



ICT for effective Planning and Implementation of FSM Programme: A Case study of Warangal City

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GREATER WARANGAL MUNICIPAL CORPORATION

వరంగల్ మహానగర పాలక సంస్థ



**Administrative Staff
College of India**
Leadership through Learning

Warangal city - Overview

- Second largest city in the state of Telangana
- Population: 0.8 million; Area : 472 sq.km
- Slum pop – 30% (180)
- City of lakes/water bodies – sources of drinking water
- Historical and cultural city - potential for tourism
- Priority city for growth



Sanitation Context - Warangal



Target of becoming ODF by June 2017

HH with toilets: 77% ; HH with OD and Insanitary Toilets: 23%



3 empaneled desludging operators with 8 trucks

Land for FSTP identified

Two types of treatment facilities to be established :

- Co-composting and Anaerobic



Key Challenges Faced by the city

- Limited **citizen touch points**
- Tedious **processes** for access, grievance redressal
- Lack of systematic **monitoring**
- Insufficient **data** for effective decision making
- Slow pace of **service delivery** – approvals, fund disbursement
- Lack of **systems** to track FSM regulation



A bouquet of ICT tools for better planning, management and monitoring of FSM services

Lessons from Pilot Implementations

Sanitation Helpline (S-Line)

FSM Tracker & GIS for
desludging vehicles

PT
Monitoring
App

Citizen
Feedback
Tool

Aadhar
Linked
Sanitool

Toilet Finder
App



Toilet Finder App

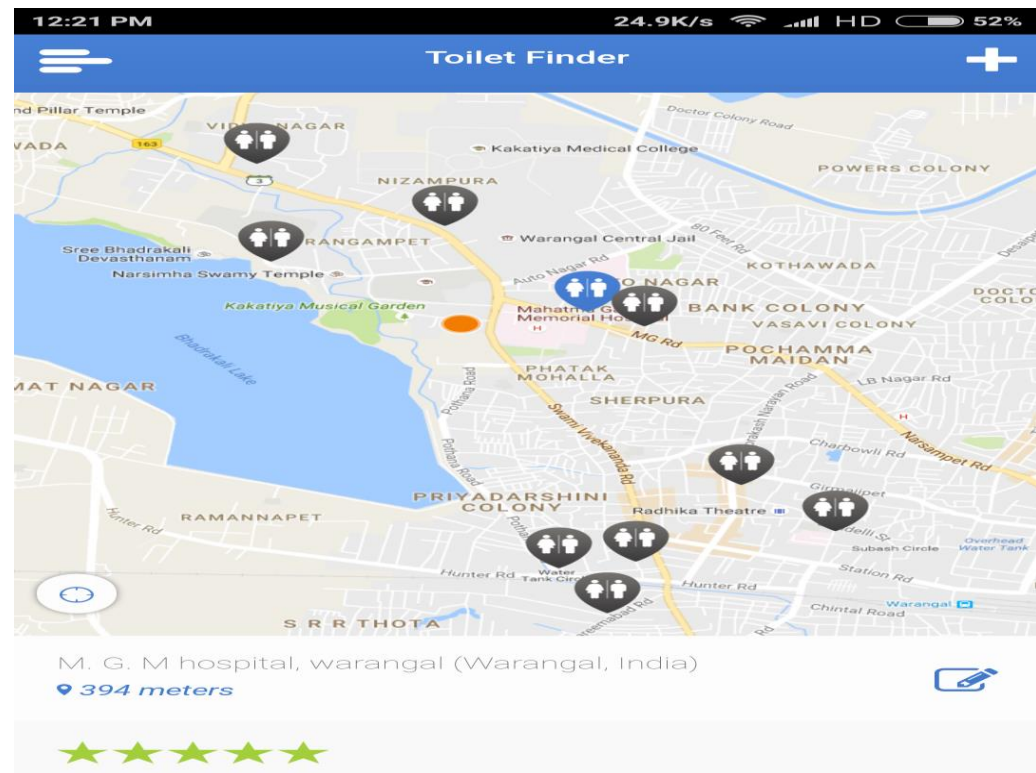
sub titles can add, clarify, ask questions or challenge

Purpose: To locate toilets in a radius of 4kms

Users: Citizens, officials

Functionality:

- Google Playstore
- Users can also share, add and rate the toilets



Public Toilet Monitoring Tool

Mobile application developed and integrated into existing monitoring system of GWMC

Purpose: Weekly survey of PTs

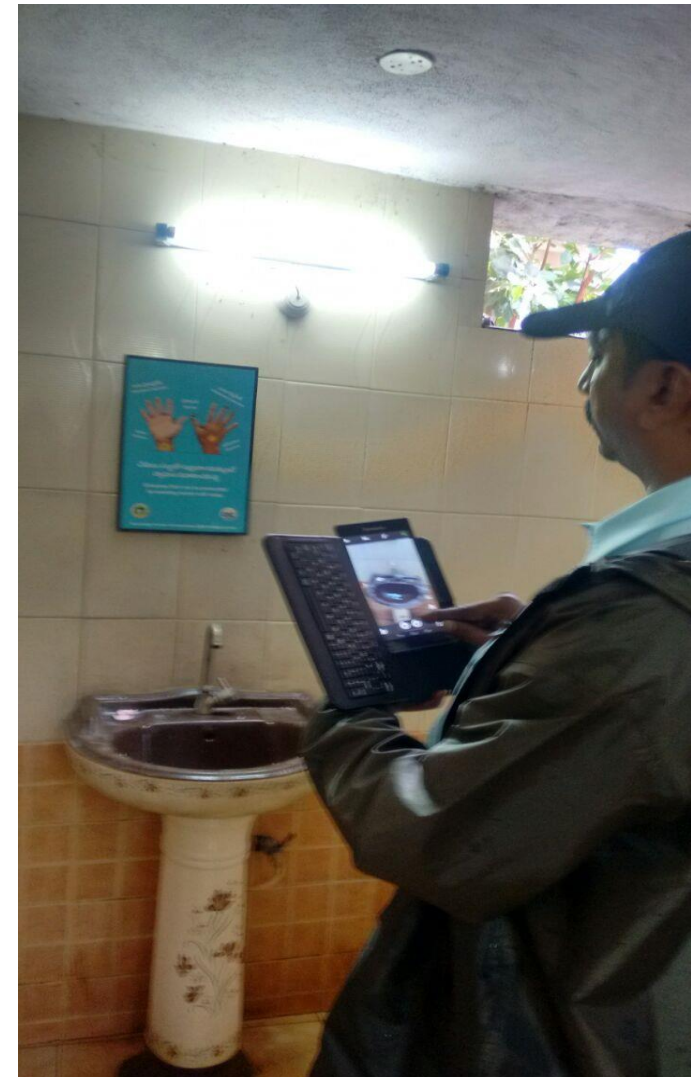
Users: Sanitary Inspectors (SIs)

Functionality:

SIs complete the simple survey every week using the app.

The data is aggregated real time and reviewed by the commissioner every Saturday.

Performance of the PT operators is monitored and memos issued. Sis involvement is also noted.



Public Toilet Monitoring Tool

Screen Shots of the Mobile app

GREATER WARANGAL MUNICIPAL CORPORATION

- Grievance >
- Tappa >
- Citizen Charter >
- Elections >
- SWM >
- Nodal Off Report >
- Nodal Off Report Time >
- Sanitation Special Drive >
- Official Login >**
- Solid Waste Management >

GREATER WARANGAL MUNICIPAL CORPORATION

Home Logging In As: ANIL KUMAR POLEPAKA [Log Out](#)

Toilets Location:

Location Visit:

1. The entire toilet block is visibly clean:

Photo Upload1

No file chosen

2. The toilet block smells fresh:

3. There is soap available at the handwash stations:

Photo Upload3

No file chosen

4. All the fittings and fixtures are in working condition:

Photo Upload4

No file chosen

5. Cleaning cycles are being followed:

Photo Upload5

No file chosen



Public Toilet Monitoring Tool

Fuel Stations



Perfumery in PTs- Ferminich



Citizen Feedback Tool

GPS Enabled Feedback Machines Placed in Public Toilets

Purpose: Information from multiple locations is collated on a real time basis.

Users: Citizens using the PTs

Functionality: Citizens use the feedback machine to rate the maintenance of the toilet.

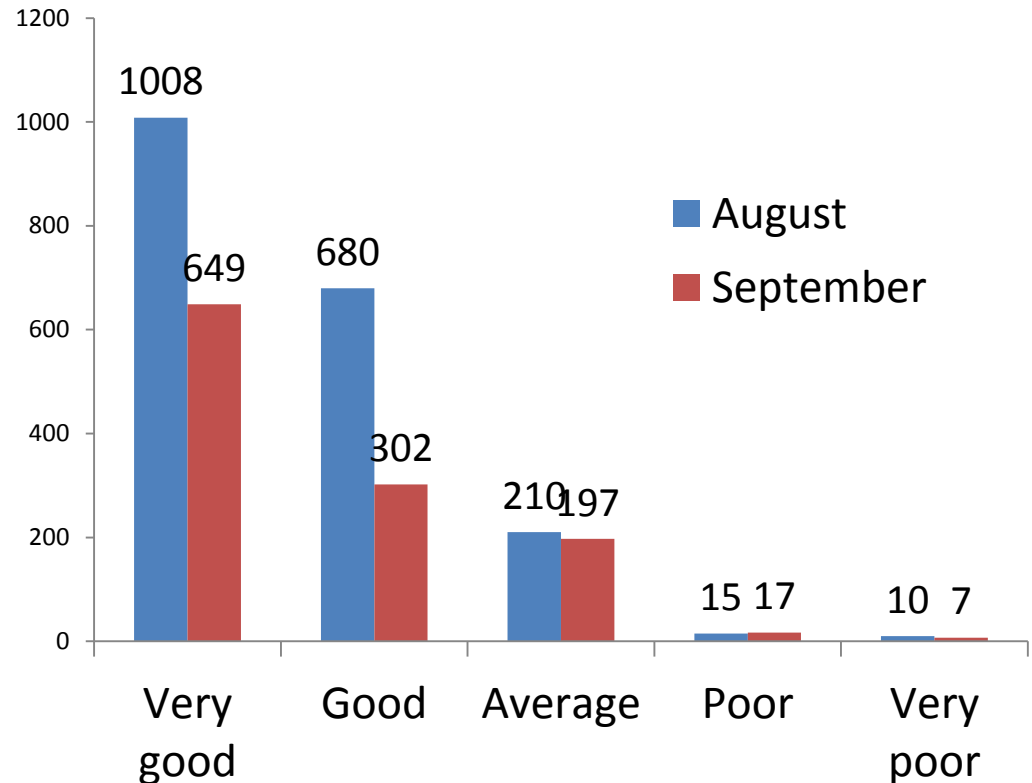
This data is used in combination with data from PTs monitoring tool (SIs app) for monitoring service level standards on weekly basis



Citizen Feedback Tool

Feedback Results

- Data can be viewed facility wise as well as in a consolidated form
- The machines were piloted in 5 PTs in the Months of August and September and are now being scaled up to 31 other PTs



Sanitation Helpline (S-Line)

Launched in May 2016, it is integrated into GHMC systems

- An average of 45 calls (30 women, 15 men) received per day.
- As on date, S-Line was able to facilitate the GWMC to release the Rs. 2,94,00,000 **(Rs. 29.4 million)** to **1800 beneficiaries**.
- S-line started receiving calls for booking trucks for desludging.



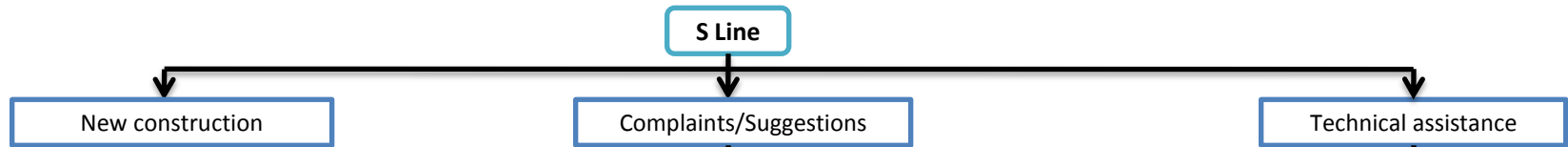
New toilet construction

Desludging and Complaints

Technical Assistance

Sanitation Helpline (S-Line)

Process Flow



Project Implementation Unit (PIU) meets every week

CHAIRPERSON: Additional Commissioner

GWMC CONVENOR: Secretary

MEMBERS:

- 2 Deputy Commissioners
- 3 Executive Engineers
- Town Planning Resource Officer
- 2 Town Level Federation Presidents (Any 2 of the 12 presidents to represent the TLF)
- Municipal Health Officer

Sanitation Helpline (S-Line)

Process Flow for New Applications

S-line operator receiving calls from beneficiaries for the construction of new toilets



Online Application format for construction of new toilet

Enter S-Line ID No. _____		Name of the Bank _____	
Form ID: For data on Toilet _____		Formal Bank _____	
A) Beneficiary's Particulars			
State:	Chhattisgarh	City:	_____
District:	Warrangal	Pin Code:	_____
Block:	Warrangal	Note: The funds will be transferred through Electronic Transfer	
House No.:	_____	State of the Existing Toilet:	Place is available for construction of new toilet? <input type="checkbox"/> Yes <input type="checkbox"/> No
B) Toilet Owner's Particulars			
Name of the Applicant:	_____	Gender:	Male <input type="checkbox"/> Female <input type="checkbox"/>
Profession:	_____	Present Distress is existing in the house?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Father's Name:	_____	If Yes, is toilet connected to UGD system?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Mother's Name:	_____	If No, is Applicant eligible for UGD Connection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Address:	House No. _____	Note: Only applicable for those who don't have toilets or have unimproved latrines	
Locality:	_____	I undertake that the particulars given above are true to the best of my knowledge and belief	
Select Caste:	_____	and in case of any information is found to be false/incorrect, State Government/ Government of India will initiate suitable action against me.	
Mobile:	_____	C) Reference of Past Events regarding the State/Zone	
Landline:	_____	Reference:	I II III IV
Bank Account No. _____	_____	Name:	_____

Validation at applicant's house by Verification officer



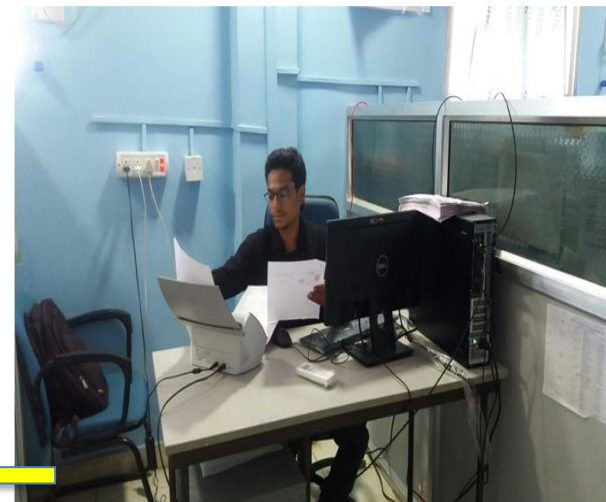
Different stages involved in construction of toilet



Assistant Engineer geo tagging the location of the toilet after approval



ASCI officer uploading the information provided by verification officer into the CGG website



Aadhar Linked Sanitation Tool

Survey of Slums (SOS)

Purpose: To build a robust central database of information related to sanitation in slums.

Users: Field Officers / Evaluators

Functionality:

- Primary information about households
- Awareness and attitude towards sanitation
- Current situation related to Health, Water, Sanitation, access to toilets, toilet typologies, behavioral patterns etc.



Aadhar Linked Sanitation Tool

Survey of Slums (SOS)

Functionality:

- Real time data capture and analysis.
- Data overlaid on GIS maps
- The Iris scanner in the mobile tablet permits Real time Biometric Authentication by linking it with National database of Unique Identification Number (UID)



Aadhar Linked Sanitation Tool

Survey of Slums (SOS) app screenshots

Warangal SOS
(Survey of Slums)

LOG IN

User Id

Password

Login >

[Forgot Password](#)

Warangal SOS
(Survey of Slums)

All Areas

- Deena dayal nagar
- Hanuman Nagar
- Hari kishan singh surgith nagar
- Jyothi Nagar
- Kashikunta
- M H Nagar
- Nagendra Nagar
- O S Nagar
- Peddamagadda
- Pochammakunta
- pothana nagar
- cammah nagar

Warangal SOS
(Survey of Slums)

All Sections

- Primary Information of The Slum
- Primary Information of The Household
- Household Socio-Economic Status
- Health
- Water
- Sanitation
- Sanitation & Toilet in the house and Shared Toilet
- Sanitation & No Toilet in the House House Hold Using Public or Community Toilet
- Sanitation- No Toilet in the House Open Defecation
- Awareness About And Attitudes Towards Sanitation
- Liquid And Solid Waste Disposal Practices
- Awareness And Interest In SBM

Step 1 : Field Evaluator Login

Step 2: Select the area

Step 3 : Select Section

Aadhar Linked Sanitation Tool

Survey of Slums (SOS) app screenshots

Warangal SOS (Survey of Slums) Knowledge Partner

Primary Information of The Slum

Name of the slum:

Ward Number:

Sanitation Zone:

Locality:

Age of the slum:

Area in sq. Meters:

Total number of Households:

Population of the slum:

Number of BPL (white ration card) Households:

Number of

Step 4 : Primary Section

Warangal SOS (Survey of Slums) Knowledge Partner

Primary Information of The Household

Name of the Head of the Household:

Address of the Household :

House No:

Locality:

Phone No. of the Head of the Household:

Area of the Plot (Sq. Feet):

Area of the House (Sq. Feet):

Latitude and Longitude:

Aadhar Card No. of the Head of the Household:

Sex of the Head of the Household:

Male
Female
Other

Age of the head of household :

Step 5: Household Information

Warangal SOS (Survey of Slums) Knowledge Partner

Aadhar Card No. of the Head of the Household:

Sex of the Head of the Household:

Male
Female
Other

Age of the head of household :

20 - 40
41-60
61 and above

Education of the head of the household:

Illiterate
Can sign only
Primary level
Secondary
Higher Secondary
Graduate
Post graduate and above

Profession of the head of the household:

Government Service
Private Service
Student
Business
Rickshaw/Van
Farmer/Agriculture work
Professional (Doctor, advocate, etc.)
Technician/mechanic, etc.
Household Help Unemployed/not involved with earning
Others specify

Are there differently-abled members in the Household :

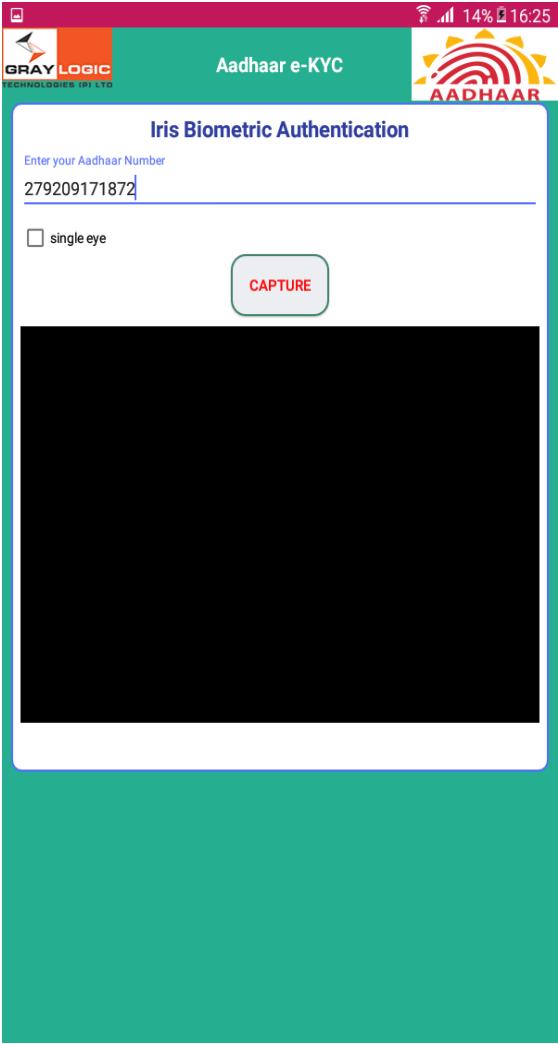
Yes
No

Step 6 : Taking Aadhar card number

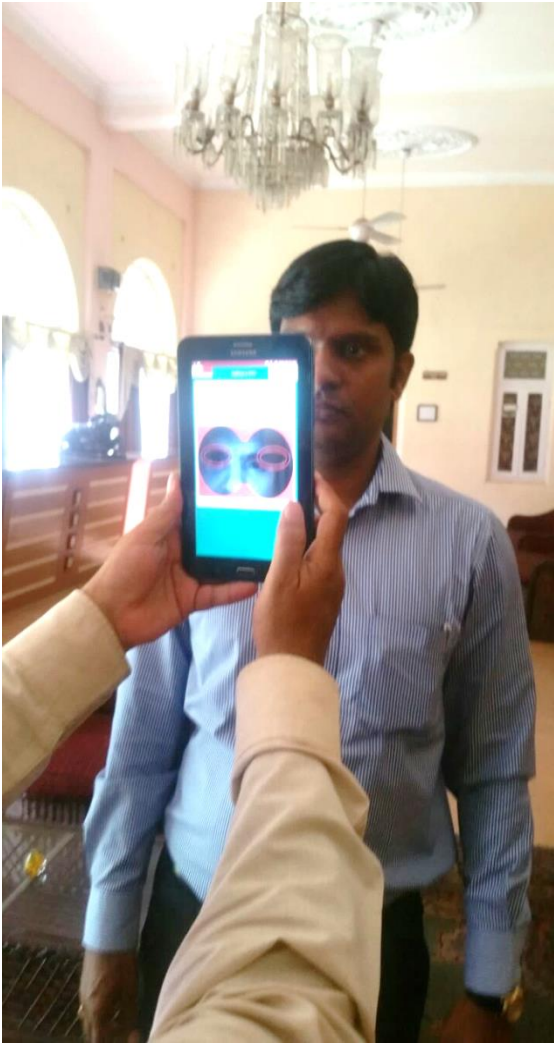


Aadhar Linked Sanitation Tool

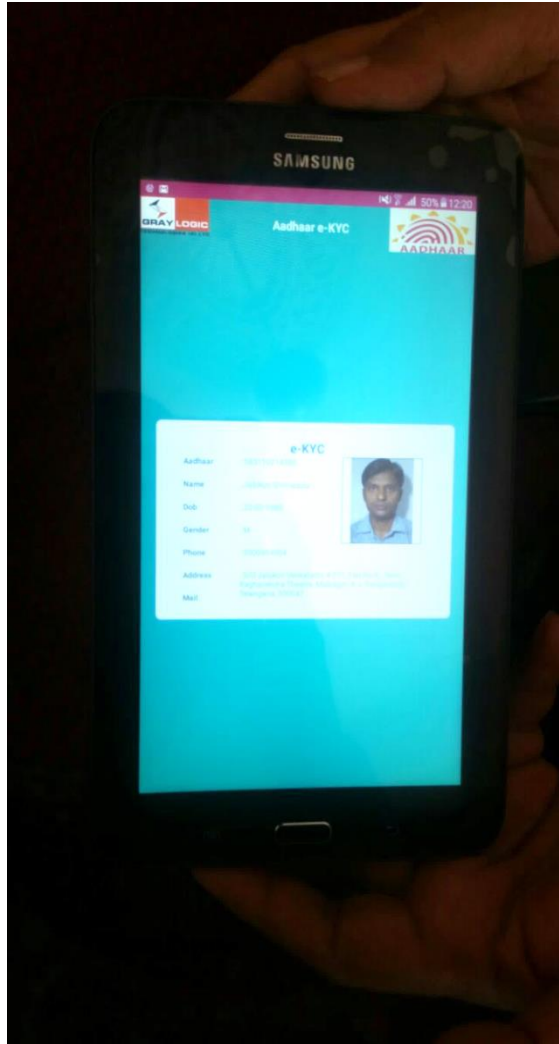
Survey of Slums (SOS) app screenshots



Step 7: Enter Aadhar number



Step 8: Iris scan



Step 9: Getting data from Aadhar server



FSM Tracker

App screenshots

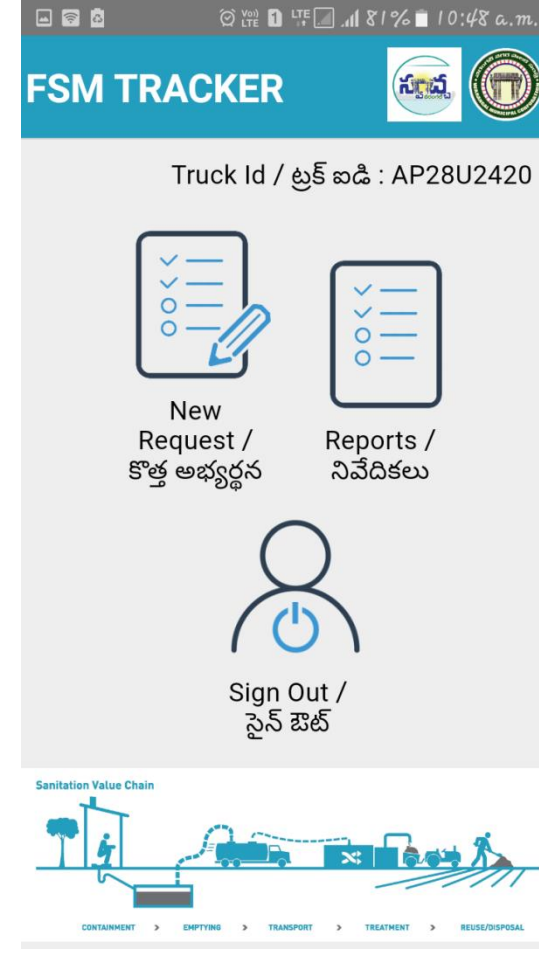
Purpose: Licensed FSM operators are required to report information as per the FSM Regulations .

Users: Desludging Operators

Functionality:

Information on septage collection on a real time basis

Send auto alert to citizen and operators regarding next desludging cycle.



FSM Tracker

Dashboard

FSM Tracker

[DashBoard](#)

[FSM Operations](#) ▾

[FSM Reports](#) ▾

[Users](#) ▾

[Logout](#)

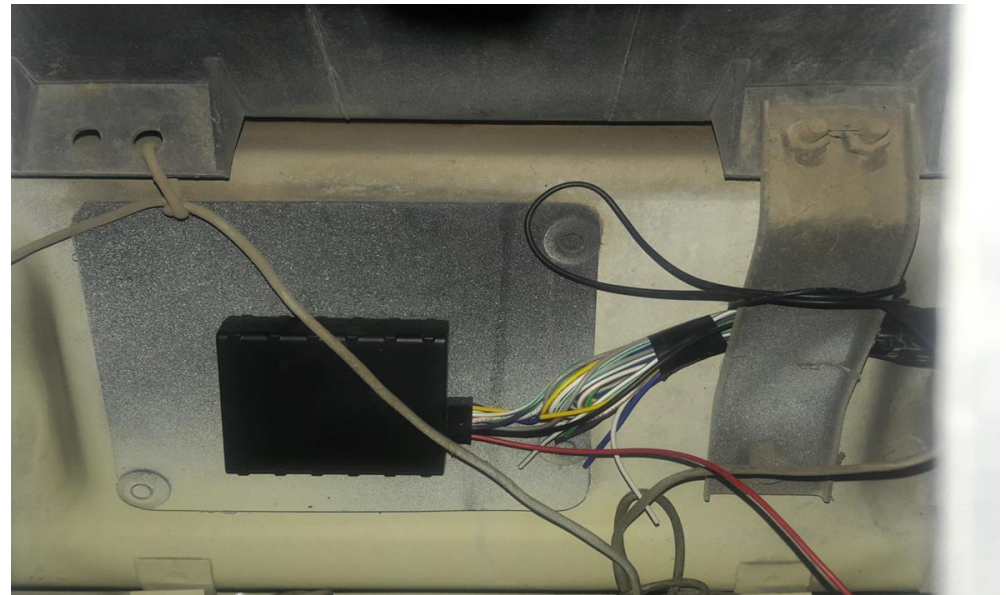
FSM Truck Details

[Download Excel](#)

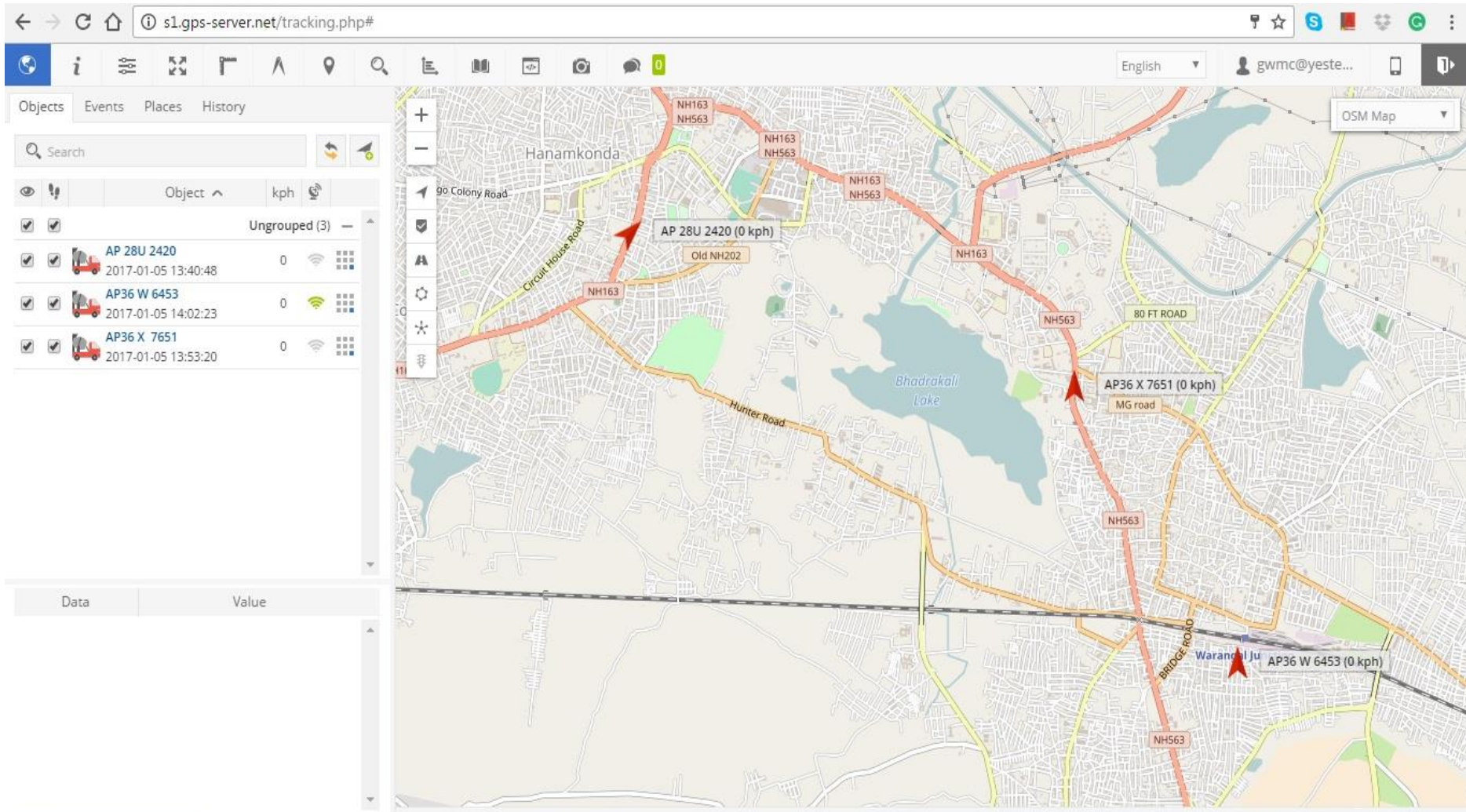
#	FSMID	FSM Name	TruckId	Truck DriverName	Operator Id	Operator Name	Aadhar Number	Email	Mobile no	Booking Date	HouseNO	Area	City
1	100180	RD collage	1008	Narasimha Rao	10008	Mr Dilly Sampath Rao			9059910298	06/01/2017	2-2-126	Naimnagar	Hnk
2	100179	Raju	1006	Srinivas	10008	Mr Dilly Sampath Rao			9966451421	05/01/2017	22-7-62	Dr colony 1	Wgl
3	100178	Rsinivas	1008	Narasimha Rao	10008	Mr Dilly Sampath Rao			8328234215	05/01/2017	15-2-287	Rangampeta	Warangal
4	100177	G kranthikumar	1002	Yakaiah	10006	Mr Vijay Singh so Satveen Singh	245788015763		7386053753	04/01/2017	25-3-60/1	Somedi	Gwmc
5	100176	Kumar	1008	Narasimha	10008	Mr Dilly			9866898141	04/01/2017	5-11-269	Naimnagar	Hnk

GIS Tracking of Desludging Vehicles

As a part of the FSM regulations, GPS were installed in licensed desludging vehicles to track and effectively monitor the movement of the vehicles.



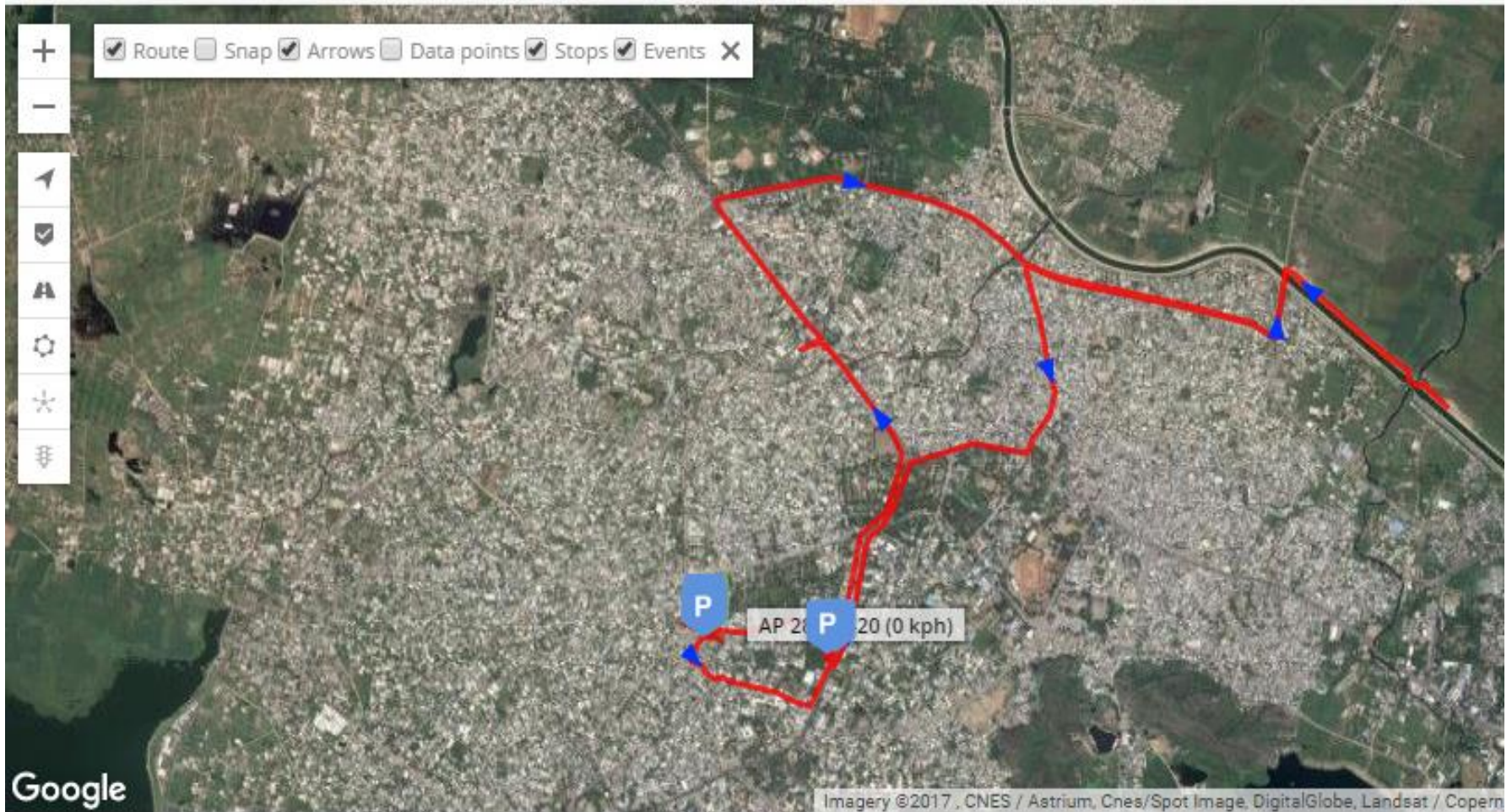
GIS Tracking of Desludging Vehicles



Arrow mark indicates the location of vehicles



GIS Tracking of Desludging Vehicles



Red colour indicates the route and Blue colour arrow indicates the direction in which vehicle travelled.



Conclusion

- ICT supports effective **implementation of FSM**
- ICT tools can help city governments make informed **decisions** to effectively implementation of sanitation program
- ICT tools are **cost effective, replicable and scalable**
- **Integration** of different tools is important
- **Stakeholder** consultations, capacity building is critical

Conclusion

- Tool development requires process mapping lending opportunities for **Process reengineering**
- Important to integrate the tools into the **existing systems** of monitoring being used by city government
- The systems and tools developed at Warangal are being **scaled up at the State level** and Swachh Bharat Mission, governments are encouraged by Warangal experience to implement similar initiatives at **Pan India level**.