WAI MUNICIPALITY

Soon paper based monitoring system will be replaced by online monitoring system

IT enabled monitoring and database creation

“Real time” monitoring
No need to process data
for results



Easy to Operate,
Reduce paper work,
Minimize human error



Can view progress easily
and process payments



Photo stamping,
Geo stamping,
Signatures



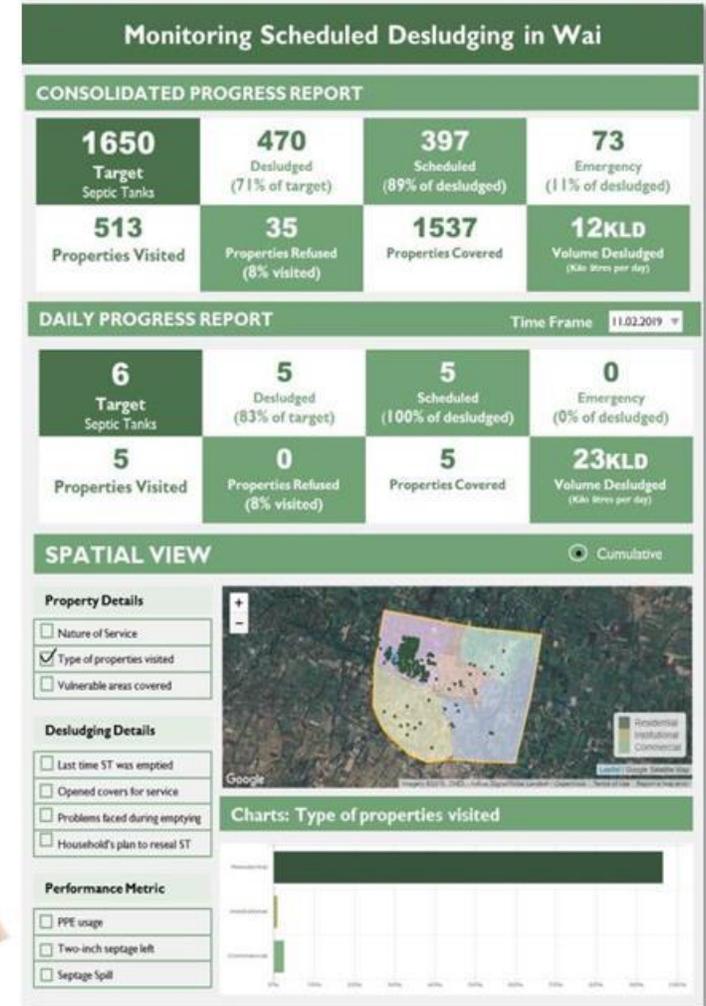
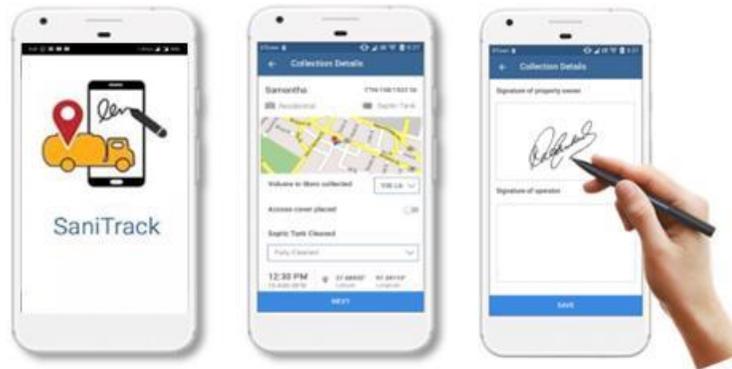
Unique database



SaniTab



SaniTrack



All collected Septage is being treated at Sanitation Resource Park ...



Wai FSTP

- Tide technocrats setup FSTP
- 70 cum / day FSTP plant
- Land required – 1800 sqm
- Technology – Pyrolysis
- Capital cost – Rs. 1.96 Crores
- O & M cost – Rs. 24 lakhs/ year

Sinnar FSTP

- DBO Tender with 3 Years O&M
- 70 cum / day FSTP plant
- Land required – 1600 sqm
- Technology – UASB based
- Financed through 14th FC funds
- Capital cost – Rs. 1.6 Crores
- O & M cost – Rs. 8 lakhs / year



What has been achieved by scheduled emptying in Wai

Results after 1 year of
scheduled emptying

645
service visits

1921
properties in the
city covered

89%
properties
serviced

11% properties
refused

Unique database
of **572** septic
tanks in the
city

464
scheduled
desludgings

108
emergency
desludgings

28 Community
toilets serviced
weekly

85%
prepared
with access covers open

~5.5 Million litres
of septage
delivered safely to
treatment facility

What has been achieved by scheduled emptying in Sinnar

Results after 4 months of scheduled emptying

253
service visits

447
properties in the
city covered

87%
properties
serviced

13% properties
refused

Unique database
of **294** septic
tanks in the
city

144
scheduled
desludgings

150
emergency
desludgings

18 Community
toilets serviced
weekly

84%
prepared
with access covers open

~2 Million litres of
septage delivered
safely to
treatment facility

Learnings

Operational learning

Solidified Septage in tanks



- Vehicle started breaking down frequently because of solidify septage
- Emptying of one septic tanks were taking longer time
- Chemicals are added one day before the emptying is done
- The private sector is going to bring new improved vehicle which can break solidified septage

New improved high jetting desludging vehicle

Access issue in narrow lanes



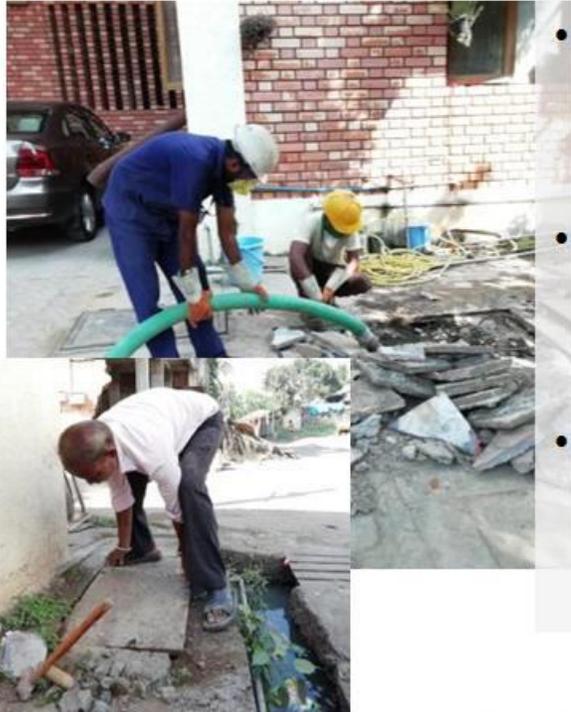
- Access of septic tanks in narrow lanes
- An smaller truck with a capacity of 600 liters was procured for accessing properties in narrow lanes
- Long pipes are also used for accessing septic tanks.

Smaller vehicles and Long pipes

Learnings

Mason Deployment

Mason deployment



- Initially there was resistant from citizen as they had to break access covers
- Opening access covers became a part of awareness drive.
- The Municipality provided a **mason** for opening access covers

90% properties now ready with open access covers

Locked properties/ Properties that ask to rescheduled desludging

15 day period set to cover rescheduled properties



Learnings

Emergency Cleaning



- Sanitary inspector visits the property who raises an emergency request;
- Emergency requests to be address post approval of the sanitary inspector
- Penalty for false emergency request

Changes in Model contract

Payment linked to Properties for apartment

Penalty if targets are not achieved

Review mechanism

Gender Clause

Delay due to non-functioning of FSTP

Consideration for varying fuel prices

Scaling up in Maharashtra

- Model Tenders for Scheduled emptying and DBO tender for FSTP is ready and other cities in Maharashtra are using it.
- Model city Sinnar and Wai have begun on scheduled emptying
- Based on Sinnar and Wai experience, training of 130+ ULBs selected from Maharashtra for developing FSSM plans – 90% report plans to take up same model to become ODF++
- Learnings from Sinnar and Wai have been translated into policies and guidelines at State and National level
- Resource materials available for cities
 - Model tender documents
 - Case studies of Wai and Sinnar
 - Awareness materials
 - Monitoring tool being prepared



Thank you

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About us

The Center for Water and Sanitation (C-WAS) at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.

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