

IT Enabled Systems for Monitoring Citywide Faecal Sludge and Septage Management Services

M. Mehta*, D. Mehta**, D. Bhavsar***, A. Dwivedi****, Y. Bakshi*****

CWAS, CEPT University, Ahmedabad, India,

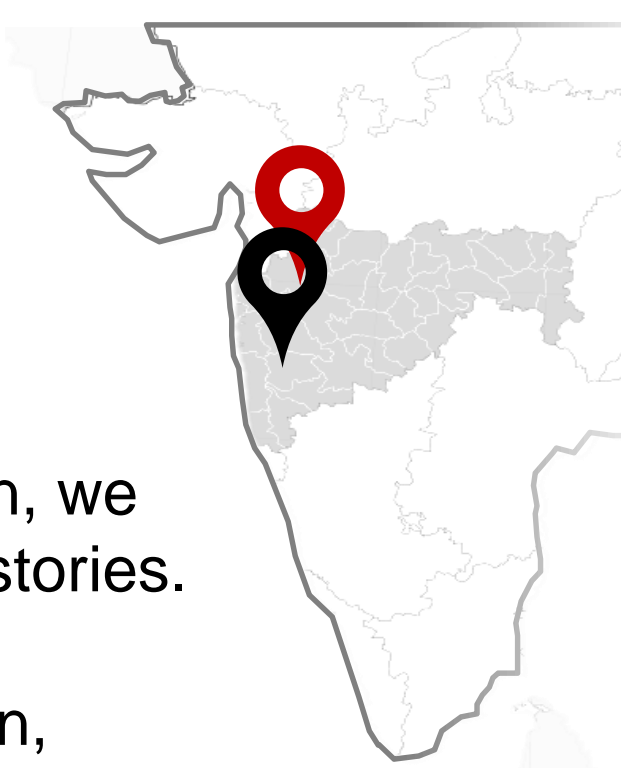
* meeramehta@cept.ac.in, ** dineshmehta@cept.ac.in, *** dhruv.bhavsar@cept.ac.in, **** aditi.dwivedi@cept.ac.in, ***** yugasha.bakshi@cept.ac.in

INTRODUCTION

Wai and Sinnar are two small towns in the state of Maharashtra, India. In their sanitation characteristics and challenges, they are representative of most small and medium Indian town in India which are home to nearly 40% of India's population.

Our involvement with the Wai and Sinnar cities

CEPT's involvement with the cities goes back to 2013 when we began research in sustainable and equitable sanitation with focus on non-networked solutions. Since then, we have been working with the city governments, helping shape their inspiring sanitation stories. These cities are dependent on onsite sanitation systems like septic tanks, and are implementing citywide faecal sludge and septage management plans for safe collection, conveyance and treatment / disposal of faecal matter.



City support
from planning to
implementation



Capacity Building
ODF cities
Scheduled
Emptying of
Septic Tanks

Both city governments have entered into a contract with a private service provider who will be responsible for carrying out scheduled emptying of septic tanks. In addition, they have also set up faecal sludge treatment plants for safe disposal of collected septage. These are also being managed by private agencies.

MONITORING SYSTEMS

A monitoring system is required to ensure smooth and efficient operations. The existing contracts with the private sector for scheduled emptying include clauses for performance-based payments and already mention paper based monitoring. However, to make the process smoother and more transparent, a gamut of IT enabled monitoring systems have been introduced across the sanitation value chain.

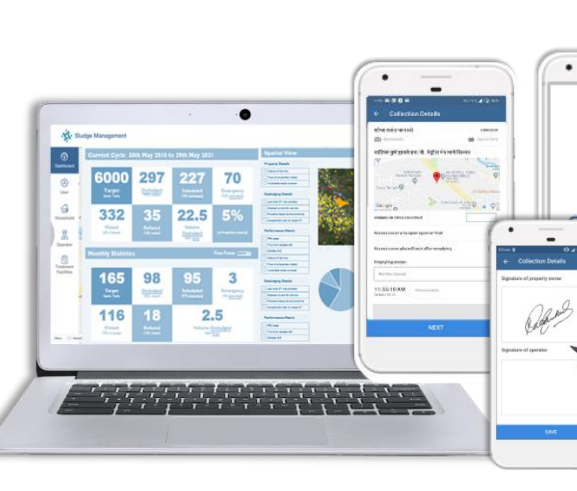
MONITORING TOOLS DEVELOPED

SANITAB



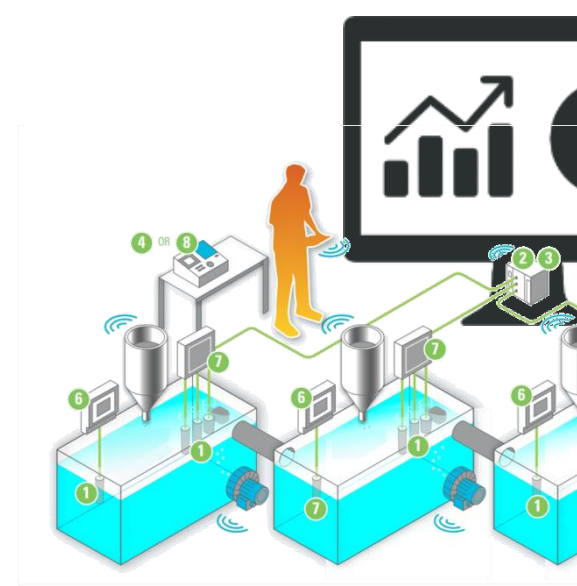
- Android App for collecting data and provides quick analyses
- Data collection to monitoring app
- Easily customizable in capturing data related to properties, type of emptying service, disposal systems and desludging performance
- A dashboard reflecting real time progress

SANITRACK



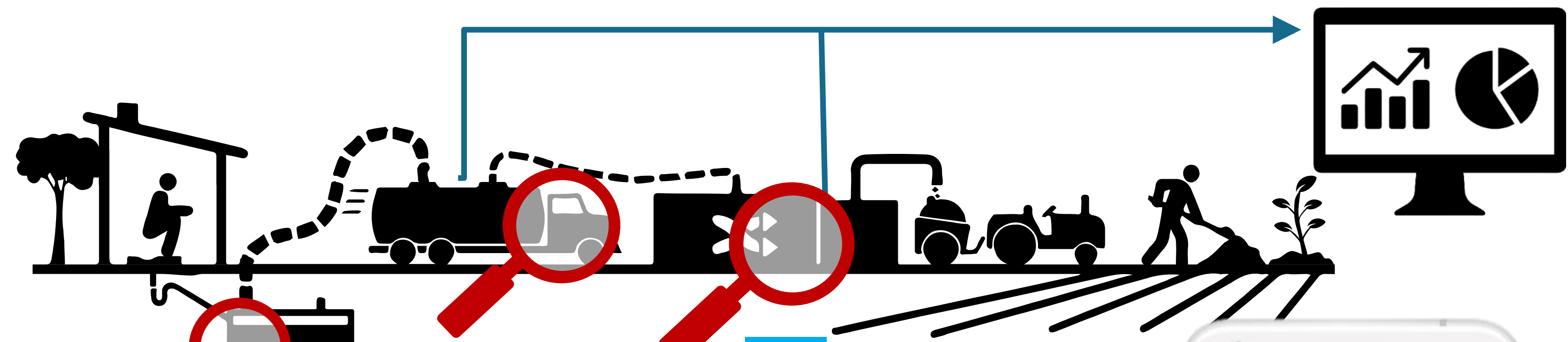
- Amazon delivery like app for desludging operations
- Modules catering to every stakeholder – truck operators, ULB Officials, administrators etc
- Ensures safe disposal at FSTP
- Downloadable septic tank desludging reports
- Easy to use, Paperless, Real time monitoring

SAN-Q

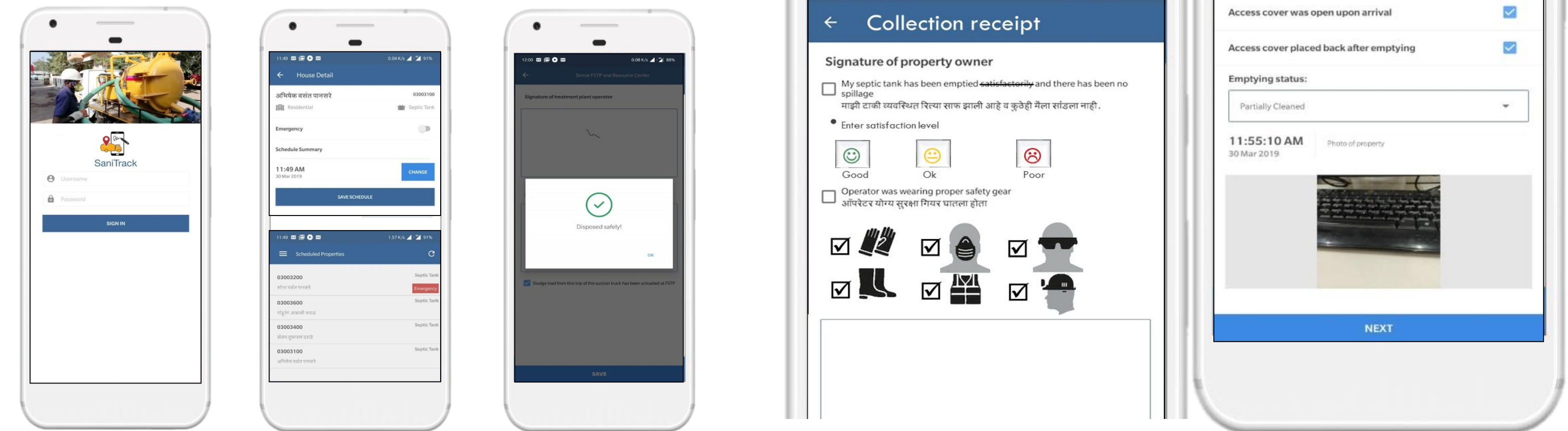


- Module for online, real-time water quality monitoring at FSTPs in Wai and Sinnar
- Interface to capture daily volume treated, quality testing results
- Alerts on web dashboard if results exceed permitted water quality levels
- Capturing flows, BOD, COD, TSS etc

NEED FOR IT-ENABLED MONITORING SYSTEMS



- 1 Building Onsite sanitation information systems**
 - Create database
 - Monitoring forms
- 2 Monitoring septic tank desludging services**
 - Register safe delivery to FSTP
 - Paperless receipts
 - Capture customer signature, geo-location onscreen
 - Geo-Dashboards
- 3 Monitoring treatment quality**



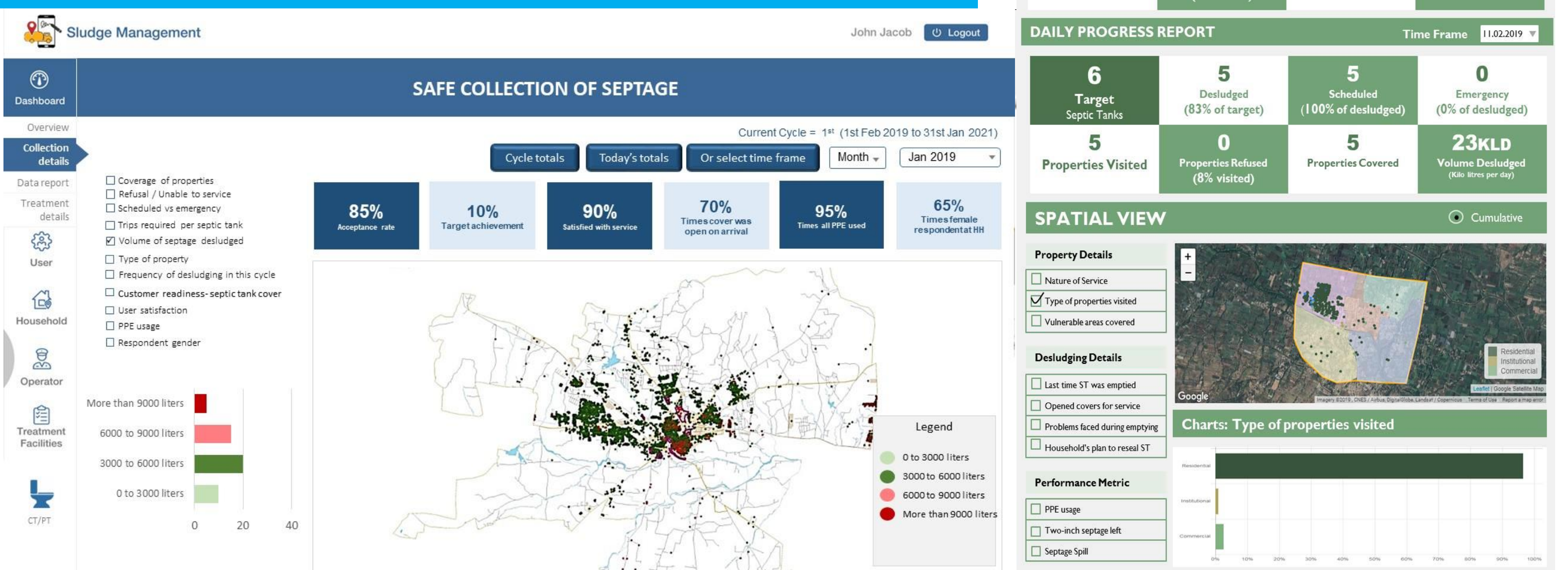
CAPACITY BUILDING OF CITY STAFF

- The Municipal staff of the cities have been trained to use these apps and monitoring systems.
- Dashboards - City officials monitor the performance of the de-sludger and the treatment facility staff before making monthly payments.
- The apps support vernacular language.



Monitoring Dashboards capturing various details :-

- Coverage of Properties
- Vulnerable Areas Covered
- Trips taken per septic tank
- Volume of septage deslugged
- Household readiness for service
- PPE Usage by de-sludger



BENEFITS OF MONITORING SYSTEM

- "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
- Citizen awareness about emptying procedures

KEY LEARNINGS

- Need a balance in keeping the survey form short while also capturing all the essential data.
- Network related issues in some part of localities (SaniTab enables forms upload as and when internet access is available). FSTPs being located on the fringe of the cities, network is not always available.
- Apps allow the surveyors to save data and submit once there is internet connectivity.
- Sanitation workers might now own or are not used to using smartphones. Workers are also hesitant to carry their phones near septic tanks for fear of dropping them. A training session was held for them.
- Scaling up of Apps would require adaptation to vernacular languages.

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CWAS-CEPT University partnered with Wai Municipal Council and Sinnar Municipal Council to implement IT enabled monitoring systems for citywide faecal sludge and septage management services with the help of our technical partner Transerve Technologies Private Limited.