

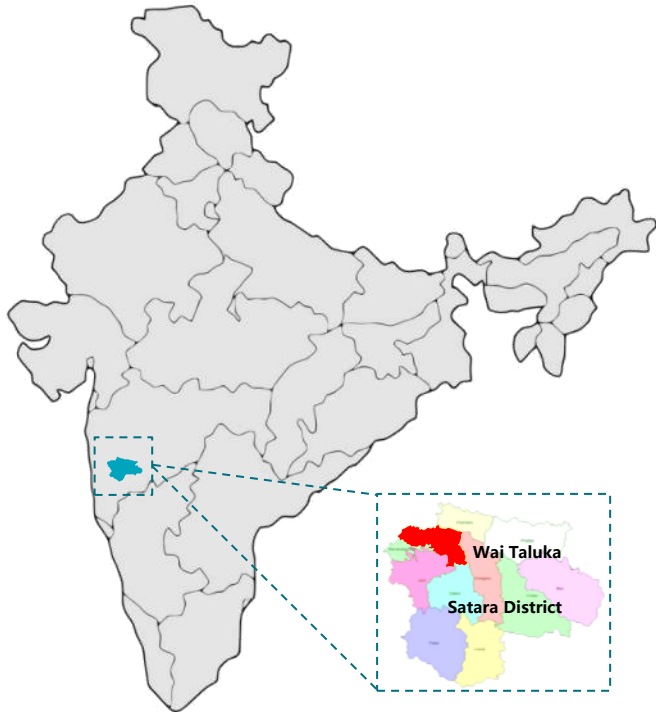
FSSM in Wai : Private Sector Contracting Model for Emptying

Aasim Mansuri and Arwa Bharmal

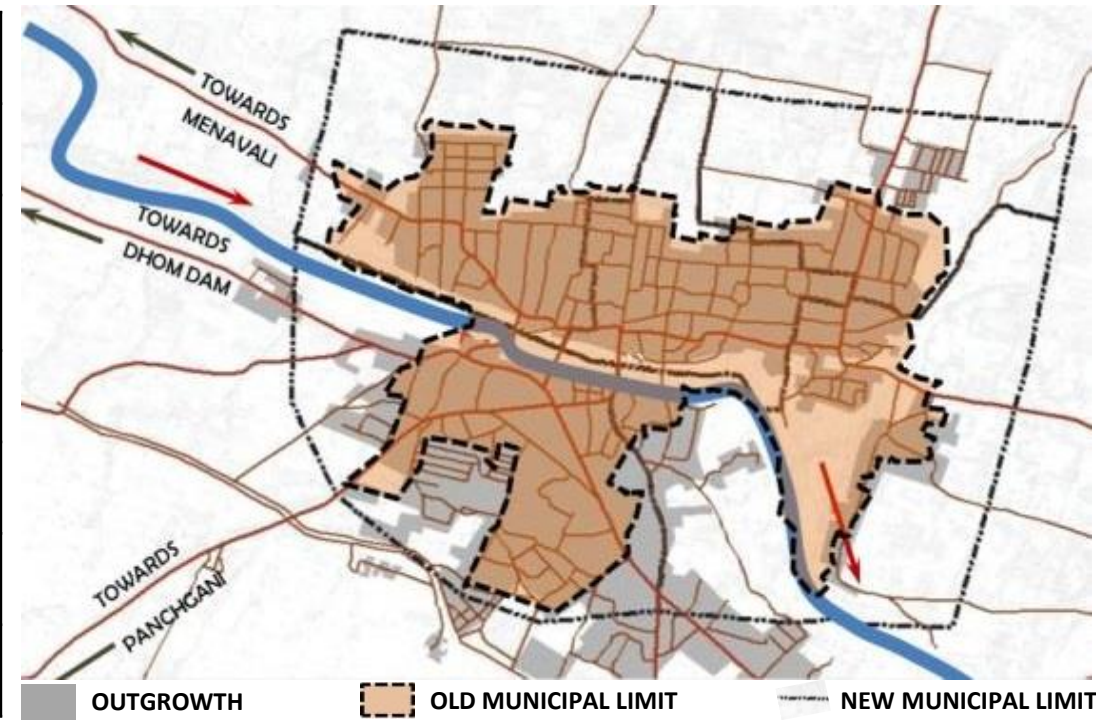
On behalf of :
Wai Municipal Council
Center for Water and Sanitation, CEPT University

WAI CITY....

A city moving towards universal access to sanitation



C Class Municipal Council	
District	Satara
Location	95km south of Pune; 35km from Satara
Area	3.54 sqkm
Population (2019)	43,000
Households	8,991
Slum population	4%



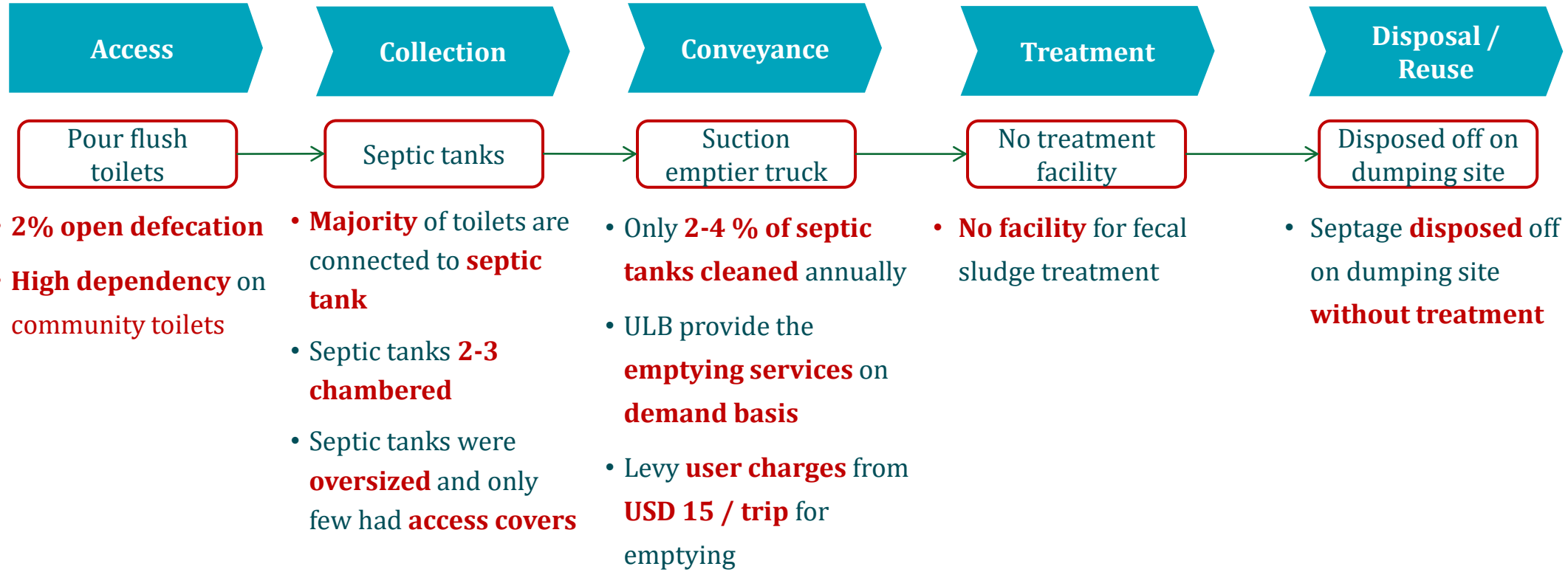
Administrative Map, Wai

- The town is known in Maharashtra for its **Ghats** on the **banks of River Krishna** and around **250 temples**.
- This **city is representative of 4000+ small and medium cities** of India.



Sanitation Situation – in 2013, when we began work ...

When work started



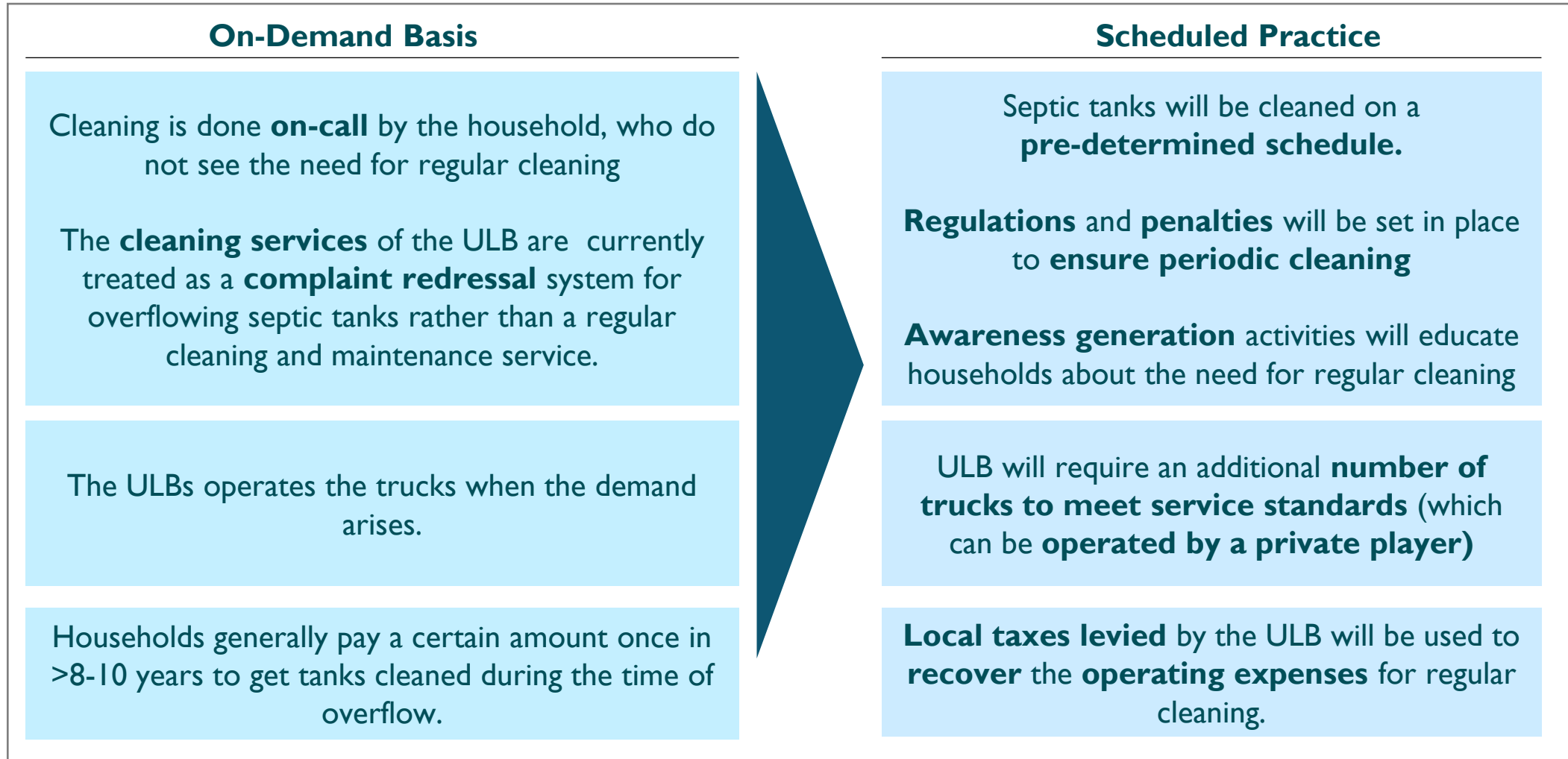
Wai resolved to implement FSSM plan in their cities through a executive order ..



- The executive order covers aspects like:
- ❑ Citywide FSSM
 - ❑ Involving Private sector
 - ❑ Scheduled cleaning
 - ❑ Land for treatment facility
 - ❑ Taxes to be levied

1st Cities in INDIA
to have passed such a executive order ...

The idea was to move from a consumer complaint redressal system to a scheduled service ...



Wai council decided to involve private sector for Scheduled desludging through a balanced contract ...

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.

Transparent bidding process through government approved process and websites

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

Awareness activities to be done by private contractor

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

Emergency emptying also included in contract

Scheduled desludging in WAI by private service provider ...

1. Zones of Emptying cycle

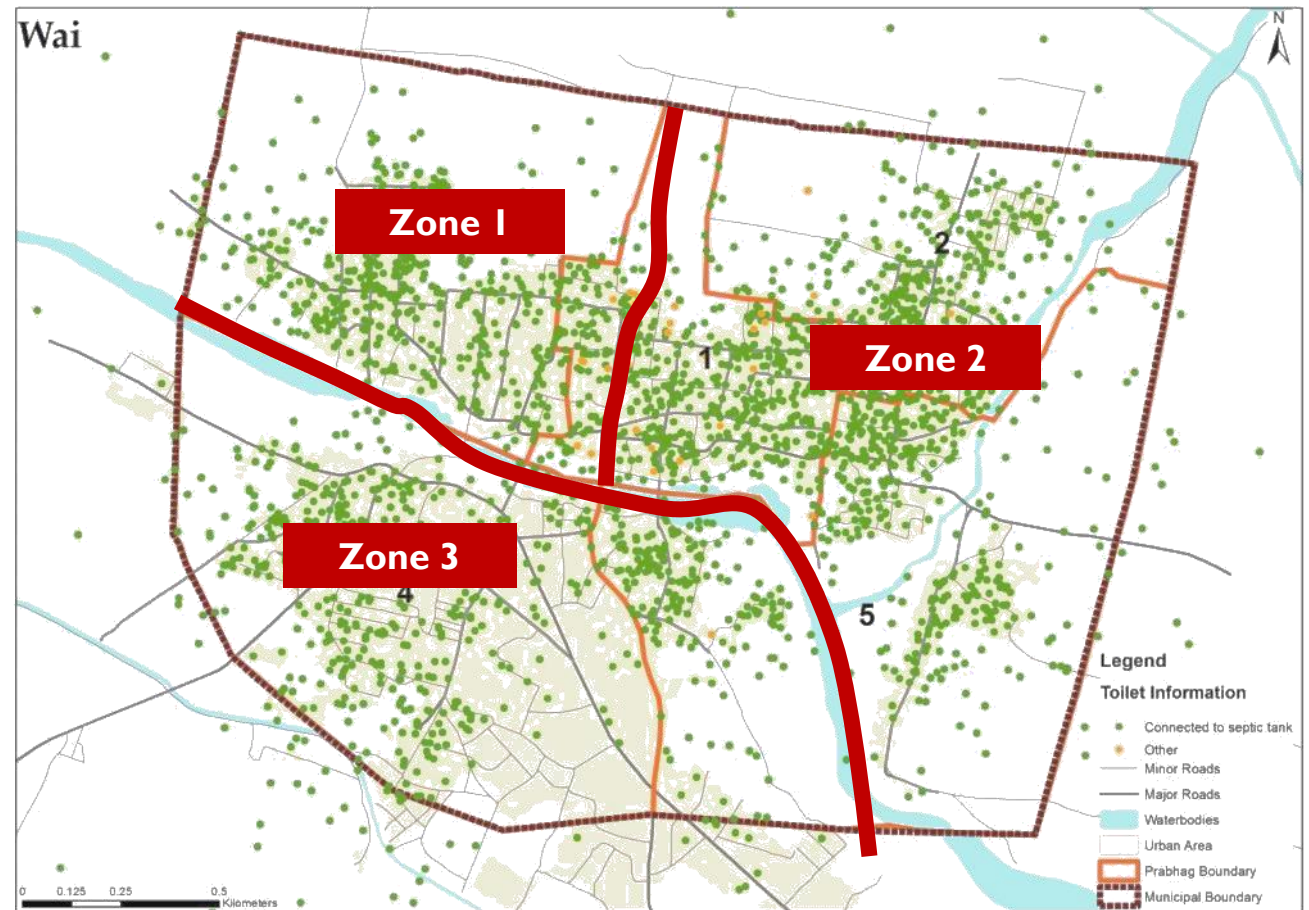
- The city was divided into 3 zones as per the citywide database on toilets and septic tanks.

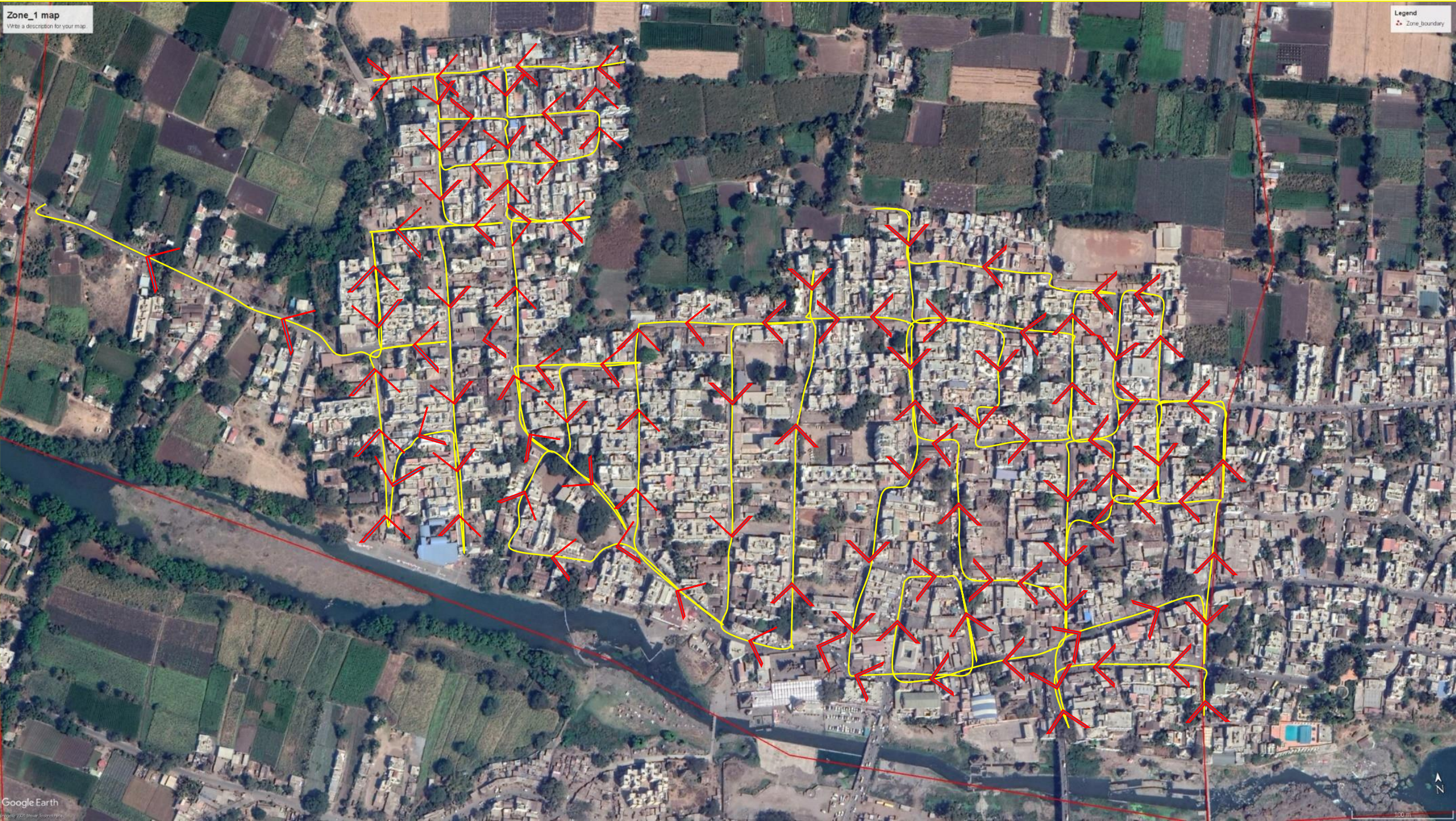
2. Emptying Truck: Number and capacity

- Number and capacity of vehicles required for desludging operations.

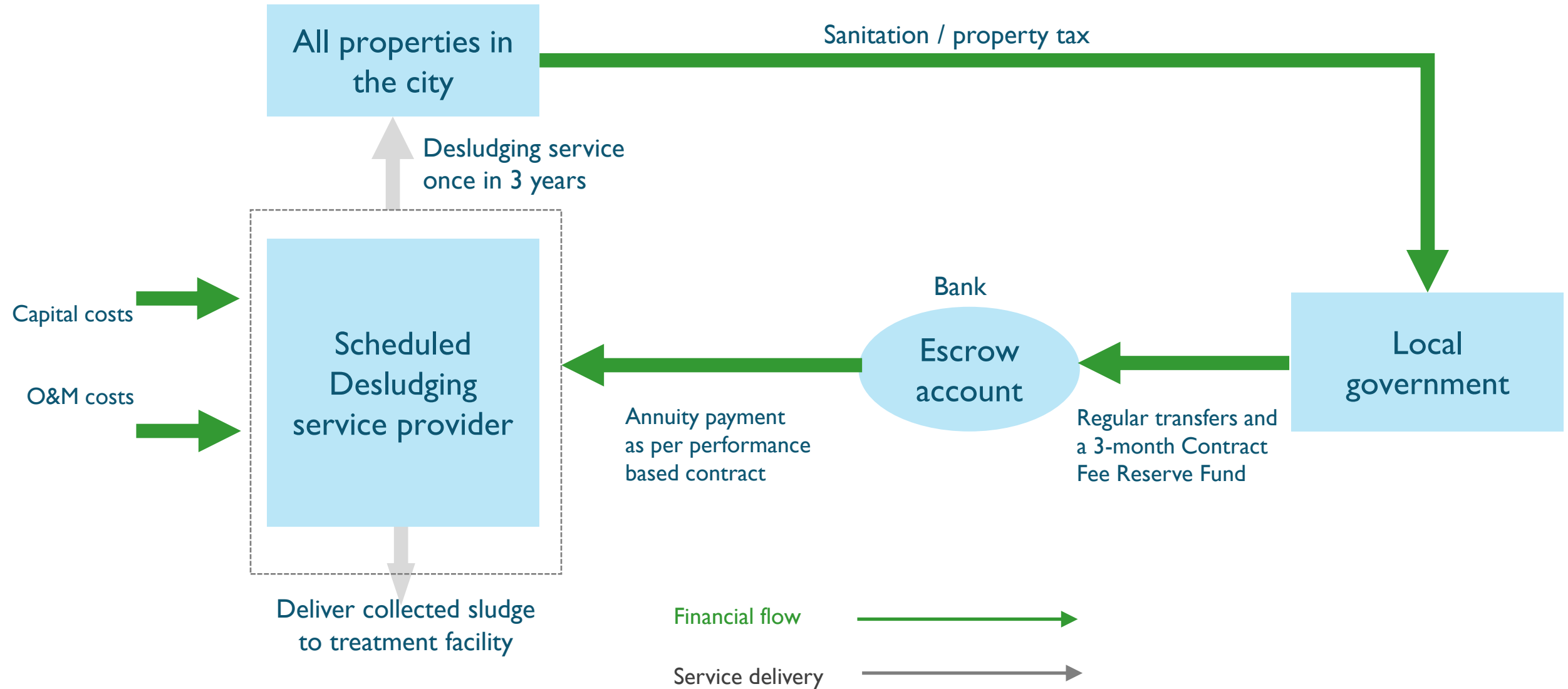
3. Route planning

- Deciding the truck movement within the zone

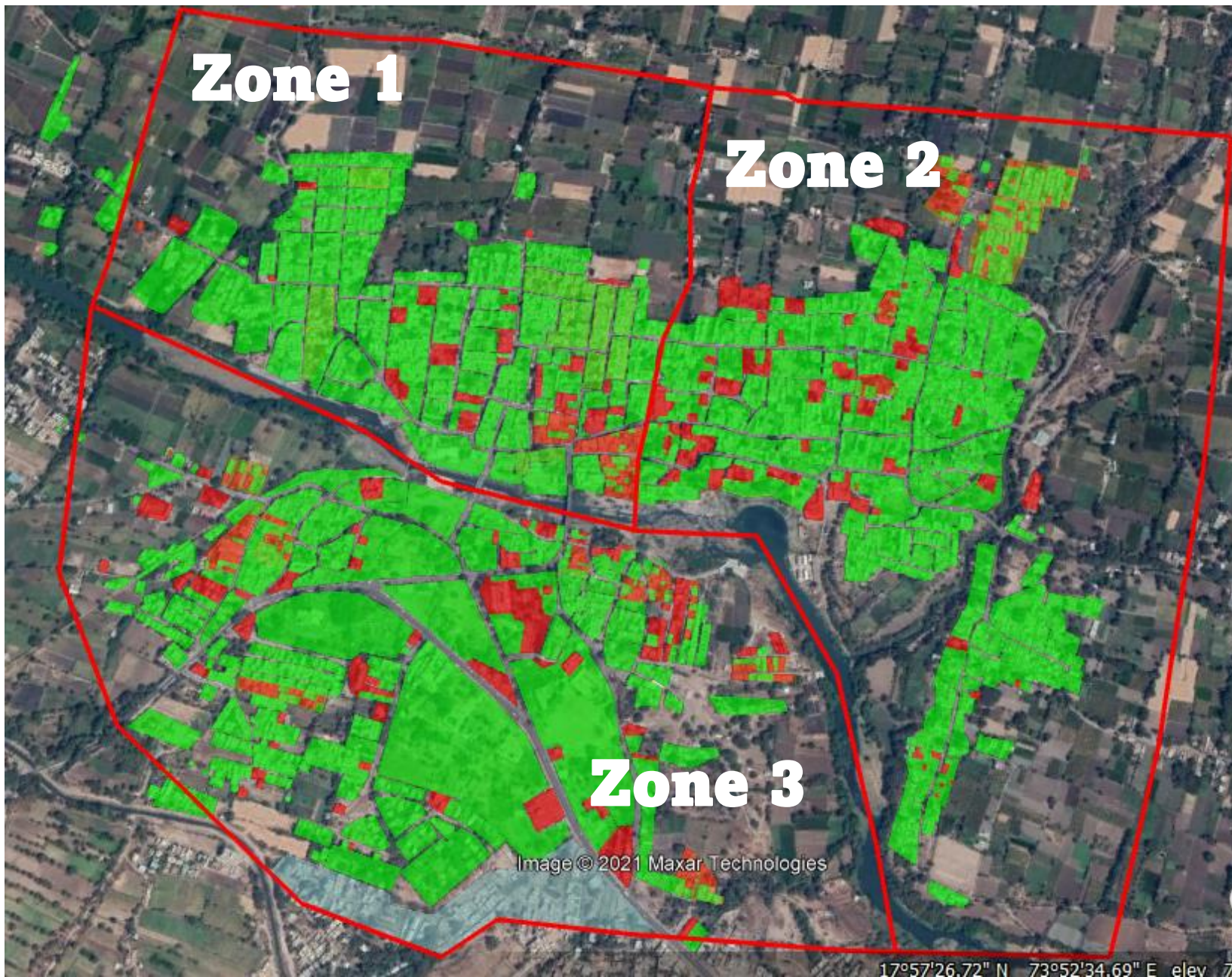




Financing model : Performance Linked Annuity Model (PLAM) for scheduled desludging



1st round of scheduled desludging is almost completed for the full city ...



- Total of 2400+ septic tanks serviced
- Total Properties covered : 5000+
- **90% of septic tanks covered**
- This is despite the COVID-19 related challenges

Impact : Improvement in groundwater and river water quality due to scheduled desludging

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 in desludged areas
- 50-60% decrease in BOD load in drains in desludged areas



- Regular desludging services will eventually improve the quality of river water and ground water as the quality of drain water and supernatants will improve

Solar FSTP setup in the city to treat the septage and treated WW reused for urban forest and landscaping ...



Wai, Maharashtra



Capacity: 70 KLD
Land: 1200 sq mt

Funded : BMGF
Commissioned - 2018

17+ ML septage delivered to the treatment facility

Awareness generation a key feature for success of high uptake of FSSM services ...

Paintings / banners in the city by WMC



Household visits by desludger with info. leaflets



Cities circulated small videos



Intimation through SMS



Performance linked Monitoring Mechanism ...

Daily report on septic tanks emptied by Sumeet team to council

This is a white form titled 'Collection and transport record form' with the number 101. It contains various fields for recording waste collection details, including name, address, and volume.

WMC's copy

This is a purple form titled 'Collection and transport record form' with the number 101. It is a duplicate of the form shown in the WMC's copy, used by the property holder.

Property holder's copy

This is a grey form titled 'Collection and transport record form' with the number 101. It is a duplicate of the form shown in the WMC's copy, used by the treatment plant operator.

Treatment plant's copy

This is a yellow form titled 'Collection and transport record form' with the number 101. It is a duplicate of the form shown in the WMC's copy, used by the Sumeet team.

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/Others _____
- 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

Add-on online monitoring system added to paper-based monitoring system

IT enabled monitoring systems for FSSM ...

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



Easy to Operate,
Reduce paper work,
Minimize human error



Monitors performance
of FSSM services



Photo stamping,
Geo stamping,
Signatures



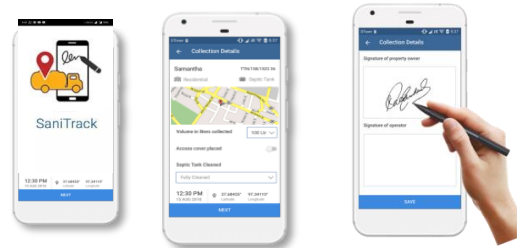
Unique database



SaniTab



SaniTrack



SanQ



Monitoring Scheduled Desludging in Wai

Logged in User: CEPT Logout

CONSOLIDATED PROGRESS REPORT

3573 Septic Tanks Remaining To Be Deslugged	2427 Deslugged	2168 Scheduled	259 Emergency
2614 Service Visits	230 Properties Refused	5066 Properties Covered	7445 KL Volume Deslugged

SPATIAL VIEW

Cumulative

Property Details

- Nature of Service
- Type of properties visited
- Vulnerable areas covered

Desludging Details

- Last time ST was emptied
- Opened covers for service
- Problems faced during emptying
- Household's plan to reseat ST

Performance Metric

- PPE usage
- Two-inch septage left

Charts: Nature of Service

Category	Value
Scheduled Emptying	5066
Emergency Emptying	259

What has been achieved after implementing FSSM in Wai

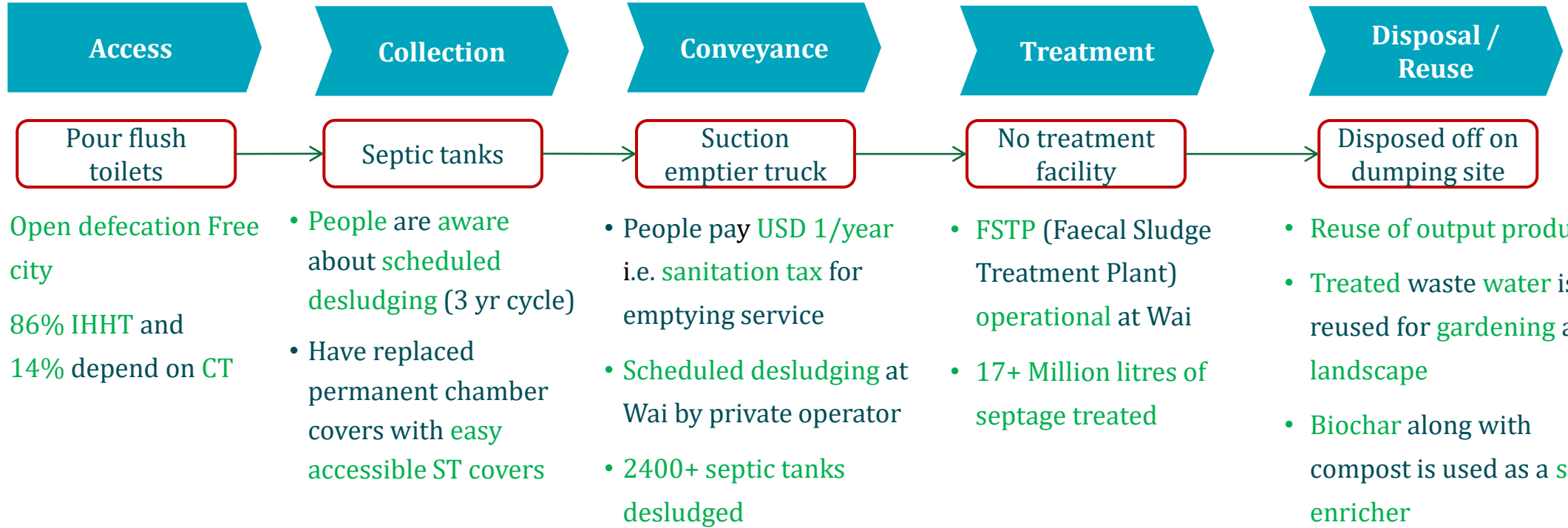
- **2400+ septic tanks** covered by scheduled desludging covering **5000+ properties**
- **1st cycle of scheduled desludging almost completed** for the full city
- **7-8 septic tanks desludged per day** as compared to 7-8 per month in 2017 with demand desludging
- **17+ million liter septage delivered** to the treatment facility
- **90-95% acceptance rate** from HHs for **scheduled service**
- **Sanitation workers now wear safety gear regularly**
- **Households pay sanitation tax** instead of high user charges for desludging



Sanitation Situation in 2021

The city has now been declared ODF++ by MoHUA

After implementation of FSSM



Thank you

cwas@cept.ac.in
pas.org.in, cwas.org.in

About us

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



cwas.org.in
pas.org.in



cwas@cept.ac.in
tiny.cc/pasenews



[CEPT_CWAS](https://twitter.com/CEPT_CWAS)



[cwas.cept](https://www.instagram.com/cwas.cept)



[pas.cept](https://www.facebook.com/pas.cept)



[cwas.cept](https://www.linkedin.com/company/cwas.cept)